



9th FAOPS Federation of the Asian and Oceanian Physiological Societies CONGRESS

in conjunction with
The 96th Annual Meeting of
the Physiological Society of Japan

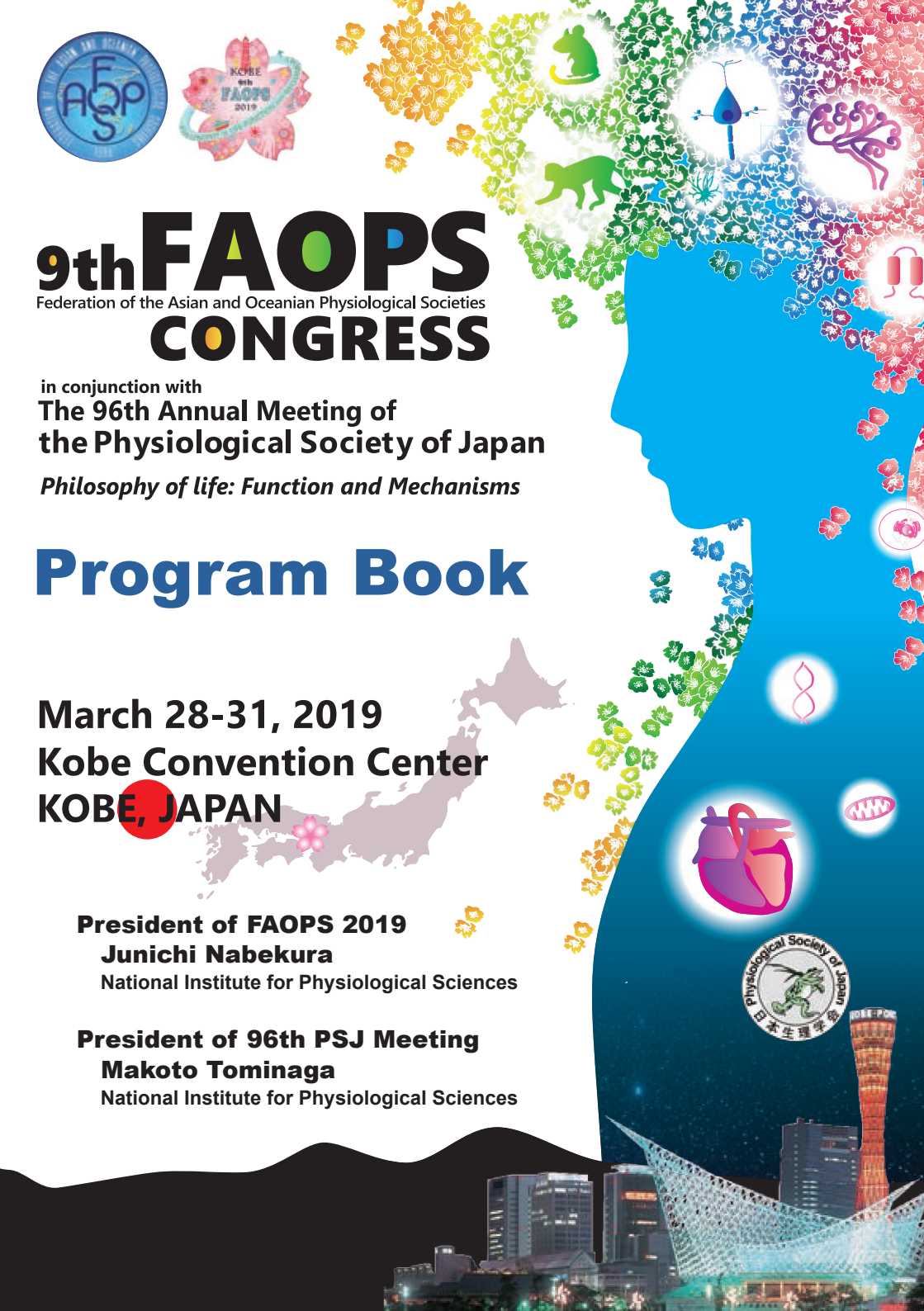
Philosophy of life: Function and Mechanisms

Program Book

March 28-31, 2019
Kobe Convention Center
KOBE, JAPAN

President of FAOPS 2019
Junichi Nabekura
National Institute for Physiological Sciences

President of 96th PSJ Meeting
Makoto Tominaga
National Institute for Physiological Sciences



漢方医学と西洋医学の融合により 世界で類のない最高の医療提供に貢献します



自然と健康を科学する

漢方の **ツムラ**

<http://www.tsumura.co.jp/>

●お問い合わせは、お客様相談窓口まで。

【医療関係者の皆様】Tel.0120-329-970 【患者様・一般のお客様】Tel.0120-329-930

The 9th Federation of the Asian and Oceanian Physiological Societies Congress

in conjunction with the 96th Annual Meeting of
the Physiological Society of Japan

Program Book

Philosophy of Life: Function and Mechanisms

Date: Thursday, March 28 – Sunday, March 31, 2019

Venue: Kobe Convention Center

Kobe International Conference Center

Kobe International Exhibition Hall, No. 2 Building

President of FAOPS 2019

Junichi Nabekura MD, PhD
(National Institute for Physiological Sciences)

President of 96th PSJ Meeting

Makoto Tominaga MD, PhD
(National Institute for Physiological Sciences)

Contents

Welcome Addresses	3
FAOPS Council Members	7
Committee Members	8
General Information	12
Access Map	12
Area Map	13
Room Information	14
Floor Map	15
Information for Participants	19
Instructions for Chairs and Co-chairs	23
Instructions for Oral Presenters	23
Instructions for Poster Presenters	25
Award Presentations	26
Social Events and Ceremonies	27
Other Programs	28
Business Meetings and Other Meetings	29
Satellite Events	30
Local Information	31
Program at a Glance	33
List of Academic Sessions	42
Programs	49
DAY1 : March 28, 2019	51
DAY2 : March 29, 2019	52
DAY3 : March 30, 2019	168
DAY4 : March 31, 2019	273
Science Outreach Program	305
Acknowledgements	311



President of the 9th Federation of the Asian and Oceanian Physiological Societies Congress

To all participants,

On behalf of the Organizing Committee, I am pleased to invite you to the 9th Federation of the Asian and Oceanian Physiological Societies Congress (FAOPS 2019) held in conjunction with the 96th Annual Meeting of the Physiological Society of Japan (PSJ) in Kobe, Japan, on 28-31 March, 2019. The main theme of this Congress is the "Philosophy of Life: Function and Mechanisms". We welcome all scientists and students, especially those from Asia and Oceania, to share their research interests across all aspects of the physiological sciences, on topics ranging from the purely curiosity-driven to the clinically oriented.

FAOPS, founded by Prof. Masao Ito, the first President of FAOPS, and other leading pioneers in Asia and Oceania, greatly contributes to the development and expansion of physiological science and education in these regions. Regrettably, Prof. Ito, who was instrumental in bringing this Congress to Japan, passed away in December 2018, just 3 months before this Congress. We regret the loss of this father figure of FAOPS and sincerely pray for the repose of his soul. The organizing committee of FAOPS 2019 and The Physiological Society of Japan are currently preparing attractive programs in honour of Prof. Ito.

The highlights of this Congress include three plenary lectures, nine special lectures, more than 60 symposia/seminars, more than 1000 poster presentations, as well as a special guest talk by a top world athlete and various social activities. At the request of the FAOPS Council Members and in celebration of the 30th anniversary of FAOPS's foundation, a special symposium is also scheduled to commemorate Prof. Masao Ito's major contribution to the field of neurophysiology over many years. In addition, a teaching workshop for physiology educators and a research training course for young scientists are also planned before and after this Congress.

In short, we hope that FAOPS 2019 Congress will provide you with numerous opportunities to gain new knowledge through interacting with other leading scholars in attendance.

Whilst attending the Congress, you will be able to enjoy spring time in Japan and its beautiful cherry blossom set against the backdrop of Kobe's magnificent cityscape. Given its rich history as a port city, Kobe not only boasts its own fascinating attractions but also serves as a convenient base for visiting some of the most famous and exciting areas of Japan such as Osaka, Kyoto and Nara.

I hope you enjoy the Congress and your stay in Japan.

Sincerely,



Junichi Nabekura, MD, PhD
President of the 9th Federation of the Asian and Oceanian
Physiological Societies Congress



President of the Physiological Society of Japan



President of the 96th Annual Meeting of the Physiological Society of Japan

We welcome all the people joining the 9th Congress of Federation of the Asian and Oceanian Physiological Societies (FAOPS 2019). FAOPS 2019 is held in conjunction with the 96th Annual Meeting of the Physiological Society of Japan (PSJ). This is the first FAOPS Congress held in Japan and a memorial congress celebrating 30 years history of FAOPS which was founded by a Japanese physiologist, Dr. Masao Ito. It is our honor to sponsor such a great congress in Kobe, a city that opened for trading with occidental countries more than 150 years ago. This Congress could be an exceptional occasion for the researchers belonging to PSJ to discuss their works in various physiological themes with many scientists from Asian and Oceanian countries and would be a milestone in the development of physiology researches in those countries. We really hope the fruitful success of this Congress and this Congress would further deepen mutual understanding of each other, which could lead to greater prosperity in physiology in Asian and Oceanian countries. Please enjoy FAOPS 2019!



Yoshinori Marunaka, MD, PhD
President of the Physiological Society of Japan



Makoto Tominaga, MD, PhD
President of the 96th Annual Meeting of the Physiological Society of Japan



President of the Federation of the Asian and Oceanian Physiological Societies

Dear Colleagues,

On behalf of the Federation of the Asian & Oceanian Physiological Societies (FAOPS), it is my great honor and pleasure to welcome you to the 9th FAOPS Congress in Kobe, Japan in March 28 - 31, 2019.

Physiology is the science of studying the functional activities and its mechanisms in biological body. It was the cornerstone of biology and medicine. It is an independent discipline formally established in the Nineteenth Century. Nobel Prize in Physiology or Medicine launched in 1901 demonstrates the importance of physiology in life science and natural science.

As we may know, FAOPS was found in November, 1990 in New Delhi, India. FAOPS is a unique organization comprising of countries located in Oceania region and across the Asia Continent. Set up the purpose of the organization is to promote the development of Physiological Sciences; to strengthen exchanges in the physiological sciences and related disciplines and the popularization of knowledge of Physiological Sciences; to encourage physiological science research; and to promote all other local physiological science level of development. The founding president is Dr. M. Ito, a famous neurophysiological scientist over the world. Under the great efforts of many leading scientists of FAOPS Council Members, FAOPS is gradually growing up and getting stronger. The FAOPS Congress is normally held every 4 years. FAOPS Council Meeting has decided to hold the FAOPS 30th Year Anniversary Program "History of FAOPS" (in Opening Ceremony, March 28). FAOPS will also issue the certificates of "lifetime contribution awards" to those who have made outstanding contributions for the construction and development of the Federation.

The theme of this conference is "Philosophy of life: Function and Mechanisms". We believe this conference will provide an excellent opportunity for participants from across the world to share their knowledge, exchange new ideas, enjoy the beauty of science and connect Physiological sciences in the world.

Finally, I must thank the Physiological Society of Japan for their unremitting efforts in preparing for the 9th FAOPS Congress and History of FAOPS! I do wish 2019 FAOPS Congress a great success and thank you for your participation and support.

Yours sincerely,



A handwritten signature in black ink that reads "Xiaomin Wang".

Dr. & Prof. Xiaomin Wang
President of the Federation of the Asian and Oceanian
Physiological Societies
Capital Medical University, China

Memorial Statement for Professor Masao Ito, the 1st President of FAOPS



Professor Masao Ito
The first President of FAOPS
1928-2018

It is with deep sorrow and regret that we announce this first FAOPS Congress in Japan is to be held without the attendance of Professor Masao Ito, the eminent neuroscientist and the first president of FAOPS, who passed away on Dec 18, 2018 at the age of 90. Prof. Ito made seminal contributions in the field of neurophysiology. Early in his career, he was invited by Sir John Eccles of the Australian National University in Canberra (laureate of The Nobel Prize in Physiology or Medicine in 1963 for revealing the mechanisms of synaptic transmission) to join his group and further their research into synaptic transmission. Having completed pioneering work on ionic mechanisms of synaptic transmission and neuronal excitation at Canberra, he returned to Japan and first worked at Kumamoto University as an associate professor and then at the University of Tokyo as a full professor at the age of 41. Up until his retirement from the University of Tokyo in 1989, he made many valuable scientific contributions, including identification of the inhibitory action of cerebellar Purkinje cells and a novel form of synaptic plasticity, long-term depression (LTD), in the cerebellum synapses. Among his most notable contributions was his development of a theory that the cerebellum is a general learning machine for acquiring not only motor skills, but also implicit memory in thought. In addition to these research activities, Prof. Ito mentored and nurtured many neurophysiologists both in Japan and overseas, particularly in Asia and Oceania.

Furthermore, Prof. Ito took an extremely active leadership role in the promotion of the physiological sciences around the world. After the establishment of FAOPS, in which he played a crucial role, he served as its first president (1990-94) and then again for a 2nd term (1994-98). In addition, he was President of The Human Frontier Science Program Organization (HFSP/O) 2000-2009, International Brain Research Organization (IBRO) 1980-86; and the International Union of Physiological Sciences (IUPS) 1994-97. He was made Honorary President of IBRO in 1987. At home, he was a member of the Japan Academy (1989-2018), President of the Science Council of Japan (1994-97), Emeritus Fellow of the Physiological Society of Japan (2013-) and the first President of the Japan Neuroscience Society (1983-1998). He also contributed to the foundation of the Brain Research Institute in RIKEN, where he was the founding director (1997-2002). We hope that his legacy of open-mindedness, international outlook and pioneering spirit continues to inspire the neuroscience scholars and physiologists of today and FAOPS members in particular.

FAOPS Council Members (2015-2019)

President	Xiaomin Wang (China)
Past-President	Julie YH Chan (Taiwan)
1st Vice-President	Javad Mirnajafi-Zadeh (Iran)
2nd Vice-President	Yoshihiro Kubo (Japan)
Secretary-General	Harbindar Jeet Singh (Malaysia)
Treasurer	Philip Poronnik (Australia)
	Arif Siddiqui (Pakistan)
	Suchinda Malaivijitnond (Thailand)
	Sashi Bala Singh (India)
	Israel Sekler (Israel)
	Chae Hun Leem (Korea)
	Colin H Brown (New Zealand)
	Mei-Ling Tsai (Taiwan)

Committee Members

President

Junichi Nabekura

Vice-Presidents

Fusao Kato [Finance and Budget]

Noriyuki Koibuchi [Secretary General]

Yasushi Okamura [Program]

President of the 96th PSJ meeting

Makoto Tominaga

Honorary Chairpersons

Keiji Imoto

Satoshi Kurihara

Yoshinori Marunaka

Yasunobu Okada

Local Organizing Committee

Junichi Nabekura

Fusao Kato

Yoshihiro Kubo

Yasushi Okamura

Makoto Tominaga

Hiroaki Wake

Yoshihiro Ishikawa

Noriyuki Koibuchi

Shohei Mitani

Mariko Omatsu-Kanbe

Yoichi Ueta

Michisuke Yuzaki

International Scientific Program Committee

[Chair, PSJ] Yasushi Okamura

[PSNZ] Joanne Davidson

[KPS] Chae Hun Leem

[ISPP] Javad Mirnajafi-Zadeh

[AuPS] Deanne Skelly

[CAPS] Ying-Shing Chan

[PSJ] Yoshihiro Kubo

[PST] Suchinda Malaivijitnond

[MSPP] Rosfaiizah Siran

[CPS] Linda Chia-Hui Yu

Secretary General Committee

[Chair] Noriyuki Koibuchi

Masakazu Agetsuma

Kei Eto

Hiroshi Horiuchi

Kunio Kondoh

Tomomi Okayasu

Mariko Omatsu-Kanbe

(30th Year Anniversary Program)

Yo Shinoda

Ikuko Takeda

Yoichi Ueta

Hiroaki Wake

Yumiko Yoshimura

Akiko Arata

Hidemasa Furue

Keigo Kohara

Madoka Narushima

Yoshitaka Oku

Yasuhiko Saito

Derouiche Sandra

Kiwako Sakamoto

Takaaki Sokabe

Makoto Tominaga

Makoto Wada

Finance and Budget Committee

[Chair] Fusao Kato

[Vice-Chair] Motohiro Nishida

Satomi Akahane

Yoshihiro Ishikawa

Keiji Naruse

Yoko Tsukamaoto

Michisuke Yuzaki

Atsushi Iriki

Atsushi Nambu

Tatsushi Onaka

Ayako M. Watabe

Local Scientific Program Committee

[Chair] Yasushi Okamura

[Vice-Chair] Michisuke Yuzaki

Harumi Hotta

Masanobu Kano

Takafumi Kawai

Yoshihisa Kurachi

Tomoyuki Kuwaki

Shohei Mitani

Kei Nagashima

Fumihito Ono

Masato Shibuya

Hiroaki Wake

Hidefumi Waki

(Dual Roles for PSJ and the Japanese Society of Physical Fitness and Sports Medicine)

Yoshikatsu Kanai

Yasuo Kawaguchi

Yoshihiro Kubo

Mieko Kurosawa

Yasuhiko Minokoshi

Tomomitsu Miyoshi

Yoshifumi Okochi

Hideki Sakai

Yoichi Ueta

FAOPS 2019 Educational Events

Noriyuki Koibuchi

Masato Shibuya

Program Committees for Other Specific Events

Sachine Tsutsumi (Yoshida): *Meet the Lecturers*

Makoto Wada: *Meet the Lecturers*

Mikio Furuse: *Technical Workshop*

Yuichiro Fujiwara: *Tutorial for Physiologists*

Yo Shinoda: *PSJ Public Lecture*

Hiroshi Hibino: *Outreach Activity for Children*

Yoshihisa Kurachi: *Outreach Activity for Children*

Yasushi Okamura: *Outreach Activity for Children*

Yasushi Sakata: *Outreach Activity for Children*

Award Committee (Travel Award)

[Chair] Atsushi Nambu

Yumiko Yoshimura

Masakazu Agetsuma

Masaki Fukata

Masaki Fukunaga

Junichi Chikazoe

Yuko Fukata

Mikio Furuse

Masumi Hirabayashi
Yasushi Izumi
Yasuo Kawaguchi
Yoshihiro Kubo
Yasuhiko Minokoshi
Kazuyoshi Murata
Akira Nakashima
Motohiro Nishida
Motohiko Sato
Mitsuhiro Tateyama

Masaki Isoda
Ryusuke Kakigi
Kenta Kobayashi
Yoshiyuki Kubota
Hideji Murakoshi
Ken-ichiro Nakajima
Madoka Narushima
Norihiko Sadato
Takaaki Sokabe

Award Committee (JGP Poster Award)

[Chair] Koichi Nakajo
Yuichiro Fujiwara
Takafumi Kawai
Shigetoshi Oiki
Ayako Takeuchi

Norio Fukuda
Nagomi Kurebayashi
Yasushi Okamura
Zhuan Zhou

Public Relations and Advertisement Committee

[Chair] Makoto Tominaga
[Vice-Chair] Yoichi Ueta
[Vice-Chair] Shohei Mitani
Masakazu Agetsuma
Atsuo Fukuda
Masanobu Kano
Fusao Kato
Mieko Kurosawa
Katsushige Ono
Yo Shinoda
Masaaki Tokuda
Hiroaki Wake
Hiromu Yawo

Kei Eto
Tadashi Isa
Makoto Kashiwayanagi
Yoshihiro Kubo
Madoka Narushima
Masato Shibuya
Noriko Takuwa
Sae Uchida
Hidefumi Waki
Miki Yoshitomo

Abstract Reviewing Committee

Toru Akaike
Akira Amano
Naohiko Anzai
Akiko Arata
Shinji Asano
Eriko Daikoku
Katsuya Dezaki
Yoshihiro Egashira
Takayuki Fujita
Yuichiro Fujiwara
Norio Fukuda
Hisayoshi Hayashi

Yukiko Hayashi
Yuki Hayashida
Hiroshi Hibino
Katsuya Hirano
Tomoo Hirano
Seiji Hitoshi
Kyoji Horie
Akira Ikari
Atsushi Inanobe
Ryuji Inoue
Ayumu Inutsuka
Taro Ishikawa

Haruyuki Kamiya
Yoshiki Kaneoke
Shin-Ya
Kawaguchi
Yasuo Kawaguchi
Takafumi Kawai
Yoshiko Kawai
Kenji Kawakita
Fumitaka Kimura
Kazuo Kitamura
Keigo Kohara
Noriyuki Koibuchi

Nagomi Kurebayashi
Junko Kurokawa
Tatsuki Kurokawa
Mieko Kurosawa
Yoichiro Kusakari
Tomoyuki Kuwaki
Takashi Maruyama
Ko Matsui
Susumu Minamisawa
Shohei Mitani
Dai Mitsushima
Naofumi Miwa
Tomomitsu Miyoshi
Masayuki Mori
Hajime Mushiake
Koichi Nakajo
Yukihiro Nakamura
Hiroko Nakaseko
Akira Nakashima
Noriyuki Nakashima
Shinsuke Nakayama
Keiji Naruse
Hiroshi Nishimaru
Yukio Nishimura
Mami Noda

Akihiko Ogura
Haruo Okado
Keiichiro Okamoto
Shiki Okamoto
James Hiroataka Okano
Yoshifumi Okochi
Tetsu Okumura
Mariko Omatsu-Kanbe
Tatsushi Onaka
Fumihito Ono
Kyoichi Ono
Norihiro Sadato
Junichi Saito
Hideki Sakai
Juro Sakai
Souhei Sakata
Mari Sasaki
Hajime Sawai
Masato Shibuya
Munetaka Shidara
Takushi Shimomura
Misa Shimuta
Tetsuya Shiuchi
Yoshiro Sohma
Yukari Takahashi

Kogo Takamiya
Yuki Takayanagi
Ayako Takeuchi
Masaki Tanaka
Mamoru Tanida
Akiyuki Taruno
Michihiro Tateyama
Kazuhito Tomizawa
Fumiyo Toyoda
Kunichika Tsumoto
Hidekazu Tsutsui
Sae Uchida
Yoichi Ueta
Masanari Umemura
Makoto Wada
Shigeo Wakabayashi
Hiroaki Wake
Hidefumi Waki
Mayako M. Watabe
Mitsuhiko Yamada
Hisao Yamamura
Manami Yamashita
Utako Yokoyama
Masahide Yoshida
Buntaro Zempo

Ethics Committee

[Chair] Shigeru Kitazawa
Atsushi Iriki
Sonoko Ogawa

Program Book and Abstract Book

Eriko Daikoku
Takafumi Kawai
Yasushi Okamura
Fumihito Ono
Mari Sasaki
Manami Yamashita

Yoshihiro Egashira
Tomomitsu Miyoshi
Yoshifumi Okochi
Souhei Sakata
Yasuhiro Yamamoto
Buntaro Zempo

Illustration

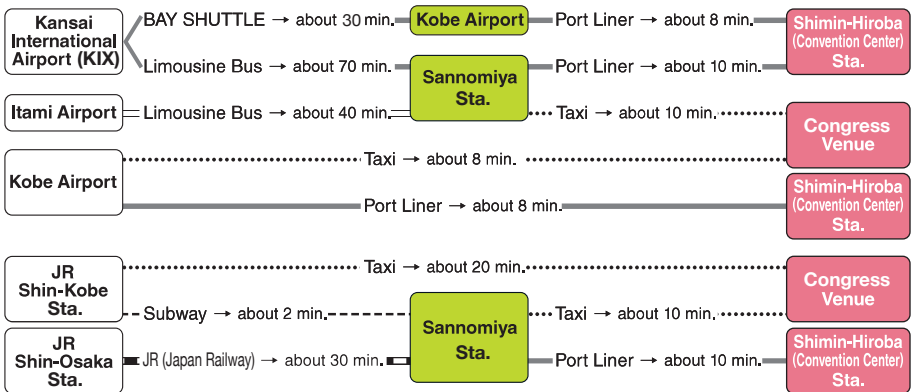
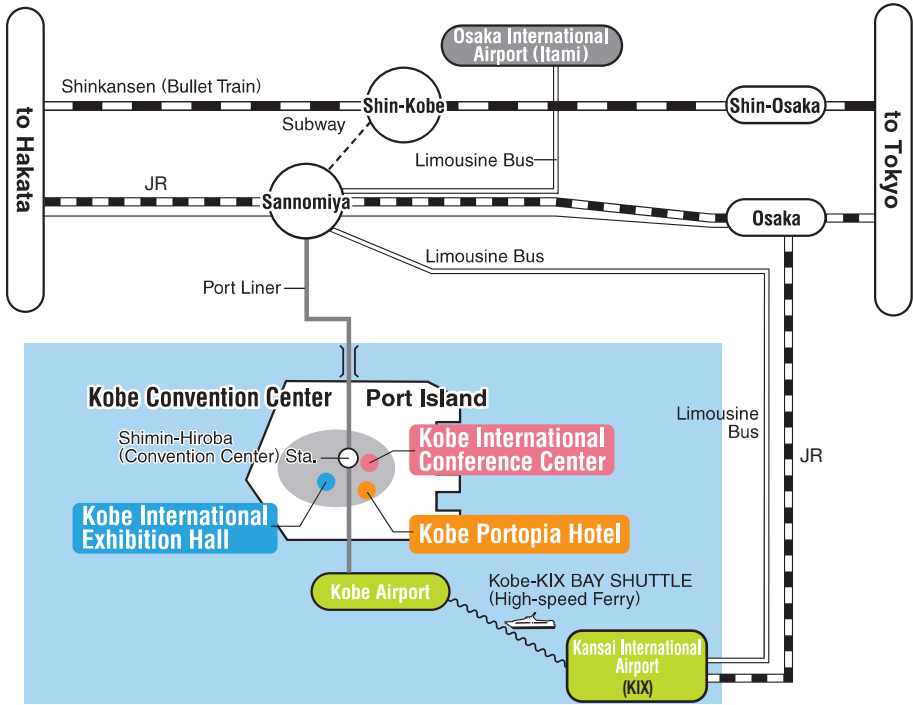
Ikuko Takeda
Yasuko Inokuchi

Auditors

Atsuo Fukuda
Yoshihiro Ishikawa

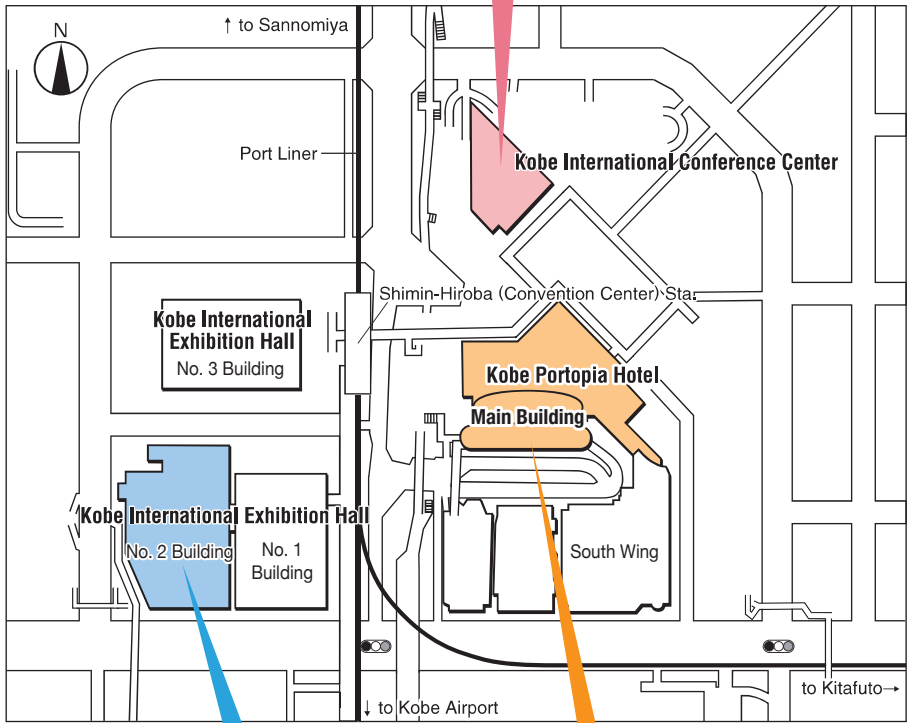
General Information

Access Map



Area Map

- Kobe International Conference Center**
- 5F Room F•G•H•I
- 4F Room D•E
- 3F Room B•C
- PC Center
- Cloakroom 2
- 1F Room A



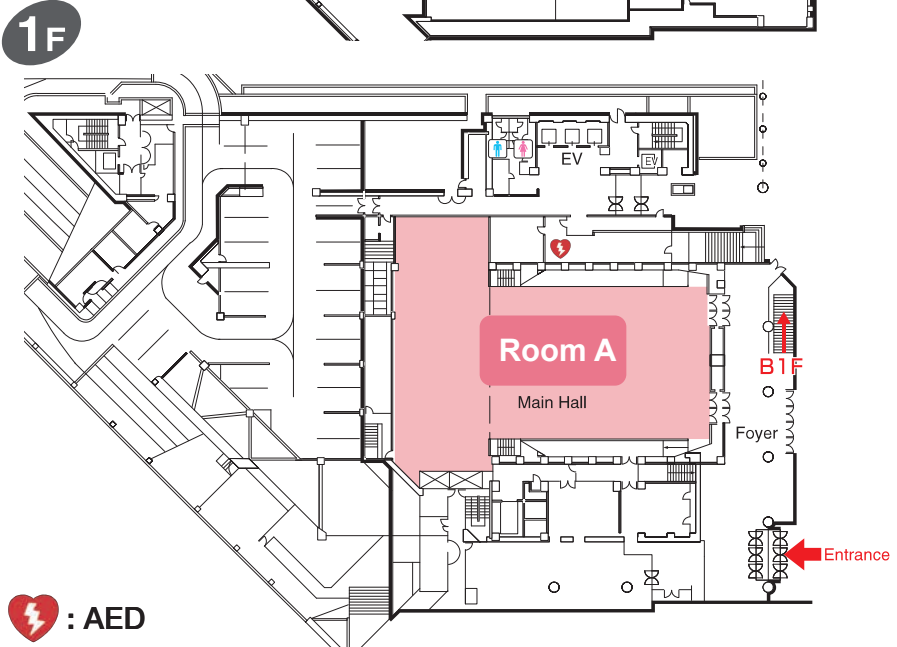
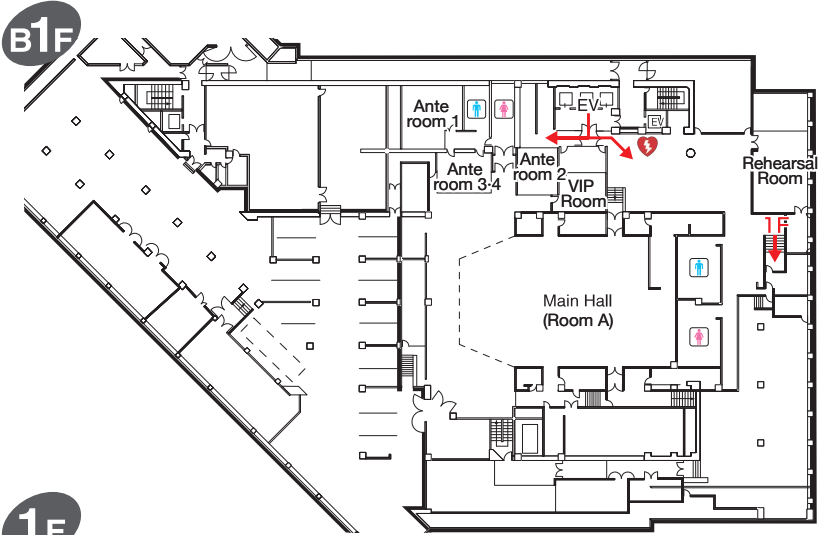
- Kobe International Exhibition Hall, No. 2 Building**
- 3F Room L•M
- 2F Room J•K
- 1F Registration Desk
- Poster Presentation
- Company / Academic Exhibition
- Book Store
- Kobe Tour Guides Desk
- Physio Café (Refreshment Corner)
- Cloakroom 1

- Kobe Portopia Hotel, Main Building B1F**
- “Kairaku”**
- Congress Dinner**

Room Information

Room A	1F	Main Hall	Kobe International Conference Center
Room B	3F	International Conference Room	
Room C		Reception Hall	
Room D	4F	Meeting Rooms 401+402	
Room E		Meeting Room 403	
Room F	5F	Meeting Room 501	
Room G		Meeting Room 502	
Room H		Meeting Room 503	
Room I		Meeting Rooms 504+505	
Room J	2F	Conference Room 2A	Kobe International Exhibition Hall, No. 2 Building
Room K		Conference Room 2B	
Room L	3F	Conference Room 3A	
Room M		Conference Room 3B	
Poster Exhibition Physio Café	1F	Convention Hall	
Registration Desks	1F	Foyer	
Cloakroom 1	1F	Foyer	
Prayer Room	1F	Anteroom 1	
PC Center	3F	Foyer	
Cloakroom 2	3F	Foyer	
Headquater	3F	Meeting Room 305	

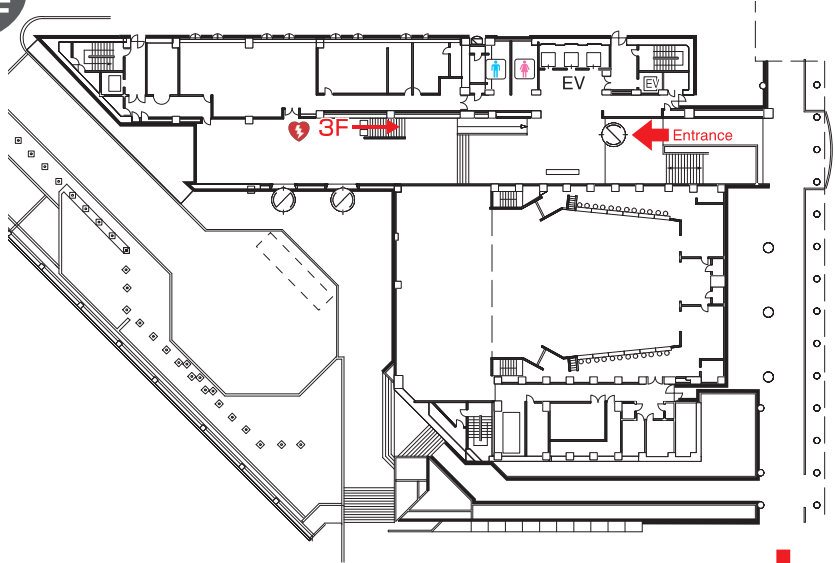
Kobe International Conference Center



Floor Map

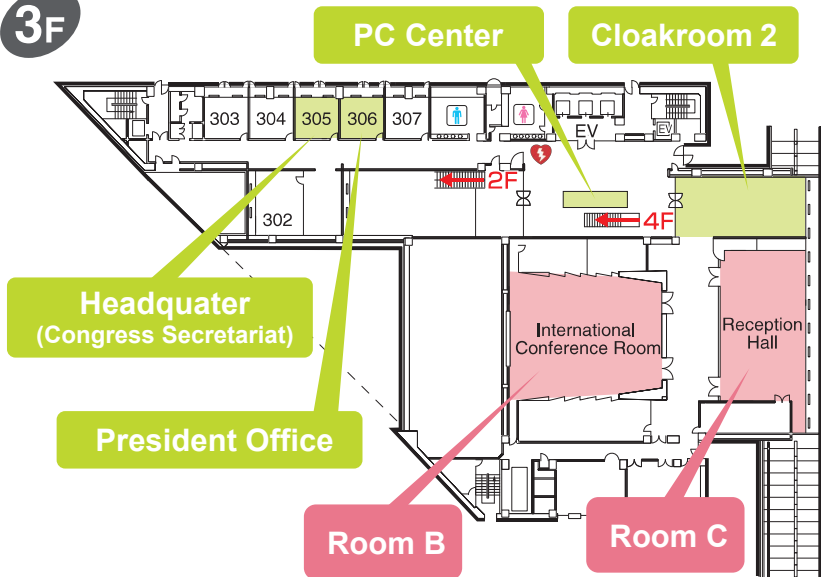
Kobe International Conference Center

2F



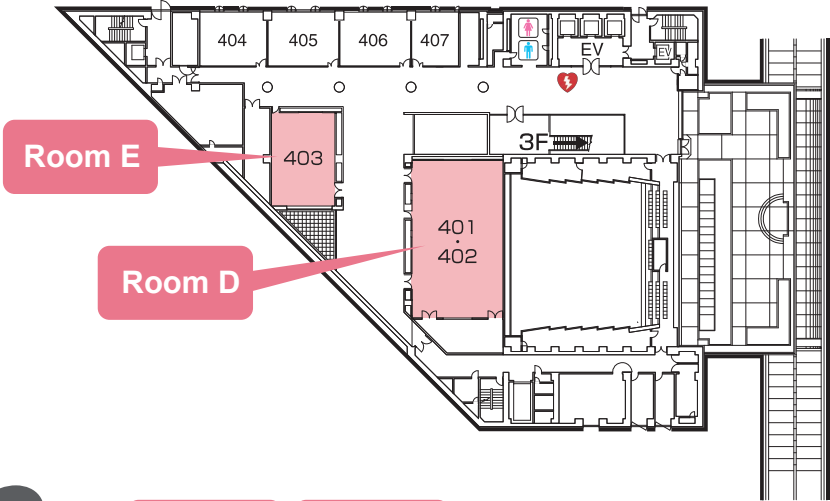
To Shimin-Hiroba Sta., Kobe International Exhibition Hall, Kobe Portopia Hotel ↓

3F

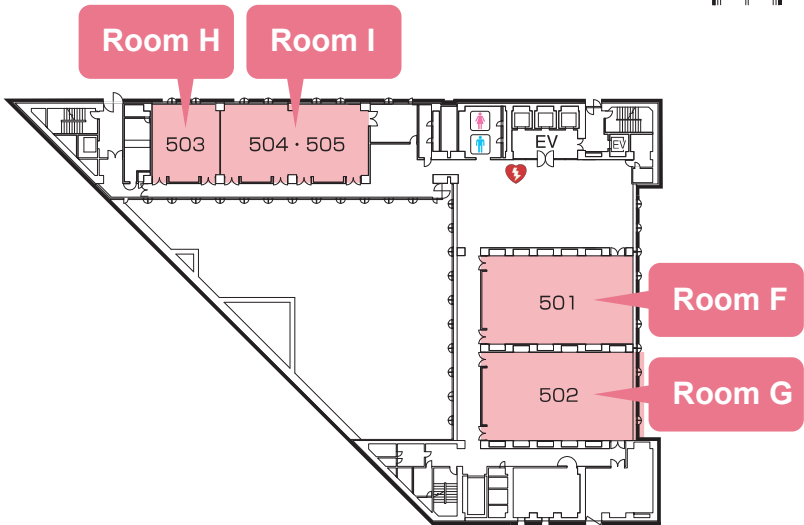


Kobe International Conference Center

4F

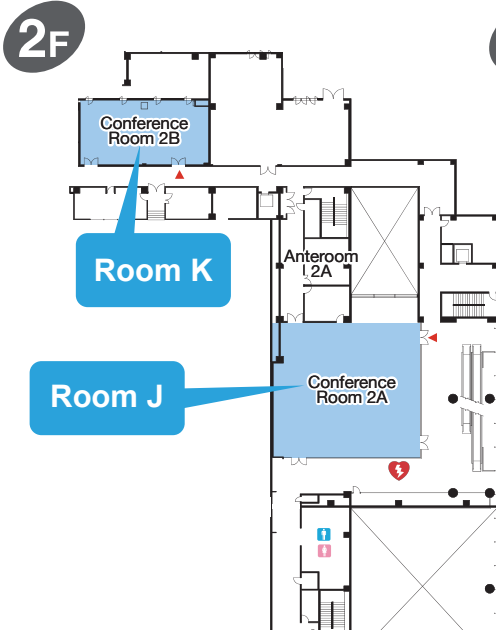
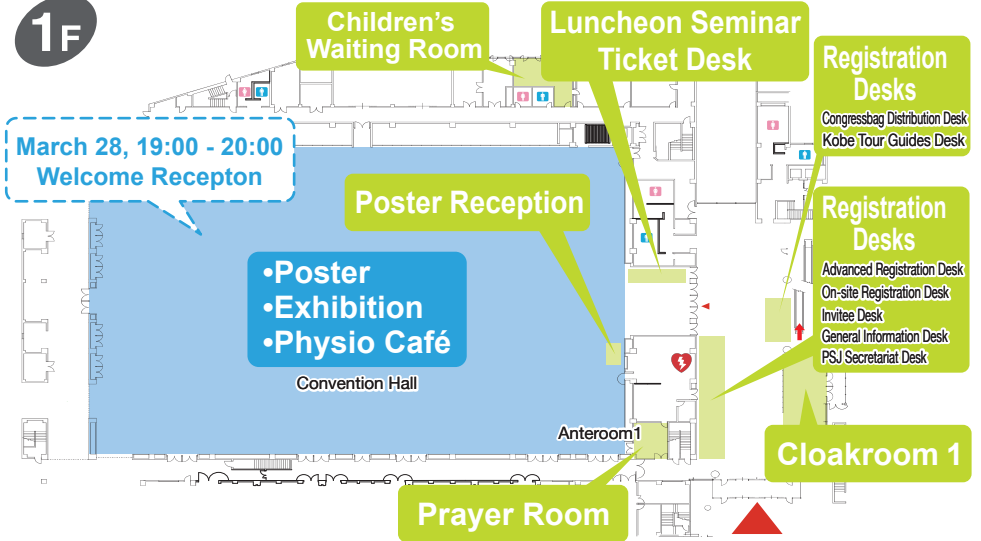


5F



Floor Map

Kobe International Exhibition Hall, No. 2 Building



Information for Participants

Date:

Thursday, March 28 – Sunday, March 31, 2019

Venue:

Kobe Convention Center
Kobe International Conference Center
6-9-1 Minatojima-nakamachi, Chuo-ku, Kobe-shi, Hyogo, 650-0046, Japan
Tel: +81-78-302-5200

Kobe International Exhibition Hall, No. 2 Building
6-11-1 Minatojima-nakamachi, Chuo-ku, Kobe-shi, Hyogo, 650-0046, Japan
Tel: +81-78-302-1020

Congress Secretariat (during the congress March 28 – March 31, 2019)

Room: Meeting Room 305, 3F, Kobe International Conference Center

TEL: +81-78-302-6900

E-mail: faops2019@convention.co.jp

Official Language:

English (except for some lunchtime programs)

*Simultaneous translation to be provided for PSJ and JSPFSM Co-organized Special Talk Session on March 30, 2019.

Country and Region:

All names of countries and regions in this program book follow the statements made by the participants.

On-site Registration:

Registration Desks are located in the Foyer, 1F,
Kobe International Exhibition Hall, No. 2 Building.
Please register and receive your name badge at the Registration Desk.

Advanced Registration:

If you have completed Advanced Registration, please bring your registration confirmation with QR code to the Registration Desk. Registration confirmation is available by clicking the "Confirmation" button on "My LaCool"*.

*My LaCool: Online system for Advanced Registration.

Registration Desk:

Place: Foyer, 1F, Kobe International Exhibition Hall, No.2 Building.

Thursday, March 28	13:00 – 18:00
Friday, March 29	7:30 – 19:00
Saturday, March 30	7:30 – 19:00
Sunday, March 31	7:30 – 13:00

- Name badge will be issued on-site.
- All congress attendees are required to wear name badges in order to enter the Scientific Program and Exhibition.
Name badges cannot be re-issued either during or after the meeting.
- With your name badge, you will receive a ticket for a Congress Bag. Please bring your ticket to the Congress Bag Desk at the Entrance Lobby, 1F, Kobe International Exhibition Hall, No.2 Building to receive your Congress Bag.
*Please note that the number of tickets for the Congress Bags is limited.

Registration Fee:

Category	Advanced Registration			On-site Registration
	Early	Normal	Late	
	Aug. 1 2018 – Oct. 31 2018	Nov. 1 2018 – Dec. 20 2018	Dec. 21 2018 – Feb. 28 2019	
Regular	JPY 25,000	JPY 30,000	JPY 35,000	JPY 40,000
Industry	JPY 30,000	JPY 35,000	JPY 40,000	JPY 50,000
Graduate Student	JPY 15,000	JPY 20,000	JPY 25,000	JPY 30,000
Undergraduate Student	JPY 10,000	JPY 10,000	JPY 10,000	JPY 15,000
Accompanying Person	JPY 10,000	JPY 10,000	JPY 10,000	JPY 15,000
Congress Dinner	JPY 5,000	JPY 5,000	JPY 5,000	–

- Undergraduate and Graduate Students are required to present a student ID/ official letter proving the status at the Registration Desk.
- Accompanying person should be family members of a participant. Aged 17 and under are regarded accompanying person free of charge. Colleagues or friends are NOT eligible to register as accompanying person. Authors can not be registered as accompanying person.
- Aged 17 and under can attend the Congress Dinner without ticket, if they are accompanied by a participant.
- Congress Dinner will be held in the evening on March 30, 2019 at Kobe Portopia Hotel.

Registration Fee for accompanying person includes:

- Opening Ceremony, Welcome Reception and Closing Ceremony
- *Accompanying persons can not access the Scientific Program of FAOPS 2019.

Payment Method for on-site Registration:

Payment must be made in Japanese Yen, by cash or credit card at the congress site. Please note that neither personal checks nor payment in any other currencies will be accepted.

Credit Card: American Express, Visa, Mastercard, Diners Club and JCB are acceptable.

Free WiFi:

Free WiFi is available in Kobe International Conference Center and Kobe International Exhibition Hall, No. 2 Building.
 SSID : FAOPS2019
 Password: faops2019

Name Badge:

- Name badge will be issued On-site.
- Receipt for those who completed Advanced Registration is available at My LaCool (Online registration system) .
- Please wear your name badge at all times during the Congress for identification and security purposes. Only registered participants wearing the Congress name badge will be allowed to access to the Congress venues.
- Congress bag and Program book ticket will be printed with your name badge.

Exhibition:

Exhibition will be held at the Convention Hall, 1F, Kobe International Exhibition Hall, No. 2 Building during the following hours.

Friday, March 29	9:00 – 18:00
Saturday, March 30	9:00 – 18:00
Sunday, March 31	8:00 – 12:30

Important Notes

Mobile Phone:

During the Scientific Programs, please refrain from using mobile phone and turn off or switch to silent mode.

Prohibiting of recording:

Photography, video recording, and sound recording of the presented data are prohibited.

SNS:

Please refrain from writing about presentations on Social Network Services.

Luncheon Sessions:

- Lunches will be provided during the Congress at;
 - *Luncheon Seminars
 - *Technical Workshops
 - *GAKUSAI (interdisciplinary) Seminar
 - *Symposium by the PSJ Committee on the Promotion of Gender Equality
- As there will be a limited number of meals, the tickets will be distributed at Luncheon Seminar Ticket Desk in the morning of each sessions.
- Luncheon Seminar Tickets become invalid after the start of the seminar.
- Luncheon Seminar Ticket is limited to one per person.
- * The details of Luncheon Seminars and Technical Workshop are described in P. 28

<Luncheon Seminar Ticket Desk>

Place: Foyer, 1F, Kobe International Exhibition Hall, No. 2 Building

Friday, March 29	7:30 – 11:30
Saturday, March 30	7:30 – 11:30

Cloakroom:

Place	March 28	March 29	March 30	March 31
1 Foyer, 1F, Kobe International Exhibition Hall, No. 2 Building	13:00 – 19:00	7:30 – 20:00	7:30 – 19:30	7:30 – 14:00
2 Foyer, 3F, Kobe International Conference Center	13:00 – 19:00	7:30 – 20:00	7:30 – 19:30	7:30 – 14:00

Kobe Tour Guides Desk:

Place: 1st Foyer, Kobe International Exhibition Hall, No. 2 Building

AED:

AED is set on every floor.

AED marks  are shown in the floor map. (P. 15 ~P. 18)

Smoking:

Smoking is prohibited anywhere except smoking area.

Personal Belongings :

The congress cannot take any responsibilities for lost or stolen items. For any lost items, please come to the general information desk located at Foyer, 1F, Kobe International Exhibition Hall, No. 2 Building.

Abstracts:

The abstracts are published as an electronic on-line supplement volume of the Journal of Physiological Sciences, available on the website of FAOPS 2019. They are also available on the Mobile Application.

<Password for download>

The password is described on P.22 of the Program Book.

Mobile Application:

Mobile Application "FAOPS2019" allows you to check the congress program and create your own itinerary. You can bookmark the sessions you wish to attend and any abstracts you are interested in.

<Download the Mobile Application>

Go to the App Store / Google Play store from your mobile device.

Enter "FAOPS2019" into the search bar and download / install the FAOPS2019 App. to your device.

<Password for abstracts>

The password is described on P.22 of the Program Book.

Prayer Room

Located at Anteroom 1 (1F, Exhibition Hall, the back of Registration Desk) Please feel free to ask congress staffs if you can not find the room.

Children's Waiting Room

A waiting room for children will be on 1F, Exhibition Hall, No. 2 Building. Our staff members will be stationed, and children can study by themselves in room. Children aged 11 years or older can stay alone. Children aged 10 years or younger can also use this room if their guardian stays with them. Lunch-time use is welcome.

<Please note>

- Children aged 11 years or older can stay in this room alone. However, when they come there for the first time, they have to be accompanied by their guardian, and the guardian has to fill in contact information.
- We do not provide any food or drink other than bottled water. Bring your own.
- Our staff members only manage children's entrance and exit. We are not responsible for any accidents or other troubles.

Anti-harassment Policy

FAOPS 2019 is dedicated to providing a harassment-free conference experience for everyone, regardless of gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, race, age or religion. For details, see FAOPS 2019 website.

Instructions for Chairs and Co-chairs

- All chairs and co-chairs are requested to come to the "Next chair" seat" (at the front row on your right side of the session room) no later than 30 minutes prior to the beginning of your session.
- All chairs and co-chairs are asked to ensure that all sessions start / finish on time.

Instructions for Oral Presenters

Presentation Time:

Plenary Lectures: 60 min.

Special Lectures: 50 min.

Symposia, Sponsored Symposia, Tutorials, Luncheon Seminars, Technical Workshops, Educational Lectures and other sessions: As informed by your session's chair.

PC Center:

Please register your presentation data At least 30 minutes before your session starts.

Place: Foyer, 3F, Conference Center

Friday, March 29	8:00 – 19:00
Saturday, March 30	8:00 – 17:30
Sunday, March 31	7:30 – 12:00

- Please bring your presentation data on USB Flash Drive made in Microsoft PowerPoint 2007, 2010, 2013 or 2016 for Windows.
- If you wish to play a video, please compress the video in a format readable on Windows Media Player 12. Please also let us know at the PC Preview Center if you will play sound.
- Please bring your own PC if you prefer to use Macintosh.
- If you will use your own computer to present, please make sure it can connect using a D-sub15 pin (mini) connection (shown below).



- We strongly recommend bringing back-up data of your slide and movie files in case of any technical difficulties.
- Please refrain from editing your presentation at the PC Preview Center.
- Your presentation data will be temporarily saved on the PC Preview Center server and on the computer at the congress, but will be deleted at the end of the congress period.

Equipment:

- Screen ratio is 4:3 in all Session rooms.
- Oral Presentations can only be made with Windows PCs (single screen only). Slide projectors are not available.
- If your presentation file is made on Macintosh, please bring your own laptop with a VGA adapter (the genuine products or products with Apple MFI Certification are recommended).

Disclosure of conflicts of interest (COI):

- Disclosure of any possible conflicts of interest (COI) of each presentation is required. Please make sure to disclose COI information in the second slide of your presentation.
- Delegates are requested to use the formats that can be downloaded from the FAOPS2019 congress website.

"SAMPLE of COI presentation format"

Form 1-A (There is a state of conflict of interest (in the past three years) requiring disclosure)

The 9th Federation of the Asian and Oceanian Physiological Societies Congress (FAOPS2019)
COI Disclosure

Name(s) of Presenter(s) *indicate the names of all co-presenters:
Put "*" in front of the name of the person who has responsibility over the presentation

○○○○, ○○○○, ...

Companies, etc. in a relation of conflict of interest requiring disclosure by the lead presenter or co-presenter(s) in relation to the contents of the presentation:

1. Advisor:	PPP Pharmaceutical Industries <small>(*Indicate "None" if not applicable.)</small>
2. Stock ownership/capital gain:	QQQ Pharmaceuticals <small>(*Indicate "None" if not applicable.)</small>
3. Patent royalties:	RRR Pharmaceutical Industries <small>(*Indicate "None" if not applicable.)</small>
4. Honoraria:	SSS Pharmaceuticals, TTT Pharma <small>(*Indicate "None" if not applicable.)</small>
5. Writing fees:	UUU Pharmaceutical Industries <small>(*Indicate "None" if not applicable.)</small>
6. Grants for commissioned/joint research:	VVV Pharmaceuticals <small>(*Indicate "None" if not applicable.)</small>
7. Scholarship grants:	XXX Pharmaceuticals <small>(*Indicate "None" if not applicable.)</small>
8. Endowed chair:	YYY Pharmaceuticals <small>(*Indicate "None" if not applicable.)</small>
9. Gifts or other forms of compensation:	ZZZ Pharmaceutical Industries <small>(*Indicate "None" if not applicable.)</small>

Form 1-B (There is no state of conflict of interest requiring disclosure)

The 9th Federation of the Asian and Oceanian Physiological Societies Congress (FAOPS2019)
COI Disclosure

Name(s) of Presenter(s) *indicate the names of all co-presenters:
Put "*" in front of the name of the person who has responsibility over the presentation

○○○○, ○○○○, ...

There is no actual or potential conflict of interest in relation to this presentation.

Instructions for Poster Presenters

Guidelines for Poster Sessions:

Presenters are requested to follow the schedule below.
The poster number for your presentation can be found in the program book.

Schedule:

Place: Convention Hall, 1F, Exhibition Hall No. 2 Building

Date	Poster No.	Posting Time	Viewing Time	Discussion Core Time	Removal Time
Fri., March 29	1P-001~1P-554	9:00 – 10:00	10:00 – 13:20 15:00 – 17:00	13:20 – 14:10	17:00 – 18:00
				14:10 – 15:00	
	AP-1~AP-9			13:20 – 15:00	
Sat., March 30	2P-001~2P-552	9:00 – 10:00	10:00 – 13:20 15:00 – 16:30	13:20 – 14:10	16:30 – 17:00
				14:10 – 15:00	
Sun., March 31	Special Sessions for Awardees**	March 30 17:00 – 18:00	8:00 – 13:00	–	13:00 – 14:00

*Any posters remaining on their panels after the removal time will be discarded by the secretariat.

**PSJ Awardees posters will be displayed throughout 3 days. Young Scientist Travel Awardees and JGP poster Awardees have additional poster presentation on March 31.

Posters:

< Size >

Poster: 90cm wide x 190cm high

Label : 70cm wide x 20cm high

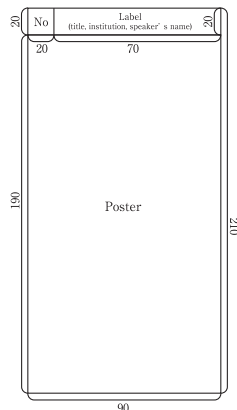
- Your poster number is ready on your assigned panel.
- Please prepare a label showing the title, institution and the speaker's name.
- Pins for posting will be prepared on each poster panel.
- During the Discussion Core Time, presenters are requested to stand in front of their poster panel.

Notes:

- Poster should be prepared by yourself.
- Presenters are responsible for posting and removing their own materials.
- Audio-Visual equipment cannot be used.

Disclosure of conflicts of interest (COI):

- Disclosure of any possible conflicts of interest (COI) of each Poster presentation is required. Please make sure to disclose COI information in the last page of your presentation.
- Delegates are requested to use the formats that can be downloaded from the FAOPS 2019 congress website.



Award Presentations

Young Scientist Travel Award (YSTA) and Masao Ito Memorial Award

The Organizing Committee of the Congress offers Young Scientist Travel Award (YSTA) to encourage the high quality performance of the young scientist. Eligible awardees have been selected by the travel grant committee. Awardees are listed on page 299-304.

Awardees have additional poster presentation on March 31.

We also announce that the best 10 awardees of YSTA in FAOPS 2019 will be given Masao Ito Memorial Award with his name crowned.

The names and country/regions of the awardees of YSTA and Masao Ito Memorial Award are posted on the FAOPS 2019 officials website.

The Journal of General Physiology (JGP) Poster Award

FAOPS 2019 Program Committee and The Journal of General Physiology (JGP) will present best poster award to the authors who presented distinguished posters about their original works on mechanistic and quantitative molecular and cellular physiology of the highest quality.

Up to 4 awardees are selected by the selection committee. Awardees will be granted at closing ceremony on March 31. Awardees also have additional poster presentation on March 31.

Awards by the Physiological Society of Japan (PSJ)

The Physiological Society of Japan annually offers several awards listed as below.

- Promotion Award of the Physiological Society of Japan for Young Scientists
 - Hiroshi and Aya Irisawa Memorial Award for Excellent Papers in The Journal of Physiological Sciences
 - Hiroshi and Aya Irisawa Memorial Promotion Award for Young Physiologists
 - Hiroshi and Aya Irisawa Memorial Award for Excellent Papers on Research in Circulation in The Journal of Physiological Sciences
 - Aya Irisawa Memorial Promotion Award for Excellence by Women Physiologists
- Awardees are listed on page 96-97. For more information, visit the website of PSJ (<http://int.physiology.jp/en/awards/>).

The posters of awardees are shown in entire period of poster sessions. Awardees are highly recommended to show their presentation in the discussion coretime: 13:20-15:00, March 29.

Social Events and Ceremonies

March 28, 2019

DAY1

Opening Ceremony
(including The FAOPS 30th Year Anniversary Program "History of FAOPS")

Time : 15:40 - 17:20
place : Room A (1F, Conference Center)

Welcome Reception

Time : 19:00 - 20:30
place : Convention Hall, 1F, Exhibition Hall No. 2 Building

*Free of charge
*Style: Buffet

March 30, 2019

DAY3

Iran Lunch

Time : 12:20 - 13:20
place : Room I (5F, Conference Center)

Congress Dinner & Award Ceremony

Time : 19:30 - 22:00
place : Room "Kairaku" ,B1F, Kobe Portopia Hotel

*Fee: 5,000 yen
*Purchasing tickets by advanced registration is required.
*Style: Buffet

March 31, 2019

DAY4

Closing Ceremony

Time : 12:50 - 14:10
place : Room A (1F, Conference Center)

Other Programs

March 29, 2019

DAY2

Symposium by the PSJ Committee on the Promotion of Gender Equality

P. 90

- Theme : Seeking Gender Equality in Science
A comparison of issues and initiatives in Japan and New Zealand
Time : 12:20 - 13:20
Place : Room M (3F, Exhibition Hall, No. 2 Building)
*Lunches will be provided at the Session. (The ticket is needed, See P.21)

GAKUSAI (interdisciplinary) Seminar

P. 94

- Theme : Frontier of Plasma Biology
Time : 12:20 - 13:20
Place : Room H (5F, Conference Center)
*Lunches will be provided at the Seminar. (The ticket is needed, See P.21)

Co-sponsored by Department of Plasmabio Science, Center for Novel Science Initiatives (CNSI), National Institutes of Natural Sciences (NINS)

P. 95

Meet the Lecturers

- Theme : The Secret of High-Impact Research
Time : 15:10 - 16:40
Place : Room M (3F, Exhibition Hall No. 2 Building)

March 30, 2019

DAY3

Spring Science Program for Children

P. 307

- Time : Lecture 10:30 - 12:00
Training 13:00 - 16:00
Place : Lecture Room M (3F, Exhibition Hall No. 2 Building)
Training Room L (3F, Exhibition Hall, No. 2 Building)

March 31, 2019

DAY4

Tutorial for Physiologists

P. 298

- Theme : Practical Approaches to Protein Structural Information
Time : 8:00 - 9:10
Place : Room B (3F, Conference Center)

Public Lecture ① **Talk in Japanese**

- Theme : Cooking Physiology
Time : 14:00 - 16:00
Place : Room B (3F, Conference Center)

Others

Luncheon Seminars/ Technical Workshops

Date: Friday, March 29 - Saturday, March 30, 2019

*Lunches will be provided at each seminar.

*As there will be a limited number of meals, the Tickets will be distributed at Luncheon Seminar Ticket Desk in the morning of each sessions. (See P.21)

These lunch time sessions are sponsored by companies in Japan and a light meal is supplied to the audience. The supporting companies are allowed to make commercial advertisement of their products as session contents and the speakers might have conflict of interests for this reason.

For information about the language spoken in the seminar, please refer to each seminar page.

Business Meetings and Other Meetings

General Assembly of FAOPS

Date : Friday, March 29, 2019
Time : 13:00 - 14:50
Room : Room E (4F, Conference Center)

Physiological Society of Japan (PSJ) General Meeting

Date : Thursday, March 28, 2019
Time : 14:00 - 15:00
Room : Room A (1F, Conference Center)

FAOPS Council Meeting

Date : Thursday, March 28, 2019
Time : 12:30 - 14:30
Room : Meeting Room 406, 4F, Conference Center

FAOPS New Council Meeting

Date : Saturday, March 30, 2019
Time : 15:00 - 18:00
Room : Meeting Room 407, 4F, Conference Center

Satellite Events

FAOPS 2019 & ADInstruments Teaching Workshop, satellite of the FAOPS2019

Education workshop will be held in the same venue as for FAOPS 2019, on March 27 – 28, 2019.

Hosting Organization	: The Physiological Society of Japan (General Incorporated Association)
Dates	: March 27-28, 2019
Venue	: Room 501&502, Kobe International Conference Center
President	: Noriyuki Koibuchi M.D, Ph.D. (Professor and Director, Department of Integrative Physiology, Gunma University Graduate School of Medicine)
Academic Theme	: "Blossoming the Future of Active Learners"

A FAOPS 2019 satellite - NIPS/Thermal Biology Training Course

National Institute for Physiological Sciences (NIPS) [located at Okazaki] and Thermal Biology Group supported by JSPS will hold a training course on basic techniques in physiological research on April 1-5, 2019 at NIPS.

Local Information



Passport and Visa

To visit Japan, you must have a valid passport. A visa is required for citizens of countries/regions that do not have visa-exempt agreements with Japan. Please contact the nearest Japanese Embassy or Consulate for visa requirements.



Insurance

The organizer cannot accept responsibility for accidents that might occur. Delegates are encouraged to purchase travel insurance before leaving their home country/region. Insurance plans typically cover accidental loss of belongings, medical costs in case of injury or illness, and other possible risks of international travel.



Climate

The temperature in KOBE during the period of the Congress ranges between 7 - 18 degrees Celsius.



Currency Exchange

Only Japanese yen (JPY) is acceptable at regular stores and restaurants. Certain foreign currencies may be accepted at a limited number of hotels, restaurants and souvenir shops. You can buy yen at foreign exchange banks and other authorized money exchangers on presentation of your passport.



Credit Cards

VISA, MasterCard, Diners Club, and American Express are widely accepted at hotels, department stores, shops, restaurants and nightclubs.



Tipping

In Japan, tips are not necessary anywhere, even at hotels and restaurants.



Electricity

Electric current is uniformly 100 volts, AC, throughout Japan, but with two different cycles: 60Hz in western Japan including Kobe, Osaka, Kyoto and Nagoya, and 50Hz in eastern Japan including Tokyo. Leading hotels in major cities have two outlets of 100 and 220 volts but their sockets usually accept a two-leg plug only.



Shopping

Shops and other sales outlets in Japan are generally open on Saturdays, Sundays and national holidays as well as weekdays from 10:00 to 20:00. Department stores, however, are closed on one weekday, differing by store, and certain specialty shops may not open on Sundays and national holidays.



Restaurant

A large number of restaurant types can be found in the center of Kobe city. Mainly the Japanese style dishes and Western dishes are served at the most of restaurants in the hotel. There are plenty of restaurants where you can have a full meal, the price range from JPY 1,000 yen at the fast food restaurant and casual restaurant while "ryotei", a high-class restaurant cost JPY 20,000 yen. Also convenience stores to be opened 24hours are located in business areas offer inexpensive lunch boxes roughly between JPY 500 yen and JPY 1,000 yen. During the nighttime, most of restaurants open until 10:00p.m.

PhysioCafé in FAOPS 2019

A relaxing place to chat, web/mail-check,
meet-and-work, exchange ideas, kick-off collaborations
and simply take a rest for the physiologists!

Place: Exhibition Hall (next to poster presentation area)

Date: 29 Friday, 30 Saturday and 31 Sunday March

- ✓ Free coffee, free Kobe sweets and free Kobe goodies in exchange with the coupons distributed at exhibition booths (numbers/day limited).
- ✓ Free WiFi, AC supply and on-line viewing of Room A sessions.



Last day (Sunday 31) is the special service day!

- Higher coupon exchange rate.
- Coupons can be used to get Kobe souvenirs.



Program at a Glance

		7:30	8:00	9:00	10:00	11:00	12:00			
Kobe International Conference Center	Room A									
	Main Hall									
	Room B International Conference Room									
	Room C Reception Hall									
	Room D 401+402				Council of the Physiological Society of Japan					
	Room E 403									
	Room F 501			FAOPS 2019 & ADInstruments Teaching Workshop (Satellite Event)						
	Room G 502			FAOPS 2019 & ADInstruments Teaching Workshop (Satellite Event)						
	Room H 503									
	Room I 504+505									
Kobe International Exhibition Hall, No.2 Building	Room J 2A									
	Room K 2B									
	Room L 3A									
	Room M 3B									
	Poster Session Convention Hall									
	Exhibition Convention Hall									

13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
	General Assembly of PSJ <small>P. 29</small>		Opening Ceremony <small>P. 27</small>		PL 1 Linda Buck <small>P. 51</small>	Welcome Reception Convention Hall, 1F, Exhibition Hall <small>P. 27</small>	
			(Satellite Room)		(Satellite Room)		

		7:30	8:00	9:00	10:00	11:00	12:00
Kobe International Conference Center	Room A			PL 2 David Julius P. 52	S1 Molecular mechanisms of aging P. 55		
	Main Hall						
	Room B				S2 Thermal biology: A new world of life science (part I) P. 56	LS 1 Thermo Fisher Scientific	
	International Conference Room						
	Room C				S3 Gastrointestinal microbiome and immunophysiology (CPS, Taiwan) P. 57	LS 2 DOJINDO LABORATORIES	
	Reception Hall						
	Room D	J Educational Lecture 1 P. 95 Regulation of the autonomic functions			S4 Teaching physiology; International perspectives (part I) P. 58	J LS 3 Human Metabolome Technologies, Inc.	
	401+402						
	Room E				S5 New Translational Insights on Cardiopulmonary Remodeling P. 59		
	403						
Room F				S6 Facilitation of Recovery of Motor Function After Paralysis P. 60	J TW 1 YASKAWA ELECTRIC CORPORATION		
501							
Room G	<div style="border: 1px solid black; padding: 5px;"> <ul style="list-style-type: none"> ■ Local Organizing Committee Symposium ■ International Scientific Program Committee Symposium ■ General Symposium ■ Sponsored Symposium J: Talk in Japanese </div>			S7 From synaptic and network plasticity to behavior (CAPS, China) P. 61	LS 4 Matsutani Chemical Industry CO., LTD		
502							
Room H					S8 Biophysical mechanisms underlying nano-vibrations of the sensory epithelium in hearing organs P. 62	GAKUSAI (interdisciplinary) Seminar	
503							
Room I				S9 Metabolic syndrome and bone metabolism (TPS, Thailand) P. 63	J LS 5 NIKON INSTECH CO., LTD.		
504+505							
Kobe International Exhibition Hall, No.2 Building	Room J				S10 Neural circuit basis of behavioral physiology P. 64		
	2A						
	Room K				S11 Advances in the mastication and swallowing physiology to prepare for an aging society P. 65	You need the ticket for lunch. Please see p. 21.	
	2B						
	Room L				S12 New insights into baroreflex function for cerebral and cardiovascular regulation: Implications for human health and disease P. 66		
3A							
Room M				S13 The role of the sympathetic nerves in health and disease P. 67	Symposium by the PSJ Committee Promotion of Gender Equality		
3B							
Poster Session				Posting time	Poster Viewing time		
Convention Hall							
Exhibition				Exhibition			
Convention Hall							

13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
			S14 Advances in understanding cerebellar LTD and motor learning: Masao Ito Symposium <small>P. 68</small>	SL 1 Yasushi Miyashita <small>P. 53</small>		S26 Synaptic remodeling and beyond in health and disease <small>P. 80</small>	
<small>P. 91</small>			S15 Thermal biology: A new world of life science (part II) <small>P. 69</small>	SL 2 Heping Cheng <small>P. 53</small>		S27 Regulation of cell functions by phosphoinositides <small>P. 81</small>	
<small>P. 91</small>			S16 Gastrointestinal Control of Energy Metabolism (CAPS, China) <small>P. 70</small>	SL 3 Uhtaek Oh <small>P. 54</small>		S28 Molecular evidences Link Physical Exercise to Cardiovascular Improvement <small>P. 82</small>	
<small>P. 92</small>			S17 Teaching physiology; International perspectives (part II) <small>P. 71</small>	SL 4 Robert G. Carroll <small>P. 54</small>		S29 New insights into central mechanisms underlying hypertension <small>P. 83</small>	
	General Assembly of FAOPS <small>P. 29</small>		S18 Dynamics of membrane trafficking and intracellular signaling <small>P. 72</small>			S30 Substance abuse and addiction ~ From basic science to regulatory science <small>P. 84</small>	
<small>P. 94</small>			S19 Mitochondrial Physiology and Pathophysiology (KPS, Korea) <small>P. 73</small>			S31 Genomics of Sports and Exercise <small>P. 85</small>	
<small>P. 92</small>			S20 Adaptation mechanisms to external or internal environmental changes of respiratory system <small>P. 74</small>			S32 Membrane transporters related to diseases and drug development <small>P. 86</small>	
<small>P. 94</small>	Department of Plasmabio Science, Center for Novel Science Initiatives (CNSI), National Institutes of Natural Sciences (NINS)		S21 New Paradigm in Physiology and Pathophysiology of Coagulation-fibrinolysis System <small>P. 75</small>			S33 New insights into Endocrinology and Metabolism <small>P. 87</small>	
<small>P. 93</small>			S22 Proton signalings and proton-related functions <small>P. 76</small>			S34 Life Style Related Diseases in Asia: Underlying Mechanisms, Functions and Behavioural Transitions <small>P. 88</small>	
			S23 Glia and Neurological Diseases: from Physiological to Pathological Roles of Astrocytes and Microglia <small>P. 77</small>			S35 Frontiers in Ca ²⁺ release research in skeletal muscle: 50th anniversary from discovery of Ca ²⁺ -induced Ca ²⁺ release <small>P. 89</small>	
			S24 Complexity and Diversity of Motility Regulation in Smooth Muscle <small>P. 78</small>				
			S25 Calcium signaling in heart disease <small>P. 79</small>				
on the <small>P. 90</small>			Meet the Lecturers <small>P. 95</small>				
	Poster Discussion Core time		Poster Viewing time		Removal time		
	Exhibition						

		7:30	8:00	9:00	10:00	11:00	12:00
Kobe International Conference Center	Room A			PL 3 Yoshinori Ohsumi P. 168	S36 Inter-tissue communications underlying metabolic and feeding control in living body (part I) P. 172		J LS 6 The Japanese Plasmalogen Society
	Main Hall						
	Room B				S37 Primate researches in Asian regions P. 173		J LS 7 Kracie Pharmaceutical, Ltd.
	International Conference Room						
	Room C				S38 Cutting-edge research topics on skeletal muscle plasticity in health and diseases P. 174		LS 8 Leica Microsystems K.K.
	Reception Hall						
	Room D		J Educational Lecture 2 Mechanomedicine P. 201		S39 Cutting-Edge Optical Imaging of Neuronal Circuits and Synapses P. 175		J LS 9
	401+402						
	Room E				S40 Social communication through sensory information P. 176		
	403						
Room F				S41 Leveraging novel techniques to research and translate synaptic transmission and plasticity (ISPP, Iran) P. 177			
501							
Room G				S42 Physiological function of royal jelly contributing to healthy longevity (Yamada Bee Company, Inc.) P. 178		J TW 2 NARISHIGE SCIENTIFIC INSTRUMENT LAB.	
502							
Room H				S43 TRP channels and inflammation/fibrosis P. 179		J LS10 airweave inc. P. 198	
503							
Room I				S44 Cutting-edge approaches to long-lasting questions and novel aspects of inward rectifier K ⁺ channels -- A quarter-century anniversary of cDNA isolation (ISPP, Israel) P. 180		Iran Lunch P. 200	
504+505							
Kobe International Exhibition Hall, No.2 Building	Room J				S45 New molecular insights into the synaptic tagging and capture hypothesis P. 181		You need the ticket for lunch except for Iran Lunch. Please see P. 21.
	2A						
	Room K				S46 Plasticity of inhibitory signaling in Epilepsy: New Physiological Mechanisms P. 182		
	2B						
	Room L						
3A							
Room M					Outreach activities with school students P. 307		
3B							
Poster Session				Posting time	Poster Viewing time		
Convention Hall							
Exhibition				Exhibition			
Convention Hall							

13:00	14:00	15:00	16:00	17:00	18:00	19:00	~22:00
P. 196			S48 Inter-tissue communications underlying metabolic and feeding control in living body (part II) P. 184			PSJ and JSPFSM co-organized Special Guest Talk Nao Kodaira P. 171	
P. 196			S49 Frontiers in pain physiology - from detection to the survival behavior P. 185		SL 5 Masashi Yanagisawa P. 169		
P. 197	Grant-in-Aid for Scientific Research on Innovative Areas "Advanced Bioimaging Support (ABiS)" of MEXT, Japan		S50 Maternal influences on offspring development (AuPS, Australia) P. 186		SL 6 Graham D. Lamb P. 169		
P. 197			S51 Cutting-edge Research in Neural Network Dynamics P. 187				
			S52 Sports and Brain P. 188				
	S47 New Frontiers in Regenerative Medicine of Renal Function(Shinkoiwa Clinic) P. 183		S53 Dynamic signaling of axon and presynaptic terminals revealed by direct recordings P. 189		SL 7 Laura Bennet P. 170		
P. 199			S54 Ca ²⁺ signaling in health and disease P. 190				Congress Dinner @Portopia Hotel, Banquet Hall Kairaku
			S55 Brain pathways linking between emotion, behaviour and autonomic responses P. 191				
			S56 Optical neuroscience: reading and manipulating neural computation behind cognition, memory, and behavior P. 192				
			S57 Alternative GPCR and G-protein signaling in cardiovascular disease and therapy P. 193				
			S58 Zinc physiology and pathophysiology P. 194				
Outreach activities with school students P. 307							
			S59 Contribution of microglia in health and disease of the brain P. 195				
	Poster Discussion Core time	Poster Viewing time	Removal time	Posting time for DAY4			
Exhibition							

		7:30	8:00	9:00	10:00	11:00	12:00
Kobe International Conference Center	Room A				SL 8 Julie YH Chan P. 273	S71 Toward understanding the neural basis of memory P. 285	
	Main Hall						
	Room B		Tutorial for Physiologists P. 298		SL 9 Hideyuki Okano P. 273	S72 Neurobiology of reward system in the Brain (ISPP, Iran) P. 286	
	International Conference Room						
	Room C		S60 Hibernation and Torpor in mammals P. 274			S73 New Twists in Understanding Taste (AJINOMOTO CO., INC.) P. 287	
	Reception Hall						
	Room D		S61 The Social Brain: Recent Progress in Understanding Molecules and Networks of Social Behavior P. 275			S74 The consequences of preterm birth, intrauterine growth restriction and hypoxia-ischemia (PSNZ, New Zealand) P. 288	
	401+402						
	Room E		S62 Integrative neural processing of sound information in the higher auditory centers P. 276			S75 Ca ²⁺ -permeable channels of excitable and non-excitable cells in health and disease P. 289	
	403						
Room F		S63 Implication of tonic inhibition for Brain function P. 277			S76 Physiome for organ function (KPS, Korea) P. 290		
501							
Room G		S64 New insights into the cellular and molecular mechanisms of neurological diseases using experimental model systems P. 278			S77 Advances in the role of adipocyte in health and disease (CPS, Taiwan) P. 291		
502							
Room H		S65 Intervention factors of neuronal irregular development: from gut bacteria to mental situation via chemicals P. 279			S78 "Ins" and "outs" of smooth muscle P. 292		
503							
Room I		S66 Inflammation and Atherosclerosis P. 280			S79 Mechanomedicine P. 293		
504+505							
Kobe International Exhibition Hall, No.2 Building	Room J		S67 The potential roles of NMDAR in neurological and neuropsychiatric disorders: new findings and therapeutic targets P. 281			S80 Daily /adaptable Yin-Yang transitions in diverse physiological processes coordinated by multi-cellular Chrono-molecular signal P. 294	
	2A						
	Room K		S68 Pulmonary hypertension and inflammation: the interdependent processes triggered by each other P. 282			S81 Mechanisms of systemic beauty and health P. 295	
	2B						
	Room L		S69 Optogenetics: Contributions to Physiology and Medicine Beyond Brain Circuit-Breaking P. 283			S82 Amygdala Neuronal Circuits in Adaptive Behaviors P. 296	
3A							
Room M		S70 Contribution of brain research to the understanding of the physiology, psychology and communication of acute and chronic pain P. 284			S83 Neurobiology of obesity and its metabolic comorbidities P. 297		
3B							
Poster Session		Special Sessions for Awardees					
Convention Hall							
Exhibition		Exhibition					
Convention Hall							

13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00

Closing Ceremony

P. 27



Public Lecture

P. 28

**Removal
time**

List of Academic Sessions

Plenary Lectures

- PL1 **Olfaction and Stress** 3/28 (Thr) 17:30-18:30 Room A
Linda Buck (Fred Hutchinson Cancer Research Center, USA)
- PL2 **Natural Products as Probes of the Pain Pathway: From Physiology to Atomic Structure** 3/29 (Fri) 8:50-9:50 Room A
David Julius (Department of Biochemistry and Biophysics, The University of California, San Francisco, USA)
- PL3 **Looking Back on 30 Years of Autophagy research -dynamic equilibrium of the cell-** 3/30 (Sat) 8:50-9:50 Room A
Yoshinori Ohsumi (Institute of Innovative Research, Tokyo Institute of Technology (IIR), Japan)

Special Lectures

3/29 (Fri) 17:20-18:10

- SL1 **(The Susumu Hagiwara Memorial Lecture)** Room A
Beyond memory circuit: Origins of metamemory and retrospection in the primate
Yasushi Miyashita (RIKEN Center for Brain Science, Japan)
- SL2 **Signaling by Mitochondrial Flashes** Room B
Heping (Peace) Cheng (Peking University, China)
- SL3 **Tentonin 3, a Mechanosensitive Channel with Baroreceptor Function** Room C
Uhtaek Oh (Brain Science Institute, KIST, Korea)
- SL4 **Finding Instructional Balance Using the Educational Triangle** Room D
Robert Graham Carroll (Office of Medical Education, Brody School of Medicine, East Carolina University, USA)

3/30 (Sat) 17:20-18:10

- SL5 **Toward the Mysteries of Sleep** Room B
Masashi Yanagisawa (International Institute for Integrative Sleep Medicine (WPI-IIS), University of Tsukuba, Japan)
- SL6 **The Beauty of Physiological Mechanisms in Skeletal Muscle Function and Fatigue** Room C
Graham Douglas Lamb (Department of Physiology, La Trobe University, Australia)
- SL7 **The importance of understanding fetal physiology for detecting brain injury before birth** Room F
Laura Bennet (Department of Physiology, The University of Auckland, New Zealand)

3/31 (Sun) 9:40-10:30

- SL8 **(The Sunao Tawara Memorial Lecture)** Room A
Mitochondria in fetal programming of metabolic syndrome-associated end organ dysfunctions in adults
Julie YH Chan (Institute for Translational Research in Biomedicine, Kaohsiung Chang Gung Memorial Hospital, Taiwan)
- SL9 **Modeling Human Neurological/Psychiatric Disorders using iPSC cells and Transgenic Non-Human Primates** Room B
Hideyuki Okano (Department of Physiology, Keio University School of Medicine, Japan)

PSJ and JSPFSM co-organized Special Guest Talk

Towards the Summit with Sport Science

3/30 (Sat) 18:20-19:10

Room A

Symposia

3/29 (Fri) 10:00-12:00

S1	Molecular mechanisms of aging	Room A
S2	Thermal biology: A new world of life science (whole day symposium) part I	Room B
S3	Gastrointestinal microbiome and immunophysiology (CPS, Taiwan)	Room C
S4	Teaching physiology; International perspectives (whole day symposium) part I	Room D
S5	New Translational Insights on Cardiopulmonary Remodeling	Room E
S6	Facilitation of Recovery of Motor Function After Paralysis	Room F
S7	From synaptic and network plasticity to behavior (CAPS, China)	Room G
S8	Biophysical mechanisms underlying nano-vibrations of the sensory epithelium in hearing organs	Room H
S9	Metabolic syndrome and bone metabolism (TPS, Thailand)	Room I
S10	Neural circuit basis of behavioral physiology	Room J
S11	Advances in the mastication and swallowing physiology to prepare for an aging society	Room K
S12	New insights into baroreflex function for cerebral and cardiovascular regulation: Implications for human health and disease	Room L
S13	The role of the sympathetic nerves in health and disease	Room M

3/29 (Fri) 15:10-17:10

S14	Advances in understanding cerebellar LTD and motor learning: Masao Ito Symposium	Room A
S15	Thermal biology: A new world of life science (whole day symposium) part II	Room B
S16	Gastrointestinal Control of Energy Metabolism (CAPS, China)	Room C
S17	Teaching physiology; International perspectives (whole day symposium) part II	Room D
S18	Dynamics of membrane trafficking and intracellular signaling	Room E
S19	Mitochondrial Physiology and Pathophysiology (KPS, Korea)	Room F
S20	Adaptation mechanisms to external or internal environmental changes of respiratory system	Room G
S21	New Paradigm in Physiology and Pathophysiology of Coagulationfibrinolysis System	Room H
S22	Proton signalings and proton-related functions	Room I
S23	Glia and Neurological Diseases: from Physiological to Pathological Roles of Astrocytes and Microglia	Room J
S24	Complexity and Diversity of Motility Regulation in Smooth Muscle	Room K
S25	Calcium signaling in heart disease	Room L

3/29 (Fri) 18:30-20:00

S26	Synaptic remodeling and beyond in health and disease	Room A
S27	Regulation of cell functions by phosphoinositides	Room B
S28	Molecular evidences Link Physical Exercise to Cardiovascular Improvement	Room C
S29	New insights into central mechanisms underlying hypertension	Room D
S30	Substance abuse and addiction ~ From basic science to regulatory science	Room E
S31	Genomics of Sports and Exercise	Room F
S32	Membrane transporters related to diseases and drug development	Room G
S33	New insights into Endocrinology and Metabolism	Room H

- S34 **Life Style Related Diseases in Asia: Underlying Mechanisms, Functions and Behavioural Transitions** Room I
- S35 **Frontiers in Ca²⁺ release research in skeletal muscle: 50th anniversary from discovery of Ca²⁺-induced Ca²⁺ release** Room J

3/30 (Sat) 10:00-12:00

- S36 **Inter-tissue communications underlying metabolic and feeding control in living body (whole day symposium) part I** Room A
- S37 **Primate researches in Asian regions** Room B
- S38 **Cutting-edge research topics on skeletal muscle plasticity in health and diseases** Room C
- S39 **Cutting-Edge Optical Imaging of Neuronal Circuits and Synapses** Room D
- S40 **Social communication through sensory information** Room E
- S41 **Leveraging novel techniques to research and translate synaptic transmission and plasticity (ISPP, Iran)** Room F
- S42 **(Sponsored Symposium)*10:00~11:30**
Physiological function of royal jelly contributing to healthy longevity - The effectiveness on Locomotive syndrome, Menopausal disorders, Infectious diseases - Room G
- S43 **TRP channels and inflammation/fibrosis** Room H
- S44 **Cutting-edge approaches to long-lasting questions and novel aspects of inward rectifier K⁺ channels -- A quarter-century anniversary of cDNA isolation (ISPP, Israel)** Room I
- S45 **New molecular insights into the synaptic tagging and capture hypothesis** Room J
- S46 **Plasticity of inhibitory signaling in Epilepsy: New Physiological Mechanisms** Room K

3/30 (Sat) 13:30-15:00

- S47 **(Sponsored Symposium)**
New Frontiers in Regenerative Medicine of Renal Function Room F

3/30 (Sat) 15:10-17:10

- S48 **Inter-tissue communications underlying metabolic and feeding control in living body (whole day symposium) part II** Room A
- S49 **Frontiers in pain physiology - from detection to the survival behavior (under the auspices of Japanese Association for Study of Pain)** Room B
- S50 **Maternal influences on offspring development (AuPS, Australia)** Room C
- S51 **Cutting-edge Research in Neural Network Dynamics** Room D
- S52 **Sports and Brain** Room E
- S53 **Dynamic signaling of axon and presynaptic terminals revealed by direct recordings** Room F
- S54 **Ca²⁺ signaling in health and disease** Room G
- S55 **Brain pathways linking between emotion, behaviour and autonomic responses** Room H
- S56 **Optical neuroscience: reading and manipulating neural computation behind cognition, memory, and behavior** Room I
- S57 **Alternative GPCR and G-protein signaling in cardiovascular disease and therapy** Room J
- S58 **Zinc physiology and pathophysiology** Room K
- S59 **Contribution of microglia in health and disease of the brain** Room M

3/31 (Sun) 8:00-9:30

- S60 **Hibernation and Torpor in mammals** Room C
- S61 **The Social Brain: Recent Progress in Understanding Molecules and Networks of Social Behavior** Room D
- S62 **Integrative neural processing of sound information in the higher auditory centers** Room E

S63	Implication of tonic inhibition for Brain function	Room F
S64	New insights into the cellular and molecular mechanisms of neurological diseases using experimental model systems	Room G
S65	Intervention factors of neuronal irregular development: from gut bacteria to mental situation via chemicals	Room H
S66	Inflammation and Atherosclerosis	Room I
S67	The potential roles of NMDAR in neurological and neuropsychiatric disorders: new findings and therapeutic targets	Room J
S68	Pulmonary hypertension and inflammation: the interdependent processes triggered by each other	Room K
S69	Optogenetics: Contributions to Physiology and Medicine Beyond Brain Circuit-Breaking	Room L
S70	Contribution of brain research to the understanding of the physiology, psychology and communication of acute and chronic pain	Room M

3/31 (Sun) 10:30-12:30

S71	Toward understanding the neural basis of memory	Room A
S72	Neurobiology of reward system in the Brain (ISPP, Iran)	Room B
S73	(Sponsored Symposium)New Twists in Understanding Taste	Room C
S74	The consequences of preterm birth, intrauterine growth restriction and hypoxia-ischemia (PSNZ, New Zealand)	Room D
S75	Ca ²⁺ -permeable channels of excitable and non-excitable cells in health and disease	Room E
S76	Physiome for organ function (KPS, Korea)	Room F
S77	Advances in the role of adipocyte in health and disease (CPS, Taiwan)	Room G
S78	"Ins" and "outs" of smooth muscle	Room H

3/31 (Sun) 10:30-12:00

S79	Mechanomedicine	Room I
-----	-----------------	--------

3/31 (Sun) 10:30-12:30

S80	Daily /adaptable Yin-Yang transitions in diverse physiological processes coordinated by multi-cellular Chrono-molecular signal	Room J
S81	Mechanisms of systemic beauty and health	Room K
S82	Amygdala Neuronal Circuits in Adaptive Behaviors	Room L
S83	Neurobiology of obesity and its metabolic comorbidities	Room M

Symposium by the PSJ Committee on the Promotion of Gender Equality

MLS	Seeking Gender Equality in Science. A comparison of issues and initiatives in Japan and New Zealand	3/29 (Fri) 12:20-13:20	Room M
-----	---	------------------------	--------

Tutorial for Physiologists

T	Practical Approaches to Protein Structural Information	3/31 (Sun) 8:00-9:10	Room B
---	--	----------------------	--------

Poster Sessions

3/29 (Fri) 13:20-15:00 (discussion core time)

1F, Exhibition Hall

PSJ Awards

Skeletal muscle & locomotion (1)

Exercise (1)

Circulation & Respiration: Cardiac Physiology (1)

Circulation & Respiration: Lung Physiology (1)

Circulation & Respiration: Vascular Physiology (1)

Endocrine, Reproduction & Development (1)

Neuroscience: Synapse & neural cellular communication (1)

Neuroscience: Neural cell signalling

Neuroscience: Brain circuits

Neuroscience: Learning, memory & neuronal plasticity (1)

Neuroscience: Higher order brain functions

Neuroscience: Neurologic and psychiatric diseases (1)

Neuroscience: Somatosensory & Pain (1)

Neuroscience: Autonomic Physiology (1)

Neuroscience: Brain-machine interface

Neuroscience: Others (1)

Epithelial transport, Secretion & Absorption: Epithelium (1)

Epithelial transport, Secretion & Absorption: G-I Tract (1)

Epithelial transport, Secretion & Absorption: Renal Physiology (1)

Molecular & Cellular Biology: Channels & Transporters (1)

Molecular & Cellular Biology: Cellular Physiology (1)

Adaptation, Environment & Evolution (1)

Physiome

Alternative Medicine (1)

3/30 (Sat) 13:20-15:00 (discussion core time)

PSJ Awards

Skeletal muscle & locomotion (2)

Exercise (2)

Circulation & Respiration: Cardiac Physiology (2)

Circulation & Respiration: Lung Physiology (2)

Circulation & Respiration: Vascular Physiology (2)

Endocrine, Reproduction & Development (2)

Neuroscience: Neural development and repair

Neuroscience: Synapse & neural cellular communication (2)

Neuroscience: Neuron-glia interactions/functions of glia

Neuroscience: Imaging of brain

Neuroscience: Learning, memory & neuronal plasticity (2)

Neuroscience: Neurologic and psychiatric diseases (2)

Neuroscience: Somatosensory & Pain (2)

Neuroscience: Autonomic physiology (2)

Neuroscience: Others (2)

Epithelial transport, Secretion & Absorption: Epithelium (2)

Epithelial transport, Secretion & Absorption: G-I tract (2)

Epithelial transport, Secretion & Absorption: Renal Physiology (2)

Molecular & Cellular Biology: Channels & Transporters (2)

Molecular & Cellular Biology: Cellular Physiology (2)

Adaptation, Environment & Evolution (2)

Genomics & Biodiversity

Education

Alternative Medicine (2)

Poster Sessions (Special Sessions for Awardees)

3/31 (Sun) 8:00-13:00 (Viewing time)

1F, Exhibition Hall

Young Scientist Travel Awards and Masao Ito Memorial Awards

The Journal of General Physiology (JGP) Poster Awards

PSJ Awards

Luncheon Seminars

3/29 (Fri) 12:20-13:20

- | | | |
|-----|--|--------|
| LS1 | Structural Analysis of membrane proteins by Cryo-EM | Room B |
| LS2 | - Visualize Cellular Function - Application of DOJINDO Reagents | Room C |
| LS3 | Physiological role of brain glycogen in rats with prolonged exercise-induced central fatigue: Usefulness of metabolomics study | Room D |
| LS4 | Absorption of Rare Sugars in the Small Intestine | Room G |
| LS5 | Functional imaging of marmoset visual cortex | Room I |

3/30 (Sat) 12:20-13:20

- | | | |
|-----|---|--------|
| LS6 | Plasmalogen: The effects on Alzheimer's disease and its mechanism | Room A |
| LS7 | Frailty and Ninjin'yoeito | Room B |
| LS8 | Imaging intracellular temperature using fluorescence lifetime imaging microscopy (FLIM) reveals novel thermal signaling | Room C |
| LS9 | ABIS Luncheon Event: Neurophysiological Sciences Assisted by Imaging Support Network | Room D |

3/30 (Sat) 12:20-13:05

- | | | |
|------|---|--------|
| LS10 | The effects of Bedding based on Physiology of sleep | Room H |
|------|---|--------|

Technical Workshops

3/29 (Fri) 12:20-13:20

- | | | |
|-----|---|--------|
| TW1 | Cutting edge of clinical rehabilitation for the paresis to reduce the burden on patients; Repetitive Facilitative Exercise combined with vibratory, electrical, magnetic stimulation and Robotics | Room F |
|-----|---|--------|

3/30 (Sat) 12:20-13:20

- | | | |
|-----|---|--------|
| TW2 | How to take advantage of new tools and techniques with Narishige products | Room G |
|-----|---|--------|

GAKUSAI (interdisciplinary) Seminar

3/29 (Fri) 12:20-13:20

Room H

- | | | |
|---|--|--|
| I | Future Medicine and Innovation for Agriculture and Fisheries Opened by Low-temperature Plasma Sciences | |
|---|--|--|

Program

Plenary Lecture 1

March 28, Thu., 17:30-18:30

【Room A】 1F, Conference Center

Chair: Kazushige Touhara (The University of Tokyo, Japan)

PL1 Olfaction and Stress



Linda Buck

Fred Hutchinson Cancer Research Center, USA

Plenary Lecture 2

March 29, Fri., 8:50-9:50

【Room A】 1F, Conference Center

Chair: Makoto Tominaga (National Institute for Physiological Sciences, Japan)

PL2 Natural Products as Probes of the Pain Pathway: From Physiology to Atomic Structure



David Julius

Department of Biochemistry and Biophysics, The University of California,
San Francisco, USA

Special Lecture1

The Susumu Hagiwara Memorial Lecture

March 29, Fri., 17:20-18:10

【Room A】 1F, Conference Center

Chair: Atsushi Nambu (National Institute for Physiological Sciences, Japan)

SL1 Beyond memory circuit: Origins of metamemory and retrospection in the primate



Yasushi Miyashita

RIKEN Center for Brain Science, Japan

DAY 2

Special Lecture2

March 29, Fri., 17:20-18:10

【Room B】 3F, Conference Center

Chair: Mariko Omatsu-Kambe (Shiga University of Medical Science, Japan)

SL2 Signaling by Mitochondrial Flashes



Heping (Peace) Cheng

Peking University, China

Special Lecture3

March 29, Fri., 17:20-18:10

【Room C】 3F, Conference Center

Chair: Michisuke Yuzaki (Keio University School of Medicine, Japan)

SL3 Tentonin 3, a Mechanosensitive Channel with Baroreceptor Function



Uhtaek Oh

Brain Science Institute, KIST, Korea

Special Lecture4

March 29, Fri., 17:20-18:10

【Room D】 4F, Conference Center

Chair: Noriyuki Koibuchi (Gunma University Graduate School of Medicine, Japan)

SL4 Finding Instructional Balance Using the Educational Triangle



Robert Graham Carroll

Office of Medical Education, Brody School of
Medicine,
East Carolina University, USA

Symposium1 (Local Organizing Committee Symposium)

March 29, Fri., 10:00-12:00

【Room A】 1F, Conference Center

S1 Molecular mechanisms of aging (Co-organized by the Japanese Society of Anti-Aging Medicine)

Chairs: **Shohei Mitani** (Tokyo Women's Medical University, Japan)

Shigeo Horie (Juntendo University, Graduate School of Medicine, Japan)

-
- S1-1** The FGF-Klotho endocrine system and aging
Makoto Kuro-o
Division of Anti-aging Medicine, Center for Molecular Medicine, Jichi Medical University, Japan
- S1-2** The roles and mechanisms of SASP in aging and cancer
Eiji Hara^{1,2)}
¹Research Institute for Microbial Diseases, Osaka University, Japan, ²Immunology Frontier Research Center, Osaka University, Japan
- S1-3** Necroptosis promotes the Aging of the Male Reproductive System in Mice and Man
Xiaodong Wang, Dianrong Li, Lingjun Meng, Tao Xu, Yaning Su, Xiao Liu, Zhiyuan Zhang
National Institute of Biological Sciences, China
- S1-4** Significance of NAD/Sirtuins in Non-Communicable Diseases (NCD) and Metabo-Aging
Hiroshi Itoh
Department of Endocrinology, Metabolism and Nephrology School of Medicine, Keio University, Japan

DAY 2

Symposium2 (Local Organizing Committee Symposium)

March 29, Fri., 10:00-12:00

【Room B】 3F, Conference Center

S2 Thermal biology: A new world of life science (whole day symposium) part I

(Co-organized by Grant-in-Aid for Scientific Research on Innovative Areas
'Thermal Biology' of MEXT, Japan)

Chairs: **Makoto Tominaga** (National Institute for Physiological Sciences, Japan)
Masao Doi (Kyoto University, Japan)

S2-1 Physiological Significance of Thermosensitive TRP Channels

Makoto Tominaga^{1,2)}

¹Division of Cell Signaling, National Institute for Physiological Sciences, Japan, ²Thermal Biology Group, Exploratory Research Center on Life and Living Systems, Japan

S2-2 Imaging intracellular temperature unveils thermal signaling in single cells

Kohki Okabe^{1,2)}

¹Graduate School of Pharmaceutical Sciences, University of Tokyo, Japan, ²PRESTO, JST, Japan

S2-3 Transient intracellular acidification regulates the core transcriptional heat shock response

David Allan Drummond¹⁾, **Catherine G Triandafillou**²⁾,

Christopher D Katanski¹⁾, **Aaron R Dinner**³⁾

¹Department of Biochemistry and Molecular Biology, The University of Chicago, USA, ²Graduate Program in Biophysical Sciences, The University of Chicago, USA, ³Department of Chemistry and the James Franck Institute, The University of Chicago, USA

Part II starts from 15:10 at the same room.

Symposium3 (International Scientific Program Committee Symposium)

March 29, Fri., 10:00-12:00

【Room C】 3F, Conference Center

S3 Gastrointestinal microbiome and immunophysiology (CPS, Taiwan)

Chairs: **Linda Chia-Hui Yu** (National Taiwan University College of Medicine, Taiwan)
Shinji Fukuda (Institute for Advanced Biosciences, Keio University, Japan)

S3-1 Metabologenomic approach reveals the function of gut microbiota in health and disease

Shinji Fukuda^{1,2,3,4,5)}

¹Institute for Advanced Biosciences, Keio University, Japan, ²PRESTO, Japan Science and Technology Agency (JST), Japan, ³Kanagawa Institute of Industrial Science and Technology (KISTEC-KAST), Japan, ⁴Transborder Medical Research Center, University of Tsukuba, Japan, ⁵Metabologenomics, Inc., Japan

S3-2 Pathophysiology of the gut microbiota in digestive diseases

Sunny Hei Wong^{1,2,3)}

¹Department of Medicine and Therapeutics, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, ²Li Ka Shing Institute of Health Sciences, The Chinese University of Hong Kong, Hong Kong, ³Institute of Digestive Disease, The Chinese University of Hong Kong, Hong Kong

S3-3 Microbiota dysbiosis and immune abnormality in colorectal carcinogenesis

Linda Chia-Hui Yu

National Taiwan University College of Medicine, Taiwan

S3-4 Microbiota biofilm dysbiosis and pathobiont release induced by enteropathogens or in IBD

Andre G. Buret

Biological Sciences, Inflammation Research Network, Canada

DAY 2

Symposium4 (Local Organizing Committee Symposium)

March 29, Fri., 10:00-12:00

【Room D】 4F, Conference Center

S4 Teaching physiology; International perspectives (whole day symposium) part I

Chair: **Mei-Ling Tsai** (National Cheng Kung University, Taiwan)

S4-1 Role that the 'step-by-step study of life sciences' may play in health-related higher education

Masato Shibuya^{1,3}, Kaname Higuchi^{1,3}, Toshikazu Yamashita^{2,3})

¹Dept Physiol, Kagawa Nutrition Jr Col, Japan, ²Dept Applied Physiol, Kagawa Nutrition Univ, Japan, ³Life Science Education Sharing Group, Japan

S4-2 Team-based Learning - the backbone of medical education in LKCMedicine

Fabian C.L. Lim

Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

S4-3 The role of Indonesian Physiology Society to improve physiology teaching in Indonesia

Adrianta Surjadhana

Department of Physiology, Ciputra University, Indonesia

S4-4 Ethical Teaching: A Dilemma in Medical Education

Arif Siddiqui¹, Kusal Kanti Das²)

¹Barrett Hodgson University, Pakistan, ²BLDE University, India

Part II starts from 15:10 at the same room.

Symposium5

March 29, Fri., 10:00-12:00

【Room E】 4F, Conference Center

S5 New Translational Insights on Cardiopulmonary Remodeling

Chair: **Masanari Umemura** (Cardiovascular Research Institute, Yokohama City University Graduate School of Medicine, Japan)

Co-Chair: **Lin Hai Kurahara** (School of Medicine, Fukuoka-University, Japan)

S5-1 Calcium-sensing receptor and PDGF signals on vascular remodeling in pulmonary hypertension

Aya Yamamura, Motohiko Sato

Department of Physiology, Aichi Medical University, Japan

S5-2 Relationship between Physical Stimulus and Cardiac Remodeling

Masanari Umemura, Masatoshi Narikawa, Ryo Tanaka, Yoshihiro Ishikawa

Cardiovascular Research Institute, Yokohama City University Graduate School of Medicine, Japan

S5-3 The Neuro-Mechanical unloading limits the infarct size and prevents subsequent heart failure

Keita Saku

Department of Advanced Risk Stratification for Cardiovascular Disease, Center for Disruptive Cardiovascular Medicine, Kyushu University, Japan

S5-4 Long noncoding RNAs: emerging players in cardiac electrical and structural remodeling

Yong Zhang, Ying Zhang, Lei Jiao, Lina Xuan, Xin Liu, Baofeng Yang

Department of Pharmacology, Harbin Medical University, China

DAY 2

Symposium6

March 29, Fri., 10:00-12:00

【Room F】 5F, Conference Center

S6 Facilitation of Recovery of Motor Function After Paralysis

(Co-sponsored by Uno Hospital)

Chair: **Yukio Nishimura** (Tokyo Metropolitan Institute of Medical Science, Japan)

Co-Chair: **Takuya Takahashi** (Yokohama City University, Japan)

S6-1 CRMP2 Binding Compound, Edonepic Maleate, Accelerates Motor Function Recovery from Brain Damage

Takuya Takahashi

Department of Physiology Yokohama City University, Japan

S6-2 Bypassing damaged neural pathways via a neural interface

Yukio Nishimura

Neural Prosthesis Project, Tokyo Metropolitan Institute of Medical Science, Japan

S6-3 Repetitive facilitation exercise with non-invasive stimulation for recovery of hemiplegia

Seiji Etoh, Megumi Shimodozono, Kazumi Kawahira

Department of Rehabilitation and Physical Medicine, Kagoshima University Graduate School of Medical and Dental Sciences, Japan

S6-4 Predicting motor outcomes for individual patients after stroke

Marie-Claire Smith, Cathy Maree Stinear

Department of Medicine, University of Auckland, New Zealand

Symposium7 (International Scientific Program Committee Symposium)

March 29, Fri., 10:00-12:00

【Room G】 5F, Conference Center

S7 From synaptic and network plasticity to behavior (CAPS, China)

Chairs: **Ying-Shing Chan** (The University of Hong Kong, Hong Kong)

Tian-Le Xu (Shanghai Jiao Tong University School of Medicine, China)

S7-1 Fear extinction requires ASIC1a-dependent regulation of hippocampal-prefrontal correlates

Tian-Le Xu, Qin Wang, Qi Wang, Wei-Guang Li

Collaborative Innovation Center for Brain Science, Department of Anatomy and Physiology, Shanghai Jiao Tong University School of Medicine, China

S7-2 How does social conflict affect the synaptic plasticity in habenulo-interpeduncular pathway?

Hitoshi Okamoto

Lab. for Neural Circuit Dynamics of Decision Making, RIKEN Center for Brain Science, Japan

S7-3 Postnatal refinement of circuit plasticity for spatial navigation

Ying-Shing Chan, Kenneth Lap-Kei Wu, Wei Shi, Qiu-Fen Jiang,

Chun-Wai Ma, Daisy Kwok-Yan Shum

School of Biomedical Sciences, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong

S7-4 Behavioural Impact of Synaptic Kainate Receptor Protein Levels

Juan Lerma

Instituto de Neurociencias CSIC-UMH, San Juan de Alicante, Spain

DAY 2

Symposium8

March 29, Fri., 10:00-12:00

【Room H】 5F, Conference Center

- S8** Biophysical mechanisms underlying nano-vibrations of the sensory epithelium in hearing organs
(Co-sponsored by the Society for Promotion of International Oto-Rhino-Laryngology)

Chair: **Hiroshi Hibino** (Niigata University School of Medicine, Japan)

Co-Chair: **Tobias Reichenbach** (Imperial College London, UK)

- S8-1** Detection of an atypical motion in cochlear sensory epithelium
Takeru Ota^{1,2)}, Fumiaki Nin^{1,2)}, Samuel Choi^{2,3)}, Hiroshi Hibino^{1,2)}
¹Department of Molecular Physiology, Niigata University School of Medicine, Japan, ²AMED-CREST, AMED, Japan, ³Department of Electrical and Electronics Engineering, Niigata University, Japan
- S8-2** Sensory tissue motion and hair cell responses in the base of the gerbil cochlea
Elizabeth Sue Olson¹⁾, Clark Elliott Strimbu⁴⁾, Yi Wang²⁾, Nathan C Lin³⁾, Elika Fallah²⁾
¹Departments of Otolaryngology and Biomedical Engineering, Columbia University, USA, ²Department of Biomedical Engineering, Columbia University, USA, ³Department of Electrical Engineering, Columbia University, USA, ⁴Department of Otolaryngology, Columbia University, USA
- S8-3** Dual-mode OCT system for vibrometry in mammalian hearing mechanics at high frequencies
Fangyi Chen¹⁾, Cuixia Guo²⁾, Xiaojie Yang¹⁾, Yonghong He²⁾
¹Department of Biomedical Engineering, Southern Univ. of Sci. & Tech., China, ²Graduate School at Shenzhen, Tsinghua University, China
- S8-4** *In-Vivo* Nanomechanics in the Miniaturized Hearing Organ of an Insect
Manuela Nowotny¹⁾, Jan Scherberich¹⁾, Jennifer Hummel¹⁾, Stefan Schoneich²⁾
¹Institute of Cell Biology and Neurosciences, Goethe University, Germany, ²Institute for Biology, University of Leipzig, Germany
- S8-5** Nonlinear micromechanics of the organ of Corti in the low-frequency region of the cochlea
Tobias Reichenbach, Nikola Ciganovic
Imperial College London, UK

Symposium9 (International Scientific Program Committee Symposium)

March 29, Fri., 10:00-12:00

【Room I】 5F, Conference Center

S9 Metabolic syndrome and bone metabolism (TPS, Thailand)

Chair: Narattaphol Charoenphandhu (Center of Calcium and Bone Research (COCAB), Mahidol University, Thailand)

S9-1 Diabetic osteopathy and impaired intestinal calcium absorption in diabetes mellitus

Narattaphol Charoenphandhu^{1,2,3,4)}

¹Center of Calcium and Bone Research (COCAB), Faculty of Science, Mahidol University, Thailand, ²Department of Physiology, Faculty of Science, Mahidol University, Thailand, ³Institute of Molecular Biosciences, Mahidol University, Thailand, ⁴The Academy of Science, The Royal Society of Thailand, Thailand

S9-2 Is Metabolic Syndrome a Concern for Osteoporosis?

Siriporn C Chattipakorn^{1,2)}

¹Neurophysiology Unit, Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand

S9-3 The effect of high-fat diet on maternal bone microstructure and the metabolic parameters in rats

Panan Suntornsaratoon^{1,2)}, Narattaphol Charoenphandhu^{1,2)}

¹Department of Physiology, Faculty of Science, Mahidol University, Thailand, ²Center of Calcium and Bone Research, Faculty of Science, Mahidol University, Thailand

S9-4 Proton-mediated regulation of physiological and pathological osteoclast functions

Miyuki Kuno

Department of Anesthesiology, Osaka City University, Japan

DAY 2

Symposium10

March 29, Fri., 10:00-12:00

【Room J】 2F, Exhibition Hall

S10 Neural circuit basis of behavioral physiology

Chair: **Shi-Bing Yang** (Institute of Biomedical Sciences, Academia Sinica, Taiwan)

Co-Chair: **Tsung-Han Kuo** (National Tsing Hua University, Taiwan)

S10-1 Functional Dissection of the Central Glucoregulatory circuits

Shi-Bing Yang, Hsin-Ju Tsai

Institute of Biomedical Sciences, Academia Sinica, Taiwan

S10-2 Modeling of group size dependent aggressive behavior in the cricket

Hitoshi Aonuma

Research Institute for Electronic Science, Hokkaido University, Japan

S10-3 Neural basis of infant attachment and separation anxiety

Kumi O Kuroda¹⁾, Sachine Yoshida^{1,2)}

¹Lab for Affiliative Social Behavior, RIKEN Center for Brain Science, Japan, ²Department of Anatomy, Faculty of Medicine, Toho University, Japan

S10-4 Set the threshold for surrender in social conflicts

Ming-Yi Chou¹⁾, Hitoshi Okamoto²⁾

¹Department of Life Science, National Taiwan University, Taiwan, ²RIKEN Center for Brain Science, Japan

S10-5 Dissecting the neural circuits mediating female fertility in health and disease

Rebecca Campbell

Centre for Neuroendocrinology, Department of Physiology, University of Otago, New Zealand

Symposium11

March 29, Fri., 10:00-12:00

【Room K】 2F, Exhibition Hall

S11 Advances in the mastication and swallowing physiology to prepare for an aging society

Chair: **Yoshitaka Oku** (Hyogo College of Medicine, Japan)

Co-Chair: **Makito Iizuka** (Showa University School of Medicine, Japan)

S11-1 Properties of *Phox2b*-expressing premotor neurons targeting jaw-muscle motoneurons

Tomio Inoue

Department of Oral Physiology, Showa University School of Dentistry, Japan

S11-2 Development of masticatory performance as a novel biomarker of general health

Takahiro Ono

Graduate School of Medical and Dental Sciences, Niigata Univ., Japan

S11-3 Are respiratory-swallowing disturbances indicators of early dementia?

Mathias Dutschmann, Davor Stanic

Florey Institute of Neuroscience and Mental Health, Australia

S11-4 Coordination between swallowing and breathing: pathophysiology and its clinical significance

Yoshitaka Oku

Department of Physiology, Hyogo College of Medicine, Japan

S11-5 Non-invasive methods to evaluate the swallowing function

Makito Iizuka¹, Kazuhide Tomita², Reiko Takeshima³, Masahiko Izumizaki¹

¹Department of Physiology, Showa University School of Medicine, Japan, ²Department of Physical Therapy, Ibaraki Prefectural University of Health Sciences, Japan, ³Center for Medical Sciences, Ibaraki Prefectural University of Health Sciences, Japan

DAY 2

Symposium12

March 29, Fri., 10:00-12:00

【Room L】 3F, Exhibition Hall

S12 New insights into baroreflex function for cerebral and cardiovascular regulation: Implications for human health and disease

Chair: **Shigehiko Ogoh** (Toyo University, Japan)

Co-Chair: **Paul J Fadel** (University of Texas at Arlington, USA)

S12-1 The effect of baroreflex function on cerebral blood flow regulation during exercise

Shigehiko Ogoh

Department of Biomedical Engineering, Toyo University, Japan

S12-2 Arterial and cardiopulmonary baroreflex control of sympathetic nerve activity during exercise

Paul J Fadel

Department of Kinesiology, University of Texas at Arlington, USA

S12-3 Sex Differences in Baroreflex Function

Qi Fu^{1,2)}

¹Internal Medicine, University of Texas Southwestern Medical Center, USA, ²Institute for Exercise and Environmental Medicine at Texas Health Presbyterian Hospital, USA

S12-4 Exercise pressor reflex and arterial baroreflex function in cardiovascular disease

Scott Alan Smith

School of Health Professions, Department of Health Care Sciences, University of Texas Southwestern Medical Center, USA

S12-5 Modulation of cardiac baroreflex by central command in daily life

Kanji Matsukawa, Kei Ishii, Ryota Asahara

Department of Integrative Physiology, Hiroshima University, Japan

Symposium13

March 29, Fri., 10:00-12:00

[Room M] 3F, Exhibition Hall

S13 The role of the sympathetic nerves in health and disease

Chair: Rohit Ramchandra (The University of Auckland, New Zealand)

- S13-1** Longterm effects of renal denervation in an ovine model of hypertensive chronic kidney disease
Kate M Denton, Reetu R Singh
Department of Physiology, Monash University, Australia
- S13-2** Sympathetic regulation in anaphylactic shock or feeding suppression
Mamoru Tanida
Department of Physiology II, Kanazawa Medical University, Japan
- S13-3** The importance of sympathetic nervous system influences in the coronary vasculature
James T. Pearson^{1,2}, Daryl O. Schwenke³, Hirotsugu Tsuchimochi¹, Takashi Sonobe¹, Vijayakumar Sukumaran¹, Mikiyasu Shirai⁴
¹Department of Cardiac Physiology, National Cerebral & Cardiovascular Center, Japan, ²Department of Physiology, Monash University, Australia, ³Department of Physiology, University of Otago, New Zealand, ⁴Department of Advanced Medical Research for Pulmonary Hypertension, National Cerebral & Cardiovascular Center, Japan
- S13-4** Altered differential control of cardiac and renal sympathetic nerve activity in hypertension
Rohit Ramchandra¹, Darvina Mahesh¹, Jaap Joles², Tycho Tromp^{1,2}
¹Department of Physiology, The University of Auckland, New Zealand, ²University Medical Centre, Utrecht University, The Netherlands
- S13-5** Cortical and subcortical structures involved in the generation of muscle sympathetic nerve activity
Vaughan G Macefield^{1,2,3}, Luke A Henderson⁴
¹Human Autonomic Neurophysiology Lab, Baker Heart and Diabetes Institute, Australia, ²School of Medicine, Western Sydney University, Australia, ³Neuroscience Research Australia, Australia, ⁴Discipline of Anatomy & Histology, Sydney Medical School, University of Sydney, Australia

DAY 2

Symposium14 (Local Organizing Committee Symposium)

March 29, Fri., 15:10-17:10

【Room A】 1F, Conference Center

S14 Advances in understanding cerebellar LTD and motor learning: Masao Ito Symposium

Chairs: **Yasuo Kawaguchi** (National Institute for Physiological Sciences, Japan)

Masanobu Kano (Graduate School of Medicine, The University of Tokyo, Japan)

Kazuo Kitamura (University of Yamanashi, Japan)

S14-1 Discovery and investigation of cerebellar long-term depression at Masao Ito's lab

Masanobu Kano^{1,2)}

¹Department of Neurophysiology, Graduate School of Medicine, The University of Tokyo, Japan, ²International Research Center for Neurointelligence (WPI-IRCIN), The University of Tokyo Institutes for Advanced Study (UTIAS), The University of Tokyo, Japan

S14-2 Temporal aspects of cerebellar long-term synaptic depression

Keiko Tanaka-Yamamoto, Taegon Kim, Yukio Yamamoto

Center for Functional Connectomics (CFC), Korea Institute of Science and Technology (KIST), Korea

S14-3 LTD and the search for the cerebellar memory trace

Christian Hansel

Department of Neurobiology, University of Chicago, USA

S14-4 New optogenetical tool clarified that the cerebellar LTD was essential for motor learning

Shinji Matsuda

Department of Engineering Science, The University of Electro-Communications, Japan

S14-5 Specialization of the rules for cerebellar LTD at different parallel fiber- Purkinje cell synapses

Jennifer L Raymond

Department of Neurobiology, Stanford University School of Medicine, USA

Symposium15 (Local Organizing Committee Symposium)

March 29, Fri., 15:10-17:10

【Room B】 3F, Conference Center

S15 Thermal biology: A new world of life science (whole day symposium) part II

(Co-organized By Grant-In-Aid For Scientific Research on Innovative Areas
'Thermal Biology' of Mext, Japan)

Chairs: **Makoto Tominaga** (National Institute for Physiological Sciences, Japan)

Kazuhiro Nakamura (Nagoya University Graduate School of Medicine, Japan)

S15-1 Effects of temperature on seasonal adaptation: Towards the understanding of human seasonality

Takashi Yoshimura^{1,2,3)}

¹Institute of Transformative Bio-Molecules (WPI-ITbM), Nagoya University, Japan, ²Graduate School of Bioagricultural Sciences, Nagoya University, Japan, ³Division of Seasonal Biology, National Institute for Basic Biology, Japan

S15-2 Mechanisms of psychological impacts on thermoregulation and metabolism

Kazuhiro Nakamura

Department of Integrative Physiology, Nagoya University Graduate School of Medicine, Japan

S15-3 TRP ion channels - internal/deep-brain temperature sensors and guardians of homeostasis?

Jan Erik Siemens¹⁾, **Gretel B. Kamm**¹⁾, **Juan C. Boffi**²⁾, **Hong Wang**^{1,4)},

Thomas Kuner²⁾, **Kun Song**^{1,3)}

¹Department of Pharmacology, Heidelberg University, Germany, ²Department of Functional Neuroanatomy, Heidelberg University, Germany, ³Max Delbrück Center for Molecular Medicine (MDC), Germany, ⁴The Brain Cognition & Brain Disease Institute, University Town of Shenzhen, China

Symposium16 (International Scientific Program Committee Symposium)

March 29, Fri., 15:10-17:10

【Room C】 3F, Conference Center

S16 Gastrointestinal Control of Energy Metabolism (CAPS, China)

Chairs: **Weizhen Zhang** (Peking University Health Science Center, China)

Jinxia Zhu (Capital Medical University, China)

-
- S16-1** Gastric mTORC1 as a fuel sensing mechanism and its role in lipid homeostasis
Weizhen Zhang
Department of Physiology and Pathophysiology, Peking University Health Science Center, China
- S16-2** Gut-derived Dopamine and Its Regulation on Intestinal Barrier Function
Jinxia Zhu, Xiaoyan Feng, Chenzhe Liu, Xiaoli Zhang
Department of Physiology and Pathophysiology, Capital Medical University, China
- S16-3** Hormonal and neuronal regulatory mechanisms of gastrointestinal motility in the *Suncus murinus*
Ichiro Sakata, Takafumi Sakai
Graduate school of Science and Engineering, Saitama University, Japan
- S16-4** The X/A-like cell as a regulator of food intake
Andreas Stengel^{1,2)}
¹Psychosomatic Medicine, University Tuebingen, Germany, ²Psychosomatic Medicine, Charité University, Germany
- S16-5** Regulation of GLP1 secretion and mitochondrial function by Berberine in colon enterocytes
Jianping Ye
Central Lab, Shanghai Jiaotong University Affiliated 6th People's Hospital East, China

Symposium17 (Local Organizing Committee Symposium)

March 29, Fri., 15:10-17:10

【Room D】 4F, Conference Center

S17 Teaching physiology; International perspectives (whole day symposium) part II

Chair: **Noriyuki Koibuchi** (Gunma University Graduate School of Medicine, Japan)

S17-1 Integration of social practice and medical knowledge in an outcome-based curriculum at NCKU Medical School

Mei-Ling Tsai

Department of Physiology, National Cheng Kung University, Taiwan

S17-2 PHY-STORY : Students Discovering and Telling their Stories of Physiology

Cheng Hwee Ming

Department Physiology, Faculty of Medicine, University Malaya, Malaysia

S17-3 How to make students alert during lectures

Mangala Gunatilake

Dept. of Physiology, Faculty of Medicine, University of Colombo, Sri Lanka

S17-4 Teaching Physiology - Students' Voice

Noriyuki Koibuchi

Gunma University Graduate School of Medicine, Japan

DAY 2

S18 Dynamics of membrane trafficking and intracellular signaling

Chair: **Yoh Takuwa** (Kanazawa University, Japan)

Co-Chair: **Yusuke Ohba** (Hokkaido University, Japan)

S18-1 Optogenetic control of diverse molecular and cellular processes in the mouse brain.

Won Do Heo^{1,2)}

¹Department of Biological Sciences, KAIST, Korea, ²Center for Cognition and Sociality, IBS, Korea

S18-2 Imaging secretory cells and molecular configurations of exocytic proteins

Noriko Takahashi¹⁾, Hiroyasu Hatakeyama¹⁾, Tomomi Oshima¹⁾,
Yuichi Morimoto²⁾, Haruo Kasai²⁾

¹Department of Physiology, Kitasato University School of Medicine, Japan, ²Structural Physiology, Graduate School of Medicine, The University of Tokyo, Japan

S18-3 Fluorescence Imaging of membrane dynamics and intracellular signaling

Yusuke Ohba

Department of Cell Physiology, Faculty of Medicine, Hokkaido University, Japan

S18-4 Essential role of class II PI3K in endocytosis and endosomal signaling

Kazuaki Yoshioka¹⁾, Khin Thuzar Aung¹⁾, Md Azadul Kabir Sarker¹⁾,
Sho Aki¹⁾, Kuntal Biswas¹⁾, Noriko Takuwa^{1,2)}, Yoh Takuwa¹⁾

¹Department of Physiology, Kanazawa University, Japan, ²Department of Health Science, Ishikawa Prefectural Nursing University, Japan

S18-5 Morphological changes of plasma membrane and protein assembly during clathrin-mediated endocytosis

Shige H. Yoshimura¹⁾, Aiko Yoshida^{1,2)}, Yoshitsuna Itagaki¹⁾, Yuki Suzuki³⁾

¹Graduate School of Biostudies, Kyoto University, Japan, ²Graduate School of Medicine, Hokkaido University, Japan, ³Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan

Symposium19 (International Scientific Program Committee Symposium)

March 29, Fri., 15:10-17:10

【Room F】 5F, Conference Center

S19 Mitochondrial Physiology and Pathophysiology (KPS, Korea)

Chairs: **Kyu-Sang Park** (Wonju College of Medicine, Yonsei University, Korea)
Jin Han (Inje University, Korea)

S19-1 Mitochondrial quality control and its metabolic regulation by reactive persulfide species

Motohiro Nishida^{1,2)}

¹Division of Cradiocirculatory Signaling, National Institute for Physiological Sciences, National Institutes of Natural Sciences, ²Department of Translational Pharmaceutical Sciences, Graduate School of Pharmaceutical Sciences, Kyushu University

S19-2 Regulation of systemic energy metabolism in altered mitochondrial proteostasis

Minho Shong

Department of Internal Medicine, Chungnam National University, Korea

S19-3 Roles of mitochondrial dynamics in cellular function, development, and differentiation

Naotada Ishihara^{1,2)}, Takaya Ishihara^{1,2)}, Emi Ogasawara^{1,2)}, Tadato Ban²⁾

¹Graduate School of Science, Osaka University, Japan, ²Institute of Life Science, Kurume University, Japan

S19-4 Mitochondrial oxidative stress associated with calcium and phosphate

Kyu-Sang Park^{1,2)}

¹Department of Physiology, Wonju College of Medicine, Yonsei University, Korea, ²Mitohormesis Research Center, Wonju College of Medicine, Yonsei University, Korea

DAY 2

Symposium20

March 29, Fri., 15:10-17:10

【Room G】 5F, Conference Center

S20 Adaptation mechanisms to external or internal environmental changes of respiratory system

Chair: **Hiroshi Onimaru** (Showa University School of Medicine, Japan)

Co-Chair: **Keiko Ikeda** (International University of Health and Welfare, Japan)

S20-1 Vaginal delivery is a strong adaptation signal to start spontaneous breathing

Keiko Ikeda^{1,2)}, Hiroshi Onimaru³⁾, Kiyoshi Kawakami²⁾

¹Department of Physiology, International University of Health and Welfare, Japan,

²Division of Biology, Center for Molecular Medicine, Jichi Medical University, Japan,

³Department of Physiology, Showa University School of Medicine, Japan

S20-2 Pontine modulation of medullary respiratory circuit activity

Rishi R Dhingra, Mathias Dutschmann

Division of Systems Neurophysiology, The Florey Institute of Neuroscience & Mental Health, Australia

S20-3 Hypoxic responses of the respiratory system

Yasumasa Okada¹⁾, Itaru Yazawa²⁾, Kotaro Takeda³⁾, Shuntaro Okazaki⁴⁾,

Makoto Uchiyama⁵⁾, Yuki Kurita⁵⁾, Isato Fukushi¹⁾, Shigefumi Yokota⁶⁾,

Yasuo Mori⁵⁾, Hiroshi Onimaru⁷⁾

¹Clin. Res. Ctr., Murayama Med. Ctr., Japan, ²Global Res. Ctr. for Innovative Life Sci., Hoshi

Univ. Sch. of Pharm. & Pharmaceut. Sc, Japan, ³Sch. of Hlth. Sci., Fujita Hlth. Univ., Japan,

⁴Waseda Univ., Japan, ⁵Dept. of Synthetic Chem. and Biol. Chem., Grad. Sch. of

Engineering, Kyoto Univ., Japan, ⁶Dept. of Anat. and Neurosci., Shimane Univ., Japan,

⁷Showa Univ. Sch. of Med., Japan

S20-4 How hypoxia blunts respiratory arousal from sleep

Peter George Burke

Neuroscience Research Australia, Australia

S20-5 Impact of cervical spinal cord injury on respiratory motor control

Kun-Ze Lee

Department of Biological Sciences, National Sun Yat-sen University, Taiwan

Symposium21

March 29, Fri., 15:10-17:10

【Room H】 5F, Conference Center

S21 New Paradigm in Physiology and Pathophysiology of Coagulation-fibrinolysis System

Chair: **Katsuya Hirano** (Kagawa University, Japan)

Co-Chair: **Tetsumei Urano** (Hamamatsu University School of Medicine, Japan)

S21-1 Overview of the cross-talk between the coagulation-fibrinolysis System and cellular functions

Tetsumei Urano, Yuko Suzuki

Department of Medical Physiology, Hamamatsu University School of Medicine, Japan

S21-2 Cell surface-modified fibrinolysis; contribution of vascular endothelial cells and platelets

Yuko Suzuki, Hideto Sano, Naoki Honkura, Tetsumei Urano

Department of Medical Physiology, Hamamatsu University School of Medicine, Japan

S21-3 Novel role of coagulation factor XI as a regulator of vascular smooth muscle function

Katsuya Hirano, Wenhua Liu

Department of Cardiovascular Physiology, Faculty of Medicine, Kagawa University, Japan

S21-4 Endosomal Platforms for Protease Signaling

Nigel W. Bunnet

Columbia University

S21-5 Fibrinolysis and immunity: a new paradigm

Robert Lindsay Medcalf

Australian Centre for Blood Diseases, Monash University, Australia

DAY 2

Symposium22

March 29, Fri., 15:10-17:10

【Room I】 5F, Conference Center

S22 Proton signalings and proton-related functions

Chair: **Yoshifumi Okochi** (Graduate School of Medicine, Osaka University, Japan)

Co-Chair: **Ye Yu** (China Pharmaceutical University, China)

S22-1 Hv1/VSOP voltage-gated proton channel inhibits migration in response to fMLF in neutrophils

Yoshifumi Okochi, Yasushi Okamura

Integrative Physiology, Graduate School of Medicine, Osaka University, Japan

S22-2 Controlling the innate immune signaling by the proton-coupled peptide transporters

Toshihiko Kobayashi, Noriko Toyama-Sorimachi

Department of Molecular Immunology and Inflammation, Research Institute, National Center for Global Health and Medicine, Japan

S22-3 Otopetrins constitute a new family of proton-selective ion channels

Emily Liman

Section of Neurobiology, University of Southern California, USA

S22-4 Proton imaging in the brain using CCD-type ion image sensor

Hiroshi Horiuchi^{1,2,4}, Junko Ishida^{1,4}, Masakazu Agetsuma^{1,2,4},

Kazuaki Sawada^{3,4}, Junichi Nabekura^{1,2,4}

¹Division for Homeostatic Development, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, The Graduate School for Advanced Study, Hayama, Japan, ³Department of Electronic and Information Engineering, Toyohashi University of Technology, Japan, ⁴Core Research for Evolutional Science and Technology, Japan Science and Technology Agency, Japan

S22-5 A nonproton ligand sensor in the acid-sensing ion channel

Ye Yu

China Pharmaceutical University, China

Symposium23

March 29, Fri., 15:10-17:10

【Room J】 2F, Exhibition Hall

S23 Glia and Neurological Diseases: from Physiological to Pathological Roles of Astrocytes and Microglia

Chair: **Sun Kwang Kim** (College of Korean Medicine, Kyung Hee University, Korea)

Co-Chair: **Hiroaki Wake** (Kobe University Graduate School of Medicine, Japan)

S23-1 Physiological function of microglia and their effect on neuronal circuits Hiroaki Wake

Division of System Neuroscience, Kobe University Graduate School of Medicine, Japan

S23-2 The roles of astrocytes and microglia in glutamate release after brain injury

Wen-Biao Gan, Sally Levinson, Joseph Cichon, Mirko Santello

Skirball Institute, New York University School of Medicine, USA

S23-3 Bidirectional regulation of synapse remodeling by reactive astrocytes Schuichi Koizumi

Department of Neuropharmacology, Interdisciplinary Graduate School of Medicine, University of Yamanashi, Japan

S23-4 The role of cortical astrocytes in establishing peripheral neuropathic pain

Sun Kwang Kim

Department of Physiology, College of Korean Medicine, Kyung Hee University, Korea

DAY 2

S24 Complexity and Diversity of Motility Regulation in Smooth Muscle

Chair: **Shinsuke Nakayama** (Nagoya University, Japan)

Co-Chair: **Masaru Watanabe** (Tokyo Metropolitan University, Japan)

S24-1 Morphological Study of Motility Regulation Mechanisms in Gastrointestinal Tract

Hiromi Tamada^{1,2)}

¹Graduate School of Medicine, Nagoya University, Japan, ²Japan Society for the Promotion of Science, Japan

S24-2 Difference of pacemaker activity of interstitial cells of Cajal between small and large intestine

Jae Yeoul Jun

Department of Physiology, University of Chosun, Korea

S24-3 Characteristic motility regulation of smooth muscle in lower urinary tract

Shunichi Kajioka¹⁾, **Tomoko Maki**²⁾, **Maya Hayashi**²⁾, **Nouval Shahab**¹⁾,
Shinsuke Nakayama³⁾, **Toshiyuki Sasaguri**¹⁾

¹Department of Clinical Pharmacology, Kyushu University, Japan, ²Department of Urology, Kyushu University, Japan, ³Department of Cell Physiology, Nagoya University, Japan

S24-4 Regulation of thick and thin filaments organization during smooth muscle contraction

Masaru Watanabe¹⁾, **Naoya Nakahara**²⁾, **Yukisato Ishida**^{1,3)}

¹Laboratory of Physiology, Graduate School of Human Health Sciences, Tokyo Metropolitan University, Japan, ²The Jikei University, Japan, ³Bunkyo Gakuin University, Japan

Symposium25

March 29, Fri., 15:10-17:10

【Room L】 3F, Exhibition Hall

S25 Calcium signaling in heart disease

Chair: **Shi-Qiang Wang** (Peking University, China)
Co-Chair: **Sun-Hee Woo** (Chungnam National University, Korea)

- S25-1** Alterations of shear-Ca²⁺ signaling in atrial myocytes under chronic pressure and volume overload
Sun-Hee Woo, Min-Jeong Son, Qui A Le, Joon-Chul Kim
College of Pharmacy, Chungnam National University, Korea
- S25-2** Mechanisms for sex differences in drug-induced arrhythmia
Junko Kurokawa
School of Pharmaceutical Sciences, University of Shizuoka, Japan
- S25-3** Sarcoplasmic reticulum calcium leak promotes atrial fibrillation
Wenjun Xie, Ying Qi, Jingjing Li, Wenjin He
School of Life Science and Technology, Xi'an Jiaotong University, China
- S25-4** Mechanism and therapeutic strategies for arrhythmogenic diseases caused by RyR2 mutations
Nagomi Kurebayashi
Department of Pharmacology, Faculty of Medicine, Juntendo University, Japan
- S25-5** Conjunct JPH2-CAV3 Transcription Enhanced Ca Signaling Efficiency in Hibernating Ground Squirrels
Shi-Qiang Wang, Lei Yang, Rong-Chang Li, Bin Xiang, Yi-Chen Li, Li-Peng Wang, Xiao-Ting Wang
College of Life Sciences, Peking University, China

DAY 2

Symposium26

March 29, Fri., 18:30-20:00

【Room A】 1F, Conference Center

S26 Synaptic remodeling and beyond in health and disease

Chair: **Ryuta Koyama** (The University of Tokyo, Japan)

Co-Chair: **Naofumi Uesaka** (The University of Tokyo, Japan)

- S26-1** **Neuronal activity-dependent synaptic pruning by microglia**
Ryuta Koyama
Graduate School of Pharmaceutical Science, The University of Tokyo, Japan
- S26-2** **Interleukin-1s-mediated effects of inflammation on visual circuit development in the zebrafish**
Edward S Ruthazer, Cynthia M Solek, Nasr AI Farooqi, Niklas S Brake
Montreal Neurological Institute, McGill University, Canada
- S26-3** **Photooxygenation reduces the A β level in the brains of Alzheimer disease model mice**
Yukiko Hori¹, Shuta Ozawa¹, Youhei Sohma², Motomu Kanai²,
Taisuke Tomita¹
¹Laboratory of Neuropathology and Neuroscience, Graduate School of Pharmaceutical Sciences, The University of Tokyo, Japan, ²Laboratory of Synthetic Organic Chemistry, Graduate School of Pharmaceutical Sciences, The University of Tokyo, Japan
- S26-4** **Regulation of aberrant synaptic remodeling in the thalamus triggered by peripheral nerve injury**
Yoshifumi Ueta, Mariko Miyata
Dept Physiol, Div Neurophysiol, Grad Sch Med, Tokyo Women's Med Univ, Japan
- S26-5** **Activity-dependent synapse elimination in the developing cerebellum**
Naofumi Uesaka, Tzu-Huei Kao, Masanobu Kano
Graduate School Medicine, The University of Tokyo, Japan

S27 Regulation of cell functions by phosphoinositides

Chair: **Zhuan Zhou** (Peking University, China)

Co-Chair: **Yasushi Okamura** (Osaka University, Japan)

S27-1 A new mechanism of Ca²⁺-independent voltage-dependent secretion in dorsal root ganglion neurons

Zhuan Zhou¹, Yuan Wang¹, Hiroki Arima², Rong Huang¹, Yuqi Hang¹, Xingyu Du¹, Feipeng Zhu¹, Zuying Chai¹, Changhe Wang¹, Yasushi Okamura²

¹Peking University, China, ²Osaka University, Japan

S27-2 Functional analysis of voltage-sensing phosphatase in mouse sperm

Takafumi Kawai¹, Haruhiko Miyata², Hiroki Nakanishi³, Souhei Sakata^{1,4}, Yoshifumi Okochi¹, Masahiko Watanabe⁵, Kenji Sakimura⁶, Takehiko Sasaki^{7,8}, Masahito Ikawa², Yasushi Okamura¹

¹Graduate School of Medicine, Osaka University, Japan, ²RIMD, Osaka University, Japan, ³Research Center for Biosignal, Akita University, Japan, ⁴Dept. of Physiology, Osaka Medical College, Japan, ⁵Graduate School of Medicine, Hokkaido University, Japan, ⁶Brain Research Institute, Niigata University, Japan, ⁷Graduate School of Medicine, Akita University, Japan, ⁸Medical research institute, Tokyo Medical and Dental University, Japan

S27-3 Regulation of ion channel functions by phosphoinositides

Byung C. Suh

Department of Brain and Cognitive Sciences, DGIST, Korea

S27-4 Molecular mechanisms of phosphoinositide signaling

Junko Sasaki¹, Satoshi Eguchi², Hiroki Nakanishi³, Takehiko Sasaki¹

¹Medical Research Institute, Tokyo Medical and Dental University, Japan, ²Department of Medical Biology, Graduate School of Medicine, Akita University, Japan, ³Research Center for Biosignal, Akita University, Japan

Symposium28

March 29, Fri., 18:30-20:00

【Room C】 3F, Conference Center

S28 Molecular evidences Link Physical Exercise to Cardiovascular Improvement

Chair: **Junjie Xiao** (Shanghai University, China)

Co-Chair: **Julie McMullen** (Baker Heart and Diabetes Institute, Australia)

S28-1 Non-coding RNA basis of exercise induced physiological hypertrophy
Junjie Xiao

Institute of Cardiovascular Sciences, School of Life Science, Shanghai University, China

S28-2 Exercise Training Prevents Cardiac Injury Induced by Sympathetic Stress

Han Xiao, Youyi Zhang

Institute of vascular medicine, Peking University Third Hospital, China

S28-3 Targeting a critical regulator of exercise-induced cardiac hypertrophy, PI3K, in the failing heart

Julie Rae McMullen

Baker Heart and Diabetes Institute, Australia

Symposium29

March 29, Fri., 18:30-20:00

【Room D】 4F, Conference Center

S29 New insights into central mechanisms underlying hypertension

Chair: **Julian FR Paton** (Department of Physiology, University of Auckland, New Zealand)

Co-Chair: **Sabine S. S. Gouraud** (Ochanomizu University, Japan)

- S29-1** Central mechanisms of hypertension: brain-heart-kidney connection
Yoshitaka Hirooka
Department of Medical Technology and Sciences, International University of Health and Welfare, Japan
- S29-2** Visceral afferent modulation for regulating sympathetic activity in cardiorespiratory disease
Julian FR Paton
Department of Physiology, University of Auckland, New Zealand
- S29-3** Role of hypothalamus on the cardiovascular regulation during repeated acute psychological stress
Jouji Horiuchi, Ena Yamamoto, Takatoshi Horiuchi, Misaki Ichikawa
Department of Biomedical Engineering, Toyo University, Japan
- S29-4** NTS gene expression profiles underlying basal blood pressure levels: Focus on disease and gender
Sabine S. S. Gouraud^{1,2)}, Makiko Onishi³⁾, Linh Thuy Pham^{2,3)}, Ko Yamanaka⁴⁾, Hidefumi Waki⁴⁾
¹Dept. Biology, Ochanomizu University, Japan, ²Grad Sch General Educational Research, Ochanomizu University, Japan, ³Grad Sch Humanities and Sciences, Ochanomizu University, Japan, ⁴Dept. Physiology, Grad Sch Health and Sports Science, Juntendo University, Japan
- S29-5** Brain molecular mechanisms underlying anti-hypertensive effect of daily exercise
Hidefumi Waki¹⁾, Ko Yamanaka¹⁾, Kei Tsukioka¹⁾, Keisuke Tomita¹⁾, Miwa Takagishi²⁾, Sabine S. S. Gouraud³⁾
¹Department of Physiology, Graduate School of Health and Sports Science, Juntendo University, Japan, ²Department of Therapeutic Health Promotion, Kansai University of Health Sciences, Japan, ³Department of Biology, Faculty of Science, Ochanomizu University, Japan

DAY 2

Symposium30

March 29, Fri., 18:30-20:00

【Room E】 4F, Conference Center

S30 Substance abuse and addiction ~ From basic science to regulatory science

Chair: **Tomoaki Shirao** (Gunma University Graduate School of Medicine, Japan)

Co-Chair: **Bart A Ellenbroek** (Victoria University of Wellington, New Zealand)

S30-1 An overview of recent emergence of new psychoactive substances (NPS)

Ruri Kikura-Hanajiri

Division of Pharmacognosy, Phytochemistry and Narcotics, National Institute of Health Sciences, Japan

S30-2 High-throughput imaging analysis using cultured neurons for detecting phencyclidine-like substances

Kenji Hanamura¹⁾, Toshinari Mitsuoka¹⁾, Ruri Kikura-Hanajiri²⁾,
Yuko Sekino³⁾, Tomoaki Shirao¹⁾

¹⁾Department of Neurobiology and Behavior, Gunma University Graduate School of Medicine, Japan, ²⁾Division of Pharmacognosy, Phytochemistry and Narcotics, National Institute of Health Sciences, Japan, ³⁾Endowed Laboratory of Human Cell-Based Drug Discovery, Graduate School of Pharmaceutical Sciences, The University of Tokyo, Japan

S30-3 GIRK channels and NMDA receptor GluN2D subunit in signal pathways from addictive substances

Kazutaka Ikeda

Department of Psychiatry and Behavioral Sciences, Tokyo Metropolitan Institute of Medical Science, Japan

S30-4 The serotonin transporter (SERT) as a genetic risk factor for drug addiction

Bart A Ellenbroek

School of Psychology, Victoria University of Wellington, New Zealand

Symposium31

March 29, Fri., 18:30-20:00

【Room F】 5F, Conference Center

S31 Genomics of Sports and Exercise

Chair: **Noriyuki Fuku** (Juntendo University, Japan)

Co-Chair: **Ola Hanson** (Lund University, Sweden)

S31-1 Implication of genetic polymorphisms on sports performance

Eri Miyamoto-Mikami

Graduate School of Health and Sports Science, Juntendo University, Japan

S31-2 Genomic investigations of skeletal muscle function

Ola Hansson^{1,2)}

¹Department of Clinical Sciences, Lund University, Sweden, ²Institute for Molecular Medicine Finland (FIMM), Helsinki University, Finland

S31-3 A Kinesio-Genomic Effect of mtDNA Polymorphism in the MOTS-c on Diabetes

Hirofumi Zempo^{1,2)}

¹Department of Administrative Nutrition, Faculty of Health and Nutrition, Tokyo Seiei College, Japan, ²Graduate School of Health and Sports Science, Juntendo University, Japan

DAY 2

Symposium32 (Local Organizing Committee Symposium)

March 29, Fri., 18:30-20:00

【Room G】 5F, Conference Center

S32 Membrane transporters related to diseases and drug development

Chair: **Naohiko Anzai** (Chiba University School of Medicine, Japan)

Co-Chair: **Stefan Broer** (The Australian National University, Australia)

S32-1 The amino acid transporter SLC6A19 as a target to improve metabolic diseases

Stefan Broer

Research School of Biology, Australian National University, Australia

S32-2 L-type Amino Acid Transporters and Cancer

Arthit Chairoungdua^{1,2)}

¹Department of Physiology, Faculty of Science, Mahidol University, Thailand, ²Excellent Center for Drug Discovery (ECDD), Mahidol University, Thailand

S32-3 Phosphate balance in the body and epithelial phosphate transporters

Hiroko Segawa, Yuji Shiozaki, Ichiro Kaneko, Ken-Ichi Minamoto

Department of Molecular Nutrition Institute of Biomedical Sciences, Tokushima University Graduate School, Japan

S32-4 Genomic analysis of Japanese Cystinuria patients through a next-generation sequence

Shinichi Sakamoto¹⁾, Yukio Naya²⁾, Yasuhiro Shigeta³⁾, Masaaki Fujimura⁴⁾, Chiaki Inada^{1,8)}, Yuzuru Ikehara⁶⁾, Yoshikatsu Kanai⁷⁾, Naohiko Anzai⁵⁾, Tomohiko Ichikawa^{1,8)}

¹Department of Urology, Chiba University Graduate School of Medicine, Japan,

²Department of Urology, Teikyo University Chiba Medical Center, Japan, ³Nishifunabashi

Urology Clinic, Japan, ⁴Department of Urology, Saiseikai Narashino Hospital, Japan,

⁵Department of Pharmacology, Chiba University Graduate School of Medicine, Japan,

⁶Department of Tumor Pathology, Chiba University Graduate School of Medicine,

Japan, ⁷Department of Bio-system Pharmacology, Osaka University Graduate School of

Medicine, Japan, ⁸Division of Clinical Genetics, Chiba University Graduate School of

Medicine, Japan

Symposium33

March 29, Fri., 18:30-20:00

【Room H】 5F, Conference Center

S33 New insights into Endocrinology and Metabolism

Chair: **Izuki Amano** (Gunma University Graduate School of Medicine, Japan)

Co-Chair: **Ronny Lesmana** (Universitas Padjadjaran, Indonesia)

- S33-1** **Effects of perinatal hypothyroidism on brain development**
Izuki Amano, Yusuke Takatsuru, Ayane Kate Ninomiya, Hiroyuki Yajima,
Miski Aghnia Khairinisa, Michifumi Kokubo, Machiko Suda, Asahi Haijima,
Noriyuki Koibuchi
Department of Integrative Physiology, Gunma University Graduate School of Medicine,
Japan
- S33-2** **Revealing role of thyroid hormone on autophagy regulation in skeletal muscle**
Ronny Lesmana^{1,2)}
¹Departement of basic science, Physiology Division, Faculty of Medicine, Universitas Padjadjaran, Indonesia, ²Central Laboratory, Universitas Padjadjaran, Indonesia
- S33-3** **The role of nuclear receptor corepressors NCoR1 and SMRT on physiologic function in the mouse**
Megan Jean Ritter, Izuki Amano, Kristen Vella, Anthony N Hollenberg
Weill Cornell Medicine, Department of Medicine, Division of Endocrinology, Diabetes and Metabolism, USA
- S33-4** **The Protective Roles of Cardiac Macrophages in Heart Failure**
Munehiko Shibata
Division of Endocrinology, Diabetes and Metabolism, Beth Israel Deaconess Medical Center, USA

DAY 2

Symposium34

March 29, Fri., 18:30-20:00

【Room I】 5F, Conference Center

S34 Life Style Related Diseases in Asia: Underlying Mechanisms, Functions and Behavioural Transitions

Chair: **Kanwal Preet Kochhar** (All India Institute of Medical Sciences, India)

Co-Chair: **Kishore Kumar Deepak** (All India Institute of Medical Sciences, India)

S34-1 Obesity : a matter of fat taste

Naim A Khan

Universite de Bourgogne, France

S34-2 The autonomic modulation for alleviating life style diseases

Kishore Kumar Deepak

Department of Physiology, All India Institute of Medical Sciences, India

S34-3 Cognitive Neurophysiological Imaging and Neuromodulation in Obesity

Kanwal Preet Kochhar

Department of physiology, All India Institute of Medical Sciences, India

S34-4 Role of Yoga-based intervention in managing obesity and inflammation

Raj Kumar Yadav

Department of Physiology, All India Institute of Medical Sciences, India

S34-5 Food addiction and its link to obesity

Siddharth Sarkar

Department of Psychiatry and NDDTC, AIIMS, India

Symposium35

March 29, Fri., 18:30-20:00

【Room J】 2F, Exhibition Hall

S35 Frontiers in Ca²⁺ release research in skeletal muscle: 50th anniversary from discovery of Ca²⁺-induced Ca²⁺ release

Chair: Takashi Murayama (Juntendo University School of Medicine, Japan)

Co-Chair: Zhiguang Yuchi (Tianjin University, China)

S35-1 Identification of novel inhibitors of Ca²⁺-induced Ca²⁺ release for RyR1-related muscle diseases

Takashi Murayama

Department of Pharmacology, Juntendo University School of Medicine, Japan

S35-2 Interaction of junctophilins and the Ca_v1.1 is essential for the skeletal muscle contraction

Tsutomu Nakada, Toshihide Kashihara, Masatoshi Komatsu,

Mitsuhiko Yamada

Department of Molecular pharmacology, Shinshu University School of Medicine, Japan

S35-3 Analysis of disease mutants of type 1 ryanodine receptor using molecular dynamics and Ca²⁺ imaging

Toshiko Yamazawa

Department of Molecular Physiology, The Jikei University School of Medicine, Japan

S35-4 Structural basis for the gating, insecticide binding and resistance of insect ryanodine receptor

Zhiguang Yuchi, Lianyun Lin, Zhiyuan Hao

School of Pharmaceutical Science and Technology, Tianjin University, China

DAY 2

Symposium by the PSJ Committee on the Promotion of Gender Equality

March 29, Fri., 12:20-13:20

【Room M】 3F, Exhibition Hall

MLS Seeking Gender Equality in Science. A comparison of issues and initiatives in Japan and New Zealand

Chairs: **Yasuhiko Saito** (Nara Medical University, Japan)

Tomoe Nakamura-Nishitani (National Cerebral and Cardiovascular Center Institute, Japan)

MLS-1 Making room at the table: Gender equality initiatives at the Okinawa Institute of Science and Technology (OIST) Graduate University

Gail Tripp

Okinawa Institute of Science and Technology Graduate University, Japan

MLS-2 Summary of the 4th Large-Scale Survey of Gender-Equality status in scientific professions

Tomoe Nakamura-Nishitani

National Cerebral and Cardiovascular Center Institute, Japan

Luncheon Seminar1

March 29, Fri., 12:20-13:20

【Room B】 3F, Conference Center

LS1 Structural Analysis of membrane proteins by Cryo-EM

(Co-sponsored by Thermo Fisher Scientific)

Chair: **Makoto Tominaga** (National Institute for Physiological Sciences, Japan)

LS1-1 Single particle cryo-EM of membrane proteins

Yifan Cheng^{1,2)}

¹Howard Hughes Medical Institute, USA, ²Department of Biochemistry and Biophysics, The University of California, USA

DAY 2

Luncheon Seminar2

March 29, Fri., 12:20-13:20

【Room C】 3F, Conference Center

LS2 - Visualize Cellular Function - Application of DOJINDO Reagents

(Co-sponsored by DOJINDO LABORATORIES)

Chair: **Kazuhito Tomizawa** (Kumamoto University, Japan)

Fan-Yan Wei

Department of Molecular Physiology, Faculty of Life Sciences, Kumamoto University, Japan

Luncheon Seminar3

🇯🇵 Talk in Japanese

March 29, Fri., 12:20-13:20

【Room D】 4F, Conference Center

- LS3** Physiological role of brain glycogen in rats with prolonged exercise-induced central fatigue: Usefulness of metabolomics study
(Co-sponsored by Human Metabolome Technologies, Inc.)

Chair: **Kentaro Kawanaka** (University of Fukuoka, Japan)

Hideaki Soya^{1,2,3)}

¹Laboratory of Exercise Biochemistry and Sport Neuroscience, Japan, ²Advanced Research Initiative for Human High Performance (ARIHHP), ³Faculty of Health and Sport Sciences, University of Tsukuba, Japan

Luncheon Seminar4

March 29, Fri., 12:20-13:20

【Room G】 5F, Conference Center

- LS4** Absorption of Rare Sugars in the Small Intestine
(Co-sponsored by Matsutani Chemical Industry CO., LTD)

Chair: **Masaaki Tokuda** (Kagawa University, Japan)

Kunihiro Kishida

Department of Science and Technology on Food Safety, Kindai University, Japan

Luncheon Seminar5

🗣️ Talk in Japanese

March 29, Fri., 12:20-13:20

【Room I】 5F, Conference Center

LS5 Functional imaging of marmoset visual cortex

(Co-sponsored by NIKON INSTECH CO., LTD.)

Chair: **Misuzu Nakajima** (NIKON INSTECH CO., LTD., Japan)

LS5-1 Functional imaging of marmoset visual cortex

Kenichi Ohki

Department of Physiology, Graduate School of Medicine, The University of Tokyo, Japan

LS5-2 Next generation confocal microscope system “A1R HD25”

Tadayoshi Ogura

NIKON INSTECH CO., LTD. Bioscience Sales Division, Japan

DAY 2

Technical Workshop1

 Talk in Japanese

March 29, Fri., 12:20-13:20

【Room F】 5F, Conference Center

- TW1** Cutting edge of clinical rehabilitation for the paresis to reduce the burden on patients; Repetitive Facilitative Exercise combined with vibratory, electrical, magnetic stimulation and Robotics
(Co-sponsored by YASKAWA ELECTRIC CORPORATION)

Chairs: **Seiji Etoh** (Graduate School of Medical and Dental Sciences, Kagoshima University, Japan)
Yong Yu (Graduate School of Science and Engineering, Kagoshima University, Japan)

- TW1-1** Repetitive Facilitative Exercise combined with neuromuscular electrical stimulation and vibratory stimulation for the upper hemiplegic extremity
Tomokazu Noma
Department of Rehabilitation, Faculty of Health Sciences, Nihon Fukushi University, Japan
- TW1-2** Repetitive Facilitative Exercise combined with transcranial magnetic stimulation
Seiji Etoh
Department of Rehabilitation and Physical Medicine, Graduate School of Medical and Dental Sciences, Kagoshima University, Japan
- TW1-3** Development of Hemiplegic Limbs Rehabilitation Devices Based on Repetitive Facilitation Exercise
Yong Yu
Department of Mechanical Engineering, Graduate School of Science and Engineering, Kagoshima University, Japan

GAKUSAI (interdisciplinary) Seminar

March 29, Fri., 12:20-13:20

【Room H】 5F, Conference Center

GAKUSAI Frontiers of Plasma Biology

(Co-sponsored by Department of Plasmabio Science, Center for Novel Science Initiatives (CNSI), National Institutes of Natural Sciences (NINS))

Moderator: **Motohiro Nishida** (National Institute for Physiological Sciences (Exploratory Research Center on Life and Living Systems), National Institutes of Natural Sciences, Japan)

- GAKUSAI-1** Future Medicine and Innovation for Agriculture and Fisheries Opened by Low-temperature Plasma Sciences
Masaru Hori
Center for Low-temperature Plasma Sciences, Nagoya University, Japan

Meet the Lecturers

March 29, Fri., 15:10-16:40

【Room M】 3F, Exhibition Hall

The Secret of High-Impact Research

Planning and Management: **Association of Young Researchers of Physiology**
(Committee of the PSJ)

Organizers: **Kaori Yamaguchi** (International University of Health and Welfare)
Makoto Wada (Research Institute of National Rehabilitation Center for Persons with Disabilities)

Lecturers: **Linda B. Buck**
Fred Hutchinson Cancer Research Center, USA

Hideyuki Okano
Keio University, Japan

[overview]

This is an event for young physiologists and students. At the event, great scientists who have great achievement in the field of physiology give participants their episodes about the big findings, lab set-up, grant application and so on. The event consists of three parts; topic providing from young researchers, Q&A with great scientists (lecturers answer to questions from young scientists) and discussion with participants (lecturers and several young scientists). Some questions are widely collected from young researchers through SNS and so on in advance and some questions are received from participants at the venue instantly.

We expect interaction with great scientists encourages young scientists who plan to have their own labs in the future.

Educational Lecture1

🗣️ Talk in Japanese

March 29, Fri., 8:00-8:40

【Room D】 4F, Conference Center

EDL1 Regulation of the autonomic functions

EDL1-1 Regulation of the autonomic functions

Mieko Kurosawa
Center for Medical Science, International University of Health and Welfare

This lecture provides the credit in the qualification update for Physiology Educator accredited by Physiological Society of Japan.

PSJ Awards

20th Promotion Award of the Physiological Society of Japan for Young Scientists

- AP-1** Chronic stress causes excessive aggression by altering synaptic actin dynamics in the mPFC
Hirobumi Tada^{1,2)}, Takuya Takahashi²⁾
¹Section of Neuroendocrinology, National Center for Geriatrics and Gerontology, Japan,
²Department of Physiology, Yokohama City University
- AP-2** Characterization of the secondary auditory field in the mouse auditory cortex
Hiroaki Tsukano
Department of Neurophysiology, Brain Research Institute, Niigata University, Japan

9th Hiroshi and Aya Irisawa Memorial Promotion Award for Young Physiologists: Section of channel and transporter

- AP-3** Cytoplasmic conformational changes of VSP detected by voltage clamp fluorescence spectroscopy
Akira Kawanabe, Tomoko Yonezawa, Yasushi Okamura
Graduate School of Medicine, Osaka University, Japan
- AP-4** Interaction of junctophilins and the Ca_v1.1 is essential for the skeletal muscle contraction
Tsutomu Nakada
Department of Molecular pharmacology, Shinshu University School of Medicine, Japan

9th Hiroshi and Aya Irisawa Memorial Promotion Award for Young Physiologists: Section of heart and circulatory system

- AP-5** Physiological and pathophysiological significance of TRPC3-Nox2 coupling in the heart
Takuro Numaga-Tomita^{1,2,3)}, Tsukasa Shimauchi^{4,5)}, Naoyuki Kitajima⁴⁾,
Akiyuki Nishimura^{2,4)}, Motohiro Nishida^{1,2,3,4)}
¹Department of Creative Research, Exploratory Research Center on Life and Living Systems: ExCELLS, National Institutes of Natural Sciences, Japan, ²National Institute for Physiological Sciences (NIPS), National Institutes of Natural Sciences, ³School of life sciences, SOKENDAI, ⁴Graduate School of Pharmaceutical Sciences, Kyushu University, ⁵Graduate School of Medical Sciences, Kyushu University

9th Aya Irisawa Memorial Promotion Award for Excellence by Women Physiologists

- AP-6** Microglia permit climbing fiber pruning by promoting synaptic inhibition in the developing cerebellum

Hisako Nakayama

Department of Physiology, School of Medicine, Tokyo Women's Medical University, 8-1, Kawada-cho, Sinjuku-ku, Tokyo, Japan

9th Hiroshi and Aya Irisawa Memorial Award for Excellent Papers in The Journal of Physiological Sciences

- AP-7** Inhibition of ghrelin-induced feeding in rats by treatment with a novel orexin receptor antagonist

Mariko So^{1,2}, Hirofumi Hashimoto^{2,4}, Reiko Saito^{2,3}, Yukiyo Yamamoto³, Yasuhito Motojima², Hiromichi Ueno², Satomi Sonoda², Mitsuhiro Yoshimura², Takashi Maruyama², Koichi Kusuhara³, Yoichi Ueta²

¹Department of Health and Nutritional Care, Faculty of Medical Science, University of East Asia, Shimonoseki 751-0807, Japan, ²Department of Physiology, School of Medicine, University of Occupational and Environmental Health, 1-1 Iseigaoka, Yahatanishi-ku, Kitakyushu 807-8555, Japan, ³Department of Pediatrics, School of Medicine, University of Occupational and Environmental Health, Kitakyushu 807-8555, Japan, ⁴Department of Regulatory Physiology, Dokkyo Medical University, 880 Kitakobayashi, Mibu 321-0293, Japan.

- AP-8** Hypotonicity-induced cell swelling activates TRPA1

Fumitaka Fujita^{1,2,3}, Kunitoshi Uchida⁴, Yasunori Takayama^{1,5}, Yoshiro Suzuki^{1,5}, Masayuki Takaishi^{1,6}, Makoto Tominaga^{1,5}

¹Division of Cell Signaling, National Institute for Physiological Sciences, Japan, ²Basic Research Institute, Mandom Corp., Japan, ³Laboratory of Advanced Cosmetic Science, Graduate School of Pharmaceutical Sciences, Osaka University, Japan, ⁴Departments of Physiological Science and Molecular Biology and Morphological Biology, Fukuoka Dental College, Japan, ⁵Thermal Biology Group, Exploratory Research Center on Life and Living Systems, Japan; ⁶Product Assurance Division, Mandom Corp., Japan

9th Hiroshi and Aya Irisawa Memorial Award for Excellent Papers on Research in Circulation in The Journal of Physiological Sciences

- AP-9** Epac activation inhibits IL-6-induced cardiac myocyte dysfunction

Huilin Jin¹, Takayuki Fujita¹, Meihua Jin^{1,2}, Reiko Kurotani^{1,3}, Yuko Hidaka¹, Wenqian Cai¹, Kenji Suita¹, Rajesh Prajapati¹, Chen Liang¹, Yoshiaki Ohnuki⁴, Yasumasa Mototani⁴, Masanari Umemura¹, Utako Yokoyama¹, Motohiko Sato^{1,5}, Satoshi Okumura^{1,4}, Yoshihiro Ishikawa¹

¹ Cardiovascular Research Institute, Yokohama City University Graduate School of Medicine, Japan, ² Department of Cardiac Physiology, National Cerebral and Cardiovascular Center Research Institute, Japan, ³ Biochemical Engineering, Faculty of Engineering, Yamagata University, Japan, ⁴ Department of Physiology, Tsurumi University School of Dental Medicine, Japan, ⁵ Department of Physiology, Aichi Medical University, Japan

Skeletal muscle & locomotion (1)

- 1P-001** Analysis of junctophilin2 knock out zebrafish
Souhei Sakata, Fumihito Ono
Department of Physiology, Division of Life Sciences, Faculty of Medicine, Osaka Medical College, Japan
- 1P-002** Evaluation of muscle contraction by electromyogram and sonography
Masafumi Katayama
International University of Health and Welfare, Japan
- 1P-003** Muscle representations in spinal motor circuitry in intact humans and an individual with SCI
Toshiki Tazoe¹, Koichi Iwatsuki², Yukio Nishimura¹
¹Neural Prosthesis Project, Department of Dementia and Higher Brain Function, Tokyo Metropolitan Institute of Medical Science, Japan, ²Senbokuji Hospital
- 1P-004** Generation of a transgenic zebrafish for monitoring *murf1* expression
Genri Kawahara, Mami S Nakayashiki, Yukiko K Hayashi
Department of Pathophysiology, Tokyo Medical University, Japan
- 1P-005** Acetylcholinesterase inhibitor accelerates muscle differentiation in C2C12 myoblasts
Hiroshi Todaka¹, Mikihiko Arikawa², Tatsuya Noguchi³, Atsushi Ichikawa¹, Takayuki Sato¹
¹Dept Cardiovasc Control, Kochi Med Sch, Japan, ²Dept Biol Sci, Fac Sci Tech, Kochi Univ, Japan, ³Dept Med Geriatr, Kochi Med Sch, Japan
- 1P-006** Emerin deficiency exacerbates skeletal muscle pathology in *Lmna*^{H222P/H222P} mutant mice
Eiji Wada, Megumi Kato, Kaori Yamashita, Yukiko K Hayashi
Department of Pathophysiology, Tokyo Medical University, Japan
- 1P-007** Cell surface flip-flop of phosphatidylserine is critical for PIEZO1-mediated myotube formation
Yuji Hara^{1,2}, Masaki Tsuchiya¹, Masaki Okuda¹, Kotaro Hirano¹, Seiji Takabayashi¹, Masato Umeda¹
¹Graduate School of Engineering, Kyoto University, Japan, ²AMED, PRIME
- 1P-008** Role of Ror-family receptor tyrosine kinases in the skeletal muscle
Koki Kamizaki¹, Ayano Yamamoto¹, Ryosuke Doi¹, Motoi Kanagawa², Tatsushi Toda², Akiyoshi Uezumi³, So-Ichiro Fukada⁴, Mitsuharu Endo¹, Yasuhiro Minami¹
¹Division of Cell Physiology, Department of Physiology and Cell Biology, Graduate School of Medicine, Kobe University, Japan, ²Division of Neurology/Molecular Brain Science, Graduate School of Medicine, Kobe University, Japan, ³Department of Geriatric Medicine, Tokyo Metropolitan Institute of Gerontology, Japan, ⁴Laboratory of Molecular and Cellular Physiology, Graduate School of Pharmaceutical Sciences, Osaka University, Japan
- 1P-009** Bereitschaftspotential of the interference between attention distribution and finger movement timing
Daisuke Hirano^{1,2}, Daisuke Jinnai^{1,3}, Hana Nozawa^{1,3}, Takamichi Taniguchi^{1,3}
¹Graduate School of Health and Welfare Sciences, International University of Health and Welfare, Japan, ²Department of Occupational Therapy, School of Health Sciences at

1P-010 Control of Keiber's valve at rest, foot extension and retraction of the clam *Nodularia douglasiae*

Yoshiteru Seo¹, Yoshie Imaizumi-Ohashi¹, Mika Yokoi-Hayakawa¹, Eriko Seo²

¹Department of Regulatory Physiology, Dokkyo Medical University School of Medicine, Japan, ²Department of Marine Ecosystem Dynamics, Division of Marine Life Science, Atmosphere and Ocean Research Institute, The University of Tokyo, Japan

1P-011 Suppressive Activity of Chondroitin Sulfate on Nitric Oxide Production by Knee Synoviocytes In Vitro

Takayuki Okumo¹, Kazuhito Asano³, Hideshi Ikemoto¹, Mana Tsukada¹, Shi-Yu Guo¹, Koji Kanzaki², Tadashi Hisamitsu¹, Masataka Sunagawa¹

¹Department of Physiology, School of Medicine, Showa University, Japan, ²Department of Orthopaedic Surgery, Showa University Fujigaoka Hospital, Japan, ³Department of Physiology, School of Nursing and Rehabilitation Science, Showa University, Japan

1P-012 Upregulation of osteoclastogenic markers and impaired bone microstructure in hypertensive rats

Wacharaporn Tiyasatkulkovit^{1,3}, Worachet Promruk^{2,3}, Aniwat Sawangsalee^{1,3}, Sirawich Intarapanich^{1,3}, Jirawan Thongbunchoo^{2,3}, Kwanchit Chaimongkolnukul⁴, Kanchana Kengkoom⁴, Nattapon Panupinthu^{2,3}, Narattaphol Charoenphandhu^{2,3,5,6}

¹Department of Biology, Faculty of Science, Chulalongkorn University, Thailand, ²Department of Physiology, Faculty of Science, Mahidol University, Thailand, ³Center of Calcium and Bone Research (COBAB), Faculty of Science, Mahidol University, Thailand, ⁴National Laboratory Animal Center, Mahidol University, Thailand, ⁵Institute of Molecular Biosciences, Mahidol University, Thailand, ⁶The Academy of Science, The Royal Society of Thailand, Thailand

1P-013 Immature network function of the adult lumbosacral cord by loss of interferon regulatory factor 8

Itaru Yazawa^{1,2}, Yuko Yoshida⁴, Ryusuke Yoshimi^{3,4}, Michael J O'Donovan², Keiko Ozato⁴

¹Global Research Center for Innovative Life Science, Hoshi University School of Pharmacy and Pharmaceutical Sciences, Japan, ²Lab. of Neural Control, National Institute of Neurological Disorders and Stroke, National Institutes of Health, USA, ³Department of Stem Cell and Immune Regulation, Yokohama City University Graduate School of Medicine, Japan, ⁴Lab. of Molecular Growth Regulation, National Institute of Child Health and Human Development, National Institutes of Health, USA

Exercise (1)

1P-014 Exercise is better than caloric restriction regarding improving fatigability in muscle of obese rats

Sintip Pattanakuhar¹, Wissuta Sutham^{2,3}, Jirapas Sripetchwandee^{2,3}, Wanitchaya Minta^{2,3}, Duangkamol Mantor^{2,3}, Siripong Palee^{2,3}, Wasana Pratchayasakul^{2,3}, Nipon Chattipakorn^{2,3}, Siriporn C. Chattipakorn^{2,4}

¹Department of Rehabilitation Medicine, Chiang Mai University, Thailand, ²Neurophysiology Unit, Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ³Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Science, Faculty of Dentistry, Chiang Mai University, Thailand

- 1P-015** Effects of Hypoxia on Skeletal Muscle Molecular Adaptations to Heavy Resistance Training
 Aaron Petersen¹, Jackson Fyfe², Mathew Inness^{1,3}, Lewan Parker², Francois Billaut⁴, Robert Aughey¹
¹Institute for Health and Sport, Victoria University, Australia, ²School of Exercise and Nutrition Sciences, Deakin University, Australia, ³Western Bulldogs Football Club, Australia, ⁴Département de Kinesiologie, Université Laval, Canada
- 1P-016** Enriched environment attenuates hindlimb dysfunction in neonatal white matter injury model
 Naoki Tajiri¹, Atsunori Hattori¹, Yoshitomo Ueda¹, Shino Ogawa^{1,2}, Akimasa Ishida¹, Takeshi Shimizu¹, Hideki Hida¹
¹Department of Neurophysiology & Brain Science, Graduate School of Medical Sciences & Medical School, Nagoya City University, Japan, ²Department of Obstetrics and Gynecology, Graduate School of Medical Sciences & Medical School, Nagoya City University, Japan
- 1P-017** Role of dopaminergic function in septum on exercise efficiency
 Tetsuya Shiuchi, Takuya Masuda, Noriyuki Shimizu, Sachiko Chikahisa, Hiroyoshi Sei
 Department of Integrative Physiology, Tokushima University Graduate School, Japan
- 1P-018** Enhanced muscle afferent responses to mechanical/chemical stimuli in type 2 diabetic rats in vitro
 Rie Ishizawa¹, Norio Hotta², Gary A Iwamoto¹, Han-Kyul Kim¹, Wanpen Vongpatanasin¹, Jere H Mitchell¹, Scott A Smith¹, Masaki Mizuno¹
¹University of Texas Southwestern Medical Center, United States, ²Chubu University, Japan
- 1P-019** Sex difference in mitochondrial Ca²⁺ handling properties in mouse skeletal muscle
 Daiki Watanabe, Koji Hatakeyama, Hiroaki Eshima, Ryo Ikegami, Yutaka Kano
 Department of Engineering Sciences, University of Electro-communications, Japan
- 1P-020** Enhanced cerebro-cardiovascular responses before voluntary cycling in physically fit men
 Kazumasa Manabe^{1,2}, Shizue Masuki^{1,2}, Koji Uchida¹, Yu Takeda¹, Hiroshi Nose^{1,2}
¹Department of Sports Medical Sciences, Shinshu University Graduate School of Medicine, Japan, ²Institute for Biomedical Sciences, Shinshu University, Japan
- 1P-021** Unloading-induced sarcopenia in relation to mitochondrial disorder in skeletal muscle of old rats
 Hideki Yamauchi, Shigeru Takemori
 Div of Phys Fitness, Dept of Mol Physiol, The Jikei Univ Sch Med, Japan
- 1P-022** The effect of warm/cool stimulus to forearm/hand on brachial artery blood flow during leg exercise
 Yoshiyuki Fukuba¹, Saki Namura¹, Marina Morimoto¹, Kohei Miura¹, Hideaki Kashima¹, Anna Oue²
¹Department of Exercise Science and Physiology, School of Health Sciences, Prefectural University of Hiroshima, Japan, ²Faculty of Food and Nutritional Sciences, Toyo University, Japan

- 1P-023** Timing of nutrient intake after mild exercise: effects of gastrointestinal activity in humans
Hideaki Kashima¹⁾, Saori Kamimura¹⁾, Masako Yamaoka Endo¹⁾, Kohei Miura^{1,2)}, Akira Miura¹⁾, Yoshiyuki Fukuba¹⁾
¹Department of Exercise Science and Physiology, School of Health Sciences, Prefectural University of Hiroshima, Japan, ²Department of Health and Nutrition, Hiroshima Shudo University, Japan
- 1P-024** Effects of continuous exercise with vocalization on the oxygen dissociation states in muscles
Hajime Arikawa¹⁾, Toshio Matsuoka¹⁾, Teppei Takahashi²⁾, Tomoyoshi Terada³⁾, Seiichi Era⁴⁾
¹Faculty of Sports and Health Sci, Chubu Gakuin Univ, Japan, ²Dept Oral and Maxillofacial Surgery, Gifu Prefectural Gero Hospital, Japan, ³United Graduate School of Drug Discovery and Medical Information Sciences, Gifu Univ, Japan, ⁴Dept of General Internal Medicine, Gifu Univ, Japan
- 1P-025** The salivary 11 β -HSD2 activities is beneficial for continuous strength exercises in elderly people
Miyako Mochizuki¹⁾, Noboru Hasegawa²⁾
¹Kyoto Bunkyo Junior College, Japan, ²Department of Health and Medical Sciences, Ishikawa Prefectural Nursing University, Japan
- 1P-026** The differential dynamics of brachial artery and forearm skin blood flows during leg cycle exercise
Kohei Miura¹⁾, Ayaka Kondo²⁾, Yuka Kikugawa²⁾, Masako Y Endo²⁾, Hideaki Kashima²⁾, Anna Oue³⁾, Yoshiyuki Fukuba²⁾
¹Faculty of Health Sciences, Department of Health and Nutrition, University of Hiroshima Shudo, Japan, ²Department of Exercise Science and Physiology, School of Health Sciences, Prefectural University of Hiroshima, Japan, ³Faculty of Food and Nutritional Sciences, Toyo University, Japan
- 1P-027** Molecular hydrogen increases acetone excretion and changes lipid metabolism during exercise
Amane Hori, Ryota Masuda, Masatoshi Ichihara, Hisayoshi Ogata, Takaharu Kondo, Norio Hotta
Chubu University, Japan
- 1P-028** Combining Acute Exercise With Insulin Treatment increase Type 1 Diabetic Liver Antioxidant Capacity
Hei-Man Yuen, Ting-Wen Lin, Shiow-Chwen Tsai
Institute of Sports Sciences, University of Taipei, Taiwan
- 1P-029** Longitudinal changes of trunk skeletal muscle characteristics in Japanese elderly males and females
Noriko Ishiguro Tanaka¹⁾, Madoka Ogawa^{1,2)}, Hisashi Maeda^{1,2)}, Akito Yoshiko³⁾, Aya Tomita³⁾, Ryosuke Ando⁴⁾, Hiroshi Akima¹⁾
¹Research Center of Health Physical Fitness and Sports, Nagoya University, Japan, ²Japan Society for the Promotion of Science, Japan, ³School of International Liberal Studies, Chukyo University, Japan, ⁴Japan Institute of Sports Science, Japan
- 1P-030** Relationship between occlusal balance and agility in Japanese elite female junior badminton players
Mutsumi Takahashi^{1,2)}, Yogetsu Bando^{2,3)}, Yoshihide Satoh¹⁾
¹Department of Physiology, The Nippon Dental University School of Life Dentistry at Niigata, Japan, ²Division of Medical Science Research, The Japan Schoolchildren

- 1P-031** Estimation of maximal oxygen uptake from oxygen uptake efficiency slope by leg or arm ergometer
Reizo Baba, Norio Hotta, Hisako Urai, Hisayoshi Ogata, Yukiko Okamura
College of Life and Health Sciences, Chubu University, Japan
- 1P-032** Effect of low-volume high-intensity interval exercise on post-exercise inhibitory control
Takeshi Sugimoto¹, Tadashi Suga¹, Hayato Tsukamoto², Daichi Tanaka¹, Saki Takenaka¹, Kento Shimoho¹, Tadao Isaka¹, Takeshi Hashimoto¹
¹Faculty of Sport and Health Science, Ritsumeikan University, Japan, ²Faculty of Life Sciences and Education, University of South Wales
- 1P-033** Atrioventricular nodal function during dynamic exercise in elite endurance athletes
Makoto Takahashi¹, Tomoko Nakamoto¹, Shigemitsu Niihata², Kanji Matsukawa¹
¹Graduate School of Biomedical and Health Sciences, Hiroshima University, Japan, ²Faculty of Welfare and Health, Fukuyamaheisei University
- 1P-035** The influence of aerobics dance exercise on energy intake, appetite, and mood in young women
Yuki Aikawa¹, Yusuke Takagi², Minoru Horiba³
¹Tsu City College, Japan, ²Nara University of Education, ³Nagoya University of The Arts
- 1P-036** Shortening velocity of knee extensor in frog *in vivo*
Yoshiki Ishii¹, Yuki Yamanaka¹, Tomohito Mizuno¹, Nobuaki Sasai², Toshie Nagare¹, Teizo Tsuchiya³
¹Faculty of Health Care Sciences, Himeji Dokkyo University, Japan, ²Faculty of Health Science, Suzuka University of Medical Science, Japan, ³Faculty of Science, Kobe University, Japan
- 1P-037** CO₂-water bath promotes a recovery from the muscle fatigue induced by high intensity exercise
Noriyuki Yamamoto¹, Tadashi Wada², Fumiko Takenoya³, Masaaki Hashimoto⁴
¹Department of Health Science, Japanese Red Cross Hokkaido College of Nursing, Japan, ²Faculty of Science and Technology, Kokushikan University, ³Department of Pharmacy, Hoshi University, ⁴Physiology Laboratory, Canter for Medical Education, Teikyo University of Science
- 1P-038** How does voluntary exercise frequency affect cardiac function in dilated cardiomyopathy model mice?
Masami Sugihara¹, Ryo Kakigi³, Takashi Murayama², Takashi Miida¹, Takashi Sakurai², Sachio Morimoto⁴, Nagomi Kurebayashi²
¹Department of Clinical Laboratory, Juntendo University, Japan, ²Department of Pharmacology, Juntendo University, Japan, ³Department of Physiology(III), Juntendo University, Japan, ⁴Department of Health Sciences at Fukuoka, International University of Health and Welfare, Japan
- 1P-039** Effect of lower body positive pressure and walking on fluid turnover in human legs
Satoshi Matsuo, Felix Ojeiru Ezomo, Noriko Matsuo
Division of Adaptation Physiology, Tottori University, Japan

- 1P-040** Changes in weight bearing index (WBI) before and after skyrunning in Mt. Fuji
 Hiroto Tsujikawa¹, Koki Nagatsu², Junichi Nagasawa³, Yutaka Iwaihara², Shinichi Murata², Shino Sasaki¹, Koji Sugiyama²
¹Faculty of Health Science and Nursing, Juntendo University, Japan, ²Faculty of Education-Physical and Health Education, Shizuoka University, Japan, ³College of Humanities and Sciences, Nihon University, Japan

Circulation & Respiration: Cardiac Physiology (1)

- 1P-041** Electrophysiological analyses of multi-ion channel blockers in hiPSC-CMs sheets with MEA system
 Hiroko Izumi-Nakaseko^{1,2}, Atsuhiko T Naito^{1,2}, Yuko Sekino³, Mihoko Hagiwara-Nagasawa¹, Ai Goto², Koki Chiba², Yasunari Kanda⁴, Atsushi Sugiyama^{1,2}
¹Department of Pharmacology, Faculty of Medicine, Toho University, Japan, ²Department of Pharmacology, Toho University Graduate School of Medicine, Japan, ³Endowed Laboratory of Human Cell-based Drug Discovery, Graduate School of Pharmaceutical Sciences, The University of Tokyo, Japan, ⁴Division of Pharmacology, National Institute of Health Sciences, Japan
- 1P-042** A CMOS camera depicted the excitation spread during arrhythmia in an isolated rat atrial preparation
 Tetsuro Sakai
 Department of Systems Physiology, University of The Ryukyus Graduate School of Medicine, Japan
- 1P-043** Potential link between Ca²⁺-activated cation TRPM4 channels and I_{st} in mouse cardiac pacemaker cells
 Futoshi Toyoda, Wei-Guang Ding, Hiroshi Matsuura
 Department of Physiology, Shiga University of Medical Science, Japan
- 1P-044** Functional role of delayed rectifier K⁺ current in the automaticity of pulmonary vein cardiomyocytes
 Xinya Mi, Wei-Guang Ding, Yingnan Li, Hiroshi Matsuura
 Department of Physiol, University of Shiga Univ. Med. Sci., Japan
- 1P-045** Pacemaking ion channel remodelling underlies chronic exercise-induced atrioventricular block
 Shu Nakao^{1,3}, Alicia D'Souza¹, Pirtro Mesirca², Tariq Trussell¹, Min Zi¹, Sunil JRJ Logantha¹, Elizabeth J Cartwright¹, Matteo E Mangoni², Halina Dobrzynski¹, Mark R Boyett¹
¹Division of Cardiovascular Sciences, University of Manchester, UK, ²Département de Physiologie, Université de Montpellier, France, ³Department of Biomedical Sciences, Ritsumeikan University, Japan
- 1P-046** Cardiac Iron Overload: Impacts on Cellular Electrophysiology and Calcium Handling
 Natthaphat Siri-Angkul^{1,2,3}, Richard Gordan³, Suwakon Wongjaikam^{1,2}, Nadezhda Fefelova³, Judith K. Gwathmey³, Siriporn C. Chattipakorn^{1,4}, Nipon Chattipakorn^{1,2}, Lai-Hua Xie³
¹Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Department of Cell Biology and Molecular Medicine, Rutgers University - New Jersey Medical School, USA, ⁴Department

- 1P-047** Species difference of the hyperpolarized-activated current in pulmonary vein cardiomyocytes
Daichi Takagi¹⁾, Yosuke Okamoto¹⁾, Takayoshi Ohba¹⁾, Hiroshi Yamamoto²⁾, Kyoichi Ono¹⁾
¹Dept. Cell Physiol., Akita Univ. Grad. Sch. Med., Japan, ²Dept Cardiovas. Surg., Akita Univ. Grad. Sch. Med., Japan
- 1P-048** The mitochondrial Na⁺-Ca²⁺ exchanger is involved in automaticity of murine sinoatrial nodal cells
Yukari Takeda, Ayako Takeuchi, Satoshi Matsuoka
Department of Integrative & Systems Physiology, Faculty of Medical Sciences, University of Fukui, Japan
- 1P-049** Low T-tubule density is related with vulnerability of sympathetic atrial arrhythmia
Jieun An, Ami Kim, Tong Mook Kang
Department of Physiology, Sungkyunkwan Univeristy, Korea
- 1P-050** Effect of Myocyte Mechanical Properties on Transmural Distribution of Stress and Energy Consumption
Shiro Kato, Kumiko Tamura, Akira Amano
Department of Bioinformatics, Graduate School of Life Science, University of Ritsumeikan, Japan
- 1P-051** D-galactose worsens cardiac function via aggravating mitochondrial dysfunction in obese rats
Cherry Bo-Htay^{1,2,3)}, Thazin Shwe^{1,2,3)}, Krekwit Shinlapawittayatorn^{1,2,3)}, Siripong Palee^{1,3)}, Siriporn C Chattipakorn^{1,3,4)}, Nipon Chattipakorn^{1,2,3)}
¹Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Center of Excellence in Cardiac Electrophysiology, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Science, Faculty of Dentistry, Chiang Mai University, Thailand
- 1P-052** Drug Effect Estimation System that Uses Cardiac Action Potential Waveforms
Maho Yamamoto¹⁾, Kazuki Okumura²⁾, Yukiko Himeno²⁾, Akira Amano²⁾
¹Graduate School of Life Sciences, Ritsumeikan University, Japan, ²Department of Bioinformatics, College of Life Sciences, University of Ritsumeikan, Japan
- 1P-053** Acute Overstretch Causes Abrupt Inner Mitochondrial Collapsing of Rat Papillary Muscles
Naritomo Nishioka^{1,2)}, Yoichiro Kusakari¹⁾, Jun Tanihata³⁾, Susumu Minamisawa^{1,3)}
¹Department of Cell Physiology, The Jikei University School of Medicine, Japan, ²Department of Cardiac Surgery, The Jikei University School of Medicine, Japan, ³Division of Aerospace Medicine, Department of Cell Physiology, The Jikei University School of Medicine, Japan
- 1P-054** PCSK9 Inhibitor Attenuates Cardiac and Mitochondrial Dysfunction in Obese-Insulin Resistant Rats
Patchareeya Amput^{1,2,3)}, Siripong Palee^{1,3)}, Busarin Arunsak^{1,2,3)}, Wasana Pratchayasakul^{1,2,3)}, Thidarat Jaiwongkam^{1,3)}, Siriporn C Chattipakorn^{1,3,4)}, Nipon Chattipakorn^{1,2,3)}

¹Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Center of Excellence in Cardiac Electrophysiology Research, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand

- 1P-055** Evaluating the Role of Individual Types of Ca²⁺ Channels in the Sinoatrial Node Pacemaker Cell Model
Yixin Zhang¹), Yukiko Himeno¹), Futoshi Toyoda²), Akira Amano¹), Akinori Noma¹)
¹Graduate School of Life Sciences, Bioinformatics Course, University of Ritsumeikan, Japan, ²Shiga University of Medical Science, Japan
- 1P-056** Experimental Autoimmune Myocarditis (EAM) Model in Nonhuman Primates
Shunya Nakayama^{1,2}), Hiroshi Koie¹), Yuki Ishii^{1,2}), Chungyu Pai^{1,2}), Yasuyo Ito-Fujishiro^{1,2}), Kiichi Kanayama¹), Yoshiko Munesue³), Tadashi Sankai²), Yasuhiro Yasutomi²), Naohide Ageyama²)
¹Laboratory of Veterinary Physiology, Nihon University, Japan, ²Tsukuba Primate Research Center, NIBIOHN, Japan, ³The Corporation for Production and Research of Laboratory Primates, Japan
- 1P-057** Physiological role of TRPC6 upregulation in hyperglycemia-exposed mice hearts
Sayaka Oda^{1,2}), Takuro Numaga-Tomita^{1,2}), Akiyuki Nishimura³), Motohiro Nishida^{1,2,3})
¹Division of Cardiocirculatory Signaling, National Institute for Physiological Sciences (Exploratory Research Center on Life and Living Systems), National Institutes of Natural Sciences, Japan, ²Department of Physiological Sciences, SOKENDAI (School of Life Science, The Graduate University for Advanced Studies), ³Department of Translational Pharmaceutical Sciences, Graduate School of Pharmaceutical Sciences, Kyushu University
- 1P-058** IL-6 may have protective roles in Lmna-related cardiomyopathy
Megumi Kato¹), Mizuyo Kojima²), Kaori Yamashita¹), Eiji Wada¹), Yukiko Hayashi¹)
¹Department of Pathophysiol, Grad Sch Med, Tokyo Medical Univ, Japan, ²Sopport Center of Medical Doctors and Researchers, Tokyo Medical University, Japan
- 1P-059** Sonic hedgehog signaling regulates the mammalian cardiac regenerative response
Hiroyuki Kawagishi^{1,2,3}), Jianhua Xiong²), Mitsuhiko Yamada³), Toreen Finkel^{2,4})
¹Institute for Biomedical Sciences, Shinshu University, Japan, ²Center for Molecular Medicine, National Heart, Lung and Blood Institute/NIH, USA, ³Department of Molecular Pharmacology, Shinshu University School of Medicine, Japan, ⁴Aging Institute of UPMC and The University of Pittsburgh, USA
- 1P-060** Analysis of Diabetic Cardiomyopathy with type 2 Diabetes Mellitus in Nonhuman Primate
Yuuki Ishii^{1,2}), Shunya Nakayama^{1,2}), Hiroshi Koie¹), Chungyu Pai^{1,2}), Yasuyo Ito-Fujishiro^{1,2}), Kiichi Kanayama¹), Yoshiko Munesue³), Tadashi Sankai²), Yasuhiro Yasutomi²), Naohide Ageyama²)
¹Laboratory of Veterinary Physiology, Nihon University, Japan, ² Tsukuba Primate Research Center, NIBIOHN, Japan, ³CPRLP, Japan
- 1P-061** Role of Cardiac Hormones in a Nonhuman Primate Model of Cardiac Disease

Chungyu Pai^{1,2)}, Hiroshi Koie¹⁾, Yuki Ishii^{1,2)}, Yasuyo Ito-Fujishiro^{1,2)},
Kiichi Kanayama¹⁾, Yoshiko Munesue³⁾, Tadashi Sankai²⁾,
Yasuhiro Yasutomi²⁾, Naohide Ageyama²⁾

¹⁾Laboratory of Veterinary Physiology, Nihon University, Japan, ²⁾Tsukuba Primate Research Center, NIBIOHN, Japan, ³⁾CPRLP, Japan

1P-062 Activation of SIRT1 Attenuates Cardiac fibrosis via preventing Endothelial-to-Mesenchymal Transition

Zhenhua Liu, Yanhong Zhang, Yongsheng Gong, Xu Li, Liping Han
Wenzhou Medical University, China

1P-063 Insulin signaling deficiency is responsible for diastolic dysfunction of diabetic cardiomyopathy

Yoshinori Mikami¹⁾, Masanori Ito¹⁾, Shogo Hamaguchi²⁾,
Shingo Murakami^{1,3)}, Taichiro Tomida¹⁾, Daisuke Ohshima¹⁾,
Iyuki Namekata²⁾, Hikaru Tanaka²⁾, Satomi Adachi-Akahane¹⁾

¹⁾Department of Physiology, Faculty of Medicine, Toho University, Japan, ²⁾Department of Pharmacology, Faculty of Pharmaceutical Sciences, Toho University, Japan, ³⁾Faculty of Science and Engineering, Chuo University, Japan

1P-064 Vitamin B1 pretreatment prevents cardiac mitochondrial morphology from ischemia/reperfusion injury

Yoichiro Kusakar¹⁾, Naritomo Nishioka^{1,2)}, Jun Tanihata¹⁾,
Susumu Minamisawa¹⁾

¹⁾Department of Cell Physiology, The Jikei University School of Medicine, Japan ,
²⁾Department of Cardiac Surgery, The Jikei University School of Medicine, Japan

1P-065 Regulation of Orai1 in Angiotensin II-Induced Cardiac Hypertrophy

Mingxu Xie, Changbo Zheng, Xiaoqiang Yao

School of Biomedical Sciences, The Chinese University of Hong Kong, China

1P-066 Plasma Proteomic Analysis of Acute Myocardial Infarction in Young Adults

Norbaiyah Mohamed Bakrim¹⁾, Aszrin Abdullah¹⁾,
Azarisman Shah Mohd Shah²⁾, Norlelawati A Talib³⁾,
Aida Nur Sharini Mohd Shah²⁾, Jamalludin A Rahman⁴⁾,
Noraslinda Muhamad Bunnori⁵⁾, Siti Khairani Zainal Abidin⁶⁾,
Mohd Yusri Idorus⁷⁾

¹⁾Department of Basic Medical Sciences, Faculty of Medicine, International Islamic University Malaysia, Kuantan, Malaysia, ²⁾Department of Internal Medicine, Faculty of Medicine, International Islamic University Malaysia, Malaysia, ³⁾Department of Pathology and Laboratory Medicine, Faculty of Medicine, International Islamic University Malaysia, Malaysia, ⁴⁾Department of Community Medicine, Faculty of Medicine, International Islamic University Malaysia, Malaysia, ⁵⁾Department of Biotechnology, Faculty of Sciences, International Islamic University Malaysia, Malaysia, ⁶⁾Hospital Tengku Ampuan Afzan, Malaysia, ⁷⁾Institute of Medical Molecular Biotechnology, Faculty of Medicine, Malaysia

1P-067 Angiotensin-(1-5)-mediated cardioprotection via AT2R-PI3K-Akt-eNOS pathway

Byung Mun Park, Weijian Li, Suhn Hee Kim

Department of Physiology, Research Institute for Endocrine Sciences, Chonbuk National University Medical School, Korea

1P-068 Palmitic Acid Contributes to the Development of Ca²⁺ Oscillations in Adult Rat Cardiomyocyte

Yan-Jihh Shen¹⁾, Kun-Ta Yang^{2,3)}

- 1P-069** Insights into signaling mechanism of ANP receptor by x-ray crystallography
Haruo Ogawa, Masami Kodama
IQB, The University of Tokyo, Japan
- 1P-070** (AP-5) Physiological and pathophysiological significance of TRPC3-Nox2 coupling in the heart
Takuro Numaga-Tomita^{1,2,3}, Tsukasa Shimauchi^{4,5}, Naoyuki Kitajima⁴, Akiyuki Nishimura^{2,4}, Motohiro Nishida^{1,2,3,4}
¹Department of Creative Research, Exploratory Research Center on Life and Living Systems: ExCELLS, National Institutes of Natural Sciences, Japan, ²National Institute for Physiological Sciences (NIPS), National Institutes of Natural Sciences, ³School of Life Sciences, SOKENDAI, ⁴Graduate School of Pharmaceutical Sciences, Kyushu University, ⁵Graduate School of Medical Sciences, Kyushu University
- 1P-071** Nuclear connectin novex-3 is essential for proliferation of hypoxic fetal cardiomyocytes
Ken Hashimoto¹, Aya Kodama¹, Miki Sugino¹, Tomoko Yobimoto¹, Takeshi Honda², Akira Hanashima¹, Yoshihiro Ujihara¹, Satoshi Mohri¹
¹First Department of Physiology, Kawasaki Medical School, Japan, ²Department of Cardiovascular Surgery, Kawasaki Medical School, Japan
- 1P-072** Effect of autonomic nervous system on early and late repolarization intervals in children
Hiroyuki Kusuki¹, Yuri Mizutani², Yuka Tsuchiya¹, Tadayoshi Hata¹
¹Graduate School of Health Science, Fujita Health University, Japan, ²Division of Clinical Laboratory, Fujita Health University Hospital, Japan
- 1P-073** Pilocarpine but not Ach permeate the mouse footpads and induce perspiration, sedation and arrhythmia
Shinichi Sato, Yosuke Okamoto, Kyoichi Ono
Department of Cell Physiology, Akita University, Japan
- 1P-074** Expression change of cytokine in principal organ during cardiopulmonary bypass
Yutaka Fujii¹, Haruo Hanawa²
¹Department of Clinical Engineering and Medical Technology, Niigata University of Health and Welfare, Japan, ²Department of Health and Sports, Niigata University of Health and Welfare
- 1P-075** Irregular division of the nucleus without cytokinesis in cardiac progenitor cells of mouse heart
Ryo Fukunaga, Mariko Omatsu-Kanbe, Hiroshi Matsuura
Department of Physiology, Shiga University of Medical Science, Japan
- 1P-076** Usefulness of anti-arrhythmic drug therapy targeting cardiac adenylyl cyclase
Kenji Suita¹, Takayuki Fujita², Satoshi Okumura¹, Yoshihiro Ishikawa²
¹Department of Physiology, Tsurumi University School of Dental Medicine, Japan, ²Cardiovascular Research Institute, Yokohama City University Graduate School of Medicine
- 1P-077** Stress intensity exhibited by E-PASS score and development of atrial fibrillation

Takashi Kikuchi¹⁾, Takahide Kodama²⁾, Masaki Ueno³⁾, Minae Kamata¹⁾,
Yukimi Nakano¹⁾, Haruo Mitani²⁾

¹⁾Department of Clinical Physiology, Toranomon Hospital, Japan, ²⁾Cardiovascular Center, Toranomon Hospital, Japan, ³⁾Department of Gastroenterological Surgery, Toranomon Hospital, Japan

1P-078 Initiation of the heartbeat in rat embryonic heart precedes sarcomere formation

Nobutoshi Ichise, Tatsuya Sato, Yoshinori Terashima, Mitsumasa Chiba,
Hiroya Yamazaki, Syunsuke Jimbo, Noritsugu Tohse

Department of Cellular Physiology and Signal Transduction, Sapporo Medical University, Japan

1P-079 Contribution of the rostroventral midbrain to movement-related cardiovascular activation

Kei Ishii¹⁾, Ryota Asahara²⁾, Nan Liang²⁾, Hidehiko Komine¹⁾,
Kanji Matsukawa²⁾

¹⁾Automotive Human Factors Research Center, National Institute of Advanced Industrial Science and Technology, Japan, ²⁾Department of Integrative Physiology, Graduate School of Biomedical and Health Sciences, Hiroshima University, Japan

1P-080 Mechanism of augmentation of hydrogen sulfide-induced ANP secretion in hypoxic condition

Weijian Li¹⁾, Lamei Yu²⁾, Byung Mun Park¹⁾, Sun Hee Kim¹⁾

¹⁾Department of Physiology, Research Institute for Endocrine Sciences, Chonbuk National University Medical School, Korea, ²⁾Department of Physiology, Binzhou Medical University, China

Circulation & Respiration: Lung Physiology (1)

1P-081 In vitro generation of goblet cell hyperplasia model using iPS cells and cigarette smoking solution

Susumu Yoshie, Masao Miyake, Akihiro Hazama

Department of Cellular and Integrative Physiology, Fukushima Medical University, Japan

1P-082 Pulmonary Hypertension Downregulated Mitochondria Associated Membrane Tethering Proteins In Rat

Shunsuke Baba, Satoko Shinjo, Yoshitaka Fujimoto, Mariko Okada,
Toru Akaike, Yoichiro Kusakari, Susumu Minamisawa

Department of Cell Physiology, Jikei Medical University, Japan

1P-083 NF- κ B-mediated upregulation of miR-335-3p contributes to the induction of hypoxic PAH in mice

Xiaofang Fan, Junming Fan, Hui Guang, Xiaoqiong Shan, Yongyu Wang,
Lianggang Hu, Yongsheng Gong

Institute of Hypoxia Medicine, Wenzhou Medical University, PR China

1P-084 The role of vascular smooth muscle NCX1 in the pathogenesis of pulmonary arterial hypertension

Hideaki Tagashira¹⁾, Asahi Nagata^{1,2)}, Satomi Kita^{1,3)}, Tomo Kita¹⁾,
Sari Suzuki¹⁾, Kohtaro Abe⁴⁾, Akinori Iwasaki²⁾, Takahiro Iwamoto¹⁾

¹⁾Department of Pharmacology, Faculty of Medicine, Fukuoka University, Japan,

²⁾Department of General Thoracic, Breast and Pediatric Surgery, Faculty of Medicine, Fukuoka University, Japan, ³⁾Department of Pharmacology, Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Japan, ⁴⁾Department of Cardiovascular Medicine,

1P-085 Inflammatory effects of menthol versus non-menthol cigarette smoke on the mouse lungs

Yu Ru Kou¹), Tzong-Shyuan Lee²)

¹Department of Physiology, School of Medicine, National Yang-Ming University, Taiwan,

²Graduate Institute and Department of Physiology, College of Medicine, National Taiwan University, Taiwan

1P-086 Nerve growth factor contributes laryngeal airway hyperreactivity in rats with intermittent hypoxia

Ping-Hsun Ou¹), Yan-Jhih Shen²), Ching Jung Lai¹)

¹Master Program in Medical Physiology, School of Medicine, Tzu Chi University, Taiwan,

²PhD program in Pharmacology and Toxicology, School of Medicine, Tzu Chi University, Taiwan

1P-088 Successful cigarette smoke extract-induced emphysema model defined by histology and inflammation

Siriporn V Siriphorn^{1,3}), Supitsara Thorsuwan¹), Julalux Thongam¹),
Poungpetch Hussarin¹), Thanaporn Rungruang²), Sorachai Srisuma¹)

¹Department of Physiology, Faculty of Medicine Siriraj Hospital, Mahidol University,

Thailand, ²Department of Anatomy, Faculty of Medicine Siriraj Hospital, Mahidol

University, Thailand, ³Faculty of Physical Therapy and Sport Medicine, Rangsit University, Thailand

Circulation & Respiration: Vascular Physiology (1)

1P-089 Functional Role of TRPC5 in Platelets

Zhuo Duan¹), Lau Eva²), Lo Chun Yin¹), Yao Xiao Qiang¹)

¹School of Biomedical Sciences, The Chinese University of Hong Kong, Hong Kong,

²Institute of Neuroscience, University of Louvain, Belgium

1P-090 Decreased expression of KATP channel in human umbilical smooth muscle during gestational diabetes

Won Sun Park, Ji Hye Jang, Mi Seon Seo

Department of Physiology, Kangwon National University School of Medicine, Korea

1P-091 Vildagliptin induces vasodilation via SERCA pump and Kv channel activation in aortic smooth muscle

Mi Seon Seo, Won Sun Park

Department of Physiology, Kangwon National University School of Medicine, Korea

1P-092 Withdrawn

1P-093 Roles of K⁺ channels in synchronising spontaneous Ca²⁺ transients in mural cells of rectal arteriole

Retsu Mitsui, Hikaru Hashitani

Department of Cell Physiology, Nagoya City University Graduate School of Medical Sciences, Japan

1P-094 Periodic assessment of (ET-1) and Nitric Oxide (NO) in hypertensive disorders of pregnancy (HDP)

Hidayatul Radziah Ismawi¹), Tariq Abd. Razak¹), Nurjasmine Aida Jamani²),
Maizura Mohd Zainudin¹)

¹Department of Basic Medical Sciences, Kulliyah of Medicine, International Islamic University Malaysia, ²Department of Family Medicine, Kulliyah of Medicine,

- 1P-095** L-Cysteine's carotid flow responses mapped in pre-sympathetic areas of the rat ventral medulla
Yumi Takemoto
Physiology II, Biomedical Sciences Major, Graduate School of Biomedical and Health Sciences, Hiroshima University, Japan
- 1P-096** Role of c-Abl/YAP³⁵⁷ in integrin $\alpha 5$ activation in endothelial atherogenic responses
Bochuan Li, Jinlong He
Department of Physiology and Pathophysiology, Tianjin Medical University, China
- 1P-097** Different effects of α and β_1 blockers on Beta in the elastic and muscular arteries in rabbits
Shi-ichiro Katsuda¹), Yuko Horikoshi²), Yuko Fujikura³), Akihiro Hazama¹), Tsuyoshi Shimizu⁴), Koji Shirai⁵)
¹Department of Cellular and Integrative Physiology, Fukushima Medical University School of Medicine, Japan, ²Department of Laboratory Medicine, Fukushima Medical University School of Medicine, Japan, ³5th-year Medical Student, Fukushima Medical University School of Medicine, Japan, ⁴Shimizu Institute of Space Physiology, Suwa Maternity Clinic, Japan, ⁵Seijinkai Mihama Hospital, Japan
- 1P-098** Angiopietin-2 is released after vascular leak onset during anaphylaxis in un- and anesthetized rats
Toshishige Shibamoto¹), Mamoru Tanida¹), Tao Zhang^{1,2}), Wei Yang^{1,3}), Yuhichi Kuda¹), Yasutaka Kurata¹)
¹Department of Physiology 2, Kanazawa Medical University, Japan, ²Department of Colorectal and Hernia Surgery, The Fourth Affiliated Hospital of China Medical University, ³Department of Infectious Disease, Shengjing Hospital of China Medical University
- 1P-099** Apolipoprotein C3-rich LDL induces endothelial dysfunction and vascular cells senescence *in vivo*
Ming-Yi Shen^{1,2,3}), Li-Zhen Chen³), Ping-Hsuan Tsai⁴), Fang-Yu Chen^{1,2,3})
¹Department of Pharmacology, School of Medicine, China Medical University, Taiwan, ²Department of Medicine Research, China Medical University Hospital, Taiwan, ³Graduate Institute of Biomedical Science, China Medical University, Taiwan, ⁴Department of Biological Science and Technology, China Medical University, Taiwan
- 1P-100** The Role of KLF1 in Mediating Immune Response
Chun Ju Yang^{1,2}), Yu Chiau Shyu^{2,3,4,5})
¹Institute of Biopharmaceutical Sciences, University of Yang-Ming, Taiwan, ²Community Medicine Research Center, Chang Gung Memorial Hospital, Taiwan, ³Institute of Molecular Biology, Academia Sinica, Taiwan, ⁴Department of Nursing, Research Center for Food and Cosmetic Safety, College of Human Ecology, Chang Gung University of Science and Technology, Taiwan, ⁵Department of Nutrition and Health Sciences, Research Center for Chinese Herbal Medicine, College of Human Ecology, Chang Gung University of Science and Technology, Taiwan
- 1P-101** YAP promotes angiogenesis via STAT3 in endothelial cells
Jinlong He, Ding Ai, Yi Zhu
Tianjin Medical University, China
- 1P-102** Inhibition of PRC2 Protects against Restenosis via Suppressing Trimethylation of H3K27 in SMCs
Jing Liang
Department of Physiology, Tianjin Medical University, China

- 1P-103** Gaseous components of cigarette smoke upregulate prostaglandin E2 receptor EP4 in aortic aneurysm
Taro Hiromi^{1,2)}, Utako Yokoyama¹⁾, Al Mamun¹⁾, Tsunehito Higashi³⁾, Takahiro Horinouchi³⁾, Souichi Miwa⁴⁾, Ichiro Takeuchi²⁾, Yoshihiro Ishikawa¹⁾
¹Cardiovascular Research Institute, Yokohama City University, Japan, ²Department of Emergency Medicine, Yokohama City University, Japan, ³Department of Cellular Pharmacology, Hokkaido University Graduate School of Medicine, Japan, ⁴Toyouka Hospital, Japan
- 1P-104** Central command increases oxygenation of the non-contracting arm muscles during fine hand movement
Ryota Asahara, Kanji Matsukawa, Kei Ishii, Izumi Okamoto, Yuki Sunami, Hironobu Hamada, Tsuyoshi Kataoka, Wakana Oshita, Tae Watanabe
Department of Integrative Physiology, Hiroshima University, Japan
- 1P-105** Cold stimulation for the tympanic membrane decreases heart rate
Kunihiko Tanaka¹⁾, Akihiro Sugiura²⁾
¹Graduate School of Health and Medicine, Gifu University of Medical Science, Japan, ²Department of Radiological Technology, Gifu University of Medical Science
- 1P-106** mGluR2/3 Agonist Suppresses Hypertension Development in SHR
Julia Chu-Ning Hsu, Shin-ichi Sekizawa, Masayoshi Kuwahara
Department of Veterinary Medical Sciences, Graduate School of Agricultural and Life Sciences, The University of Tokyo
- 1P-107** Standard-dose gentamicin does not increase a risk of patent ductus
Toru Akaike, Ayana Kishibuchi, Susumu Minamisawa
Department of Cell Physiology, The Jikei University, Japan
- 1P-108** Role of TRPV4 on the spontaneous electrical properties of guinea pig mesenteric lymphatic vessel
Hiromichi Takano, Hikaru Hashitani
Department of Cell Physiology, Nagoya City University, Japan
- 1P-109** Physiological evidence that mesenteric lymph has been called as white blood
Tomomi Watanabe-Asaka^{1,2)}, Daisuke Maejima²⁾, Moyuru Hayashi^{1,2)}, Yoshiko Kawaj^{1,2)}, Toshio Ohhashi²⁾
¹Department of Physiology, Faculty of Medicine, Tohoku Medical and Pharmaceutical University, Japan, ²Department of Innovation of Medical and Health Sciences Research, Shinshu University School of Medicine, Japan

Endocrine, Reproduction & Development (1)

- 1P-110** Mutual interaction of orexin-A and glucagon-like peptide-1 on reflex swallowing in anesthetized rats
Motoi Kobashi¹⁾, Yuichi Shimatani²⁾, Masako Fujita¹⁾, Yoshihiro Mitoh¹⁾, Ryuji Matsuo¹⁾
¹Department of Oral Physiology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan, ²Department of Medical Engineering, Faculty of Engineering, Tokyo City University, Japan
- 1P-111** Age-dependent attenuation of hypothalamic sensitivity to thermogenic melanocortin signals
Manami Oya, Kazuhiro Nakamura

- 1P-112** Intake of caffeine in the morning exhibits anti-obesity effect on mice fed with high-fat diet
Atsushi Haraguchi, Tomohiro Yamazaki, Konomi Tamura, Shuhei Sato, Shigenobu Shibata
Laboratory of Physiology and Pharmacology, School of Advanced Science and Engineering, Waseda University, Japan
- 1P-113** Effect of suppression of oral sweet-sensing with gymnema sylvestre on food motivation in humans
Naomi Sano Kashima¹), Kanako Kimura²), Natsumi Nishitani²), Masako Yamaoko Endo²), Yoshiyuki Fukuba²), Hideaki Kashima²)
¹Department of Health and Nutrition, Hiroshima Shudo University, Japan, ²Department of Exercise Science and Physiology, School of Health Sciences, Prefectural University of Hiroshima, Japan
- 1P-114** Impact of Aerobic Exercises on Hunger, Satiety and Food Intake in Type 2 Diabetes Mellitus (T2DM)
Dinithi Vidanage¹), Sudarshani Wasalathanthri²), Priyadarshika Hettiarachchi³)
¹Department of Nursing and Midwifery, General Sir John Kotelawala Defence University, Sri Lanka, ²Department of Physiology, University of Colombo, Sri Lanka, ³Department of Physiology, University of Sri Jayewardenepura, Sri Lanka
- 1P-115** Possible improvement of cognitive function by long-term dark chocolate ingestion in young subjects
Eri Sumiyoshi¹), Kentaro Matsuzaki¹), Naotoshi Sugimoto³), Yoko Tanabe¹), Toshiko Hara¹), Masanori Katakura⁴), Mayumi Miyamoto²), Seiji Mishima⁵), Osamu Shido¹)
¹Department of Environmental Physiology, Shimane University, Japan, ²Fundamental Nursing, Shimane University, Japan, ³Department of Physiology, Kanazawa University, Japan, ⁴Department of Pharmaceutical Sciences, Josai University, Japan, ⁵Central Clinical Laboratory, Shimane University Hospital, Japan
- 1P-116** Maternal low-protein-diet alters the glucose metabolism and its intestinal mechanism of offspring
Nan Wang¹), Ke Chen¹), Bo Lv²), Hu Qiao³), Bo Hu³), Qun jian Yan¹)
¹Department of Physiology and Pathophysiology, School of Basic Medical Sciences, Xi'an Jiaotong University Health Science Center, China, ²School of Humanities, Xidian University, China, ³Key Laboratory of Shaanxi Province for Craniofacial Precision Medicine Research, Xi'an Jiaotong University College of Stomatology, China
- 1P-117** Importance of RANTES/CCR5 signaling in lipid oxidation and adaptive thermogenesis in mice
Pei-Chi Chan¹), Po-Shiuan Hsieh^{1,2})
¹Department of Physiology & Biophysics, National Defense Medical Center, Taiwan, ²Institute of Preventive Medicine, National Defense Medical Center, Taiwan
- 1P-118** Estradiol protects decrease in energy intake under psychosocial stress in ovariectomized rats
Miho Nishimura, Sayaka Nishihara, Mariko Kawahara, Mizuho Kawakami, Naoko Nakagi, Yuki Uchida, Akira Takamata, Keiko Morimoto
Dept. Environm. Health, Facult. Human Life & Environm, Sci., Nara Women's Univ., Japan

- 1P-119** Involvement of phosphoinositide 3-kinase in leptin signaling in sweet sensitive taste cells
Ryusuke Yoshida¹, Robert F. Margolskee², Yuzo Ninomiya^{2,3}
¹Department of Oral Physiology, Graduate School of Medicine, Dentistry and Pharmaceutical Science, Okayama University, Japan, ²Monell Chemical Senses Center, USA, ³Division of Sensory Physiology, Research and Development Center for Taste and Odor Sensing, Kyushu University, Japan
- 1P-120** CRF circuit involved in the regulation of food intake
Shuhei Horio¹, Satoshi Yamagata², Kenta Kobayashi³, Shigeki Kato⁴, Kenji Sakimura⁵, Kazuto Kobayashi⁶, Yasuhiko Minokoshi¹, Keiichi Itoi⁶
¹Division of Endocrinology and Metabolism, National Institute for Physiological Sciences, Japan, ²Graduate School of Medicine, Hirosaki University, Japan, ³Section of Viral Vector Development, National Institute for Physiological Sciences, Japan, ⁴Department of Molecular Genetics, Fukushima Medical University, Japan, ⁵Brain Research Institute, Niigata University, Japan, ⁶Graduate School of Information Sciences, Tohoku University, Japan
- 1P-121** Association between Birth weigh and some Metabolic Syndrome Parameters among Medical Students
Tasabeeh Abd Allah Alnoor¹, Lamis Abd Algadir Kaddam², Marwa Mohammed Ali³, Faris Jamal Altekana⁴, Humeda Suiket Humeda⁵
¹Department of Human Physiology, lecturer, University of Aneelain, Sudan, ²Department of Human Physiology, associate professor, University of Aneelain, Sudan, ³Department of Human Physiology, master candidate, University of Aneelain, Sudan, ⁴Department of Human Physiology, medical student, University of Aneelain, Sudan, ⁵Department of Human Physiology, assistant professor, International University of Africa, Sudan
- 1P-122** EID1 inhibits adipogenesis through reduction of GPDH expression
Tomohiko Sato^{1,2,3}, Diana Vargas^{1,2}, Saki Kawano², Tomomi Maeyama², Amu Maruyama², Kaoru Uchida², Noriyuki Koibuchi¹, Noriaki Shimokawa^{1,2}
¹Department of Integrative Physiology, Gunma University Graduate School of Medicine, Japan, ²Department of Nutrition, Takasaki University of Health and Welfare, Japan, ³Department of Physical Therapy, Ota College of Medical Technology, Japan
- 1P-123** Macrophage Raptor deficiency-induced lysosome dysfunction exacerbates non-alcoholic steatohepatitis
Chunjong Wang, Wenli Liu, Chenji Ye, Yi Zhu, Ding Ai
Department of Physiology and Pathophysiology, Tianjin Medical University, China
- 1P-124** Capsaicinoid Nonivamide ameliorates hepatic injury on non-alcoholic fatty liver disease in rat model
Naruemon Wikan¹, Jiraporn Tocharus², Sivanan Sivasinprasasn¹, Aphisek Kongkaew³, Waraluck Chaichompo⁴, Apichart Suksamrarn⁴, Chainarong Tocharus¹
¹Department of Anatomy, Faculty of Medicine, Chiang Mai University, Thailand, ²Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Research Administration Section, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Chemistry and Center of Excellence for Innovation in Chemistry, Faculty of Science, Ramkhamhaeng University, Thailand
- 1P-125** Regulation of mitochondrial respiration, energy metabolism, and obesity by neuronal Ca²⁺-sensor-1
Tomoe Y Nakamura-Nishitani¹, Shu Nakao², Shigeo Wakabayashi³
¹Dept. of Mol. Physiol., Natl. Cereb & Cardiovasc. Ctr., Japan, ²Stem Cell Regen. Med. Lab.,

- 1P-126** Pioglitazone ameliorates senescence related markers in visceral adipose tissue of obese mice
Masaki Kimura, Risako Ishii, Natsumi Hirano, Ryoei Uchida, Shoji Yamada, Yoshimasa Saito, Hidetsugu Saito
Division of Pharmacotherapeutics, Faculty of Pharmacy, Keio University, Japan
- 1P-127** Remote ischemic preconditioning affects gluconeogenesis via the brain-liver route
Yoshihiko Kakinuma¹, Atsushi Kurabayashi²
¹Department of Bioregulatory Science, Nippon Medical School Graduate School of Medicine, Japan, ²Department of Pathology, Kochi Medical School
- 1P-128** Systemic glucose oxidation is enhanced in acquired liver and muscle insulin receptor knockout mice
Kei Takahashi¹, Tetsuya Yamada², Takashi Sugisawa¹, Keiko Kawata³, Yoichiro Asai¹, Yuichiro Munakata¹, Shinjiro Kodama¹, Shojiro Sawada¹, Junta Imai¹, Makoto Inada³, Hideki Katagiri¹
¹Department of Metabolism and Diabetes, Tohoku University Graduate School of Medicine, Japan, ²Department of Molecular Endocrinology and Metabolism, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, ³Diagnostic Division, Otsuka Pharmaceutical Co., Ltd.
- 1P-129** CCL5 Deficiency Protect against High-fat Diet-induced Insulin Resistance
Chao-Yu Kuo, Li-Man Hung
Department and Graduate Institute of Biomedical Sciences, College of Medicine, Chang Gung University, Taiwan
- 1P-130** The effects of insulin signaling on mouse taste bud organoid
Shingo Takai¹, Peihua Jiang², Robert F Margolskee², Yuzo Ninomiya^{2,3}, Noriatsu Shigemura^{1,3}
¹Section of Oral Neuroscience, Faculty of Dental Science, Kyushu University, Japan, ²Monell Chemical Senses Center, ³Division of Sensory Physiology, Research and Development Center for Taste and Odor Sensing, Kyushu University, Japan
- 1P-131** Anti-hyperglycemic Effect *Gynura Procumbens* (Lour.) Merr. in *In vivo* and *In vitro* Studies
Cho Lwin Aung¹, Fumitaka Kawakami², Motoki Imai², Thet Thet Lwin³, Ohnmar⁴, Khin Phyu Phyu⁵, Mya Mya Thwin¹, Hiroko Maruyama⁶
¹Department of Physiology, University of Medicine 2, Myanmar, ²Department of Biochemistry, Graduate School of Medical Sciences, Kitasato University, Japan, ³Department of Radiology, Graduate School of Medical Sciences, Kitasato University, Japan, ⁴Department of Physiology, University of Medicine, Myanmar, ⁵Department of Medical Research (DMR), Myanmar, ⁶Department of Cytopathology, Graduate School of Medical Sciences, Kitasato University, Japan
- 1P-132** Whole organism chemical screening identifies modulators of pancreatic β cell function
Hiroki Matsuda^{1,2}, Sri Teja Mullapudi², Carol Yang², Hideki Masaki³, Daniel Hesselson⁴, Didier Stainier²
¹College of Life Sciences, Ritsumeikan University, Japan, ²Max Planck Institute for Heart and Lung Research, ³The Institute of Medical Science, University of Tokyo, ⁴Garvan Institute of Medical Research
- 1P-133** Colonic smooth muscle injury ameliorates via SIRT1 activator in STZ-Induced Diabetic Mice

Hongli Lu^{1,2)}, Xu Huang¹⁾, Jie Chen²⁾, Wenxie Xu¹⁾

¹Department of Anatomy and Physiology, Shanghai Jiaotong University, School of Medicine, China, ²Department of Pediatric Surgery, Xin Hua Hospital, Affiliated to Shanghai Jiao Tong University School of Medicine, China

- 1P-134** Evaluation of anti-hyperglycemic efficacy of *Lactobacillus paracasei* HII01 in type 2 diabetic rat
Parichart Toejing¹⁾, Nuntawat Khat-Udomkiri²⁾, Sasithorn Sirilun²⁾, Chaiyavat Chaiyasut²⁾, Narissara Lailerd¹⁾
¹Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ²Innovation Center for Holistic Health, Nutraceuticals and Cosmeceuticals, Faculty of Pharmacy, Chiang Mai University, Thailand
- 1P-135** White-skinned sweet potato stimulates insulin secretion from pancreatic β cells
Takuma Nagata, Takumi Shimada, Tetsuya Okuyama, Mikio Nishizawa, Eri Mukai
Graduate School of Life Sciences, Ritsumeikan University, Japan
- 1P-136** Correlation between hie-sho score and progesterone, fat intake in the pre- and post-menopausal women
Yuki Uchida, Kyoko Ueshima, Koko Kano, Mayuko Minami, Yuri Mizukami, Keiko Morimoto
Department of Health Sciences, Faculty of Human Life and Environment, Nara Women's University, Japan
- 1P-137** Action mechanisms of sex steroids during puberty on sexual differentiation of the brain in mice
Masahiro Morishita, Shinji Tsukahara
Division of Life Science, Graduate School of Science and Engineering, Saitama University, Japan
- 1P-138** Role of Sphingosine-1-phosphate on the proliferative effect of Estrogen in Human Osteoblast cells
Duangrat Tatikanlayaporn¹⁾, Pawinee Piyachaturawat²⁾, Michelle R Witt³⁾, Irina C Tourkova⁴⁾, Harry C Blair⁴⁾
¹Division of Cell Biology, Faculty of Medicine, Thammasat University, Thailand, ²Department of Physiology, Faculty of Sciences, Mahidol University, Thailand, ³Departments of Pathology and of Microbiology, Immunology & Cell Biology, West Virginia University School of Medicine, ⁴Department of Pathology, University of Pittsburgh
- 1P-139** Neonatal motor coordination is impaired by moderate perinatal hypothyroidism in mice
Michifumi Kokubo¹⁾, Izuki Amano¹⁾, Wataru Miyazaki¹⁾, Yusuke Takatsuru²⁾, Asahi Haijima¹⁾, Shogo Haraguchi³⁾, Noriyuki Koibuchi¹⁾
¹Department of Integrative Physiology, Gunma University Graduate School of Medicine, Japan, ²Department of Medicine, Johmoh Hospital, Japan, ³Department of Biochemistry, Showa University School of Medicine, Japan
- 1P-140** Mifepristone upregulates vimentin expression in human hepatic stellate cells
Takeshi Hashimoto, Katsuya Hirano
Department of Cardiovascular Physiology, Faculty of Medicine, Kagawa University, Japan
- 1P-141** CDK5 regulates estrogen receptor and breast cancer cell growth

Chia Wei Huang¹), Yueh-Tsung Lee²), Wei-Huan Huang³), Mei-Chih Chen^{3,4}), Ho Lin¹)

¹Department of Life Sciences, National Chung Hsing University, Taiwan, ²Division of General Surgery, Chang Bing Show Chwan Memorial Hospital, Taiwan, ³Medical Research Center for Exosomes and Mitochondria Related Diseases, China Medical University Hospital, Taiwan, ⁴Department of Nursing, Asia University, Taiwan

1P-142 Effect of Blood Donation on Insulin Resistance and Lipid Peroxidation Product

Thet Khaing Lei Maung, Zin Maung Tun

Department of Physiology, University of Medicine Mandalay, Myanmar

1P-143 Ghrelin modulates duration or number of wakefulness, NREM and REM sleep event

Ryosuke Okumura, Toshiki Tajima, Takuya Mukai, Taiga Yamashita, Taichi Kakizawa, Juhyon Kim, Kazuki Nakajima

Division of Bio-Information Engineering, Faculty of Engineering, University of Toyama, Japan

1P-144 Estrogen deficiency leads to decreased water channel aquaporin 4 expression in skeletal muscle

Yung-Li Hung¹), Keigo Ota²), Minenori Ishido³), Shuichi Machida²)

¹Institute of Health and Sports Science & Medicine, Juntendo University, Japan, ²Graduate School of Health and Sports Science, Juntendo University, ³Section for Health-related Physical Education, Division of Human Sciences, Faculty of Engineering, Osaka Institute of Technology

1P-146 The expression of the arginine vasopressin gene in the rat hypothalamus of EAE model

Kentaro Tanaka, Haruki Nishimura, Kazuaki Nishimura, Satomi Sonoda, Hiromichi Ueno, Takanori Matsuura, Reiko Saito, Mitsuhiko Yoshimura, Takashi Maruyama, Koichi Kusuhara, Yoichi Ueta

Department of Physiology, School of Medicine, University of Occupational and Environmental Health, Japan

1P-147 Effect of persistent nicotine exposure on cell differentiation in rat pituitary gland

Masashi Higuchi, Takahiro Yamaguchi, Ayaka Hibara, Yoshiaki Yamano

Laboratory of Veterinary Biochemistry, Joint Department of Veterinary Medicine, Faculty of Agriculture, Tottori University, Japan

1P-148 Identification and functional analysis of inhibin βE (*INHBE*) as a hepatokine

Akihiro Kikuchi^{1,2}), Hirofumi Misu²), Hirobumi Igawa²),

Yasuhiko Minokoshi¹), Toshinari Takamura²)

¹Division of Endocrinology and Metabolism, National Institute for Physiological Sciences, Japan, ²Department of Endocrinology and Metabolism, Kanazawa University Graduate School of Medical Sciences, Japan

1P-149 Serum leptin adiponectin and their effects on obesity among adolescents in Colombo district Sri Lanka

Thilini Abeyratne¹), Sharaine Fernando²), Rasika Perera³)

¹Department of Allied Health Sciences, University of Sri Jayewardanapura, Sri Lanka, ²Department of Physiology, University of Sri Jayewardanapura, Sri Lanka, ³Department of Biochemistry, University of Sri Jayewardanapura, Sri Lanka

1P-151 Targeting FGF/FGFR axis ameliorates endometriosis progression

Pei-Chin Chuang³), Wen-Hong Su¹), Shaw-Jenq Tsai³), Meng-Hsing Wu²)

¹Department of Medical Research, Chang Gung Memorial Hospital, Taiwan,

²Department of Obstetrics & Gynecology, College of Medicine, National Cheng Kung University, Taiwan, ³Department of Physiology, College of Medicine, National Cheng

Kung University, Taiwan

1P-152 Subepithelial synchronous interstitial cells drive spontaneous contractions in the seminal vesicle

Mitsue Takeya¹), Hikaru Hashitani²), Tokumasa Hayashi³), Ryuhei Higashi⁴), Kei-Ichiro Nakamura⁵), Makoto Takano¹)

¹Dept. Physiol., Kurume Univ. Sch. Med., Japan, ²Dept. Cell Physiol., Grad. Sch. Med. Sci., Nagoya City Univ., Japan, ³Dept. Urol., Kurume Univ. Sch. Med., Japan, ⁴Advanced Imaging Research Center, Kurume Univ. Sch. Med., Japan, ⁵Dept. Anat., Kurume Univ. Sch. Med., Japan

1P-153 Chronological change in concepts and symptoms of premenstrual syndrome of female university students

Ayaka Matsuo, Shunta Maruo, Takayoshi Hosono

Department of Biomedical Engineering, Osaka Electro-Communication University, Japan

1P-154 Expression and function of GLUT1-4 in mouse endometrium during the preimplantation period

Long Yun, Li Nie, Yuan Dong Zhi, Liu Min, Zhao Dan, Wang Yi Cheng, Zhang Xue Qing, Lei Yi, Wang Mei Jiao, Zhang Jin Hu, Yue Li Min

Department of Physiology, University of SiChuan, China

1P-155 The dynamic expression of PTEN in the development of mouse spiral limbus

Youyi Dong, Kazuyo Kamitori

Department of Molecular Physiology, Faculty of Medicine, Kagawa University, Japan

1P-156 The effect of post-natal PFOS exposure on cerebellar development and motor coordination

Abdallah Mshaty, Asahi Haijima, Wataru Miyazaki, Noriyuki Koibuchi

Integrative Physiology Department, Gunma University, Japan

1P-157 The effects of thyroid hormone on development of hippocampal neurons in vitro

Hiroyuki Yajima¹), Izuki Amano¹), Wataru Miyazaki¹), Yusuke Takatsuru²), Noriyuki Koibuchi¹)

¹Department of Integrative Physiology, Gunma University, Japan, ²Department of Medicine, Johmoh Hospital, Japan

1P-158 Perceptions towards health and care giving among elderly with loneliness, living in aged-care homes

Hapuarachchige Sewvandi Maliga Sampath Kumari Wijesiri¹), Kerstin Samarasinghe²)

¹Department of Nursing and Midwifery, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka, ²Department of Health Sciences, Kristianstad University, Sweden

1P-159 Krüppel-like factor 5 regulates proliferation of neural precursor cells in the developing brain

Takahiro Fuchigami¹), Yoshitaka Hayashi¹), Anri Kuroda¹), Takuya Azami²), Masatsugu Ema²), Seiji Hitoshi¹)

¹Department of Integrative Physiology, Shiga University of Medical Science, Japan,

1P-160 Rescue of craniofacial defects with therapeutic hedgehog target chemical in ECO syndrome mouse model

Jeong-Oh Shin¹, Jieun Song², Hyuk Wan Ko³, Jinwoong Bok¹

¹Department of Anatomy, Yonsei University College of Medicine, Korea, ²Department of Biochemistry, College of Life Science and Biotechnology, Yonsei University

Neuroscience: Synapse & neural cellular communication (1)

1P-161 Nicotine layer-specifically modulates synaptic plasticity in the mouse insular cortex

Hiroki Toyoda, Hajime Sato, Dong-Xu Yin, Takafumi Kato

Department of Oral Physiology, Osaka University Graduate School of Dentistry, Japan

1P-162 Large volume electron microscopy and neural microcircuit analysis

Yoshiyuki Kubota^{1,2}, Jaerin Sohn^{1,3}, Yasuo Kawaguchi^{1,2}

¹Div Cerebral Circuitry, National Institute for Physiological Sciences, Japan, ²Dept Physiological Sciences, The Graduate University for Advanced Studies (SOKENDAI),

³Research Fellow of Japan Society for the Promotion of Science (JSPS), Japan

1P-163 Stimulated single fiber electromyography in orbicularis oculi muscle in profenofos poisoned patients

Chanika Alahakoon¹, Tharaka Lagath Dassanayake¹,

Indika Bandara Gawarammana², Vajira Senaka Weerasinghe¹

¹Department of Physiology, University of Peradeniya, Sri Lanka, ²Department of Medicine, University of Peradeniya, Sri Lanka

1P-164 Conduction filtering of synaptic currents via dendrites by SK channels in cerebellar Purkinje cells

Gen Ohtsuki

Hakubi Center / Department of Biophysics, Kyoto University, Japan

1P-165 Bidirectional dopamine-dependent synaptic plasticity at IPSC of SNR GABA neurons in young rat slice

Takefumi Miyazaki

Department of Physiology, Tokyo Medical University, Japan

1P-166 Miniature inhibitory postsynaptic current in cerebellar Purkinje cells of old dystrophic *mdx* mice

Chek Ying Tan, Sindy Lyn Ling Kueh, Stewart Ian Head,

John William Morley

School of Medicine, Western Sydney University, Australia

1P-167 Src kinase regulates the presynaptic transmitter release in avian cochlear nucleus

Takayuki Furuta, Rei Yamada, Hiroshi Kuba

Department of Cell Physiology, University of Nagoya, Japan

1P-168 The mGluR1 contributes strengthening and maintenance of developing lemniscal synapses

Madoka Narushima^{1,2}, Yuki Yagasaki¹, Yuichi Takeuchi¹, Mariko Miyata¹

¹Dept Physiol, Div Neurophysiol, Sch Med, Tokyo Women's Medical Uni, Japan, ²Div Homeostatic Development, NIPS, Japan

1P-169 Inhibition expands dynamic range of inputs in low-tuning frequency neurons in avian cochlear nucleus

Mohammed Al-Yaari, Rei Yamada, Hiroshi Kuba

Department of Cell Physiology, Japan

- 1P-170** 5-HT-induced inhibition of excitatory transmission onto basal forebrain cholinergic neurons
Takuma Nishijo, Toshihiko Momiyama
Department of Pharmacology, Jikei University School of Medicine, Japan
- 1P-171** Electrophysiological comparison between zebrin-positive and -negative Purkinje cells
Viet Tuan Nguyen-Minh, Anh Khoa Tran, Yuanjun Luo, Izumi Sugihara
Department of Systems Neurophysiology, Tokyo Medical and Dental University, Japan
- 1P-172** Actin-associated tropomyosins in the dendritic spine play a role in synaptic function
Chanchanok Chaichim¹), Holly Stefen¹), Merryn Brettle¹), Peter W Gunning¹), Edna C Hardeman¹), Thomas Fath^{1,2}), John M Power¹)
¹School of Medical Sciences, UNSW Sydney, Australia, ²Department of Biomedical Sciences, Macquarie University, Australia
- 1P-173** New method to prevent the visually-evoked somatic depolarization for spine imaging
Satoru Kondo^{1,2}), Kenichi Ohki^{1,2})
¹IRCN, The University of Tokyo Institutes for Advanced Study, The University of Tokyo, Japan, ²Department of Physiology, School of Medicine, The University of Tokyo
- 1P-174** Fndc3b promotes climbing fiber synapse elimination partly by inhibiting STAT3 in the cerebellum
Kushibe Kyoko¹), Celine Mercier¹), Takaki Watanabe¹), Taisuke Miyazaki²), Miwako Yamasaki²), Masahiko Watanabe²), Naofumi Uesaka¹), Masanobu Kano¹)
¹Dept of Neurophysiol, University of Tokyo, Japan, ²Dept of Anat, Hokkaido Univ Grad Sch of Med, Japan
- 1P-175** Distinct kinetics of synaptic vesicle replenishment mediated by synaptotagmin 1, 2 and 7
Shota Tanifuji¹), Ken Kojima²)
¹Department of Physiology, Tokyo Medical University, Japan, ²Pre-clinical Research Center, Tokyo Medical University, Tokyo, Japan
- 1P-176** Synaptic clustering regulates the auditory coincidence detection in low tuning frequency neurons
Rei Yamada, Hiroshi Kuba
Department of Cell Physiology, Graduate School of Medicine, Nagoya University, Japan

Neuroscience: Neural cell signalling

- 1P-177** Function of type 1 metabotropic glutamate receptors in the neonatal rat hippocampal marginal zone
Megumi Taketo
Department of Cellular and Functional Biology Institute of Biomedical Science, Faculty of Medicine, Kansai Medical University, Japan
- 1P-178** Sodium channel-independent components of axonal afterdepolarization in hippocampal mossy fibers
Shunsuke Ohura, Haruyuki Kamiya

- 1P-179** Different taste sensitivity to salt and amiloride relates localization in the rat rNST neurons
Tatsuko Yokota, Katsunari Hiraba
Department of Physiology, School of Dentistry, Aichi-Gakuin University, Japan
- 1P-180** Olfactory marker protein controls cAMP-throughput capacity via cAMP-gated channels in normosmia
Noriyuki Nakashima¹), Kie Nakashima²), Akiko Taura³), Akiko Nakashima⁴), Harunori Ohmori⁵), Makoto Takano¹)
¹Department of Physiology, Kurume University School of Medicine, Japan, ²Laboratory of Developmental Neurobiology, Graduate School of Biostudies, Kyoto University, Japan, ³Department of Medical Engineering, Faculty of Health Science, Aino University, Japan, ⁴Post Graduate Training Program, The University of Tokyo Hospital, Japan, ⁵Department of Physiology, School of Medicine, Kanazawa Medical University, Japan
- 1P-181** Melatonin does not protect the brain against cardiac ischemia/reperfusion injury
Nattayaporn Apajai^{1,2}), Kodchanan Singhanat^{1,2,3}), Thidarat Jaiwongkam^{1,2}), Siriporn C Chattipakorn^{1,2,4}), Nipon Chattipakorn^{1,2,3})
¹Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Center of Excellence in Cardiac Electrophysiology Research, Chiang Mai University, Thailand, ³Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand
- 1P-182** Developmental regulation of Ca channel expression in avian cochlear nucleus
Kensuke Muto, Rei Yamada, Hiroshi Kuba
Department of Cell Physiology, Graduate School of Medicine, Nagoya University, Japan
- 1P-183** Mechanisms underlying WNK3 kinase mediated regulation of neuronal excitability in prefrontal cortex
Adya Saran Sinha¹), Tianying Wang¹), Yasushi Hosoi¹), Eisei Sohara²), Tenpei Akita¹), Shinichi Uchida²), Atsuo Fukuda¹)
¹Department of Neurophysiology, Hamamatsu University School of Medicine, Japan, ²Department of Nephrology, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Japan
- 1P-184** Ca²⁺ signaling and ion channel activation in embryonic neurons in the medial ganglionic eminence
Tenpei Akita, Atsuo Fukuda
Department of Neurophysiology, Hamamatsu University School of Medicine, Japan
- 1P-185** GABA in the suprachiasmatic nucleus refines circadian behavioral rhythms
Daisuke Ono¹), Ken-Ichi Honma²), Yuchio Yanagawa³), Akihiro Yamanaka¹), Sato Honma²)
¹Research Institute of Environmental Medicine, Nagoya University, Japan, ²Research and Education Center for Brain Science, Hokkaido University Graduate School of Medicine, Japan, ³Department of Genetic and Behavioral Neuroscience, Gunma University Graduate School of Medicine, Japan
- 1P-186** Calpain inhibition modulates NMDAR responsiveness to calcium increases in midbrain dopamine neurons
Shinhye Kim, Sun Hee Jeon, Hyung Seo Park, Se Hoon Kim

1P-187 P2X7 receptor-pannexin-1 channel interaction in rat trigeminal ganglion neuron

Hiroyuki Inoue¹, Hidetaka Kuroda², Noboru Ishikawa³, Sadao Ohyama⁴, Asuka Higashikawa⁴, Maki Himura⁴, Hitoshi Yamamoto³, Yoshiyuki Shibukawa⁴, Tatsuya Ichinohe¹

¹Department of Dental Anesthesiology, Tokyo Dental College, Japan, ²Department Critical Care Medicine and Dentistry, Kanagawa Dental University Graduate School of Dentistry, Japan, ³Department of Histology and Developmental Biology, Tokyo Dental College, ⁴Department of Physiology, Tokyo Dental College, Japan

Neuroscience: Brain circuits

1P-188 Oxygen affects simple circuit for cold acclimation via KQT potassium channel and HADH in *C. elegans*

Atsushi Kuhara^{1,3}, Mayu Fujita¹, Misaki Okahata¹, Yohei Minakuchi², Atsushi Toyoda², Akane Ohta¹

¹Inst. for Integrative Neurobio., Konan University, Japan, ²National Institute of Genetis, Japan, ³PRIME, AMED

1P-189 Corticocortical mechanisms underlying perceptual memory consolidation during NREM sleep

Daichi Hirai^{1,2}, Daisuke Miyamoto¹, Yasuhiro Oisi¹, Maya Odagawa¹, Chie Matsubara¹, Kanako Ueno¹, Kenta Kobayashi³, Akiko Hayashi-Takagi⁴, Masanori Murayama¹

¹Lab for Haptic Perception and Cognitive Physiology, RIKEN Center for Brain Science, Japan, ²Research Fellow, Japan Society for the Promotion of Science (JSPS), Japan, ³Lab Viral Vector Development, Natl Inst Physiol Sci, Japan, ⁴Laboratory of Medical Neuroscience, Institute for Molecular and Cellular Regulation, Gunma University, Japan

1P-190 Physiological and anatomical organization of cortico-striatal inputs in the basal ganglia

Hiromi Sano^{1,2}, Kenta Kobayashi^{2,3}, Shigeki Kato⁴, Satomi Chiken^{1,2}, Kazuto Kobayashi⁴, Atsushi Nambu^{1,2}

¹Division of System Neurophysiology, NIPS, Japan, ²Department of Physiological Sciences, SOKENDAI, Japan, ³Section of Viral Vector Development, NIPS, Japan, ⁴Department of Molecular Genetics, Fukushima Med. Univ., Japan

1P-191 Effects of acute kidney dysfunction on arginine vasopressin in transgenic rats

Hiromichi Ueno, Kenya Sanada, Kentaro Tanaka, Haruki Nishimura, Kazuaki Nishimura, Satomi Sonoda, Yoshihiro Yoshimura, Takashi Maruyama, Yutaka Otsuji, Yoichi Ueta

Department of Physiology, University of Occupational and Environmental Health, Japan

1P-192 How does the cerebellum control thalamocortical activity?

Satomi Chiken^{1,2}, Hiromi Sano^{1,2}, Kenta Kobayashi^{2,3}, Atsushi Nambu^{1,2}

¹Division of System Neurophysiology, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, SOKENDAI, Japan, ³Section of Viral Vector Development, National Institute for Physiological Sciences, Japan

1P-193 The perioral sensory signaling pathway for complex spike generation in cerebellar Purkinje cells

Reika Kubo¹, Atsu Aiba², Kouichi Hashimoto¹

¹Department of Neurophysiology, Graduate School of Biomedical and Health Sciences, Hiroshima University, Japan, ²Laboratory of Animal Resources, Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo, Japan

1P-194 Examination into effects of stimulation of the lateral habenula on cardiovascular responses in rats

Tri Huu Doan^{1,2,4}, Yuma Sato^{1,3}, Masayuki Matsumoto¹,
Tadachika Koganezawa¹

¹Department of Physiology, Faculty of Medicine, University of Tsukuba, Tsukuba, Japan, ²Doctoral Program in Biomedical Sciences, Graduate School of Comprehensive Human Sciences, University of Tsukuba, Japan, ³School of Medical Sciences, University of Tsukuba, Japan, ⁴Center for Advanced Training in Clinical Simulation, University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam

1P-195 NMDA receptor-mediated activation of excitatory networks in rat interstitial nucleus of Cajal

Yasuhiko Saito

Department of Neurophysiology, Nara Medical University, Japan

1P-196 Topographic representation of saccade vector in frontal eye field of common marmoset

Chih-Yang Chen, Denis Matrov, Kuan-Ting Ho, Tadashi Isa

Division of Physiology and Neurobiology, Department of Neuroscience, Graduate School of Medicine, Kyoto University, Japan

1P-197 Measurement of multiple cerebellar mossy fiber activities by calcium imaging in mouse

Satoshi Manita¹, Koji Ikezoe¹, Masaaki Sato^{2,3}, Masamichi Ohkura^{2,3},
Junichi Nakai^{2,3}, Yasunori Hayashi⁴, Kazuo Kitamura¹

¹Department of Neurophysiology, Faculty of Medicine, University of Yamaguchi, Japan, ²Graduate School of Science and Engineering, Saitama University, Japan, ³Brain and Body System Science Institute, Saitama University, Japan, ⁴Department of Pharmacology, Graduate School of Medicine, Kyoto University, Japan

1P-198 Activity-dependent formation and restoration of callosal axon projections in developing neocortex

Yoshiaki Tagawa^{1,2}, Yuta Tezuka², Kenta Hagihara³, Kenichi Ohki⁴,
Tomoo Hirano²

¹Department of Physiology, Graduate School of Medical and Dental Sciences, Kagoshima University, Japan, ²Department of Biophysics, Graduate School of Science, Kyoto University, Japan, ³Friedrich Miescher Institute, Neurobiology, Switzerland, ⁴Department of Physiology, Graduate School of Medicine, University of Tokyo, Japan

1P-199 Neural ensemble dynamics during P-waves in mice

Tomomi Tsunematsu^{1,2,3,4}, Arno Onken⁵, Shuzo Sakata¹

¹Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Japan, ²Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, ³Super-network Brain Physiology, Graduate School of Life Sciences, Tohoku University, ⁴JST, PRESTO, ⁵School of Informatics, University of Edinburgh

1P-200 The neural connections between the oculomotor neural integrators and the vestibulo-cerebellum

Taketoshi Sugimura, Yasuhiko Saito

Department of Neurophysiology, Nara Medical University, Japan

1P-201 Serotonin regulated the fetal movement-like activity in the spinal cord

Reona Furukawa¹, Chiaki Uchida¹, Hiroataka Ooka¹, Yoshiyuki Ohmura²,

Akiko Arata¹⁾

¹Department of Physiology, Hyogo College of Medicine, Japan, ²Lab. for Intell. Sys. & Informatics, Dept. Mechano-Informatics, School of Information Science & Technology, Univ. of Tokyo, Japan

1P-202 **Function of inhibitory neurons in the solitary nucleus in the control of respiration**

Noriyuki Hama¹⁾, Shigefumi Yokota²⁾, Masashi Fujitani^{1,2)}, Yasumasa Okada³⁾, Naohiro Koshiya⁴⁾, Hidehiko Koizumi⁴⁾

¹Department of Neural and Muscular Physiology, Shimane University School of Medicine, Japan, ²Department of Anatomy and Neuroscience, Shimane University School of Medicine, ³Clinical Research Center, Murayama Medical Center, ⁴Cellular and Systems Neurobiology Section, NINDS, NIH

1P-203 **Information processing in brainstem bitter taste-relaying neurons**

Makoto Sugita, Kuniyo Yamamoto

Department of Physiology and Oral Physiology, Graduate School of Biomedical & Health Sciences, Hiroshima University, Japan

1P-204 **Inhibitory local connection of parvalbumin-expressing neurons in the rat globus pallidus**

Tetsuya Higashiyama¹⁾, Fuyuki Karube¹⁾, Yasuharu Hirai¹⁾, Kenta Kobayashi²⁾, Fumino Fujiyama¹⁾

¹Department of Brain Science, Doshisha University, Japan, ²Section of Viral Vector Development, Center for Genetic Analysis of Behavior, NIPS, Japan

1P-205 **Effects of hypovolemia and osmotic challenge on arginine vasopressin synthesis in transgenic rats**

Kenya Sanada^{1,2)}, Hiromichi Ueno^{1,2)}, Hiroki Beppu¹⁾, Kentaro Tanaka¹⁾, Haruki Nishimura¹⁾, Kazuaki Nishimura¹⁾, Satomi Sonoda¹⁾, Mitsuhiro Yoshimura¹⁾, Takashi Maruyama¹⁾, Yutaka Otsuji²⁾, Yoichi Ueta¹⁾

¹Department of Physiology, University of Occupational and Environmental Health, Japan, ²Department of Cardiovascular Medicine and Nephrology

1P-206 **Sex difference of oxytocin and vasopressin dynamics in the hypothalamus of rats**

Kazuaki Nishimura^{1,2)}, Kenya Sanada¹⁾, Hiroki Beppu¹⁾, Haruki Nishimura¹⁾, Kentaro Tanaka¹⁾, Satomi Sonoda¹⁾, Hiromichi Ueno¹⁾,

Mitsuhiro Yoshimura¹⁾, Takashi Maruyama¹⁾, Kiyoshi Yoshino²⁾, Yoichi Ueta¹⁾

¹Department of Physiology, School of Medicine, University of Occupational and Environmental Health, Japan, ²Department of Obstetrics and Gynecology, School of Medicine, University of Occupational and Environmental Health, Japan

1P-207 **Projection-specific cortico-cortical transformations in the mouse visual system**

Fumitaka Osakada^{1,2,3)}

¹Laboratory of Cellular Pharmacology, Graduate School of Pharmaceutical Sciences, Nagoya University, Japan, ²Laboratory of Neural Information Processing, Institute for Advanced Research, Nagoya University, Japan, ³PRESTO, Japan Science and Technology Agency, Japan

1P-208 **Presynaptic H3 heteroreceptor in nucleus accumbens mediates anxiolytic effect of histamine**

Jing-Ning Zhu^{1,2)}, Shi-Yu Peng¹⁾, Bin Li¹⁾, Qian-Xing Zhuang¹⁾, Shu-Tao Xie¹⁾, Jian-Jun Wang^{1,2)}

¹State Key Laboratory of Pharmaceutical Biotechnology and Department of Physiology, School of Life Sciences, Nanjing University, China, ²Institute for Brain Sciences, Nanjing University, China

- 1P-209** VTA neurons targeting cortical motor areas exhibit highly diffuse collateral projections
 Yoshinori Koshimizu^{1,3}, Kenta Kobayashi^{2,3}, Kaoru Isa^{1,3}, Tadashi Isa^{1,3}
¹Department of Neurophysiology, Graduated School of Medicine, University of Kyoto, Japan, ²Laboratory of Viral Vector Development, National Institute for Physiological Sciences, Japan, ³CREST, JST, Japan
- 1P-210** Phasic increase of interleukin 1 in the dorsal raphe nucleus affects inter-male aggressive behavior
 Aki Takahashi^{1,2,3}, Hossein Aleyasin², Mihaela A Stavarache⁴, Meghan E Flanigan², Caroline Menard², Madeline L Pfau², Georgia E Hodes², Sonoko Ogawa¹, Bruce S Mcewen³, Scott J Russo²
¹Laboratory of Behavioral Neuroendocrinology, University of Tsukuba, Japan, ²Center for Affective Neuroscience and Friedman Brain Institute, Icahn School of Medicine at Mount Sinai, ³Laboratory of Neuroendocrinology, The Rockefeller University, ⁴Department of Neurological Surgery, Weill Cornell Medical College
- 1P-211** Cerebellar integration of neocortical somatosensory signals
 Misa Shimuta¹, Izumi Sugihara², Taro Ishikawa¹
¹Dept. Pharmacology, Jikei Univ. Sch. of Med., Japan, ²Dept. Systems Neurophysiol., Tokyo Med. Dent. Univ., Japan
- 1P-212** Phox2b-expressing neurons in the rat reticular formation dorsal to the trigeminal motor nucleus
 Shiro Nakamura¹, Kouta Nagoya², Keiko Ikeda³, Hiroshi Onimaru⁴, Kiyoshi Kawakami⁵, Kiyomi Nakayama¹, Ayako Mochizuki¹, Masanori Dantsuji¹, Tomio Inoue¹
¹Department of Oral Physiology, Showa University School of Dentistry, Japan, ²Division of Dysphagia Rehabilitation, Department of Oral Biological Science, Faculty of Dentistry Niigata University, ³Department of Physiology, School of Medicine, International University of Health and Welfare, ⁴Department of Physiology, Showa University School of Medicine, ⁵Division of Biology, Center for Molecular Medicine, Jichi Medical University
- 1P-213** Neural activity underlying mismatch negativity generation in macaque temporal and frontal cortices
 Yuki Suda¹, Mariko Tada², Takeshi Matsuo³, Keisuke Kawasaki⁴, Takafumi Suzuki⁵, Isao Hasegawa⁴, Kenji Matsumoto¹, Kiyoto Kasai², Takanori Uka⁶
¹Brain Science Institute, Tamagawa University, Tokyo, Japan, ²Department of Neuropsychiatry, Graduate School of Medicine, University of Tokyo, ³Department of Neurosurgery, Tokyo Metropolitan Neurological Hospital, Tokyo, ⁴Department of Neurophysiology, Niigata University School of Medicine, ⁵Center for Information and Neural Networks (CiNet), National Institute of Information and Communications Technology, and Osaka University, ⁶Department of Integrative Physiology, Graduate School of Medicine, University of Yamanashi
- 1P-214** CRH release regulation by GABAergic projection from arcuate nucleus using chemogenetic model
 Ruksana Yesmin, Miho Watanabe, Atsuo Fukuda
 Department of Neurophysiology, Hamamatsu University School of Medicine, Japan
- 1P-215** Exploring the roles of calbindin-D28K in the medial preoptic nucleus in sexual behavior of male rats
 Sho Maejima¹, Masahiro Morishita², Kanna Ueno², Arisa Kamada², Shinji Tsukahara^{1,2}
¹Area of Life-NanoBio, Division of Strategy Research, Graduate School of Science and

1P-216 ASIC1a mediates striatal synapse remodeling and procedural motor learning

Wei-Guang Li, Zhe Yu, Yan-Jiao Wu, Tian-Le Xu

Department of Anatomy and Physiology, Shanghai Jiao Tong University School of Medicine, China

Neuroscience: Learning, memory & neuronal plasticity (1)

1P-218 Effects of ELF-EMF on learning and memory, anxiety-like behavior and stress oxidative in male rats

Iraj Salehi^{1,2)}, Seyed Asaad Karimi^{1,2)}, Alireza Komaki^{1,2)}

¹Neurophysiology Research Center, Hamadan University of Medical Sciences, Iran,

²Department of Neuroscience, School of Advanced Technologies in Medicine, Hamadan University of Medical Sciences, Iran

1P-219 Ventral hippocampus inactivation facilitates the attenuation of olfactory neophobia in rats

Keisuke Shinohara, Yasunobu Yasoshima

Division of Behavioral Physiology, Department of Human Sciences, Osaka University, Japan

1P-220 Effect of Castration on Electrophysiological Properties of LMAN Neurons in Adult Male Zebra Finches

Dongfeng Li, Li Wu

School of Life Science, South China Normal University, China

1P-221 MMP-9 activity is required for the NMDA induced endocytosis of AMPA receptor

Shinnosuke Kohara¹⁾, Shinji Matsuda^{1,2)}

¹Department of Engineering Science, University of Electro-Communications, Japan,

²Brain Science Inspired Life Support Research Center (BLSC), The University of Electro-Communications

1P-222 Impairment of Long-term Plasticity in Purkinje Cell with Dominant-negative Thyroid Hormone Receptor

Ayane Ninomiya¹⁾, Nobutake Hosoi²⁾, Michifumi Kokubo¹⁾, Izuki Amano¹⁾, Asahi Haijima¹⁾, Wataru Miyazaki¹⁾, Hirokazu Hirai²⁾, Noriyuki Koibuchi¹⁾

¹Dept. Integrative Physiology, Grad. Sch. Med., Gunma Univ., Japan, ²Dept. Neurophysiology and Neural Repair, Grad. Sch. Med., Gunma Univ., Japan

1P-223 Remote memory traces in the mouse hippocampus revealed by Arc-based functional labeling

Hiroyuki Okuno^{1,2)}, Anna Araki²⁾, Keiichiro Minatohara^{1,2)}, Haruhiko Bito⁴⁾, Itaru Imayoshi^{2,3)}

¹Dept. of Biochem. and Molec. Biol., Kagoshima University Graduate School of Medical and Dental Sciences, Japan, ²Med. Innov. Ctr., Graduate School of Medicine, Kyoto University, Japan, ³Graduate School of Biostudies, Kyoto University, Japan, ⁴Dept. of Neurochem., Graduate School of Medicine, The University of Tokyo, Japan

1P-224 Plasmalogens enhance spatial memory in mice by increasing the gene expression in hippocampus

Md Shamim Hossain¹⁾, Sanyu Sejimo¹⁾, Yutaka Oomura¹⁾, Takehiko Fujino²⁾

¹Department of Neuroinflammation and Brain Fatigue Science, Graduate School of Medical Sciences, Kyushu University, Japan, ²Institute of Rheological Functions of Food

- 1P-225** Reaction time property of visual working memory to adjacent two-lever task in standing rats
Masatoshi Takita^{1,2)}, Sei-etsu Fujiwara³⁾, Yukio Ichtani⁴⁾
¹Human Informatics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan, ²Brain Science Inspired Life Support Research Center, The University of Electro-Communications, Japan, ³Department of Physiology, St Marianna University School of Medicine, Japan, ⁴Faculty of Human Sciences, University of Tsukuba, Japan
- 1P-226** Gut Dysbiosis Induced Brain Pathological Changes and Cognitive Decline in HFD-Fed Rats
Napatsorn Saiyasit^{1,2)}, Dillon Prus¹⁾, Kanokphong Suparan¹⁾, Sasiwan Kredphoo^{1,2)}, Thidarat Jaiwongkum^{1,2)}, Jirapas Sripetchwandee^{1,2)}, Nipon Chattipakorn^{1,2)}, Siriporn C Chattipakorn^{1,3)}
¹Neurophysiology Unit, Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand
- 1P-227** PKD1 promotes functional synapse formation coordinated with N-cadherin in hippocampus
Cen Cheng, Luo Li-Da
Neuroscience Research Institute, Peking University, China
- 1P-228** Dynamics of cell assemblies in hippocampus during memory consolidation and recall
Shogo Takamiya, Shoko Yuki, Junya Hirokawa, Yoshio Sakurai
Graduate School of Brain Science, Doshisha University, Japan
- 1P-229** Hippocampal-prefrontal plasticity with transcranial direct current stimulation
Yumiko Watanabe¹⁾, Hiroyuki Takei^{1,2)}, Kazuaki Nagasaka¹⁾, Ichiro Takashima^{1,2)}
¹Human Informatics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan, ²Graduate School of Comprehensive Human Sciences, University of Tsukuba, Japan
- 1P-230** D-galactose induced aging aggravates hippocampal oxidative stress in obese-insulin resistant rats
Thazin Shwe^{1,2,3)}, Cherry Bo-Htay^{1,2,3)}, Wasana Pratchayasakul^{1,2,3)}, Nipon Chattipakorn^{1,2,3)}, Siriporn C Chattipakorn^{1,3,4)}
¹Neurophysiology Unit, Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Center of Excellence in Cardiac Electrophysiology, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Science, Faculty of Dentistry, Chiang Mai University, Thailand
- 1P-231** Exercise, not calorie restriction, improves cognitive function in obese rats
Wasana Pratchayasakul^{1,2,3)}, Duangkamol Mantor^{1,2,3)}, Wanitchaya Minta^{1,2,3)}, Wissuta Sutham^{1,2,3)}, Siripong Palee^{1,3)}, Jirapas Sripetchwandee^{1,2,3)}, Sasiwan Kerdphoo^{1,3)}, Thidarat Jaiwongkum^{1,3)}, Nipon Chattipakorn^{1,2,3)}, Siriporn C Chattipakorn^{1,3,4)}
¹Neurophysiology Unit, Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Cardiac Electrophysiology Unit,

- 1P-232** Mitochondrial ATP-linked respiration in PBMCs is associated with cognition in Aged-EGAT population
Sirawit Sriwichaiin^{1,2,4}), Nattayaporn Apaijai^{1,2)}, Thidarat Jaiwongkam^{1,2)}, Sasiwan Kerdphoo^{1,2)}, Wasana Pratchayasakul^{1,2,4)}, Siripong Palee^{1,2)}, Arintaya Phrommintikul^{1,2,5)}, Chrigriya Kitiyakara⁶⁾, Piyamitr Sritara⁶⁾, Nipon Chattipakorn^{1,2,4)}, Siriporn Chattipakorn^{1,2,3)}
¹Center of Excellence in Cardiac Electrophysiology Research, Faculty of Medicine, Chiang Mai University, Thailand, ²Neurophysiology Unit, Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ³Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand, ⁴Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁵Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Thailand, ⁶Department of Medicine, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Thailand
- 1P-233** Temporal dynamics of reward cue representation in the rat paraventricular nucleus
Munkhaya Unur, Chinzorig Chojiljav, Jumpei Matsumoto, Hiroshi Nishimaru, Yusaku Takamura, Taketoshi Ono, Hisao Nishijo
Department of System Emotional Science, University of Toyama, Japan
- 1P-234** Modulation of Synaptic Plasticity in Hippocampal CA1 Region by Basolateral Amygdala
Yee Song Chong^{1,2)}, Cai Shan Goh¹⁾, Sreedharan Sajikumar^{1,2)}
¹Department of Physiology, School of Medicine, National University of Singapore, Singapore, ²Neurobiology/Aging Program, Life Sciences Institute, Singapore
- 1P-235** Depotentiation at the hippocampal CA1 synapse depends on the basal synaptic transmission
Jun-Ichi Goto^{1,2)}, Satoshi Fujii^{1,2)}, Kenya Kaneko¹⁾, Hiroki Fujiwara¹⁾, Yoshihiko Yamazaki¹⁾, Katsuhiko Mikoshiba²⁾
¹Department of Physiology, Yamagata University School of Medicine, Japan, ²Laboratory for Developmental Biology, Center for Brain Science, RIKEN, Japan
- 1P-236** Population Spike-Timing-Dependent Plasticity and Synaptic Tagging and Capture in hippocampal CA1
Ka Lam Karen Pang^{1,2)}, Mahima Sharma^{1,2)}, Thomas Behnisch³⁾, Sreedharan Sajikumar^{1,2)}
¹Department of Physiology, Yong Loo Lin School of Medicine, National University of Singapore, Singapore, ²Neurobiology/Aging Programme, Life Sciences Institute, Centre for Life Sciences, ³The Institutes of Brain Science, The State Key Laboratory of Medical Neurobiology, The Collaborative Innovation Centre for Brain Science, Fudan University, China
- 1P-237** p75 neurotrophin receptor regulates hippocampal associative plasticity in aging
Lik Wei Wong, Yee Song Chong, Sajikumar Sreedharan
Department of Physiology, National University of Singapore, Singapore
- 1P-238** Role of dopamine D₃ receptor on hyper-dopamine activity-altered novel object recognition memory
Jin-Chung Chen^{1,2)}, Pi-Kai Chang^{1,2)}

- 1P-239** Role of olfactory tubercle in the weaning of neonatal mice
Yasutaka Chikuda, Masahiro Yamaguchi
Department of Physiology, Kochi Medical School, Japan
- 1P-240** The analysis of neuropeptide-dependent and-independent late associativity
Yasuyuki Ishikawa, Yuka Suzuki
Department of Systems Life Engineering, Maebashi Institute of Technology, Japan
- 1P-241** Differentiation of spatially overlapping routes and reward zones in the monkey hippocampus
Rafael Bretas Vieira^{1,2}, Jumpei Matsumoto², Hiroshi Nishimaru², Yusaku Takamura², Etsuro Hori², Taketoshi Ono², Hisao Nishijo²
¹Laboratory for Symbolic Cognitive Development, Center for Biosystems Dynamics Research, RIKEN, Japan, ²System Emotional Science, Graduate School of Medical and Pharmaceutical Sciences, University of Toyama, Japan
- 1P-242** (-)-Festidinol: Potential Effect on Preventing Neurodegeneration in Mice
Jittiporn Wongpun¹, Ratchanaporn Chokchaisiri², Jiraporn Tocharus³, Apichart Suksamrarn⁴, Chainarong Tocharus¹
¹Department of Anatomy, Faculty of Medicine, Chiang Mai University, Thailand, ²Department of Chemistry, Faculty of Science, University of Payao, Thailand, ³Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Chemistry and Center of Excellence for Innovation in Chemistry, Faculty of Science, Ramkhamhaeng University, Thailand
- 1P-243** Effect of agomelatine on neurogenesis in D-galactose-induced brain aging
Teera Chanmanee¹, Piyarat Govitrapong², Jiraporn Tocharus³, Chainarong Tocharus¹
¹Department of Anatomy, Faculty of Medicine, Chiang Mai University, Thailand, ²Chulabhorn Graduate Institute, Thailand, ³Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand
- 1P-244** Effects of 5,6,7,4'-TMF on neurodegeneration and neurogenesis in dexamethasone-induced mice
Kanet Pakdeepak¹, Ratchanaporn Chokchaisiri², Chainarong Tocharus³, Pranglada Jearjaroen¹, Apichart Suksamrarn⁴, Jiraporn Tocharus¹
¹Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ²Department of Chemistry, School of Science, University of Phayao, ³Department of Anatomy, Faculty of Medicine, Thailand, ⁴Department of Chemistry and Center of Excellence for Innovation in Chemistry, Faculty of Science, Ramkhamhaeng University

Neuroscience: Higher order brain functions

- 1P-246** Salicylate-induced changes of tuning function in AI of guinea pigs observed by optical recording.
Yutaka Hosokawa¹, Michinori Kubota², Shunji Sugimoto³, Junsei Horikawa⁴
¹Dept. of Systems Physiol., Grad. Sch. Univ. of Ryukyus, Japan, ²Med. Res. Inst., Tokyo Medical and Dental Univ., ³Dept. of Comp. Sci. and Eng., Grad. Sch. of Eng., Toyohashi Univ. of Technology, ⁴Senior Researcher, Toyohashi Univ. of Technology

- 1P-247** Laterality effects of the visual information processing on the sensorimotor gating system
 Daisuke Ishii^{1,2}, Kotaro Takeda³, Satoshi Yamamoto⁴, Akira Noguchi⁵, Kiyoshige Ishibashi⁶, Kenya Tanamachi⁶, Arito Yozu¹, Yutaka Kohno¹
¹Center for Medical Sciences, Ibaraki Prefectural University of Health Sciences, Japan, ²Department of Cognitive Behavioral Physiology, Chiba University Graduate School of Medicine, ³Faculty of Rehabilitation, School of Health Sciences, Fujita Health University, ⁴Department of Physical Therapy, School of Healthcare, Ibaraki Prefectural University of Health Sciences, ⁵Sakai Neurosurgical Clinic, ⁶Department of Physical Therapy, Ibaraki Prefectural University of Health Sciences Hospital
- 1P-248** Neural substrates of action timing decisions
 Masayoshi Murakami¹, Fanny Cazettes², Zachary F. Mainen², Kazuo Kitamura¹
¹Department of Neurophysiology, Division of Medicine, University of Yamaguchi, Japan, ²Champalimaud Research, Champalimaud Centre for the Unknown, Portugal
- 1P-249** Ongoing motor information embedded in a network dynamics of primate primary somatosensory neurons
 Kei Mochizuki¹, Katsumi Nakajima², Masahiko Inase¹, Akira Murata¹
¹Dept Physiol, Facult Med, Kindai Univ, Japan, ²Dept Physiol, Facult Med, Iwate Medical Univ, Japan
- 1P-250** Chronic mild stress increases aggressive behavior in mice
 Sachiko Chikahisa, Tetsuya Shiuchi, Daisuke Tanioka, Noriyuki Shimizu, Airi Otsuka, Hiroyoshi Sei
 Department of Integrative Physiology, Institute of Biomedical Sciences, Tokushima University Graduate School, Japan
- 1P-251** Body ownership and agency altered by a robotic arm controlled by electromyography of elbow muscles
 Toshihiro Kawase^{1,2,3}, Kenta Kono¹, Kenichi Cho¹, Eiko Kato¹, Kenji Kansaku^{1,4}
¹Department of Physiology and Biological Information, Dokkyo Medical University School of Medicine, Japan, ²Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan, ³Institute of Innovative Research, Tokyo Institute of Technology, Japan, ⁴Brain Science Inspired Life Support Research Center, The University of Electro-Communications, Japan
- 1P-252** Hypoxia effect on daily activity is daily activity dependent wavelike response in mice
 Satoru Masubuchi¹, Takako Yano¹, Kouji Komatsu¹, Wataru Nakamura², Akinobu Ota³, Sivasundaram Karnan³, Kosei Takeuchi⁴, Yoshitaka Hosokawa³, Takeshi Todo⁵, Toshiaki Shiomi⁶
¹Department of Physiology, Aichi Medical University, Japan, ²Department of Oral ChronoPhysiology, Unit of Basic Medical Sciences, Graduate School of Biomedical Sciences, Nagasaki University, Japan, ³Department of Biochemistry, Aichi Medical University, Japan, ⁴Department of Biology, Aichi Medical University, Japan, ⁵Department of Radiation biology and Medical Genetics, Graduate School of Medicine, Osaka University, Japan, ⁶Department of Sleep Medicine, Aichi Medical University, Japan
- 1P-253** Recency of pattern repetition degrades monkeys' performance in pattern recognition with visual noise
 Ryosuke Kuboki¹, Narihisa Matsumoto², Yasuko Sugase-Miyamoto², Barry J Richmond³, Munetaka Shidara^{1,4}
¹Grad. Sch. of Comprehensive Human Sci., University of Tsukuba, Japan, ²Human Info.

- 1P-255** Lower c-Fos expressions in the posterior parietal cortex during rubber tail task in Caps2 KO mice
Makoto Wada^{1,2}, Masakazu Ide¹, Takeshi Atsumi¹, Kouji Takano³, Yoshitake Sano⁴, Yo Shinoda⁵, Teiichi Furuichi⁴, Kenji Kansaku^{3,6,7}
¹Dev Disorders Sect, Dept Brain Rehab, Res Inst of NRCD, Japan, ²Dept Informatics, Shizuoka Univ, ³Sys Neurosci Sect, Dept Brain Rehab, Res Inst of NRCD, ⁴Tokyo Univ of Sci, ⁵Tokyo Univ of Pharmacy and Life Science, ⁶Brain Sci Inspired Life Supp Res Cent, Univ of Electro-Communications, ⁷Dept Physiol & Biol Info, Dokkyo Med Univ Sch of Med
- 1P-256** Interval timing of visual and auditory cues for duration discrimination in monkey prefrontal cortex
Atsushi Chiba¹, Kazunori Morita², Ken-ichi Oshio¹, Masahiko Inase¹
¹Department of Physiology, Kindai University, Japan, ²Department of Physiology, Iwate Medical University, Japan
- 1P-257** Haptic material perception in macaque monkeys, estimated by the material discrimination task
Minami Ito, Chisaki Hatta, Sakie Yoshida, Kanoko Katsube, Yuka Morisue, Tensei Iwata
Department of Biofunctional System Engineering, Tokyo Medical and Dental University (TMDU), Japan
- 1P-258** Physiological effects of two types of sitting positions on the brain and autonomic nerve activities
Yuji L. Tanaka¹, Yume Sasaki², Ayumi Amemiya¹, Hisayoshi Sugawara¹, Ryutaro Kase¹
¹Department of Nursing Physiology, Chiba University Graduate School of Nursing, Japan, ²Yokohama Municipal Citizen's Hospital, Japan
- 1P-259** Prefrontal-enriched *SLIT1* expression in primate cortex established during the postnatal development
Tetsuya Sasaki^{1,2}, Yusuke Komatsu³, Akiya Watakabe⁴, Tetsuo Yamamori⁴
¹Department of Anatomy and Neuroscience, Faculty of Medicine, University of Tsukuba, Japan, ²Department of Kansei, Behavioral, and Brain Sciences, Graduate School of Comprehensive Human Sciences, ³ACD Corporation, ⁴Laboratory for Molecular Analysis of Higher Brain Function, CBS, RIKEN
- 1P-260** Response preference to artificial and environmental natural sounds in higher auditory cortices
Sohei Chimoto
Department of Neurophysiology, University of Yamanashi, Japan
- 1P-261** Neural properties of macaque SII bimodal neurons and their functional role for self-body awareness
Miki Taoka, Sayaka Hihara, Rafael Bretas, Atsushi Iriki
Laboratory for Symbolic Cognitive Development, Center of Biosystematics Dynamics Research, RIKEN, Japan

- 1P-262** The relation between the NMDA receptor/NO/cGMP pathway and the antidepressant-like effects of GLP-2
 Sachie Sasaki-Hamada^{1,2)}, Yuya Nakamura²⁾, Kenichi Koizumi²⁾,
 Rena Nabeta²⁾, Jun-Ichiro Oka²⁾
¹Department of Physiology, Kitasato University, Japan, ²Laboratory of Pharmacology, Tokyo University of Science, Japan
- 1P-263** Systematic analysis on the seeding activity of familial mutant forms of α -synuclein
 Ning Xu¹⁾, Genta Ito²⁾, Airi Tarutani¹⁾, Taisuke Tomita^{1,2)}
¹Laboratory of Neuropathology and Neurosciences, Graduate School of Pharmaceutical Science, The University of Tokyo, Japan, ²Laboratory of Brain and Neurological Disorders, Graduate School of Pharmaceutical Science, The University of Tokyo, Japan
- 1P-264** Olfactory impairment associated with left hippocampus volumes at earliest stages of schizophrenia
 Yuri Masaoka^{1,2)}, Dennis Velakoulis²⁾, Warrick Brewer³⁾, Vanessa Cropley²⁾,
 Cali Bartholomeusz^{2,3)}, Masahiko Izumizaki¹⁾, Patrick McGorry³⁾,
 Stephen J Wood^{3,4)}, Christos Pantelis^{2,5)}
¹Department of Physiology, Showa University School of Medicine, Japan, ²Melbourne Neuropsychiatry Centre, Department of Psychiatry, University of Melbourne and Melbourne Health, Australia, ³Orygen Youth Health Research Centre, Centre for Youth Mental Health, University of Melbourne, Australia, ⁴School of Psychology, University of Birmingham, UK, ⁵Centre for Neural Engineering, Department of Electrical and Electronic Engineering, University of Melbourne, Australia
- 1P-265** Atypical Motility Patterns in Gut Preparation of LRRK2 Knockout Mice
 Tatsunori Maekawa¹⁾, Fumitaka Kawakami¹⁾, Rei Kawashima¹⁾,
 Joel Bornstein²⁾, Jaime Foong²⁾, Takafumi Ichikawa¹⁾
¹Department of Regulation Biochemistry, Graduate School of Medical Sciences, Kitasato University, Japan, ²Department of Physiology, The University of Melbourne, Australia
- 1P-266** Histone Deacetylase 1, 3 as a novel target for anti-seizure drug discovery
 Kingsley Ibhazehiebo^{1,3)}, Cezar Gavrilovici^{2,3)}, Cristiane De La Hoz^{1,3)},
 Paola Meza Santoscoy^{1,3)}, Jong Micheal Rho^{2,3)}, Deborah Marie Kurrasch^{1,3)}
¹Department of Medical Genetics, University of Calgary, Canada, ²Department of Pediatrics, University of Calgary, Canada, ³Alberta Children's Hospital Research Institute, University of Calgary, Canada
- 1P-267** Hyperventilation test with indocyanine green kinetics predicts cerebral hyperperfusion after CAS
 Ichiro Nakagawa, Masashi Kotsugi, Fumihiko Nishimura, Syuichi Yamada,
 Yasushi Motoyama, Young Su Park, Hiroyuki Nakase
 Department of Neurosurgery, Nara Medical University, Japan
- 1P-268** Electrophysiological study of epilepticus recovering effect and mechanism of JBPOS0101 using MEA
 Eunsang Hwang⁴⁾, Kwan-Joong Kim³⁾, Min-Jeong Kim³⁾, Jeong-Hee Yoon¹⁾,
 Jae-Ho Khil²⁾, Ji-Ho Park¹⁾
¹Department of East-West Medicine, Graduate School of East-West Medical Science, Kyung Hee University, Korea, ²Department of Sports Medicine, Graduate School of Sports Science, Kyung Hee University, Korea, ³Department of Food Science and Biotechnology, Graduate School of Biotechnology, Kyung Hee University, Korea,

- 1P-269** ROS generation, Neuronal degeneration and Neurologic dysfunction after Ischemic Stroke in Mice
Nobuo Nagai¹⁾, Yasuki Matano¹⁾, Riku Kawazu¹⁾, Yasuhiro Suzuki²⁾, Kazuo Umemura³⁾
¹Laboratory of Animal Physiology, Nagahama Institute of Bio-Science and Technology, Japan, ²School of Pharmaceutical Sciences, Ohu University, Japan, ³Department of Pharmacology, Hamamatsu University School of Medicine, Japan
- 1P-270** Effect of orexin on the firing pattern of serotonergic dorsal raphe neurons
Masaru Ishibashi^{1,2)}, Nancy E Molina²⁾, Atsuo Fukuda¹⁾, Christopher S Leonard²⁾
¹Department of Neurophysiology, Hamamatsu University School of Medicine, Japan, ²Department of Physiology, New York Medical College
- 1P-271** Would skin resistance be a novel neurophysiological marker for transcranial electrical stimulation?
Hanna Lu^{1,2,3)}, Harriet Tang¹⁾, Linda Chiu Wa Lam¹⁾
¹Department of Psychiatry, The Chinese University of Hong Kong, China, ²Shenzhen Research Institute, The Chinese University of Hong Kong, ³The Affiliated Brain Hospital of Guangzhou Medical University
- 1P-272** Proposal for the classification sweating disorders based on lesion site
Yoko Inukai, Satoshi Iwase, Motohiko Sato
Department of Physiology, Aichi Medical University School of Medicine, Japan
- 1P-273** Reduced synaptic inputs in prefrontal cortex by lack of a mental disorder-related epigenetic factor
Kenichiro Nagahama^{1,2)}, Kazuto Sakoori^{1,2)}, Takaki Watanabe^{1,2)}, Naofumi Uesaka^{1,2)}, Masanobu Kano^{1,2)}
¹Dept. Neurophysiol, Gran. Sch. of Med., The Univ Tokyo, Japan, ²WPI-IRCIN, URIAS, The Univ. Tokyo
- 1P-274** Common behavioral characteristics in the mice maternally exposed to different types of dioxins
Fumihiko Maekawa¹⁾, Eiki Kimura^{1,2)}, Naoto Uramaru³⁾, Go Suzuki⁴⁾
¹Center for Health and Environmental Risk Research, National Institute for Environmental Studies, Japan, ²Japan Society for the Promotion of Science, ³Nihon Pharmaceutical University, ⁴Center for Material Cycles and Waste Management Research, National Institute for Environmental Studies, Japan
- 1P-275** TSPO-targeting compound ameliorates the abnormal behaviors of mice received social defeat stress
Kanako Nozaki¹⁾, Hikaru Ito¹⁾, Masahiro Ohgidani²⁾, Yosuke Yamawaki³⁾, Takashi Kitajima⁴⁾, Seishi Katsumata⁴⁾, Shigeto Yamawaki⁵⁾, Takahiro Kato²⁾, Hidenori Aizawa¹⁾
¹Department of Neurobiology, Hiroshima University, Japan, ²Department of Neuropsychiatry, Kyushu University, Japan, ³Department of Cellular and Molecular Pharmacology, Hiroshima University, Japan, ⁴Discovery Research Laboratories, Drug Discovery Division, Discovery & Research ONO Pharmaceutical Co., Ltd., Japan, ⁵Department of Psychiatry and Neurosciences, Hiroshima University, Japan
- 1P-276** Investigation of the effect of seaweed on the metabolic dysfunction-associated neurodegeneration

Motoki Imai¹), Fumitaka Kawakami¹), Hiroko Maruyama²)

¹Department of Regulation Biochemistry, Graduate School of Medical Sciences, Kitasato University, Japan, ²Department of Cytopathology, Graduate School of Medical Science, Kitasato University

- 1P-277** The expression and activation of Smad in the rat hippocampus following global cerebral ischemia
Yusuke Takahashi, Takayuki Nakajima
Department of Veterinary Anatomy, Osaka Prefecture University, Japan
- 1P-278** Abnormalities in synaptic structure and function in valproate-induced autism model marmosets
Satoshi Watanabe¹), Tohru Kurotani²), Tomofumi Oga¹), Keiko Nakagaki¹), Jun Noguchi¹), Noritaka Ichinohe^{1,2})
¹Department of Ultrastructural Research, National Center of Neurology and Psychiatry, Japan, ²Ichinohe Group, Laboratory for Molecular Analysis of Higher Brain Function, RIKEN Center for Brain Science, Japan
- 1P-279** Neonatal dexamethasone treatment suppresses hippocampal ERa expression in adolescent female rats
Kwok-Tung Lu¹), Hui-Fang Chiu¹), Michael W.Y. Chan²), Chiung-Yin Cheng¹), Jian-Liang Chou³), Jora Meng-Ju Lin²), Yi-Ling Yang⁴)
¹Department of Life Science, University of Taiwan Normal University, Taiwan, ²Department of Life Science, National Chung Cheng University, Taiwan, ³Division of Gastroenterology, Chang Gung Memorial Hospital, Taiwan, ⁴Institute of Biochemical Science and Technology, National Chia-Yi University, Taiwan
- 1P-280** Rosmarinic acid protects against MPTP-induced toxicity and inhibits iron-induced α -syn aggregation
Wenting Jia, Le Qu, Huamin Xu, Junxia Xie
Department of Physiology, Medical College of Qingdao University, China
- 1P-281** Automated, closed-loop stimulation of the medial septum alleviates temporal lobe epilepsy in rats
Yuichi Takeuchi^{1,2}), Márk Harangozó¹), Lizeth Pedraza¹), Tamás Földi¹), Gábor Kozák¹), Antal Berényi^{1,3})
¹MTA-SZTE 'Momentum' Oscillatory Neuronal Networks Research Group, Department of Physiology, University of Szeged, Hungary, ²Department of Neuropharmacology, Graduate School of Pharmaceutical Sciences, Nagoya City University, Japan, ³Neuroscience Institute, New York University, USA
- 1P-282** The effect of anti-arrhythmic drugs on glioma stem cells
Kohei Ofune¹), Ryoichi Iwata¹), Mikio Hayashi²), Kunikazu Yoshimura¹), Masahiro Nonaka¹), Akio Asai¹)
¹Department of Neurosurgery, Kansai Medical University, Japan, ²Department of Cell Physiology, Kansai Medical University, Japan
- 1P-283** TRPV4 is critical to brain edema after traumatic brain injury
Yi-Ling Yang¹), Kwok-Tung Lu²), Tai-Chung Huang²), Ya-Hsin Tsai²)
¹Department of Biochemical Science and Technology, National Chia-Yi University, Taiwan, ²Department of Life Science, National Taiwan Normal University, Taiwan
- 1P-284** Three-dimensional kinematical gait analysis of hindlimbs in rats with focal cerebral infarction
Tatsuro Kumada¹), Akira Yoshikawa²), Saho Morishita^{3,4}), Kazuya Hokamura³), Masahiko Izumizaki²), Kazuo Umemura³)
¹Faculty of Health and Medical Sciences, Tokoha University, Japan, ²Department of Physiology, Showa University, School of Medicine, Japan, ³Department of Pharmacology,

1P-285 TrkB activation promotes neuronal survival via Akt-ASK1 signaling after intracerebral hemorrhage

Chun-Hu Wu¹, Yen-Chieh Chuang², Chien-Cheng Chen³, Chia-Hua Ke³, Chun-Yen Lee³, Song-Kun Shyue⁴, Szu-Fu Chen^{2,3}

¹Graduate Institute of Life Sciences, National Defense Medical Center, Taiwan, ²Departments of Physiology and Biophysics, National Defense Medical Center, Taiwan, Republic of China, ³Department of Physical Medicine and Rehabilitation, Cheng Hsin General Hospital, Taiwan, Republic of China, ⁴Institute of Biomedical Sciences, Academia Sinica, Taiwan, Republic of China

1P-286 Neuroprotective effects of COPPIX against dopaminergic neurons degeneration in MPTP-intoxicated mice

Ning Song, Xiaofeng Xu, Xiaojun Yu, Junxia Xie
Department of Physiology, Qingdao University, China

1P-287 Investigation of the antidepressant agomelatine and ketamine on the synaptic plasticity in mice

Chi-Wei Lee^{1,2}, Yueh-Jung Chung², Yi-Chao Lee¹, Hui-Ching Lin^{1,2,3}

¹Ph.D. Program for Neural Regenerative Medicine, College of Medical Science and Technology, Taipei Medical University, Taiwan, ²Department and Institute of Physiology, School of Medicine, National Yang-Ming University, Taiwan, ³Brain Research Center, National Yang-Ming University, Taiwan

1P-288 Prenatal stress on *Gad1*-heterozygotes perturbs development of GABAergic networks affecting behavior

Tianying Wang¹, Adya Saran Sinha¹, Hiroki Mutoh¹, Tenpei Akita¹, Yuchio Yanagawa², Tomoko Kawai³, Kenichiro Hata³, Atsuo Fukuda¹

¹Department of Neurophysiology, Hamamatsu University School of Medicine, Japan, ²Department of Genetic and Behavioral Neuroscience, Gunma University Graduate School of Medicine, Japan, ³Department of Maternal-Fetal Biology, National Research Institute for Child Health and Development, Japan

1P-289 Suppression of FoxO1 by leptin enhances tyrosine hydroxylase and leads to anxiolytic behavior

Seul Ki Kim¹, Dong Hwee Son¹, Khanh Van Doan², Dong Joo Yang^{1,3}, Ji Su Sun¹, Yun-Hee Choi¹, Dong Min Shin¹, Ki Woo Kim¹

¹Department of Oral Biology, BK21 PLUS Project, Yonsei University College of Dentistry, Korea, ²Department of Pharmacology, School of Medicine, Tan Tao University, Vietnam., ³Department of Pharmacology and Global Medical Science, Yonsei University, Republic of Korea

Neuroscience: Somatosensory & Pain (1)

1P-290 Nociceptor-mediated outcomes under hydroxyphenyl octanediamide exposure via TRPV4 modulation

Pyung Sun Cho^{1,2}, Geunyeol Choi¹, Minseok Kim¹, Seung-In Choi¹, Ji Yeon Lim¹, Im Joo Rhyu¹, Sun Wook Hwang^{1,2}

¹Department of Biomedical Sciences, Korea University, Korea, ²Neuroscience Research Institute, Korea University, Korea

1P-291 Effects of *Toxoplasma gondii* infection on motor and non-motor symptoms of rat model of Parkinson

Mahnaz Taherianfard, Moslem Riyahi

- 1P-292** Increase of histone acetylation in the RVM in the rat with stress-induced hyperalgesia
Hiroki Imbe, Akihisa Kimura
Department of Physiology, Wakayama Medical University, Japan
- 1P-293** Psychological stress modulates On- and Off-cell activity in the rostral ventromedial medulla
Masayuki Kurose¹, Mana Hasegawa², Yosuke Nakatani^{1,3}, Shiho Shimizu^{1,3}, Noritaka Fujii², Yoshihide Satoh⁴, Kensuke Yamamura¹, Keiichiro Okamoto¹
¹Division of Oral Physiology, Department of Oral Biological Sciences, Niigata University, Graduate School of Medical and Dental Sciences, Japan, ²General Dentistry and Clinical Education Unit, Niigata University Medical and Dental Hospital, Japan, ³Division of Oral and Maxillofacial Surgery, Department of Oral Biological Sciences, Niigata University, Graduate School of Medical and Dental Sciences, Japan, ⁴Department of Physiology, The Nippon Dental University School of Life Dentistry at Niigata, Japan
- 1P-294** Descending orexinergic inhibition contributes to the linalool odor-induced analgesia in mice
Yurina Higa^{1,2}, Mitutaka Sugimura¹, Tomoyuki Kuwaki², Hideki Kashiwadani²
¹Department of Dental Anesthesiology, Graduate School of Medical and Dental Sciences Kagoshima University, Japan, ²Department of Physiology, Graduate School of Medical and Dental Sciences Kagoshima University
- 1P-295** Modulation of nociception via Endothelin-1 signaling in early-stage tongue cancer in rats
Masamichi Shinoda¹, Akihiko Furukawa², Ryuta Akasaka², Yoshiyuki Yonehara², Koichi Iwata¹
¹Department of Physiology, Nihon University School of Dentistry, Japan, ²Department of Clinical Medicine, Nihon University School of Dentistry, Japan
- 1P-296** TRPV1 Expression in the TG and Spinal Trigeminal Nucleus Following Dental Pulp Inflammation
Myeounghoon Cha¹, Imene Sallem², Il-Young Jung², Bae Hwan Lee¹
¹Department of Physiology, Yonsei University College of Medicine, Korea, ²Department of Conservative Dentistry and Oral Science Research Center, Yonsei University College of Dentistry
- 1P-297** TRPV1 inhibition by α_2 adrenergic receptors on peripheral sensory neurons causes analgesia
Yumi Matsushita, Miki Manabe, Naoki Kitamura, Izumi Shibuya
Faculty of Agriculture, Tottori University, Japan
- 1P-299** Effects of QX314 / Flagellin (Q/F) on the conduction of the peripheral nerve in rats
Yoshiyuki Tsuboi, Akihiro Kaizu
Department Physiology, Nihon University School of Dentistry, Japan
- 1P-300** Investigation of the antipruritic mechanisms of nalfurafine in the murine spinal cord
Kotaro Honda¹, Mitsutoshi Tominaga¹, Fumiya Kusube^{1,2}, Fumiyuki Yamakura³, Hisashi Naito³, Yasushi Suga⁵, Kenji Takamori^{1,5}
¹Institute for Environmental and Gender Specific Medicine, Juntendo University, Japan, ²Department of Biological Science and Technology, Faculty of Industrial Science and

Technology, Tokyo University of Science, Japan, ³Faculty of International Liberal Arts, Juntendo University, Japan, ⁴Institute of Health and Sports Science & Medicine, Juntendo University, Japan, ⁵Department of Dermatology, Juntendo University Urayasu Hospital, Japan

1P-301 Enhanced basal pain sensitivities observed in mice lacking interleukin-27

Toshiharu Yasaka¹), Tomoko Sasaguri²), Toru Taguchi^{3,4}), Yuzo Murata⁵), Kimiko Kobayashi⁶), Sayaka Iizasa⁷), Ei'ichi Iizasa¹), Makoto Tsuda⁸), Naomi Hirakawa²), Hiromitsu Hara¹), Hiroki Yoshida⁹)

¹Department of Immunology, Kagoshima University, Japan, ²Department of Anesthesiology & Critical Care Medicine, Saga University, Japan, ³Department of Physical Therapy, Niigata University of Health and Welfare, Japan, ⁴Department of Neuroscience II, Nagoya University, Japan, ⁵Division of Histology and Neuroanatomy, Department of Anatomy & Physiology, Saga University, Japan, ⁶Department of Anatomy and Neuroscience, Hyogo College of Medicine, Japan, ⁷Department of Biological Science and Technology, Kagoshima University, Japan, ⁸Department of Molecular and System Pharmacology, Kyushu University, Japan, ⁹Division of Molecular and Cellular Immunoscience, Department of Biomolecular Sciences, Saga University, Japan

1P-302 Withdrawn

1P-303 Astrocytes are a novel target for treatment of the chronic pain

Ikuko Takeda, Kei Eto, Kohei Yoshihara, Junichi Nabekura

Division of Homeostatic Development, National Institute for Physiological Sciences, Japan

1P-304 IFN- γ signaling in trigeminal spinal subnucleus caudalis is involved in orofacial neuropathic pain

Sayaka Asano^{1,2}), Masamichi Shinoda²), Akiko Ogawa-Okada¹), Yoshiaki Imamura¹), Koichi Iwata²)

¹Department of Oral Diagnostic Sciences, Nihon University School of Dentistry, Japan, ²Department of Physiology, Nihon University School of Dentistry, Japan

1P-305 Analgesic effects of calcitonin on radicular pain in rats

Yoshinori Terashima^{1,2}), Shunsuke Jimbo²), Tatsuya Sato¹), Nobutoshi Ichise¹), Toshihiko Yamashita²), Noritsugu Tohse¹)

¹Department of Cellular Physiology and Signal Transduction, Sapporo Medical University School of Medicine, Japan, ²Department of Orthopaedic Surgery, Sapporo Medical University School of Medicine, Japan

1P-306 Effect of intraarticular hyaluronic acid in a rat monoiodoacetate-induced ankle osteoarthritis model

Shunsuke Jimbo^{1,2}), Yoshinori Terashima^{1,2}), Atsushi Teramoto²), Tatsuya Sato¹), Izaya Ogon²), Nobutoshi Ichise¹), Kota Watanabe³), Tsuneo Takebayashi⁴), Toshihiko Yamashita²), Noritsugu Tohse¹)

¹Department of Cellular Physiology and Signal Transduction, Sapporo Medical University School of Medicine, Japan, ²Department of Orthopaedic Surgery, Sapporo Medical University School of Medicine, Japan, ³Department of Second Division of Physical Therapy, Sapporo Medical University School of Health Sciences, Japan, ⁴Sapporo Maruyama Orthopaedic Hospital, Japan

1P-307 Chronic pain model alters GABAergic synaptic transmission in the mice anterior cingulate cortex

Kohei Koga^{1,2}), Shuji Shimoyama¹), Akihiro Yamada²), Hidemasa Furue²), Kazuhiro Nakamura³), Shinya Ueno¹)

¹Department of Neurophysiology, Hirosaki University, Japan, ²Department of

- 1P-308** NGF induces constitutive activity of TRPV1 triggering spontaneous firing in sensory neurons
Naoki Kitamura, Erika Nagami, Yumi Matsushita, Tomohiko Kayano, Izumi Shibuya
Faculty of Agriculture, Tottori University, Japan
- 1P-309** Characterization of mechanically-insensitive afferents and sympathetic efferents in skeletal muscle
Hiroki Ota¹, Takanori Matsubara², Harumi Hotta³, Kazue Mizumura⁴, Toru Taguchi⁵
¹Dept. Judo Ther., Fac. Med. Tech., Teikyo Univ., Japan, ²Dept. Neural Regul., Grad. School Med., Nagoya Univ., Japan, ³Dept. Auton. Neurosci., Tokyo Metropol. Inst. Gerontol., Japan, ⁴Dept. Phys. Sch. Dent. Nihon Univ., Japan, ⁵Dept. Phys. Ther., Fac. Rehabil., Niigata Univ. Health Wel., Japan
- 1P-310** An alteration of gut microbiota is associated with pain in fibromyalgia patients: a pilot study
Passakorn Sawaddiruk¹, Nattayaporn Apaijai², Sasiwan Kerdphoo², Nipon Chattipakorn³, Siriporn Chattipakorn²
¹Department of Anesthesiology, Faculty of Medicine, Chiang Mai University, Thailand, ²Neurophysiology Unit, Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ³Center of Excellence in Cardiac Electrophysiology Research, Chiang Mai University, Thailand
- 1P-311** In vivo two-photon imaging of thermo-sensing at the skin of living rats
Atsunori Kamiya¹, Kazuo Kobayashi²
¹Department of Cellular Physiology, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Japan, ²Department of Molecular Genetics, Institute of Biomedical Sciences, Fukushima Medical University School of Medicine
- 1P-312** Cisplatin-induced intraoral neuropathy due to TRPA1 sensitization in rats
Suzuro Hitomi¹, Kiichiro Yamaguchi¹, Yuji Seta², Izumi Ujihara¹, Kentaro Ono¹
¹Division of Physiology, Kyushu Dental University, Japan, ²Division of Anatomy, Kyushu Dental University
- 1P-313** Amitriptyline-induced suppression of spinal dorsal horn neurons in a rat model of fibromyalgia
Toru Taguchi¹, Daisuke Uta², Katsuyuki Tsuboshima³, Hisao Nishijo³, Kazue Mizumura⁴
¹Department of Physical Therapy, Niigata University of Health and Welfare, Japan, ²Department of Applied Pharmacology, Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Japan, ³System Emotional Sciences, Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Japan, ⁴Department of Physiology, School of Dentistry, Nihon University, Japan
- 1P-314** Presynaptic inhibition of muscle afferent in awake, behaving monkeys: task-dependent modulation
Saeka Tomatsu^{1,2}, Geehee Kim², Shinji Kubota², Kazuhiko Seki²
¹Department of System Neuroscience, National Institute for Physiological Science, Japan, ²Department of Neurophysiology, National Institute of Neuroscience, National Center of Neurology and Psychiatry, Japan

- 1P-315** Tentonin 3/TMEM150c, a mechanotransduction channel for Arterial-pressure sensing baroreceptors
Huanjun Lu^{1,2)}, Luan Thien Nguyen^{1,2)}, Hyungsup Kim¹⁾, Hyesu Kim¹⁾, Uhtaek Oh¹⁾
¹Brain Science Institute, Korea Institute of Science and Technology (KIST), Korea, ²College of Pharmacy, Seoul National University, Korea
- 1P-316** The role of Cdkal1-mediated tRNA modification in peripheral neuropathy
Korin Sakakida^{1,2)}, Fan-Yan Wei¹⁾, Eiichi Araki²⁾, Kazuhito Tomizawa¹⁾
¹Department of Molecular Physiology, University of Kumamoto, Japan, ²Department of Metabolic Medicine, University of Kumamoto, Japan
- 1P-317** Mild traumatic brain injury induce sensitization of neurovascular system: Relevance for migraine
Akimasa Tashiro, Hiroyuki Ohta, Yuji Morimoto
Department of Physiology, National Defense Medical College, Japan
- 1P-318** Mechanical and reactive oxygen species-sensitive TRP channels mediate tooth movement-induced pain
Aoi Morii^{1,2)}, Suzuro Hitomi¹⁾, Izumi Ujihara¹⁾, Misa Sago-Ito²⁾, Masahiro Mizuhara²⁾, Kaori Gunjigake²⁾, Tatuo Kawamoto²⁾, Kentaro Ono¹⁾
¹Division of Physiology, Kyushu Dental University, Japan, ²Division of Orofacial Functions and Orthodontics, Kyushu Dental University, Japan
- 1P-319** Therapeutic effects of highly-residual ointments on oral ulcerative mucositis
Mako Naniwa^{1,2)}, Suzuro Hitomi¹⁾, Izumi Ujihara¹⁾, Kazunari Matsuda³⁾, Kenichi Yoshino⁴⁾, Atsuko Nakamichi²⁾, Kentaro Ono¹⁾
¹Division of Physiology, Kyushu Dental University, Japan, ²Division of Oral Health Sciences, Kyushu Dental University, Japan, ³Daiichi Sankyo Healthcare Co. Ltd., Japan, ⁴Section of Primary Dental Education, Kyushu Dental University, Japan
- 1P-320** mGluR5 in the dysgranular zone of primary somatosensory cortex mediates neuropathic pain in the rat
Geehoon Chung^{1,2)}, Sang Jeong Kim²⁾, Sun Kwang Kim¹⁾
¹Department of Physiology, College of Korean Medicine, Kyung Hee University, Korea, ²Department of Physiology, College of Medicine, Seoul National University, Korea
- 1P-321** Thermosensory processing in excitatory and inhibitory neurons of the primary somatosensory cortex
Kei Eto, Junichi Nabekura
Division of Homeostatic Development, National Institute for Physiological Sciences, Japan

- 1P-322** Electrophysiological characterization of bradykinin B₂ receptors in rat intracardiac neurons
 Shiho Arichi¹⁾, Sachie Hamada²⁾, Masanori Ogata²⁾, Hitoshi Ishibashi²⁾
¹Department of Brain Science, Graduate School of Medical Science, Kitasato University, Japan, ²Department of Physiology, School of Allied Health Science, Kitasato University, Japan
- 1P-323** Cell type-based activation timing and order in the sequence in the preBotzinger Complex
 Yoshihiko Oke¹⁾, Fumikazu Miwakeichi^{2,3)}, Yoshitaka Oku¹⁾,
 Johannes Hirrlinger^{4,5)}, Swen Hülsmann^{6,7)}
¹Division of Physiome, Department of Physiology, Hyogo College of Medicine, Japan, ²Department of Statistical Modeling, The Institute of Statistical Mathematics, Japan, ³Department of Statistical Science, School of Multidisciplinary Sciences, The Graduate University for Advanced Studies, Japan, ⁴Carl-Ludwig-Institute for Physiology, Faculty of Medicine, University of Leipzig, Germany, ⁵Department of Neurogenetics, Max Planck Institute of Experimental Medicine, Germany, ⁶Clinic for Anesthesiology, University Medical Center Gottingen, Germany, ⁷Research Center for Nanoscale Microscopy and Molecular Physiology of the Brain, University Medical Center Gottingen, Germany
- 1P-324** Respiratory fluctuations in pupil diameter are not maintained during cognitive tasks
 Nozomu H Nakamura¹⁾, Masaki Fukunaga²⁾, Yoshitaka Oku¹⁾
¹Div. Physiome, Dept. Physiology, Hyogo College of Medicine, Japan, ²Div. Cerebral Integration, Dept. System Neuroscience, National Institute of Physiological Sciences, Japan
- 1P-325** Morphology and vanilloid-susceptibility of sensory neurons innervating perirenal adipose tissue
 Bo-Xun Liu, Peng-Yu Zong, Xu-Guan Chen, Wei Sun, Xiang-Qing Kong
 Department of Cardiology, The First Affiliated Hospital of Nanjing Medical University, China
- 1P-326** The central nNOS uncoupling contributes to cardiovascular dysfunction in hypertensive rats
 Wei-Zhong Wang, Xing Tan, Yang-Kai Wang, Ya-Hong Yang
 Department of Physiology, Naval Medical University, China
- 1P-327** Involvement of PVN neurons projecting to the RVLM in sympathetic dysfunction in heart failure
 Satoshi Koba, Eri Hanai, Nao Kumada, Tatsuo Watanabe
 Tottori University Faculty of Medicine, Japan
- 1P-328** Responses to hypercapnia and hypoxia of Phox2b-positive cells in the ventral medulla of newborn rats
 Hiroshi Onimaru¹⁾, Keiko Ikeda²⁾, Hiroyuki Igarashi³⁾, Hiromu Yawo⁴⁾,
 Kazuto Kobayashi⁵⁾, Satoru Arata⁶⁾, Kiyoshi Kawakami⁷⁾,
 Masahiko Izumizaki¹⁾
¹Department of Physiology, Showa University School of Medicine, Japan, ²Department of Physiology, International University of Health and Welfare (IUHW), ³Department of Physiology and Pharmacology, Schulich School of Medicine and Dentistry, Robarts Research Institute, Western University, ⁴Department of Integrative Life Sciences, Tohoku University Graduate School of Life Sciences, ⁵Dept Mol Genet, (Inst Bio Sic.) Fukushima Med Univ, ⁶Center for Biotechnology, Showa University, ⁷Division of Biology, Center for Molecular Medicine, Jichi Medical University

- 1P-329** Involvement of the lateral parabrachial nucleus in the pressor responses to pinching of the hindpaw
Hana Nozawa^{1,2)}, Rie Shimoku^{1,3)}, Takamichi Taniguchi^{1,2)}, Hideshi Shibata⁴⁾, Mieko Kurosawa^{1,5)}
¹Grad. Sch. Health & Sci., Int. Univ. Health & Welfare, Japan, ²Dept. Occupational Ther., Intl. Univ. Health & Welfare, Japan, ³Dept. Physical Ther., Intl. Univ. Health & Welfare, Japan, ⁴Lab. Vet. Anat., Ins. Agric., Tokyo Univ. Agric & Tech., Japan, ⁵Center Med. Sci., Intl. Univ. Health & Welfare, Japan
- 1P-330** Raphe-projecting oxytocinergic hypothalamic neurons stimulate brown adipose tissue thermogenesis
Akihiro Fukushima, Kazuhiro Nakamura
Department of Integrative Physiology, Nagoya University Graduate School of Medicine, Japan
- 1P-331** Strychnine enhances inspiratory-related calcium rise in the thoracic inspiratory interneuron
Yoshihiro Mikami, Makito Iizuka, Hiroshi Onimaru, Masahiko Izumizaki
Dept. Physiol., Showa Univ. Sch. Med., Japan
- 1P-332** Effects of feeding-promoting peptides on excitability of the superior salivatory nucleus neurons
Yoshihiro Mitoh¹⁾, Tadasu Sato²⁾, Masako Fujita¹⁾, Hiroyuki Ichikawa²⁾, Motoi Kobashi¹⁾, Ryusuke Yoshida¹⁾
¹Department of Oral Physiology, Okayama University Graduate School of Medicine and Dentistry and Pharmaceutical Sciences, Okayama, Japan, ²Division of Oral and Craniofacial Anatomy, Tohoku University Graduate School of Dentistry, Japan
- 1P-333** Patch-clamp recordings from CRF+ neuron in the Barrington's nucleus using CRF-Venus Δ neo mice
Masahiro Kawatani¹⁾, Keiichi Itoi^{2,3)}, Katsuya Uchida^{2,3)}, Kenji Sakimura⁴⁾
¹Department of Neurophysiology, School of Medicine, University of Akita, Japan, ²Laboratory of Information Biology, Graduate School of Information Sciences, Tohoku University, Japan, ³Department of Neuroendocrinology, Graduate School of Medicine, Tohoku University, Japan, ⁴Department of Cellular Neurobiology, Brain Research Institute, Niigata University, Japan
- 1P-334** Edible sesquiterpene alcohols suppress cytotoxic chemotherapy side effects
Young-Ho Jin, Eunhee Yang
Department of Physiology, School of Med. Kyung Hee University, Korea
- 1P-335** Opposite effects of peripheral warming on autonomic nerve activities in the anesthetized rat
Takehito Kemuriyama¹⁾, Yoshiaki Sato²⁾, Hokyoo Lee³⁾, Takuto Nagashima⁴⁾, Megumi Tandai-Hiruma²⁾
¹Department of Nursing, Kiryu University, Japan, ²Department of Physiology, National Defense Medical College, Japan, ³Department of Engineering, Niigata Institute of Technology, Japan, ⁴SIT Research Laboratories, Shibaura Institute of Technology, Japan
- 1P-336** Is sympathoexcitation by PVN-RVLM neurons augmented in heart failure?
Eri Hanai, Nao Kumada, Tatsuo Watanabe, Satoshi Koba
Division of Integrative Physiology, Tottori University Faculty of Medicine, Japan

- 1P-337** Role of Orexin neurons in the hypothalamus during social defeat stress in the rat
Ena Yamamoto, Takatoshi Horiuchi, Misaki Ichikawa, Jouji Horiuchi
Department of Biomedical Engineering, Toyo University, Japan
- 1P-338** Effects of anaphylaxis on the gastric autonomic nerve activities in anesthetized rats
Yuhichi Kuda, Mamoru Tanida, Yasutaka Kurata, Toshishige Shibamoto
Department of Physiology 2, Kanazawa Medical University, Japan

Neuroscience: Brain-machine interface

- 1P-339** The efficacy of prosthetic retinal stimulation
Tomomitsu Miyoshi¹⁾, Hiroyuki Kanda²⁾, Takeshi Morimoto²⁾, Takashi Fujikado²⁾
¹Department of Integrative Physiology, Graduate School of Medicine, Osaka University, Japan, ²Department of Applied Visual Science, Graduate School of Medicine, Osaka University
- 1P-340** A possibility of intracortical neural prostheses with carbon-nanotube-based electrodes
Yuki Hayashida, Rira Ohta, Shohei Suga
Grad. Engineering, Osaka University, Japan

Neuroscience: Others (1)

- 1P-341** The neuroprotective effects of Metformin after severe traumatic brain injury in male rats:
Ali Siahposht-Khachaki¹⁾, Ahmadreza Ferdowsi²⁾
¹Department of Physiology and Pharmacology, Mazandaran University of Medical Sciences, Ramsar International Branch, Iran, ²medicine Students, Mazandaran University of Medical Sciences, Ramsar International Branch, Iran
- 1P-342** In vivo otolith organs: clinical significance of its shape between normal and Meniere's disease
Hisaya Tanioka¹⁾, Kimitaka Kaga²⁾, Sayaka Tanioka³⁾
¹Department of Radiology, Tanioka Clinic, Japan, ²National Institute of Sensory Organs, Tokyo Medical Center, ³Tanioka Clinic, Japan
- 1P-343** A newly synthesized adenosine analogue COA-CI increases dopamine secretion in mouse brain
Ikuko Tsukamoto¹⁾, Mostofa Jamal¹⁾, Maki Takata¹⁾, Asuka Ito¹⁾, Junsuke Igarashi²⁾, Yasuo Kubota¹⁾, Hiroshi Kinoshita¹⁾, Norikazu Sakakibara³⁾, Ryoji Konishi¹⁾
¹Faculty of Medicine, Kagawa University, Japan, ²Morinomiya University of Medical Sciences, Japan, ³Kagawa School of Pharmaceutical Sciences, Tokushima Bunri University, Japan
- 1P-344** Neurotrophic Role of Glucagon-like Peptide-1 Promotes Neuronal Differentiation via PI3K-AKT Axis
Yun-Ru Yang, Sun Shu-Fang, Yang Jenq-Lin
Institute for Translational Research in Biomedicine, Kaohsiung Chang Gung Memorial Hospital, Taiwan

- 1P-345** Cholinergic induction of network oscillations in the slug olfactory neuron *in vitro*
Suguru Kobayashi
Kagawa School of Pharmaceutical Sciences, Tokushima Bunri University, Japan
- 1P-346** Cycle duration-modulated information transfer of olfactory and vomeronasal sensory neurons in mice
Tomohiro Noguchi, Sadaharu Miyazono, Makoto Kashiwayanagi
Department of Sensory Physiology, Asahikawa Medical University, Japan
- 1P-347** The Neuro-protective Role of Parkin-mediated Mitophagy in Ethambutol-induced Toxic Optic Neuropathy
Jin Hyoung Kim¹, Byung Joo Lee¹, Jeong Hun Kim^{1,2}
¹FARB Laboratory, Clinical Research Institute, Seoul National University Hospital, Korea, ²Department of Biomedical Sciences and Ophthalmology, Seoul National University College of Medicine, Korea
- 1P-348** Tregs Protect Dopaminergic Neurons against MPP⁺ Neurotoxicity via CD47-SIRPA Interaction
Yan Huang, Zhan Liu, Yuping Peng
Department of Physiology, School of Medicine Nantong University, China
- 1P-349** Pathology-dependent mitochondria-cytoskeleton interaction in amyotrophic lateral sclerosis (ALS)
Tomohiro Tanaka^{1,2}, Akiyuki Nishimura³, Okiru Komine⁴, Koji Yamanaka⁴, Motohiro Nishida^{1,2,3}
¹National Institute for Physiological Sciences (NIPS), National Institutes of Natural Sciences, Japan, ²Exploratory Research Center on Life and Living Systems (EXCELLS), National Institutes of Natural Sciences, Japan, ³Graduate School of Pharmaceutical Sciences, Kyushu University, Japan, ⁴Research Institute of Environmental Medicine, Nagoya University, Japan
- 1P-350** Continuous laryngeal TRPV1 activation modulates swallowing initiation in anesthetized rats
Midori Yoshihara, Takanori Tsujimura, Makoto Inoue
Division of Dysphagia Rehabilitation, Niigata University Graduate School of Medical and Dental Sciences, Japan
- 1P-351** Prevention of Dry-Eye Pain by Diquafosol Sodium Administration
Ayano Katagiri¹, Koichi Iwata²
¹Department of Oral Physiology, Osaka University Graduate School of Dentistry, Japan, ²Department of Physiology, Nihon University School of Dentistry
- 1P-352** Analysis of activated cortical area caused by food restriction in mice
Jihao Ma, Sakurako Yanase, Lisa Udagawa, Tomoyuki Kuwaki, Ikue Kusumoto-Yoshida
Department of Physiology, University of Kagoshima, Japan
- 1P-353** TLR2-dependent signaling relay of glial-neuronal circuits to regulate thermoregulation
Saki Murayama, Erkin Kurganov, Seiji Miyata
Department of Applied Biology, Kyoto Institute of Technology, Japan
- 1P-354** A novel TRPM8 expressing “cold-neuron” in mouse hypothalamus and medulla
Erkin Kurganov, Kaho Okamoto, Seiji Miyata

1P-355 Sensitivity of voltage-dependent Ca²⁺ channels in rat AVP neurons to an anthranilic acid derivative

Kaori Sato^{1,2)}, Tomohiro Numata¹⁾, Yoichi Ueta³⁾, Yasunobu Okada^{4,5)}

¹Department of Physiology, Fukuoka University, Japan, ²Japan Society for the Promotion of Science, Japan, ³Department of Physiology, School of Medicine, University of Occupational and Environmental Health, Japan, ⁴Department of Physiology and Systems Bioscience, Kyoto Prefectural University of Medicine, Japan, ⁵National Institute for Physiological Science, Japan

1P-356 Behavioral and neural characteristics of recognition of the binary taste mixture in rats

Tomoki Yamamura, Yoshihisa Katagawa, Toshiaki Yasuo, Takeshi Suwabe, Noritaka Sako

Dept. Oral Physiol., Asahi Univ. Sch. Dent., Japan

1P-357 An imaging system for 3D detection of nano-vibrations in sensory epithelium of the inner ear

Fumiaki Nin¹⁾, Samuel Choi²⁾, Takeru Ota¹⁾, Hiroshi Hibino¹⁾

¹Department of Molecular Physiology, Niigata University, Japan, ²Department of Electrical and Electronics Engineering, Niigata University, Japan

1P-358 Effects of self-motion on the hippocampal CA1 place cell activities in the freely behaving monkey

Yutaro Hazama, Takashi Asano, Ryoji Tamura

Department of Integrative Neuroscience, Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Japan

1P-359 Massage-like stroking stimulation induces 50-kHz ultrasonic vocalizations

Rie Shimoju¹⁾, Miyo Hori²⁾, Hideshi Shibata³⁾, Mieko Kurosawa^{4,5)}

¹Dept. Physical Ther., Intl. Univ. Health & Welfare, Japan, ²Foundation for Advancement of Intl. Sci., Japan, ³Lab. Vet. Anat., Ins. Agric., Tokyo Univ. Agric & Tech., Japan, ⁴Center Med. Sci., Intl. Univ. Health & Welfare, Japan, ⁵Dept. Pharm. Sci., Intl. Univ. Health & Welfare, Japan

1P-360 Retinal circadian rhythm is entrained by the SCN via corticosterone secretion from the adrenal gland

Keisuke Ikegami^{1,2)}, Mamoru Nagano²⁾, Satoru Masubuchi¹⁾, Yasufumi Shigeyoshi²⁾

¹Department of Physiology, School of Medicine, Aichi Medical University, Japan, ²Department of Anatomy and Neurobiology, Faculty of Medicine, Kindai University

1P-361 Exercise capacity and intelligence in adults after betamethasone given to 4-day-old infant rats

Shunta Maruo, Ayaka Matsuo, Takayoshi Hosono

Department of Biomedical Engineering, Osaka Electro-Communication University, Japan

1P-362 Characteristics of motor and memory functions in cerebral hypoperfusion model rat by microspheres

Naoyuki Himi¹⁾, Naohiko Okabe¹⁾, Emi Maruyama Nakamura¹⁾, Hisashi Takahashi²⁾, Norito Hayashi¹⁾, Issei Sakamoto¹⁾, Tomoshige Koga²⁾, Osamu Miyamoto¹⁾

¹Department of Physiology 2, Kawasaki Medical School, Japan, ²Department of Rehabilitation, Kawasaki University of Medical Welfare, Japan

- 1P-363** H₂S Attenuates Maternal Cigarette Smoke Exposure-Induced Oxidative Stress in pFRG in Neonatal Rats
Fang Lei, Wen Wang, Yating Fu, Ji Wang, Yu Zheng
Department of Physiology, West China School of Basic Medical Sciences and Forensic Medicine, Sichuan University, China
- 1P-364** Maternal Cigarette Smoke Exposure Disturbs Excitatory/Inhibitory Balance in pFRG of Neonatal Rats
Fu Yating, Fang Lei, Wang Ji, Zheng Yu
Department of Physiology, West China School of Basic Medical Sciences and Forensic Medicine, Sichuan University, China
- 1P-365** Brown adipose tissue is involved in anti-obesity effects of royal jelly in high fat diet-fed mice
Akira Terao¹⁾, Takeshi Yoneshiro²⁾, Ryuji Kaede²⁾, Kazuki Nagaya²⁾, Julia Aoyama²⁾, Mana Saito²⁾, Yuko Okamatsu-Ogura²⁾, Kazuhiro Kimura²⁾
¹School of Biological Sciences, Tokai University, ²Laboratory of Biochemistry, Department of Biomedical Sciences, Graduate School of Veterinary Medicine, Hokkaido University
- 1P-366** Effect of LH stimulation on formalin-induced orofacial pain: role of orexin1 receptors in the VTA
Laleh Rezaee Nazifi, Abbas Haghparast
Neuroscience Research Center Shahid Beheshti University of Medical Sciences
- 1P-367** Ischemic postconditioning induced by opening of mK⁺_{ATP} channels and NMDAR silencing by mPTP opening
Yudai Morisaki¹⁾, Ichiro Nakagawa¹⁾, Shohei Yokoyama¹⁾, Yoichi Ogawa²⁾, Yasuhiko Saito²⁾, Hiroyuki Nakase¹⁾
¹Department of Neurosurgery, Nara medical university, Japan, ²Department of Physiology I, Nara medical university, Japan
- 1P-368** Effect of cannabinoids in prefrontal on decision making mediates via change in p-CREB and p-GSK3
Zahra Fatahivanani, Abbas Haghparast, Fariba Khodaghohi
Neuroscience Research Center, Shahid Beheshti University of Medical Science, Iran
- 1P-369** Low frequency stimulation targeting the subiculum reverses drug resistance in temporal lobe epilepsy
Fan Fei, Cenglin Xu, Yi Wang, Yao Liu, Ying Wang, Fang Ding, Kai Zhong, Shuang Wang, Zhong Chen
Department of Pharmacology, University of Zhejiang, China
- 1P-370** Utilizing the TRPV1 and TRPM8 channels to facilitate the swallowing
Mohammad Zakir Hossain¹⁾, Hiroshi Ando²⁾, Shumpei Unno¹⁾, Yuji Masuda³⁾, Junichi Kitagawa¹⁾
¹Department of Oral Physiology, Matsumoto Dental University, Japan, ²Department of Biology, Matsumoto Dental University, Japan, ³Institute for Oral Science, Matsumoto Dental University, Japan
- 1P-371** Mating with SFPs deficient males cause the suppression of NaCl intake in females in *Drosophila*
Akira Furuyama
Department of Oral Function and Molecular Biology, Ohu University School of Dentistry, Japan

- 1P-372** Mood stabilizing drugs activate adult neural stem cell-neurogenesis system
Keita Nakaji¹, Natsu Koyama², Takahiro Fuchigami², Seiji Hitoshi²
¹Department of Medical Science, Shiga University of Medical Science, Japan, ²Dept. Physiology, Shiga Univ. of Medical Science
- 1P-373** Chebulinic acid negated the development of streptozotocin induced experimental dementia in rats
Rimpi Arora, Arjun Singh, Rahul Deshmukh
Dept. of Pharmacology, ISF College of Pharmacy, India
- 1P-374** Chronic EEG recording from rodents using ceramic-guided wire electrodes
Tomokazu Ohshiro¹, Yuchio Yanagawa², Hajime Mushiake¹
¹Department of Physiology, School of Medicine, Tohoku university, Japan, ²Department of Genetic and Behavioral Neuroscience, Graduate School of Medicine, Gunma University, Japan
- 1P-375** Retinal ON pathways contribute to temporal characteristics of visual motion processing in mice
Yuko Sugita^{1,2}, Kenichiro Miura², Takahisa Furukawa¹
¹Laboratory for Molecular and Developmental Biology, Institute for Protein Research, Osaka University, Japan, ²Department of Integrative Brain Science, Graduate School of Medicine, Kyoto University, Japan
- 1P-376** Distribution of Smad mRNA and proteins in the rat brain
Takayuki Nakajima
Department of Veterinary Anatomy, Graduate School of Life and Environmental Sciences, Osaka Prefecture University, Japan
- 1P-377** Event related potentials in the first-person shooter game with virtual reality environment
Masashi Arake^{1,2}, Hiroyuki Ohta³, Aki Tsuruhara³, Yuji Morimoto³, Nariyoshi Shinomiya¹
¹Department of Integrative Physiology and Bio-Nano Medicine, National Defense Medical College, Japan, ²Aeromedical Laboratory, Japan Air Self Defense Force, Japan, ³Department of Physiology, National Defense Medical College, Japan
- 1P-378** Changes in reproductive hormones-related genes in hippocampus of cognitive impaired male rats
Patteera Wititsuwankul, Sukanya Jaroenporn, Taratorn Fainanta, Suchinda Malaivijitnond
Department of Biology, Faculty of Science, Chulalongkorn University, Thailand
- 1P-379** Agomelatine protects against on permanent cerebral ischemia model through Nrf2-HO-1 pathway
Wijitra Chumboatong¹, Chainarong Tocharus², Piyarat Govitrapong³, Jiraporn Tocharus Tocharus¹
¹Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ²Department of Anatomy, Faculty of Medicine, Chiang Mai University, Thailand, ³Chulabhorn Graduate Institute, Thailand
- 1P-380** Effects of taurine supplementation with exercise on antioxidant enzymes activities in aging rat brain
Jiraporn Onsri, Rungrudee Srisawat
School of Preclinic, Institute of Science, Suranaree University of Technology, Thailand

- 1P-381** Effects of quercetin on neuronal activity in the hypothalamic food intake regulating areas
Naiyana Nontamart, Rungrudee Srisawat
School of Preclinic, Institute of Science, Suranaree University of Technology, Thailand
- 1P-382** Dihydrocapsaicin improves functional recovery after cerebral ischemia and reperfusion in rat model
Jiraporn Tocharus¹, Adchara Janyou², Chainarong Tocharus², Apichart Suksamrarn³
¹Department of Physiology, Chiang Mai University, Thailand, ²Department of Anatomy, Chiang Mai University, Thailand, ³Department of Chemistry and Center of Excellence for Innovation in Chemistry, Ramkhamhaeng University
- 1P-383** The Effect of difference of cognitive control levels in SRK model on EEG frontal theta band
Satoshi Kawashima¹, Asako Yoda²
¹Graduate School of Literature and Social Sciences, Nihon University, Japan, ²College of Humanities and Sciences, Nihon University
- 1P-384** Parvalbumin positive neurons in the basolateral amygdala and anxiety-like behavior in OLETF rats
Ryosuke Ochi¹, Naoto Fujita¹, Natsuki Goto¹, Hisao Nishijo², Susumu Urakawa¹
¹Dept. of Musculoskeletal Functional Res. and Regeneration, Grad. Sch. of Biomedical and Health Sci., Hiroshima Univ., Japan, ²Dept. of System Emotional Sci., Grad. Sch. of Medical and Pharmaceutical Sci., Univ. of Toyama, Japan
- 1P-385** Role of the medulla in the regulation of slow wave sleep
Yoshimasa Koyama, Kazuki Kobayashi, Hayato Iwata, Tatsuya Suzuki, Kaname Mochizuki, Yoshifumi Arai
Department of Science and Technology, Fukushima University, Japan
- 1P-386** The Protective Effect of Neferine on Permanent Ischemic Brain Injury in Rats
Jirakhamoln Sengking¹, Jiraporn Tocharus³, Ratchanaporn Chokchaisiri², Apichart Suksamrarn⁴, Chainarong Tocharus¹
¹Department of Anatomy, Faculty of Medicine, Chiang Mai University, Thailand, ²Department of Chemistry, School of Science, University of Phayao, Thailand, ³Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Chemistry and Center of Excellence for Innovation in Chemistry, Faculty of Science, Ramkhamhaeng University, Thailand
- 1P-387** Effects of NSAIDs on cerebral glucose metabolism measured by [¹⁸F] FDG uptake in rat brain slices
Tatsuya Asai^{1,2}, Yasuki Narita¹, Yasushi Kiyono², Hidehiko Okazawa²
¹Department of Human and Artificial Intelligence Systems, University of Fukui, Japan, ²Biomedical Imaging Research Center, University of Fukui, Japan

Epithelial Transport, Secretion & Absorption: Epithelium (1)

- 1P-388** MLCK isoforms regulate intestinal epithelial hyperpermeability under inflammatory stress
Yu Chen Pai, Tsung-Chun Lee, Chia-Hui Yu
Graduate Institute of Physiology, National Taiwan University College of Medicine, Taiwan

- 1P-389** TRPV6 mutations cause neonatal transient hyperparathyroidism
Yoshiro Suzuki^{1,2)}, David Chitayat³⁾, Hirotake Sawada⁴⁾, Gen Nishimura⁵⁾, Makoto Tominaga^{1,2)}
¹Division of Cell Signaling, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, SOKENDAI, Japan, ³University of Toronto, Canada, ⁴Miyazaki University School of Medicine, Japan, ⁵Saitama Medical University Hospital, Japan
- 1P-390** Involvement of EP receptors in the regulation of Short circuit current by prostaglandins in A6 cells
Sun Hongxin^{1,2)}, Marunaka Yoshinori²⁾, Asano Shinji^{1,2)}
¹Dept Mol. Physiol, Coll. Pharm. Sci., Ritsumeikan Univ., Japan, ²Research Organization of Sci. and Tech., Ritsumeikan Univ.
- 1P-391** Oligomerization of Na⁺/H⁺ exchanger isoform 3 (NHE3) and its role in the transport mechanism
Noriko Ishizuka, Shino Koido, Hisayoshi Hayashi
School of Food and Nutritional Sciences, University of Shizuoka, Japan
- 1P-392** Computer simulation of intracellular HCO₃⁻/CO₂ buffering in pancreatic duct cell
Makoto Yamaguchi¹⁾, Martin Steward²⁾, Yoshiro Sohma³⁾, Akiko Yamamoto¹⁾, Hiroshi Ishiguro¹⁾
¹Department of Human Nutrition, Nagoya University Graduate School of Medicine, Japan, ²School of Medical Sciences, University of Manchester, UK, ³Department of Pharmaceutical Sciences, International University of Health and welfare, Japan
- 1P-393** Secretory reflex pathway of Xenin-25 in the rat ileum
Atsukazu Kuwahara¹⁾, Yuko Kuwahara²⁾, Ikuo Kato³⁾, Toshio Inui³⁾, Yoshinori Marunaka^{1,2,5)}
¹ Research Unit for Epithelial Physiology, Research Organization of Science and Technology, Ritsumeikan University, Japan, ²Department of Molecular Cell Physiology, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, ³Department of Medical Biochemistry, Kobe Pharmaceutical University, ⁴Saisei Mirai Clinics, ⁵Research Institute for Clinical Physiology, Kyoto Industrial Health Association
- 1P-394** Secretory reflex pathway of SCFA in the rat distal colon
Daiki Harata¹⁾, Shinji Asano^{1,2)}, Atsukazu Kuwahara²⁾, Toshio Inui³⁾, Yoshinori Marunaka^{2,4,5)}
¹Dept of Mol Physiol, Coll Pharm Sci, Ritsumeikan Univ, Japan, ²Res Unit for Epithelial Physiol, Res Org of Sci and Tech, Ritsumeikan Univ, Japan, ³Saisei Mirai Clinics, Japan, ⁴Dept Mol Cell Physiol, Grad Sch Med Sci Kyoto Pref Univ Med, Japan, ⁵Res Inst for Clin Physiol, Kyoto Ind Health Assoc, Japan
- 1P-395** Epithelial ion secretion of human bronchial ciliary epithelium
Shigekuni Hosogi^{1,2)}, Leonardo Puppulin²⁾, Nobuyo Tamiya⁴⁾, Hideo Tanaka³⁾, Koichi Takayama⁴⁾, Eishi Ashihara¹⁾
¹Department of Clinical and Translational Physiology, Kyoto Pharmaceutical University, Japan, ²Department of Molecular Cell Physiology, Graduate School of Medical Sciences, Kyoto Prefectural University of Medicine, Japan, ³Department of Pathology and Cell Regulation, Graduate School of Medical Sciences, Kyoto Prefectural University of Medicine, Japan, ⁴Department of Respiratory Medicine, Graduate School of Medical Sciences, Kyoto Prefectural University of Medicine, Japan

Epithelial Transport, Secretion & Absorption: G-I tract (1)

- 1P-396** Zinc finger protein 521 involved in small intestinal function and stem cell differentiation
Nazuna Morisada, Kotone Miyake, Mamoru Aoto, Noriaki Mitsuda, Nobutaka Ohkubo
Department of Circulatory Physiology, Graduate School of Medicine, Ehime University, Japan
- 1P-397** Role of cysteine protease inhibitors in malignancy of oral squamous cell carcinoma
Junko Fujita-Yoshigaki, Megumi Yokoyama, Osamu Katsumata-Kato
Department of Physiology, Nihon University School of Dentistry at Matsudo, Japan
- 1P-398** Renal impairment disturbs the intestinal microbiota and alters intestinal motility
Kazuhiro Nishiyama¹, Yasu-Taka Azuma², Hidemitsu Nakajima², Tadayoshi Takeuchi²
¹Department of Translational Pharmaceutical Sciences Kyushu University, Japan, ²Laboratory of Veterinary Pharmacology, Division of Veterinary Science, Osaka Prefecture University Graduate School of Life and Environmental Science, Japan
- 1P-399** Down-regulation of PDGFR α + cells caused colonic dysmotility in DSS-induced colitis mice
Wenxie Xu^{1,2}, Chen Lu¹, Hongli Lu¹, Xu Huang¹, Jie Chen²
¹Department of anatomy and physiology, Shanghai Jiaotong University, School of Medicine, China, ²Department of Pediatric Surgery, Xin Hua Hospital, Affiliated to Shanghai Jiao Tong University School of Medicine, China
- 1P-400** Neurogenic relaxation of Xenin on spontaneous circular muscle contractions in rat distal colon
Yuko Kuwahara¹, Ikuo Kato², Atsukazu Kuwahara³, Yoshinori Marunaka^{3,4}, Toshio Inui⁵
¹Department of Molecular Cell Physiology, Kyoto Prefectural University of Medicine, Japan, ²Department of Medical Biochemistry, Kobe Pharmaceutical University, ³Research Unit for Epithelial Physiology, Research Organization of Science and Technology, Ritsumeikan University, ⁴Research Institute for Clinical Physiology, Kyoto Industrial Health Association, ⁵Saisei Mirai Clinics
- 1P-401** CRF regulates colonic motility through CRF-PDGFR α /ICC pathway
Xu Huang, Hong-Li Lu, Han-Yue Fu, Chen Lu, Wen-Xie Xu
Department of Anatomy and Physiology, Shanghai Jiao Tong University School of Medicine, China
- 1P-402** Regulation of gastric motility by histamine via interstitial cells of Cajal in the Syrian hamster
Takahiko Shiina¹, Kazuhiro Horii¹, Satoru Naganuma¹, Shohei Yasuda¹, Yasutake Shimizu^{1,2}
¹Department of Basic Veterinary Science, Laboratory of Physiology, The United Graduate School of Veterinary Sciences, Gifu University, Japan, ²Center for Highly Advanced Integration of Nano and Life Sciences, Gifu University (G-CHAIN)
- 1P-403** Changes of colonic transit in feeding state after abdominal open surgery in conscious rat
Misaki Okada¹, Sazu Taniguchi², Hiroshi Taniguchi³, Hiroshi Kitakoji⁴, Kazunori Itoh⁵, Kenji Imai⁶
¹Graduate School of Acupuncture and Moxibustion, Meiji University of Integrative

Medicine, Japan, ²The Japan School of Acupuncture, Moxibustion and Physiotherapy, ³Department of Acupuncture and Moxibustion, Tokyo Ariake University of Medical and Health Sciences, ⁴Department of Acupuncture and Moxibustion, Takarazuka University of Medical and Health Care, ⁵Department of Acupuncture and Moxibustion, Meiji University of Integrative Medicine, ⁶Department of Acupuncture and Moxibustion, Faculty of Health Science, Teikyo Heisei University

1P-404 The mechanism of sexually dimorphic responses of colorectal motility by noxious stimulation in rats

Kazuhiro Hori¹*, Yuka Ehara¹*, Kiyotada Naitou¹*, Hiroyuki Nakamori¹*, Takahiko Shiina¹*, Yasutake Shimizu^{1,2}*

¹Lab Vet Physiol, Unit Grad Sch Vet Sci, Gifu Univ, Japan, ²Center for Highly Advanced Integration of Nano and Life Sciences, Gifu University (G-CHAIN)

Epithelial Transport, Secretion & Absorption: Renal Physiology (1)

1P-405 Recovery of tight junctional localization and Mg²⁺ transport of claudin-16 mutant by primaquine

Akira Ikari¹*, Kana Marunaka¹*, Toru Kimura²*, Hajime Hasegawa³*, Satoshi Endo¹*, Toshiyuki Matsunaga¹

¹Laboratory of Biochemistry, Gifu Pharmaceutical University, Japan, ²School of Medicine, Kyorin University, Japan, ³Saitama Medical Center, Saitama Medical University, Japan

1P-406 Endocytosis of NKCC2 is impaired in renal tubule in moesin knockout mice

Kotoku Kawaguchi¹*, Ryo Hatano²*, Shinji Asano¹

¹College of Pharmaceutical Sciences, Ritsumeikan University, Japan, ²Graduate School of Medicine, Chiba University, Japan

1P-407 Quantitative analysis of epithelial transport in proximal tubule with mathematical model

Taiki Nishizuka¹*, Junichi Taniguchi²*, Akinori Noma¹*, Yukiko Himeno¹*, Akira Amano¹

¹Graduate School of Life Science, Ritsumeikan University, Japan, ²Div. Mol. Pharmacol. Dept. Pharmacol. Jichi Med. Univ

1P-408 Low-Pi diet-induced metabolic acidosis with alkaluria was reversed in the Pendrin KO mice

Yukiko Yasuoka¹*, Tomomi Oshima¹*, Yuichi Sato²*, Hiroshi Noguchi³*, Noriko Takahashi¹*, Katsumasa Kawahara^{1,4}*

¹Department of Physiology, Kitasato University, School of Medicine, Japan, ²Department of Molecular Diagnostics, Kitasato University, School of Allied Health Sciences, Japan, ³Division of Internal Medicine, Kitasato University Medical Center, Japan, ⁴Department of Health and Nutrition, Sendai Shirayuri Women's College, Japan

1P-409 Atorvastatin ameliorates renal injury in high-fat diet-induced obese rats

Anusorn Lungkaphin, Nattavadee Pengrattanachot, Rada Chengwelling, La-ongdao Thongnak, Anchalee Pongchaidecha

Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand

1P-410 Protective role of COUP-TFII against cisplatin-induced acute kidney injury

Sumiyasu Ishii, Noriyuki Koibuchi

Department of Integrative Physiology, Gunma University Graduate School of Medicine, Japan

- 1P-411** Possible Role of Garlic Oil in Ameliorating Renal Injury after Liver Ischemia/Reperfusion in Rats
 Noha Nooh Lasheen, Wael Alayat, Mohamed Fathy
 Associate Professor of Physiology, Physiology Department, Faculty of Medicine, Ain Shams University, Egypt
- 1P-412** A novel NEU mutagenesis model rat of chronic kidney disease
 Iori Ohmori¹⁾, Tomoji Mashimo²⁾, Mamoru Ouchida³⁾, Shinya Toyokuni⁴⁾
¹Department of special education, Okayama University, Japan, ²The Institute of Experimental Animal Sciences Department of Medicine, Osaka University, Japan, ³Department of Molecular Oncology, Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Okayama University, Japan, ⁴Department of Pathology and Biological Responses Nagoya University Graduate School of Medicine, Japan
- 1P-413** Pathogenic role of ERK1/2-mTORC1 axis in adriamycin-induced glomerulosclerosis
 Soo-Jin Kim¹⁾, Ranjan Das¹⁾, Nhung Thi Nguyen¹⁾, Luong Dai Ly¹⁾, Ji-Hee Kim¹⁾, Kyu-Hee Hwang¹⁾, Dat Da Ly¹⁾, Eunha Chang¹⁾, Hyeong Ju Kwon²⁾, Seung-Kuy Cha¹⁾, Kyu-Sang Park¹⁾
¹Department of Physiology, Wonju College of Medicine, Yonsei University, Korea, ²Department of Pathology, Wonju College of Medicine, Yonsei University, Korea

Molecular & Cellular Biology: Channels & Transporters (1)

- 1P-414** Role of TRPV3-ANO1 interaction in keratinocyte wound healing
 Yu Yamanoi^{1,2,3)}, Yasunori Takayama^{2,3)}, Makoto Tominaga^{2,3)}
¹Research Laboratory, Ikedamohando Co., Ltd., Japan, ²Division of Cell Signaling, National Institute for Physiological Sciences, ³Thermal Biology Group, Exploratory Research Center on Life and Living Systems(ExCELLS)
- 1P-415** Functional analyses for a Ca²⁺ binding site of TRPM4 and TRPM5 channels
 Soichiro Yamaguchi¹⁾, Akira Tanimoto²⁾, Shinsuke Iwasa²⁾, Ken-Ichi Otsuguro²⁾
¹Laboratory of Physiology, Department of Basic Veterinary Sciences, Faculty of Veterinary Medicine, Hokkaido University, Japan, ²Laboratory of Pharmacology, Department of Basic Veterinary Sciences, Faculty of Veterinary Medicine, Hokkaido University, Japan
- 1P-416** Enhanced activity by NKCC1 and SLC26A6 in cardioplegic arrest of db/db heart
 Minjeong Ji
 Department of Physiology, College of Medicine, Gachon University, Lee Gil Ya Cancer and Diabetes Institute, Korea
- 1P-417** Involvement of thermosensitive TRP channels in temperature-dependent microglia movement
 Sandra Derouiche¹⁾, Rei Nishimoto¹⁾, Kei Eto²⁾, Makoto Tominaga¹⁾
¹Division of Cell signaling, NIPS, Thermal biology group ExCELLS, Japan, ²Division of Homeostatic development, NIPS, Japan
- 1P-418** Characterization of TRPA1 from disease vector mosquitoes
 Tianbang Li^{1,2,3)}, Claire Tanaka Saito^{2,3)}, Shigeru Saito^{1,2,3)}, Makoto Tominaga^{1,2,3)}
¹Department of Physiological Sciences, SOKENDAI, Japan, ²Division of Cell signaling, National Institute for Physiological Sciences, Japan, ³Thermal Biology Group, Exploratory

1P-419 Simultaneous intracellular temperature imaging during patch-clamp recording of TRPV1 activity

Tomoyo Ujisawa^{1,2)}, Kunitoshi Uchida³⁾, Kohki Okabe⁴⁾, Takeharu Nagai⁵⁾, Makoto Tominaga^{1,2)}

¹Exploratory Research Center on Life and Living Systems, National Institutes of Natural Sciences, Japan, ²National Institute for Physiological Sciences, National Institutes of Natural Sciences, Japan, ³Department of Physiological Science and Molecular Biology, Fukuoka Dental College, Japan, ⁴Graduate School of Pharmaceutical Sciences, The University of Tokyo, Japan, ⁵The Institute of Scientific and Industrial Research, Osaka University, Japan

1P-420 A key interaction for modulation of voltage dependence by phosphoinositides in two-pore channel 3

Takushi Shimomura^{1,2)}, Yoshihiro Kubo^{1,2)}

¹Division of Biophysics and Neurobiology, Natl Inst Physiol Sci, Japan, ²Department of Physiological Sciences, SOKENDAI, Japan

1P-421 Inhibition of IL-10 transcription by K_{Ca}3.1 K⁺ channel activation in human T-cell lymphoma

Susumu Ohya¹⁾, Miki Matsui^{1,2)}, Junko Kajikuri¹⁾, Hiroaki Kito¹⁾, Kyoko Endo^{1,2)}, Yuki Hasagawa²⁾, Shin-ya Murate¹⁾

¹Department of Pharmacology, Graduate School of Medical Sciences, Nagoya City University, Japan, ²Department of Pharmacology, Kyoto Pharmaceutical University

1P-422 Ion Permeation of Voltage Sensor and its Foundation Structure
Ayako Katagi, Yuichiro Fujiwara

Molecular Physiology and Biophysics, Kagawa University, Faculty of Medicine, Japan

1P-423 Identification of amino acids involved in the 4-isopropylcyclohexanol action on TRP channels

Hong Dung Thi Nguyen^{1,2,3)}, Yasunori Takayama^{1,2,3)}, Makoto Tominaga^{1,2,3)}

¹Division of Cell Signaling, National Institute for Physiological Sciences, National Institutes of Natural Sciences, Japan, ²Department of Physiological Sciences, the Graduate University for Advanced Studies, Japan, ³Thermal Biology group, Exploratory Research Center on Life and Living Systems National Institutes of Natural Sciences, Japan

1P-424 TRPV1 and ANO1/TMEM16A interaction in inflammatory pain conditions

Yasunori Takayama, Makoto Tominaga

Thermal Biology Group, Exploratory Research Center on Life and Living Systems (ExCELLS), National Institutes of Natural Sciences, Japan

1P-425 DNA origami scaffolds as templates for Kir3.1/3.4 heterotetrameric channels

Tatsuki Kurokawa^{1,2)}, Shigeki Kiyonaka²⁾, Eiji Nakata³⁾, Masayuki Endo⁴⁾, Emiko Mori²⁾, Nam Ha Tran²⁾, Chikara Sato⁶⁾, Hiroshi Sugiyama^{4,5)}, Takashi Morii³⁾, Yasuo Mori²⁾

¹Department of Pathophysiology, Faculty of Medicine, Oita University, Japan, ²Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University, ³Institute of Advanced Energy, Kyoto University, ⁴Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University, ⁵Department of Chemistry, Graduate School of Science, Kyoto University, ⁶Biomedical Research Institute, National Institute of Advanced Industrial Science and Technology

- 1P-426** A tension-modulated modality of the KcsA channel exclusive for acid-activated state
Masayuki Iwamoto, Shigetoshi Oiki
Department of Molecular Physiology & Biophysics, University of Fukui Faculty of Medical Sciences, Japan
- 1P-427** Determinants of Ba²⁺ sensitivity in zebrafish ROMK channels
Yuriko Takeda¹, Fumihito Ono¹, Koichi Nakajo^{1,2}
¹Department of Physiology, Osaka Medical College, Japan, ²Division of Integrative Physiology, Department of Physiology, Jichi Medical University, Japan
- 1P-428** Functional Interaction between TRPM8 and ANO1
Mingyi Dong^{1,2}, Hong Dung Thi Nguyen^{1,2,3}, Tominaga Makoto^{1,2,3}, Yasunori Takayama^{1,2,3}
¹National Institute for Physiological Sciences, Japan, ²Thermal Biology Group, Exploratory Research Center on Life and Living Systems (EXCELLS), ³Department of Physiological Sciences, The Graduate University for Advanced Studies (SOKENDAI), Japan
- 1P-429** Analysis of dynamic structural rearrangements of Two-Pore Na⁺ Channel 3 by voltage clamp fluorometry
Ki-Ichi Hirazawa^{1,2}, Takushi Shimomura^{1,2}, Yoshihiro Kubo^{1,2}
¹Division of Biophysics and Neurobiology, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, The Graduate University for Advanced Studies, Japan
- 1P-430** Mechano-gating of Piezo1 mutants identified in patients affected by Hereditary Xerocytosis
Yohei Yamaguchi^{1,2}, H el ene Guizouarn³, Olivier Soriani³, Akira Takai¹, Peter Kohl², R emi Peyronnet²
¹Department of Physiology, Asahikawa Medical University, Japan, ²Institute for Experimental Cardiovascular Medicine, University Heart Centre Freiburg - Bad Krozingen, Faculty of Medicine, University of Freiburg, Germany, ³University C ote d'Azur, CNRS, Inserm, Institut for Biology Valrose, France.
- 1P-431** Involvement of TRPA1 channel in FK506-incuded pain sensation
Kunitoshi Uchida¹, Tomo Kita¹, Kenichi Kato¹, Yoshiro Suzuki², Makoto Tominaga^{2,3}, Jun Yamazaki¹
¹Dept of Physiol Sci and Mol Biol, Fukuoka Dental College, Japan, ²Div of Cell Signal, NIPS, Japan, ³Thermal Biol Group, EXCELLS, Japan
- 1P-432** What is the pH-gradient Sensing in the Voltage-Gated H⁺ Channel?
Yuichiro Fujiwara
Molecular Physiology & Biophysics, Faculty of Medicine / Graduate School of Medicine, Kagawa University, Japan
- 1P-433** Withdrawn
- 1P-434** Magnesium ion influx in H9c2 cells with TRPM7 gene silencing
Michiko Tashiro¹, Hana Inoue¹, Ryo Kobayashi², Masato Konishi¹
¹Department of Physiology, Tokyo Medical University, Japan, ²Department of Microbiology, Tokyo Medical University, Japan
- 1P-435** The role of TRPM4 in immune responses in keratinocytes and the novel TRPM4 agonist
Kaori Otsuka Saito^{1,2}, Fumitaka Fujita^{1,2}, Manami Toriyama²,

Ratna Annisa Utami³⁾, Yoshiro Suzuki^{4,5,6)}, Fumihiro Okada^{1,2)},
Makoto Tominaga^{4,5,6)}, Ken J Ishii^{7,8)}

¹Fundamental Research Institute, Mandom Corp., Japan, ²Laboratory of Advanced Cosmetic Science, Graduate School of Pharmaceutical Sciences, Osaka University, Japan, ³School of Pharmacy, Institut Teknologi Bandung, Indonesia, ⁴Thermal Biology Group, Exploratory Research Center on Life and Living Systems National Institutes of Natural Sciences, Japan, ⁵Division of Cell Signaling, Okazaki Institute for Integrative Bioscience, (National Institute for Physiological Sciences), National Institutes of Natural Sciences; Japan, ⁶Department of Physiological Sciences, SOKENDAI, (The Graduate University for Advanced Studies); Japan, ⁷Laboratory of Vaccine Science, WPI Immunology Frontier Research Center (iFReC), Osaka University, Japan, ⁸Laboratory of Adjuvant Innovation, Center for Vaccine and Adjuvant Research (CVAR), National Institutes of Biomedical Innovation, Health and Nutrition (NIBIHN), Japan

1P-436 Analysis of chondrocytes anion channel activity in vitro model of osteoarthritis

Kosuke Kumagai^{1,2)}, Futoshi Toyoda²⁾, Caroline Staunton³⁾,
Tsutomu Maeda¹⁾, Hitoshi Tanigawa¹⁾, Noriaki Okumura¹⁾,
Mitsuhiko Kubo¹⁾, Takahumi Yayama¹⁾, Hiroshi Matsuura²⁾, Shinji Imai¹⁾,
Richard Barrett-Jolley³⁾

¹Department of Orthopaedic Surgery, Shiga University of Medical Science, Japan, ²Department of Physiology, Shiga University of Medical Science, Japan, ³Department of Musculoskeletal Biology, University of Liverpool, United Kingdom

1P-437 The Ca²⁺-permeable cation TRPV3 channel: an emerging pivotal target for itch and skin diseases

Kewei Wang

Department of Pharmacology, School of Pharmacy, Qingdao University, China

1P-438 Cytoplasmic conformational changes of VSP detected by voltage
(AP-3) clamp fluorescence spectroscopy

Akira Kawanabe, Tomoko Yonezawa, Yasushi Okamura
Graduate School of Medicine, Osaka University, Japan

1P-439 The regulation of TRPV1 channel gating by intracellular ATP

Takahiro Shimizu, Nobuhiro Yanase, Takuto Fujii, Haruka Sakakibara,
Hideki Sakai

Department of Pharmaceutical Physiology, University of Toyama, Japan

1P-440 Recognition of capsaicin via transient receptor potential channel and transmembrane protein

Yuma Unno¹⁾, Kanami Moriya²⁾, Naomi Osakabe^{1,2)}, Yoshihisa Hirota^{1,2)}

¹Systems Engineering and Science, Graduate School of Engineering and Science, Shibaura Institute of Technology, Japan, ²Department of Bioscience and Engineering, College of Systems Engineering and Sciences, Shibaura Institute of Technology

1P-441 Regulation of TRPM7 channel activity by its kinase domain

Hana Inoue¹⁾, Takashi Murayama²⁾, Takuya Kobayashi²⁾, Masato Konishi¹⁾

¹Department of Physiology, Tokyo Medical University, Japan, ²Department of Cellular and Molecular Pharmacology, Juntendo University Graduate School of Medicine

1P-442 Mapping the agonist binding site of the FMRFamide-gated Na⁺ channel

Yasuo Furukawa, Iori Tagashira

Laboratory of Neurobiology, Graduate School of Integrated Arts and Sciences, Hiroshima University, Japan

- 1P-443** Development of tonotopic differentiation of axon initial segment in avian nucleus magnocellularis
Nargis Akter, Ryota Adachi, Ryota Fukaya, Hiroshi Kuba
Department of Cell Physiology, University of Nagoya, Japan
- 1P-444** A calcium-binding protein S100A10 is a regulator of Maxi-Cl channel activity
Rafiqul Md. Islam¹), Toshiaki Okada¹), Abduqodir Toychiev¹), Ravshan Z. Sabirov^{1,2}), Yasunobu Okada^{1,3})
¹Div. Cell Signal, National Institute for Physiological Sciences, Japan, ²Lab. Mol. Physiol., Inst. Bioorg. Chem, Uzb. Acad. Sci., Uzbekistan, ³Dept. Physiol., Kyoto Pref. Univ. Med., Japan
- 1P-445** Toward the understanding of hexose specificity of Na⁺D-glucose cotransporters SGLT1 and SGLT2
Kazuho Kamitori^{1,2}), Yuichiro Fujiwara¹)
¹Department of Molecular Physiology and Biophysics, Faculty of Medicine, Kagawa University, Japan, ²International Institute of Rare Sugar Research and Education, Kagawa University
- 1P-446** The comparison of sensitivity between NaPi-IIa and NaPi-IIb activity to phosphoinositides
Natsuki Mizutani, Yoshifumi Okochi, Yasushi Okamura
Integrative Physiol, Grad Sch Med, Osaka Univ, Japan
- 1P-447** An endosome-resident zinc transporter negatively regulates systemic dsRNA spreading in *C. elegans*
Katsufumi Dejima, Rieko Imae, Yuji Suehiro, Shohei Mitani
Department of Physiology, Tokyo Women's Medical University School of Medicine
- 1P-448** Evaluation of effects of empagliflozin on mouse ventricular myocytes
Hinako Suzuki¹), Takuma Yoshizawa²), Shunsuke Aoki³), Saki Watanabe⁴), Yukari Takeda⁵), Ayako Takeuchi⁵), Satoshi Matsuoka⁵)
¹Fukui Senior High School, ²Fujishima High School, ³Yokohama Science Frontier High School, ⁴Aomori High School, ⁵Department of Integrative and Systems Physiology, Faculty of Medical Sciences, University of Fukui
- 1P-449** A united chemotherapy to reverse drug resistance in ovarian cancer
Libo Yu
School of Biomedical Sciences, The Chinese University of Hong Kong, Hong Kong
- 1P-450** AMP-activated protein kinase dissociates vesicle association of clathrin heavy chain CHC22
Kazuho Sakamoto¹), Stéphane M Camus²), Frances M Brodsky²)
¹Department of Bio-Informational Pharmacology, University of Shizuoka, Japan, ²Division of Biosciences, University College London
- 1P-451** Function analysis of NHE1 using a strategy of cardiomyocyte differentiation from human iPS cells
Shigeo Wakabayashi, Kiichiro Tomoda, Shunichi Yokoe, Hirofumi Morihara, Michio Asahi
Department of Pharmacology, Osaka Medical College
- 1P-452** Developmental regulation of KCC2 phosphorylation is essential for GABA signaling and survival
Miho Watanabe¹), Jinwei Zhang²), Mohammad Mansuri³), Jingjing Duan³),

Kristopher T Kahle^{3,4)}, Atsuo Fukuda¹⁾

¹⁾Dept Neurophysiol, Hamamatsu Univ Sch Med, Japan, ²⁾Inst Biomed Clinical Sci, Univ Exeter Med Sch, UK, ³⁾Dept Neurosurgery, Yale Sch Med, ⁴⁾Depts of Pediatrics and Cell. and Mol Physiol; Centers for Mendelian Genomics, Yale Sch Med

1P-453 Characterization of transgenic mice overexpressing dominant negative TRPM7 mutant

Tomo Kita¹⁾, Hideaki Tagashira¹⁾, Tomohiro Numata²⁾, Satomi Kita^{1,3)}, Takahiro Iwamoto¹⁾

¹⁾Department of Pharmacology, Faculty of Medicine, Fukuoka University, Japan, ²⁾Department of Physiology, Faculty of Medicine, Fukuoka University, Japan, ³⁾Department of Pharmacology, Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Japan

1P-454 Characterizations of the HCO₃⁻ transport activities of a choroid plexus-specific variant of NBC4

Hidekazu Fukuda, Noriko Takahashi

Department of Physiology, Kitasato University School of Medicine, Japan

Molecular & Cellular Biology: Cellular Physiology (1)

1P-455 Glycative stress influences skeletal muscle growth and cell growth signaling in mice

Tatsuro Egawa^{1,2)}, Yoshitaka Ohno²⁾, Shingo Yokoyama²⁾, Ayumi Goto^{1,3)}, Satoshi Tsuda¹⁾, Katsumasa Goto²⁾, Tatsuya Hayashi¹⁾

¹⁾Graduate School of Human and Environmental Studies, Kyoto University, Japan, ²⁾Department of Physiology, Toyohashi SOZO University, Japan, ³⁾Graduate School of Medical Sciences, Juntendo University, Japan

1P-456 Intracellular cAMP induces Ca²⁺ influx in odontoblasts

Maki Kimura¹⁾, Asuka Higashikawa¹⁾, Sadao Ohyama^{1,2)}, Wataru Ofusa¹⁾, Miyuki Shimada¹⁾, Hidetaka Kuroda³⁾, Hiroyuki Mochizuki¹⁾, Masayuki Ando¹⁾, Kyosuke Kono¹⁾, Yoshiyuki Shibukawa¹⁾

¹⁾Department of Physiology, Tokyo Dental College, Japan, ²⁾Department of Oral Surgery, Tokyo Metropolitan Komagome Hospital, ³⁾Department of Critical Care Medicine and Dentistry, Division of Anesthesiology, Kanagawa Dental University

1P-457 P2Y6 receptor antagonist MRS2578 induces atypical signaling

Kakeru Shimoda^{1,2)}, Caroline Sunggip¹⁾, Akiyuki Nishimura³⁾, Tomohiro Tanaka¹⁾, Takuro Numaga-Tomita^{1,2)}, Kazuhiro Nishiyama³⁾, Motohiro Nishida^{1,2,3)}

¹⁾Division of Cardiocirculatory Signaling, National Institute for Physiological Sciences (Creative Research Group on Cardiocirculatory Dynamism, Exploratory Research Center on Life and Living Systems (ExCELLS)), National Institutes of Natural Sciences, Japan, ²⁾Department of Physiological Sciences, School of Life Science, The Graduate University for Advanced Studies (SOKENDAI), Japan, ³⁾Department of Translational Pharmaceutical Sciences, Graduate School of Pharmaceutical Sciences, Kyushu University, Japan

1P-458 PDGF signals contribute to proliferation and migration of human prostate cancer cell

Md Junayed Nayeem, Aya Yamamura, Rie Takahashi, Hisaki Hayashi, Motohiko Sato

Department of Physiology, Aichi Medical University, Japan

1P-459 Single-cell imaging analysis of inflammatory JNK signaling

Taichiro Tomida¹⁾, Kimitaka Yamaguchi¹⁾, Masanori Ito¹⁾, Yoshinori Mikami¹⁾, Daisuke Ohshima¹⁾, Shingo Murakami²⁾

Satomi Adachi-Akahane¹⁾

¹Department of Physiology, Faculty of Medicine, School of Medicine, Toho University, Japan, ²Department of EECE, Faculty of Science and Engineering, Chuo University

1P-460 LMHFV promotes BMSCs to Differentiate into osteoblast via a Novel lincRNA-7140 in osteoporosis rat

Liang Li¹⁾, Chengjian Cao¹⁾, Xiaoqin Yu¹⁾, Huiming Li¹⁾, Xiaojing Liu²⁾, Wenchao Wu²⁾, Xueling He¹⁾

¹Institute of Biomedical Engineering, School of Preclinical and Forensic Medicine, West China Center of Medical Sciences, Sichuan University, China, ²Laboratory of Cardiovascular Diseases, Regenerative Medicine Research Center, West China Hospital, Sichuan University, China

1P-461 Effect of hydrogen sulfide and L-cysteine on the principal cells of rat cortical collecting ducts

You Komagiri

Department of Physiology, School of Medicine, Iwate Medical University, Japan

1P-462 Voltage-dependent Ionic Channels in Human Cementoblast

Satomi Kamata¹⁾, Asuka Higashikawa²⁾, Maki Kimura²⁾, Sadao Oyama²⁾, Yoshiyuki Shibukawa²⁾, Shuichiro Yamashita¹⁾

¹Department of Removable Partial Prosthodont, Tokyo Dent Coll, Japan, ²Department of Physiology, Tokyo Dent Coll

1P-463 Insulin Regulates Adrenal Steroidogenesis by Stabilizing SF-1 Activity

Dong Joo Yang^{1,2)}, Ann Wambui Kinyua²⁾, Ji Su Sun¹⁾, Seul Ki Kim¹⁾, Yun-Hee Choi¹⁾, Dong Min Shin¹⁾, Ki Woo Kim¹⁾

¹Department of Oral Biology, Yonsei University, Korea, ²Departments of Pharmacology and Global Medical Science, Wonju College of Medicine, Yonsei University

1P-464 The 2nd Residue of GPCR Helix 8 May Control Transient and Specific Interaction with its G Protein

Takaaki Sato¹⁾, Hiroyoshi Matsumura²⁾

¹Biomed Res Inst, Natl. Inst. Adv. Indust. Sci. & Technol., Japan, ²Dept Biotech, Coll Life Sci, Ritsumeikan Univ, Japan

1P-465 The role for O-linked N-acetylglucosamine cycling in macrophage Toll-like receptor signaling

Ken Shirato¹⁾, Junetsu Ogasawara²⁾, Takuya Sakurai¹⁾, Kazuhiko Imaizumi³⁾, Hideki Ohno⁴⁾, Takako Kizaki¹⁾

¹Kyorin University School of Medicine, Japan, ²School of Medicine, Asahikawa Medical University, Japan, ³Faculty of Human Sciences, Waseda University, Japan, ⁴Social Medical Corporation, the Yamatokai Foundation, Japan

1P-466 Hypotonic Stress Induces ATP Release via Volume-regulated Anion Channels in Breast Cell Lines

Kishio Furuya^{1,2)}, Yuko Takahashi¹⁾, Masahiro Sokabe¹⁾

¹Mechanobiology Lobo, Nagoya University Graduate School of Medicine, Japan, ²Research Center of Health, Physical Fitness and Sports, Nagoya University, Japan

1P-467 Estrogen deficiency compromised the β_2 AR-Gs/Gi: implications for arrhythmia and cardiac injury

Yu Zhang¹⁾, Hongjian Hou¹⁾, Zhiwei Zhao²⁾, Jeremiah Ong'achwa Machuki¹⁾, Lin Zhang¹⁾, Yan Zhang¹⁾, Lu Fu¹⁾, Jinxia Wu¹⁾, Yuyu Liu²⁾, Sian E. Harding³⁾, Hong Sun¹⁾

¹Physiology Department, Xuzhou Medical University, China, ²Institute of Cardiovascular

- 1P-468** Inhibition of HSC activation by caffeine is elicited by antagonizing adenosine receptor-Akt1 pathway
Momoka Yamaguchi, Tomoya Morishita, Shin-ya Saito, Tomohisa Ishikawa
Department of Pharmacology, University of Shizuoka, Japan
- 1P-469** Phosphorylation analysis in renal arterioles by advanced phos-tag SDS-PAGE method
Kosuke Takeya
Department of Veterinary Medicine, Okayama University of Science, Japan
- 1P-470** IL-6 promotes CDK5-induced STAT3/androgen receptor activation in prostate cancer cells
Wan-Chen Yu¹, Pei-Chi Li¹, Fu-Ning Hsu¹, Chieh-Lin Jerry Teng², Hsin-Yi Wang³, Mei-Chih Chen^{4,5}, Ho Lin¹
¹Department of Life Sciences, National Chung Hsing University, Taiwan, ²Department of Division of Hematology/Medical Oncology, Taichung Veterans General Hospital, Taiwan, ³Department of Nuclear Medicine, Taichung Veterans General Hospital, Taiwan, ⁴Medical Research Center for Exosomes and Mitochondria Related Diseases, China Medical University Hospital, Taiwan, ⁵Department of Nursing, Asia University, Taiwan
- 1P-471** Acute exposure to PRMT1 inhibitor can regulate contraction in isolated mouse ventricular myocytes
Xue An¹, Hyun Ji Kim¹, Jung Hoon Pyun², Jong Sun Kang², Hana Cho¹
¹Department of Physiology, Single Cell Network Resarch Center, Sungkyunkwan University School of Medicine, Korea, ²Department of Molecular Cell Biology, Single Cell Network Resarch Center, Sungkyunkwan University School of Medicine, Korea
- 1P-472** Conditional deletion of PRMT1 in adult brain reveals its neuronal cell type-specific roles
Yoo Bin Kim¹, Hyun Kyung So², Jong Sun Kang², Hana Cho¹
¹Department of Physiology, Single Cell Network Resarch Center, Sungkyunkwan University School of Medicine, Korea, ²Department of Molecular Cell Biology, Single Cell Network Resarch Center, Sungkyunkwan University School of Medicine, Korea
- 1P-473** Procathepsin B without mannose-6-phosphaste is released from secretory granules
Osamu Katsumata-Kato, Megumi Yokoyama, Junko Fujita-Yoshigaki
Department of Physiology, Nihon University School of Dentistry at Matsudo, Japan
- 1P-474** Pathophysiological roles of an actin-binding protein ezrin in the kidney
Shinji Asano¹, Kotoku Kawaguchi¹, Tomonori Okazaki¹, Ryo Hatano²
¹College of Pharmacy, Ritsumeikan University, Japan, ²Chiba University Graduate School of Medicine
- 1P-475** The efflux characteristics of mitochondrial calcium
Jeong Hoon Lee¹, DuongDuc Pham¹, ChaeHun Leem^{1,2}
¹Department Physiology, University of Ulsan, Korea, ²ASAN medical center, Korea
- 1P-476** Role of mito-K_{ATP} channel in Formation of the De-energized Mitochondrial Membrane Potential
ChaeHun Leem^{1,2}, JeongHoon Lee¹, QuynhMai Ho¹, DuongDuc Pham¹
¹Department of Physiology University of Ulsan College of Medicine, Korea, ²ASAN Medical Center, Korea

- 1P-477** Multistep adaptation of nuclear transport system depending on varying heat stress
Yutaka Ogawa, Naoko Imamoto
Cellular Dynamics Laboratory, RIKEN Cluster for Pioneering Research, Japan
- 1P-478** Physiological functions of Hikeshi, a nuclear import carrier of molecular chaperone HSP70
Shingo Kose, Ai Watanabe, Naoko Imamoto
Cellular Dynamics Laboratory, RIKEN Cluster for Pioneering Research, Japan
- 1P-479** Palmitate induces ER Ca²⁺ depletion and defective lysosomal Ca²⁺ release in insulin-secreting cells
Luong Dai Ly^{1,2}, Dat Da Ly^{1,2}, Nhung Thi Nguyen^{1,2}, Soo-Jin Kim^{1,2}, Seung-Kuy Cha^{1,2}, Myungsik Lee³, Kyu-Sang Park^{1,2}
¹Department of Physiology, Wonju College of Medicine, Yonsei University, Korea, ²Mitohormesis Research Center, Wonju College of Medicine, Yonsei University, ³Department of Internal Medicine, College of Medicine, Yonsei University, Korea
- 1P-480** Direct Fyn-paxillin binding controls migration of coronary artery smooth muscle cells
Ying Zhang, Min Zhang, Bochao Lyu, Hiroko Kishi, Tomoka Morita, Qian Lu, Nan Li, Sei Kobayashi
Dept Mol Cell Physiol, Yamaguchi Univ, Grad Sch Med, Japan
- 1P-481** Fascia related muscle contracture
Akihiro Kaizu, Yoshiyuki Tsuboi
Department of Physiology, Nihon University School of Dentistry, Japan
- 1P-482** Inhibitory effects of chloride intracellular channel protein 2 on distant metastasis of tumor cells
Akihiro Umakoshi¹, Saya Ozaki², Yutaro Sumida¹, Shota Ohsumi¹, Erika Hayase¹, Yoshitomo Ueno³, Yasutsugu Takada³, Takeharu Kunieda², Hajime Yano¹, Junya Tanaka¹
¹Department of Molecular and Cellular Physiology, Graduate School of Medicine, Ehime University, Japan, ²Department of Neurosurgery, Graduate School of Medicine, Ehime University, Japan, ³Department of Hepato Gallblad Pancreatic, Graduate School of Medicine, Ehime University, Japan
- 1P-483** Gelatin alters the TGF-beta signaling for RANKL induced osteoclastogenesis
Yingming Liou, Wei-Ting Lin
Department of Life Sciences, National Chung Hsing University, Taiwan
- 1P-484** Evaluation of cell damage during cold-stress and re-warming
Daisuke Kobayashi, Keisuke Yoshida, Shingo Tsuji, Tomoki Nagae, Akihiro Hazama
Department of Cellular and Integrative Physiology, Fukushima Medical University, Japan
- 1P-485** The role of BAG3 on the heat-induced cell death in human cancer cells
Yoshiaki Tabuchi^{1,2}, Tatsuya Yunoki³, Yukihiko Furusawa⁴, Tetsushi Hirano¹, Atsushi Hayashi³
¹Life Science Research Center, University of Toyama, Japan, ²Graduate School of Innovative Life Science, University of Toyama, Japan, ³Department of Ophthalmology, Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama,

- 1P-486** Lysosomal Proton Sponge Effect by a Cationic Gold Nanorod-Doxorubicin in Cancer Cells
Dongun Lee¹, Jun-Young Park¹, Song Kwon¹, Jun Young Park¹, Dongwoo Khang^{1,2}, Jeong Hee Hong^{1,2}
¹Lee Gil Ya Cancer and Diabetes Institute, Gachon University, Korea, ²Department of Physiology, Gachon University, South Korea
- 1P-487** Periodontitis elicits salivary gland atrophy via plasma TNF- α and infiltration of B-cells
Takemi Shikayama^{1,3}, Misa Sago-Ito², Suzuro Hitomi¹, Izumi Ujihara¹, Mako Naniwa¹, Michihiko Usui³, Keisuke Nakashima³, Kentaro Ono¹
¹Division of Physiology, Kyushu Dental University, Japan, ²Division of Orofacial Functions Ortho, Kyushu Dental University, ³Division of Periodontol, Kyushu Dental University
- 1P-488** N-terminal region of apoptosis-inducing factor stabilizes formation of charge transfer complex
Tetsuo Yamashita¹, Takeshi Hashimoto¹, Junsuke Igarashi^{1,2}, Hiroaki Kosaka¹, Katsuya Hirano¹
¹Dept. of Cardiovasc. Physiol., Kagawa Univ., Japan, ²Dept. of Med. Engineer., Morinomiya Univ. of Med. Sci., Japan
- 1P-490** Loss of GPx4 in vascular endothelial cells induces accumulation of lipid peroxide and cell death
Toshinori Yasuzawa¹, Yoshie Sumikawa², Osamu Sakai³, Shigeru Ueshima^{1,2,4}
¹Department of Food Science and Nutrition, Faculty of Agriculture, Kindai University, Japan, ²Major in Applied Biological Chemistry, Graduated school of Agriculture, Kindai University, ³Senju Laboratory, Senju Pharmaceutical Co., Ltd., ⁴Antianging Center, Kindai University
- 1P-491** Synergistic inhibition of Dinaciclib and Paclitaxel on breast cancer cell growth
Yu-Hsuan Li¹, Hsin-Shun Tseng², Mei-Chih Chen^{3,4}, Ho Lin¹
¹Department of Life Sciences, National Chung Hsing University, Taiwan, ²Comprehensive Breast Cancer Center, Changhua Christian Hospital, Taiwan, ³Medical Research Center for Exosomes and Mitochondria Related Diseases, China Medical University Hospital, Taiwan, ⁴Department of Nursing, Asia University, Taiwan
- 1P-492** Bitter tastant and bacterial metabolite modulate glucagon-like peptide-1 secretion
Kazuki Harada¹, Hidekazu Sakaguchi², Shoko Sada¹, Takashi Tsuboi^{1,2}
¹Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo, Japan, ²Department of Biological Sciences, Graduate School of Science, The University of Tokyo
- 1P-493** Sequential phosphoinositide conversion is required for TGF β -induced receptor endocytosis in ECs
Sho Aki¹, Kazuaki Yoshioka¹, Noriko Takuwa², Yoh Takuwa¹
¹Department of Physiology Kanazawa University School of Medicine, Japan, ²Department of Health and Medical Sciences, Ishikawa Prefectural Nursing University
- 1P-494** The roles of p11 for the localization and heteromeric channel formation of TASK1 and TASK3 isoforms
Hidetada Matsuoka, Keita Harada, Masumi Inoue
Department of Cell and Systems Physiology, University of UOEH, Japan

- 1P-495** Astrocytic spontaneous hormone exocytosis modulated by spontaneous cytosolic Ca²⁺ increase
 Mai Takizawa, Kazuki Harada, Takashi Tsuboi
 Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo, Japan
- 1P-496** Molecular mechanisms of deoxycholic acid induced glucagon-like peptide-1 secretion
 Maoko Takashima, Kazuki Harada, Taichi Kamiya, Takashi Tsuboi
 Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo, Japan
- 1P-497** Effect of temperature on raft-dependent endocytosis during activation of T cells by concanavalin A
 Masahiro Takagi, Neha Sharma, Naofumi Shimokawa
 School of Materials Science, Japan Advanced Institute of Science and Technology, Japan
- 1P-498** Electrophysiological evidence for increased thrombopoiesis in the bone marrow in CRF rat model
 Itsuro Kazama^{1,2)}
¹Miyagi University, Japan, ²Tohoku University, Japan
- 1P-499** The outer BRB in diabetic retina is regulated by interaction between microglia and RPE cells
 Jeong Hun Kim^{1,2,3)}, Jin Hyoung Kim³⁾, Dong Hyun Jo³⁾, Jang-Hyuk Yun¹⁾, Chung-Hyun Cho¹⁾
¹Department of Biomedical Sciences, Seoul National University College of Medicine, Korea, ²Department of Ophthalmology, Seoul National University College of Medicine, Korea, ³FARB Laboratory, Clinical Research Institute, Seoul National University Hospital
- 1P-500** Expression of Tyrosine Hydroxylase in CD4⁺ T Cells Alleviates Collagen-Induced Arthritis
 Xiao-Qin Wang, Yan Liu, Yi-Hua Qiu
 Department of Physiology, School of Medicine, Nantong University, China
- 1P-501** Effects of 405 nm light by using light emitting diodes on cultured HeLa cells
 Toshitaka Ikehara^{1,2)}, Mutsumi Nakahashi³⁾, Takahiro Emoto⁵⁾, Masatake Akutagawa⁵⁾, Koichiro Tsuchiya⁴⁾, Akira Takahashi⁶⁾, Yohsuke Kinouchi⁵⁾
¹Department of Human Welfare, Faculty of Health and Welfare, Tokushima Bunri University, Japan, ²Division of Biomolecular and Structural Biology, Institute for Health Sciences, Tokushima bunri University, ³Tokushima Agriculture, Forestry and Fisheries Technology Support Center, ⁴Department of Medical Pharmacology, Department of Institute of Biomedical Sciences, Tokushima University, ⁵Graduate School of Technology, Industrial and Social Sciences, Tokushima University, ⁶Department of Preventive Environment and Nutrition, Institute of Biomedical Sciences, Tokushima University
- 1P-502** Inhibitory effect of Corylifol C on RANKL-induced osteoclast differentiation and bone resorption
 Jung Yun Kang, Dong Min Shin
 Department of Oral Biology, Yonsei University College of Dentistry, Korea
- 1P-503** Sestrin 2 regulates osteoclast differentiation through interaction with p62 and TRAF6

Namju Kang, Sue Young Oh, Dong Min Shin

Department of Oral Biology, BK21 PLUS project, Yonsei University College of Dentistry, Korea

- 1P-504** A novel screening system to predict injured organs using cell-free DNA in serum
Wataru Miyazaki, Hiroyuki Yajima, Michifumi Kokubo, Noriyuki Koibuchi
Department of Integrative Physiology, Graduate School of Medicine, Gunma University, Japan
- 1P-505** The stress-induced stress tolerance acquisition in ciliated protozoan *Paramecium caudatum*
Mikihiko Arikawa¹, Yasutaka Chikuda², Tatsuomi Matsuoka¹
¹Department of Biological Sciences, Faculty of Science and Technology, Kochi University, Japan, ²Department of Physiology, Kochi Medical School, Japan
- 1P-506** Calcium-dependent regulation of cortical actin filaments in mouse eggs
Shunta Arakawa, Takashi Yoshida, Hideki Shirakawa
Department of Engineering Science, The University of Electro-Communications, Japan
- 1P-507** Target-gene disruption by CRISPR/xCas9 system in *Drosophila melanogaster*
Xuyang Ni, Gongyin Ye, Jia Huang
Institute of Insect Sciences, Zhejiang University, China
- 1P-508** Electrophysiological properties of inwardly rectifying K⁺ channel in glioblastoma stem-like cells
Mikio Hayashi¹, Ryoichi Iwata², Naaz Andharia¹, Kohei Ofune², Kunikazu Yoshimura², Masahiro Nonaka², Akio Asai², Hiroko Matsuda¹
¹Department of Physiology, Kansai Medical University, Japan, ²Department of Neurosurgery, Kansai Medical University, Japan
- 1P-509** Downregulating CXCR4 by miR-139 to restrain breast cancer stem cell-like phenotypes
Chun-Wen Cheng^{1,2}, Po-Ming Chen¹, Hui-Ping Shiau¹, Yi-Hsien Hsieh¹, Jyh-Cherng Yu³, Chen-Yang Shen⁴
¹Institute of Biochemistry, Microbiology and Immunology, Chung Shan Medical University, Taiwan, ²Clinical Laboratory, Chung Shan Medical University Hospital, Taiwan, ³National Defense Medical College, Department of Surgery, Tri-Service General Hospital, Taiwan, ⁴Institute of Biomedical Sciences, Academia Sinica, Taiwan
- 1P-510** CHIP-mediated ubiquitination of Gal1 predicts prognosis of colorectal cancer
Wei min Wang^{1,2,3}
¹Department of oncology, Yangzhou University, China, ²Department of Oncology, Yixing Hospital Affiliated to Medical College of Yangzhou University, China, ³Department of Physiology, School of Medicine, Showa University, Japan
- 1P-511** CD105 maintains the thermogenic program of beige adipocyte
Ryoko Higa¹, Toshikatsu Hanada², Reiko Hanada¹
¹Department of Neurophysiology, Oita University Faculty of Medicine, Japan, ²Department of Cell Biology, Oita University Faculty of Medicine, Japan
- 1P-512** Leucine and Caffeine induce mitochondrial biogenesis and down-regulation of miRNAs in C2C12 myotubes
Claudia Perez Lopez¹, Tsubasa Shibaguchi², Kazumi Masuda¹

- 1P-513** Effects of supplementation of fatty acids on viability of B16F10 and neural stem cells
Naomi Ohuchi, Masanori Katakura
Department of Pharmaceutical Sciences, University of Josai, Japan
- 1P-514** STAT6 promotes myoblast differentiation and fusion
Mitsutoshi Kurosaka, Yuji Ogura, Kazuhisa Koda, Toshiya Funabashi
Department of Physiology, St. Marianna University School of Medicine, Japan
- 1P-515** Analysis of Molecular and Cellular Roles of the GON domain in ER-to-Golgi transport
Swako Yoshina¹⁾, Shohei Mitani^{1,2)}
¹Department of Physiology, TWMU, Japan, ²TIIMS, TWMU, Japan

Adaptation, Environment & Evolution (1)

- 1P-517** Relationships between exploration and anxiety in male Formosan wood mice (*Apodemus semotus*)
Shu-Chuan Yang¹⁾, Hsien-Yong Lai²⁾, Kun-Ruey Shieh³⁾
¹Holistic Education Center, Tzu Chi University of Science and Technology, Taiwan, ²Division of Anesthesiology, Mennonite Christian Hospital, Taiwan, ³Department of Physiology, Tzu Chi University, Taiwan
- 1P-518** Exploratory behaviors related to central dopaminergic activities in male Formosan wood mice
Kun-Ruey Shieh¹⁾, Shu-Chuan Yang²⁾, Hsien-Yong Lai³⁾
¹Department of Physiology, Tzu Chi University, Taiwan, ²Holistic Education Center, Tzu Chi University of Science and Technology, Taiwan, ³Division of Anesthesiology, Mennonite Christian Hospital, Taiwan
- 1P-519** Characterization of splicing variants of frog TRPA1 revealed divergence in their thermal property
Claire Saito^{1,2)}, Shigeru Saito^{1,2,3)}, Makoto Tominaga^{1,2,3)}
¹Thermal Biology Group, Exploratory Research Center on Life and Living Systems (ExCELLS), Japan, ²Division of Cell Signaling, National Institute for Physiological Sciences, Japan, ³Department of Physiological Sciences, SOKENDAI (The Graduate University for Advanced Studies), Japan
- 1P-520** Fos expression in the hypothalamic nuclei after changes from hypergravity to normal gravity in mice
(AP-7)
Yoichi Ueta¹⁾, Mitsuhiro Yoshimura¹⁾, Satomi Sonoda¹⁾, Takashi Maruyama¹⁾, Chikara Abe²⁾, Hironobu Morita²⁾
¹Department of Physiology, School of Medicine, University of Occupational and Environmental Health, Japan, ²Department of Physiology, Gifu University Graduate School of Medicine, Japan
- 1P-522** Impact of long-term stay in micro-gravity on vestibular function
Hironobu Morita¹⁾, Chikara Abe¹⁾, Kunihiko Tanaka²⁾
¹Department of Physiology, Gifu University Graduate School of Medicine, Japan, ²Gifu University of Medical Sciences
- 1P-523** Effect of RBM3 on Glycolysis and Apoptosis in the Liver After Acute Cold Exposure
Shize Li, Hongzhao Shi, Ruizhi Yao, Shuai Lian, Peng Liu, Yang Liu,

Yuying Yang, Huanmin Yang, Shize Li, Hongzhao Shi
 College of Animal Science and Veterinary Medicine, Heilongjiang Bayi Agricultural University, China

- 1P-524** Different adaptation of Chinese expeditioners during prolonged Antarctic and sub-Antarctic residence
 Chengli Xu¹, Shiyang Liu¹, Nan Chen¹, Quan Wu², Hao Li³, Tao Zhang⁴
¹Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences, China, ²Department of General Surgery, Beijing Jishuitan Hospital, China, ³Beijing Friendship Hospital, China, ⁴Beijing Tongren Hospital, China
- 1P-525** Circadian Rhythm and Sleep during Prolonged Antarctic Residence at Chinese Zhongshan Station
 Yanlei Xiong¹, Chengli Xu¹, Nan Chen¹, Quan Wu², Guang Chen³, Dandan Chen³
¹Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences, China, ²Department of General Surgery, Beijing Jishuitan Hospital, China, ³Beijing Institute of Technology, China
- 1P-526** The sleep parameter and autonomic nervous response in menopausal women
 Michiko Tanaka¹, Mou Nagasaka¹, Chiyomi Egami², Miyuki Matsuyama², Kiyoka Yamashita², Yukiko Ogata², Aki Nozue³, Yoshikazu Sakakibara⁴
¹School of Nursing, Miyazaki Prefectural Nursing University, Japan, ²Fukuoka Prefectural University, ³Miyazaki University, ⁴Kanazawa Institute of Technology
- 1P-527** Time since injury and thermoregulatory responses in hyperthermic person with spinal cord injury
 Yoshi-Ichiro Kamijo^{1,3}, Manabu Shibasaki², Tokio Kinoshita³, Takashi Moriki³, Yasunori Umemoto¹, Ken Kouda¹, Fumihiro Tajima^{1,3}
¹Department of Rehabilitation Medicine, Wakayama Medical University, Japan, ²Department of Health Sciences, Nara Women's University, Japan, ³Medical Center for Health Promotion and Sport Science, Wakayama Medical University, Japan
- 1P-528** Neural network during cognitive tasks during whole body heat stress
 Manabu Shibasaki, Hiroki Nakata
 Department of Health Sciences, Nara Women's University, Japan
- 1P-529** A study of ultradian rhythm expression with a mathematical model
 Hiroko Sawai, Tetsuo Kurahashi
 Toyota Central R&D Labs., Inc., Japan
- 1P-530** Ultradian Calcium Rhythms in the PVN and SPZ in the Hypothalamus
 Ryosuke Enoki¹, Yu-Er Wu², Yoshiaki Oda³, Zhi-Li Huang², Ken-Ichi Honma⁴, Sato Honma⁴
¹Laboratory of Molecular and Cellular Biophysics, Research Institute for Electronic Science, Hokkaido University, Japan, ²State Key Laboratory of Medical Neurobiology, School of Basic Medical Sciences, Fudan University, China, ³Department of Oral Chrono-Physiology, Graduate School of Biomedical Sciences, Nagasaki University, Japan, ⁴Research and Education Center for Brain Science, Hokkaido University Graduate School of Medicine, Japan
- 1P-531** Thermosensors and neural circuit regulating temperature-dependent negative masking behavior in mice
 Wataru Ota^{1,2}, Yusuke Nakane^{1,2}, Makiko Kashio⁴, Yoshiro Suzuki^{5,6}, Kazuhiro Nakamura⁷, Yasuo Mori⁸, Makoto Tominaga^{5,6}, Takashi Yoshimura^{1,2,3,9}
¹Institute of Transformative Bio-Molecules (WPI-ITbM), Nagoya University, Japan,

²Laboratory of Animal Integrative Physiology, Graduate School of Bioagricultural Sciences, Nagoya University, Japan, ³Avian Bioscience Research Center, Graduate School of Bioagricultural Sciences, Nagoya University, Japan, ⁴Department of Physiology, Aichi Medical University, Japan, ⁵Division of Cell Signaling, National Institute for Physiological Sciences, National Institutes of Natural Sciences, Japan, ⁶Thermal Biology Group, Exploratory Research Center on Life and Living Systems, National Institutes of Natural Sciences, Japan, ⁷Department of Integrative Physiology, Nagoya University Graduate School of Medicine, Japan, ⁸Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University, Japan, ⁹Division of Seasonal Biology, National Institute for Basic Biology, National Institutes of Natural Sciences, Japan

1P-532 Real time recording of clock gene expression in multiple tissues of freely moving mice

Toshiyuki Hamada, Kazuko Hamada

Department of Pharmaceutical Sciences, International University of Health and Welfare, Japan

1P-533 The evaluation of activity and body temperature fluctuation in animal model of shift work

Hiroaki Fujihara, Nobuhiro Fujiki

Department of Ergonomics, Institute of Industrial Ecological Science, University of Occupational and Environmental Health, Japan

1P-534 Optical imaging of circadian calcium rhythm in a solitary supra-chiasmatic neuron

Yoshihiro Hirata¹, Ryosuke Enoki^{1,2}), Kaori Kuribayashi-Shigetomi⁴), Yoshiaki Oda⁵), Sato Honma^{3,5}), Ken-Ichi Honma^{3,5})

¹Photic Bioimaging Section, Hokkaido University Graduate School of Medicine, ²Precursory Research for Embryonic Science and Technology (PRESTO), Japan Science and Technology Agency (JST), ³Department of Chronomedicine, Hokkaido University Graduate School of Medicine, ⁴Nitobe School, Institute for the Advancement of Higher Education, Hokkaido University, ⁵Research and Education Center for Brain Science, Hokkaido University

1P-535 Chemical and thermal sensitivity of axolotl TRPA1

Mai Oda^{1,2}), Hajime Ogino¹), Yoshihiro Kubo³), Koji Shibasaki²), Osamu Saitoh¹)

¹Department of Animal Bio-Science, Faculty of Bio-Science, Nagahama Institute of Bio-Science and Technology, ²Department of Molecular and Cellular Neurobiology, Gunma University Graduate School of Medicine, ³Division of Biophysics and Neurobiology, Department of Molecular & Cellular Physiology, National Institute for Physiological Sciences

1P-536 Innate and acquired cold tolerant properties in hibernating Syrian hamsters (*Mesocricetus auratus*)

Hiroki Shimaoka¹), Yuuma Yoshida¹), Manami Kurata¹), Yuuki Horii¹), Hiroki Sakai²), Takahiko Shiina¹), Yasutake Shimizu^{1,3})

¹Department of Basic Veterinary Science, Laboratory of Physiology, The United Graduate School of Veterinary Sciences, Gifu University, Japan, ²Department of Pathogenetic Veterinary Science, Laboratory of Veterinary Pathology, The United Graduate School of Veterinary Sciences, Gifu University, Japan, ³Center for Highly Advanced Integration of Nano and Life Sciences (G-CHAIN), Gifu University, Japan

1P-537 Effect of blue light blocking glass on melatonin secretion and sleep quality in humans

Sayo Oishi¹), Maki Sato²), Chihiro Kodama²), Yoko Inukai²), Mika Kamiya²), Naoki Nishimura²), Satoshi Iwase²)

¹Aichi Medical University School of Medicine, Japan, ²Department of Physiology, Aichi Medical University, Japan

1P-538 Cell autonomous cold resistance of a mammalian hibernator, Syrian hamster

Daisuke Anegawa^{1,2}, Yuichi Chayama², Lisa Ando², Hiroki Taii², Shuji Shigenobu³, Yuya Sato^{1,2}, Masayuki Miura², Yoshifumi Yamaguchi¹

¹Hibernation metabolism, physiology and development group, Institute of low temperature science, Hokkaido University, Japan, ²Department of Genetics, Graduate school of pharmaceutical science, The University of Tokyo, Japan, ³National institute for basic biology, Japan

1P-539 Alternative splicing of cold-inducible RNA-binding protein mRNA in hypothermic animals

Yuuki Horii¹, Hiroki Shimaoka¹, Takahiko Shiina¹, Yasutake Shimizu^{1,2}

¹Department of Basic Veterinary Science, Laboratory of Physiology, The United Graduate School of Veterinary Sciences, Gifu University, Japan, ²Center for Highly Advanced Integration of Nano and Life Sciences, Gifu University (G-CHAIN)

Physiome

1P-540 Weighted gene co-expression network analysis in chronic kidney disease and hemodialysis patients

Tomoyoshi Terada^{1,2}, Hiromichi Akahori², Yoshinori Muto^{1,2}

¹United Graduate School of Drug Discovery and Medical Information Sciences, Gifu University, Japan, ²Department of Functional Biosciences, Gifu University School of Medicine

1P-541 Reflected conduction caused by subcellular sodium channel redistributions

Kunichika Tsumoto^{1,3}, Takashi Ashihara², Yasutaka Kurata¹, Yoshihisa Kurachi³

¹Department of Physiology, Kanazawa Medical University, Japan, ²Department of Cardiovascular Medicine, Shiga University of Medical Science, Japan, ³Department of Pharmacology, Graduate school of Medicine, Osaka University, Japan

1P-542 Simulation study on the nitrogen homeostasis disturbed by defect of glutamine synthase in liver

Yuki Sasahara^{1,2}, Masaru Tomita^{1,2,3}, Yasuhiro Naito^{1,2,3}

¹Department of Environment and Information Studies, Keio University, Japan, ²Institute for Advanced Biosciences, Keio University, ³Systems Biology Program, Graduation School of Media and Governance, Keio University

Alternative Medicine (1)

1P-543 Cortical cerebral blood flow response induced by manual acupuncture of the auricular region in rats

Sae Uchida¹, Hiroshi Taniguchi^{1,2}, Yoshie Ito^{1,3}, Fusako Kagitani^{1,3}

¹Department of Autonomic Neuroscience, Tokyo Metropolitan Institute of Gerontology, Japan, ²Tokyo Ariake Univ, Japan, ³Univ Human Art Sci, Japan

1P-544 Influence of press tack needle acupuncture on the secretion of orexin

Aki Fujiwara^{1,2}, Mana Tsukada¹, Hideshi Ikemoto¹, Toku Takahashi^{1,3}, Chiaki Tezuka¹, Kana Takahashi¹, Takuji Izuno¹, Tadashi Hisamitsu¹, Masataka Sunagawa¹

¹Department of Physiology, School of Medicine, Showa University, Japan, ²Acupuncture

- 1P-546** Family history of hypertension has an effect on blood pressure response with fragrance inhalation
Eriko Kawai¹, Ryosuke Takeda², Kosuke Saho¹, Akemi Ota¹, Emiko Morita¹, Daiki Imai^{1,2}, Yuta Suzuki^{1,2}, Hisayo Yokoyama^{1,2}, Kazunobu Okazaki^{1,2}
¹Department of Environmental Physiology for Exercise, Osaka City University Graduate School of Medicine, Japan, ²Research Center for Urban Health and Sports, Osaka City University, Japan
- 1P-547** Physiological effects in CNS and the autonomic nervous system by drinking jasmine tea
Mitsuyuki Ichinose, Yumi Shigihara
Department of Chemistry and Biological Science, Iwate University, Japan
- 1P-548** Contribution of oxytocin to the anti-stress effect of Kampo medicine *Kamikihito*
Mana Tsukada¹, Tadashi Ikemoto¹, Xiao Pen Lee², Takaaki Matsuyama², Takuji Izuno¹, Toku Takahashi^{1,3}, Tadashi Hisamitsu¹, Masataka Sunagawa¹
¹Department of Physiology, School of Medicine, Showa University, Japan, ²Department of Legal Medicine, School of Medicine, Showa University, Japan, ³Department of Surgery, Medical College of Wisconsin, USA
- 1P-549** Asymmetric Dimethylarginine and Endothelin B Receptor Modulation in *Piper Sarmentosum* Treated Rats
Maizura MOHD Zainudin, Taher Ft Elshami, Hidayatul Radziah Ismawi, Fatimatuzzahra Hashim Fauzy, Tariq Abd Razak
Bms, Kulliyyah Medicine, International Islamic University Malaysia
- 1P-550** Theobromine increases plasma cholesterol levels by increasing ABCA1 protein
Natsuki Hiruma¹, Naotoshi Sugimoto², Kentaro Matsuzaki³, Eri Sumiyoshi³, Osamu Shido³, Masanori Katakura¹
¹Department of Pharmaceutical Sciences, University of Josai, Japan, ²Kanazawa University, Department of Physiology, Japan, ³Shimane University, Department of Environmental Physiology, Japan
- 1P-551** Nonequivalent effect of CO₂-water bath on muscle fatigue caused by isotonic- and isometric-exercise
Masaaki Hashimoto¹, Noriyuki Yamamoto²
¹Physiology Laboratory, Center for Medical Education, Teikyo University of Science, Japan, ²Department of Health Science, Japanese Red Cross Hokkaido College Nursing, Japan
- 1P-552** Change in the foot pressure distribution to dental occlusion adjustment by micro tapping with paper
Masanori Takemura¹, Akio Kawamura², Kenichi Ichihashi¹, Mitsuharu Kaya³, Junzo Tsujita⁴
¹Ichihashi Clinic, Japan, ²Kawamura Dental Clinic, ³Hyogo University of Health Science, ⁴Institute of Health & Sports Medical Science
- 1P-553** Analysis of Ultrasound Changes in Vastus Lateralis Muscle following Transcutaneous Vacume Treatment
Junzo Tsujita¹, Tomonari Shibutani^{2,6}, Hiroshi Ueno³, Yoichiro Yamashita⁴, Arijit Banerjee⁵, Mitsuharu Kaya⁶, Masanori Takemura⁷, Kenichi Ichihashi⁷

¹Institute of Health and Sports Medical Science, Japan, ²MJ Company, Japan, ³JCRAFT, Japan, ⁴Osaka Electro-Communication University, Japan, ⁵Aomori City Board of Education, Japan, ⁶Hyogo University of Health Sciences, Japan, ⁷Ichihashi Clinic, Japan

1P-554 Changes of HRV and resting-state amygdala functional connectivity after SKY practicing

Ting-Wei Hsu¹, Sheng-Kai Lee³, Chun-Yu Lin⁴, A-Min Huang²

¹Department of Physiology, College of Medicine, National Cheng Kung University, Taiwan, ²Institute of Basic Medical Sciences, College of Medicine, National Cheng Kung University, Taiwan, ³Interdisciplinary Neuroscience Graduate Program, Academia Sinica, Taiwan, ⁴Department of Psychology, National Cheng Kung University, Taiwan

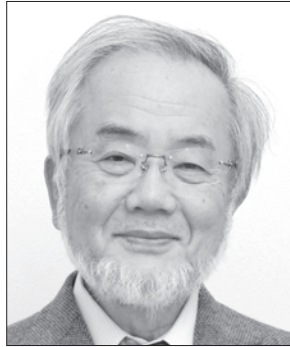
Plenary Lecture3

March 30, Sat., 8:50-9:50

【Room A】 1F, Conference Center

Chair: Junichi Nabekura (National Institute for Physiological Sciences, Japan)

PL3 Looking back on 30 years of autophagy research -dynamic equilibrium of the cell-



Yoshinori Ohsumi

Institute of Innovative Research (IIR), Tokyo Institute of Technology, Japan

Special Lecture5

March 30, Sat., 17:20-18:10

【Room B】 3F, Conference Center

Chair: Yumiko Yoshimura (National Institute for Physiological Sciences, Japan)

SL5 Toward the Mysteries of Sleep



Masashi Yanagisawa

International Institute for Integrative Sleep
Medicine (WPI-IIMS), University of Tsukuba, Japan

DAY
3

Special Lecture6

March 30, Sat., 17:20-18:10

【Room C】 3F, Conference Center

Chair: Yukiko Hayashi (Tokyo Medical University, Japan)

SL6 The Beauty of Physiological Mechanisms in Skeletal Muscle Function and Fatigue



Graham Douglas Lamb

Department of Physiology, La Trobe University,
Australia

Special Lecture7

March 30, Sat., 17:20-18:10

【Room F】 5F, Conference Center

Chair: Yoichi Ueta (University of Occupational and Environmental Health, Japan)

SL7 The importance of understanding fetal physiology for detecting brain injury before birth



Laura Bennet

Department of Physiology, The University of
Auckland, New Zealand

FAOPS2019 - PSJ and JSPFSM co-organized Special Guest Talk

🗨️ Talk in Japanese

***Simultaneous translation to English will be available in the Main Hall (Room A).

March 30, Sat., 18:20-19:10

【Room A】 1F, Conference Center

Towards the Summit with Sport Science

Ms. Nao Kodaira special talk with Professor Masahiro Yuki

(Co-organized by The Physiological Society of Japan, and Japanese Society of Physical Fitness and Sports Medicine)

Facilitator: **Fusao Kato** (Jikei University School of Medicine, Japan)



Main Guest Speaker: Nao Kodaira

Aizawa Hospital; Gold medal in women's 500m speed skating and silver medal in women's 1000m speed skating at the PyeongChang 2018 Winter Olympic Games, World record holder in women's 1000m speed skating.



Co-Speaker: Masahiro Yuki

Professor of the Shinshu University, Department of Sports Sciences Education, Faculty of Education; a national coach of Japan Skating Federation. Prof. Yuki coached Miss Kodaira since she was a student at Shinshu University.

Interviewers and Commentators:

Yukio Nishimura (Tokyo Metropolitan Institute of Medical Science; PSJ, Japan)

Mikako Sunaga (Nippon Sport Science University; JSPFSM, Japan)

Schuichi Koizumi (University of Yamanashi, Japan)

Planning: Hidefumi Waki (JSPFSM), Fusao Kato (PSJ)

Symposium36 (Local Organizing Committee Symposium)

March 30, Sat., 10:00-12:00

【Room A】 1F, Conference Center

- S36** Inter-tissue communications underlying metabolic and feeding control in living body
(whole day symposium) part I

Chairs: **Yasuhiko Minokoshi** (National Institute for Physiological Sciences, Japan)
Shingo Kajimura (UCSF Diabetes Center, University of California, USA)

- S36-1** Dietary nutrients and genes that regulate growth in *C. elegans*
Masamitsu Fukuyama¹, Toshiaki Katada^{1,2}
¹Laboratory of Physiological Chemistry, Graduate School of Pharmaceutical Sciences, University of Tokyo, Japan, ²Molecular Cell Biology Laboratory, Research Institute of Pharmaceutical Sciences, Faculty of Pharmacy, Musashino University, Japan
- S36-2** Nutri-developmental biology: nutritional adaptability and adipose tissue remodeling
Tadashi Uemura^{1,5}, Yukako Hattori¹, Kaori Watanabe¹, Taiichi Tsuyama¹, Yasutetsu Kanaoka¹, Shoko Mizutani¹, Kohei Shimono¹, Hironobu Uchiyama², Shunsuke Yajima^{2,3}, Masayoshi Watada⁴
¹Grad. Sch. of Biostudies, Kyoto Univ., Japan, ²NGRC, Tokyo Univ. of Agri., Japan, ³Dept. of Bioscience, Tokyo Univ. of Agri., Japan, ⁴Grad. Sch. of Sci. and Eng., Ehime Univ., Japan, ⁵AMED-CREST, Japan
- S36-3** The neural circuit for prey capture in zebrafish: from vision to the hypothalamic feeding center
Koichi Kawakami, Akira Muto, Deepak Ailani
Division of Molecular and Developmental Biology, National Institute of Genetics, Japan
- S36-4** Hypothalamic control of glucose metabolism in skeletal muscle
Yasuhiko Minokoshi^{1,2}
Division of Endocrinology and Metabolism, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, School of Life Science, SOKENDAI The Graduate University for Advanced Studies, Japan
- S36-5** Fibroblast Growth Factor 21 mediates the inter-talk between major metabolic regulators
Karen SL Lam
Department of Medicine, The University of Hong Kong, Hong Kong

Part II starts from 15:10 at the same room.

Symposium37 (Local Organizing Committee Symposium)

March 30, Sat., 10:00-12:00

【Room B】 3F, Conference Center

S37 Primate researches in Asian regions

Organizers: **Suchinda Malaivijitnond** (National Primate Research Center of Thailand-Chulalongkorn University, Thailand)

Atsushi Iriki (Center for Biosystems Dynamics Research, RIKEN, Japan)

S37-1 Advantages of using Thai cynomolgus macaques for infectious disease and cognitive research

Suchinda Malaivijitnond^{1,2)}, Srichan Bunlungsup¹⁾, Taratorn Kemthong¹⁾, Suthirote Meesawat¹⁾, Mallika Imwong³⁾, Yuzuru Hamada⁴⁾

¹⁾National Primate Research Center of Thailand-Chulalongkorn University, Thailand,

²⁾Department of Biology, Faculty of Science, Chulalongkorn University, Thailand,

³⁾Department of Molecular Tropical Medicine and Genetics, Faculty of Tropical Medicine, Mahidol University, Thailand, ⁴⁾Evolutionary and Morphology Section, Primate Research Institute of Kyoto University, Japan

S37-2 Tool-Use Behavior in Burmese Long-Tailed Macaques and Possible Adaptation for Learning

Michael D Gumert

Nanyang Technological University, Singapore

S37-3 Ruminant-Like Primate, Proboscis Monkey in Borneo

Ikki Matsuda^{1,2,3,4)}

¹⁾Chubu University Academy of Emerging Sciences, Japan, ²⁾Wildlife Research Center, Kyoto University, Japan, ³⁾Japan Monkey Centre, Japan, ⁴⁾Institute for Tropical Biology and Conservation, Universiti Malaysia, Malaysia

S37-4 Neurobiology of Primate Brain-Body-Environment Interactions under Evolutionary Perspectives

Atsushi Iriki

Lab. for Symbolic Cognitive Development, Center for Biosystems Dynamics Research, RIKEN, Japan

DAY 3

Symposium38 (Local Organizing Committee Symposium)

March 30, Sat., 10:00-12:00

【Room C】 3F, Conference Center

S38 Cutting-edge research topics on skeletal muscle plasticity in health and diseases

(Co-organized by Japanese Society of Physical Fitness and Sports Medicine)

Organizers: **Katsumasa Goto** (Toyohashi SOZO University, Japan)

Gordon S Lynch (The University of Melbourne, Australia)

Hidefumi Waki (Juntendo University, Japan)

S38-1 Evidence for acute contraction-induced myokine secretion by cultured myotubes

Nobuharu L Fujii

Department of Health Promotion Sciences, Graduate School of Human Health Sciences, Tokyo Metropolitan University, Japan

S38-2 Sex difference in sarcopenia: mechanisms and interventions

Shuichi Machida

Graduate School of Health and Sports Science, Juntendo University Graduate School of Health and Sports Science, Juntendo University, Japan

S38-3 Therapeutic potential of slow muscle programming for muscle wasting and muscular dystrophy

Gordon S Lynch¹, Justin P Hardee¹, Karen J Martins¹, Timur Naim¹,

Stefan M Gehrig¹, Gregory R Steinberg², Rene Koopman¹, James G Ryall¹

¹Centre for Muscle Research, Department of Physiology, The University of Melbourne, Australia, ²Division of Endocrinology and Metabolism, Department of Medicine, McMaster University, Australia

S38-4 Adiponectin and skeletal muscle - new insights and potential implications

Katsumasa Goto

Department of Physiology, Graduate School of Health Sciences, Toyohashi SOZO University, Japan

Symposium39 (Local Organizing Committee Symposium)

March 30, Sat., 10:00-12:00

【Room D】 4F, Conference Center

S39 Cutting-Edge Optical Imaging of Neuronal Circuits and Synapses

(Co-organized by Grant-in-Aid for Scientific Research on Innovative Areas 'ABiS' of MEXT, Japan)

(Co-sponsored by Spectra-Physics)

Chair: **Haruo Kasai** (The University of Tokyo, Japan)

Co-Chair: **Junichi Nabekura** (National Institute for Physiological Sciences, Japan)

S39-1 Mechanical forces of spine enlargement detected by presynaptic FRET/FLIM imaging

Haruo Kasai^{1,2)}, Hasan Ucar²⁾, Jun Noguchi³⁾, Satoshi Watanabe³⁾,
Sho Yagishita^{1,2)}, Noriko Takahashi⁴⁾

¹Graduate School of Medicine, The University of Tokyo, Japan, ²Intl. Res. Ctr. for Neurointelligence (WPI-IRCN), UTIAS, The Univ. of Tokyo, Japan, ³Natl. Ctr. of Neurol. and Psychiatry, Japan, ⁴Department of Physiology, Kitasato Univ. School of Medicine

S39-2 Multi-scale calcium imaging in the marmoset visual cortical network

Kenichi Ohki^{1,2)}

¹Department of Physiology, Graduate School of Medicine, University of Tokyo, Japan,
²International Research Center for Neurointelligence (IRCN), University of Tokyo, Japan

S39-3 Biochemical Signal Computation in Single Dendritic Spines

Ryohei Yasuda

Max Planck Florida Institute for Neuroscience, USA

S39-4 Super-resolution microscopy for neuroscience: new methods & applications

Valentin Nagerl

Interdisciplinary Institute for Neuroscience, University of Bordeaux, France

DAY
3

Symposium40

March 30, Sat., 10:00-12:00

【Room E】 4F, Conference Center

S40 Social communication through sensory information

Chair: **Sachine Yoshida** (Toho University, Japan)

Co-Chair: **Masakazu Ide** (National Rehabilitation Center for Persons with Disabilities, Japan)

S40-1 TRPM2 in the sensation for warmth

Chun-Hsiang Tan

Graduate Institute of Clinical Medicine, Kaohsiung Medical University, Taiwan

S40-2 Physiological and behavioral changes in infants during mother-infant interaction

Sachine Yoshida

Department of Anatomy, Faculty of Medicine, Toho University, Japan

S40-3 Evolutionary changes in the function and diversity of color vision in primates

Chihiro Hiramatsu

Department of Human Science, Faculty of Design, Kyushu University, Japan

S40-4 BodySharing: How we can share our body experiences

Emi Tamaki^{1,2)}

¹Waseda University, Japan, ²H2L Inc., Japan

Symposium41 (International Scientific Program Committee Symposium)

March 30, Sat., 10:00-12:00

【Room F】 5F, Conference Center

S41 Leveraging novel techniques to research and translate synaptic transmission and plasticity (ISPP, Iran)

Chairs: **Javad Mirnajafi-Zadeh** (Tarbiat Modares University, Iran)

Vahid Sheibani (Neuroscience Research Center, Kerman University of Medical Sciences, Iran)

-
- S41-1** **Modulating the mesolimbic dopamine system by leptin: a circuit study**
Azar Omrani, Veronne De Vrind, Inge G. Wolterink-Donselaar,
Mienieke Luijendijk, Roger A.H. Adan
Department of Transnational Neuroscience, University Medical Center Utrecht, The Netherlands
- S41-2** **Addressing Therapeutic Challenges in Neuroscience with Digiceuticals**
Bechara John Saab^{1,2,3}
¹Mobio Interactive, Canada, ²University of Zurich Psychiatric Hospital, Switzerland, ³Royal Society of Medicine, UK
- S41-3** **Activity dependent LncRNA LoNA: Linking synaptic plasticity and memory**
Qiang Liu, Juan Zhang, Dingfeng Li
University of Science and Technology of China, China
- S41-4** **Dual effects of dopamine on synaptic plasticity in normal and hyperexcitable brain**
Javad Mirnajafi-Zadeh¹, Mahboobeh Ahmadi¹, Bechara John Saab²,
Yaghoob Fathollahi¹, Nahid Roohi¹
¹Department of Physiology, Faculty of Medical Sciences, Tarbiat Modares University, Iran, ²Research & Development, Mobio Interactive, Canada
- S41-5** **Does exercise reverse cognitive and synaptic plasticity deficits following sleep deprivation?**
Vahid Sheibani, Hakimeh Saadati, Amin Rajizadeh, Khadijeh Esmaeelpour
Neuroscience Research Center, Kerman University of Medical Sciences, Iran

DAY 3

Symposium42

March 30, Sat., 10:00-11:30

【Room G】 5F, Conference Center

S42 Physiological function of royal jelly contributing to healthy longevity
- The effectiveness on Locomotive syndrome, Menopausal disorders,
Infectious diseases -

(Co-sponsored by Yamada Bee Company, Inc.)

Chair: **Yoshinori Marunaka** (Kyoto Industrial Health Association, General Incorporated
Foundation, Japan; Ritsumeikan University, Japan; Kyoto Prefectural
University of Medicine, Japan)

- S42-1** Royal Jelly Prevents the Progression of Sarcopenia
Hongmei Wu, Xue Bao, Yeqing Gu, Shunming Zhang, Ge Meng, Kaijun Niu
Nutritional Epidemiology Institute and School of Public Health, China
- S42-2** Mitigation of postmenopausal neurological disorders by administration
of royal jelly
Akira Minami
Department of Biochemistry, School of Pharmaceutical Sciences, University of
Shizuoka, Japan
- S42-3** 10-hydroxydecanoic acid in royal jelly elicits antigen-specific mucosal
IgA response
Shogo Misumi
Department of Environmental and Molecular Health Sciences, Faculty of Life Sciences,
Kumamoto University, Japan

S43 TRP channels and inflammation/fibrosis

Chair: **Insuk So** (Seoul National Univ, Korea)

Co-Chair: **Ryuji Inoue** (Fukuoka University, Japan)

S43-1 The regulation of TRPC5 channel activity by S-glutathionylation and S-palmitoylation

Chansik Hong¹, Insuk So²

¹Department of Physiology, Chosun University School of Medicine, Korea, ²Department of Physiology, Seoul National University College of Medicine, Korea

S43-2 TRPM7 mediated fibrogenesis in heart diseases

Lixia Yue, Zhichao Yue, Albert S. Yu, Jianlin Feng

Department of Cell Biology, Calhoun Cardiology Center, University of Connecticut School of Medicine, USA

S43-3 The role of TRPM7 channel in pathogenesis of pulmonary arterial hypertension and right heart failure

Lin Hai Kurahara¹, Keizo Hiraishi¹, Lixia Yue², Aya Yamamura³, Jianlin Feng², Yaopeng Hu¹, Mikiko Aoki⁴, Ryuji Inoue¹

¹Department of Physiology, Fukuoka University, Japan, ²Cardiology/Cell Biology, University of Connecticut Health Center, USA, ³Department of Physiology, Aichi Medical University, Japan, ⁴Department of Pathology, Fukuoka University, Japan

S43-4 Critical role of TRPC6 Targeting Hepatic Stellate Cell in Liver Fibrosis

Seung-Kuy Cha^{1,2}, Kyu-Hee Hwang^{1,2}, Ji-Hee Kim^{1,2}, Soo-Jin Kim^{1,2}, Kyu-Sang Park^{1,2}

¹Department of Physiology, Yonsei University Wonju College of Medicine, Korea, ²Mitohormesis Research Center, Yonsei University Wonju College of Medicine, Korea

S43-5 The non-neuronal protection of transient receptor potential vanilloid 1 in vascular system

Tzong-Shyuan Lee

Graduate Institute and Department of Physiology, College of Medicine, National Taiwan University, Taiwan

Symposium44 (International Scientific Program Committee Symposium)

March 30, Sat., 10:00-12:00

【Room I】 5F, Conference Center

- S44** Cutting-edge approaches to long-lasting questions and novel aspects of inward rectifier K⁺ channels -- A quarter-century anniversary of cDNA isolation (ISPP, Israel)

Chairs: **Eitan Reuveny** (Weizmann Institute of Science, Israel)

Yoshihiro Kubo (National Institute for Physiological Sciences, Japan)

- S44-1** New insights into K⁺ dependences of the strong inward rectifier potassium channel Kir2.1
Keiko Ishihara
Division of Integrated Autonomic Function, Department of Physiology, Kurume University School of Medicine, Japan
- S44-2** The mechanism underlying rectification of ion flow in Kir2.1 and evolutionarily relevant channels
Chung-Chin Kuo
Department of Physiology and Neurology, National Taiwan University, Taiwan
- S44-3** Regulation mechanisms of G-protein-gated inwardly rectifying K⁺ channel by small molecules
I-Shan Chen^{1,2)}, Chang Liu^{1,2)}, Yoshihiro Kubo^{1,2)}
¹Division of Biophysics and Neurobiology, Department of Molecular and Cellular Physiology, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, School of Life Science, SOKENDAI, Japan
- S44-4** The G protein coupled potassium channel in the mammalian brain
Eitan Reuveny
Weizmann Institute of Science, Israel

Symposium45

March 30, Sat., 10:00-12:00

【Room J】 2F, Exhibition Hall

S45 New molecular insights into the synaptic tagging and capture hypothesis

Chair: **Tomonori Takeuchi** (Aarhus University, Denmark)

Co-Chair: **Sreedharan Sajikumar** (National University of Singapore, Singapore)

S45-1 Behavioural and molecular insights in facilitating memory persistence
Szu-Han Wang

Centre for Clinical Brain Sciences, University of Edinburgh, UK

S45-2 Inverse synaptic tagging : an inactive synapse-targeted mechanism to capture activity-induced Arc

Haruhiko Bito^{1,3}, Yuichiro Ishii¹, Hiroyuki Okuno²

¹Dept of Neurochemistry, The University of Tokyo Graduate School of Medicine, Japan, ²Dept of Biochemistry and Molecular Biology, Kagoshima University Graduate School of Medical and Dental Sciences, Japan, ³WPI-IRC, The University of Tokyo Institutes for Advanced Study, Japan

S45-3 Role of p75 neurotrophin receptor in sleep deprivation induced changes in synaptic plasticity

Sajikumar Sreedharan

Department of Physiology, National University of Singapore, Singapore

S45-4 Rapid reversal of microRNA-induced silencing: a novel mechanism mediating synaptic plasticity

Ted Abel^{1,2}, Alan Jung Park⁴, Xiuping Fu³, Aparna P. Shah³,

Mahesh Shivarama Shetty^{1,2}, Jay M Baraban³

¹Iowa Neuroscience Institute, University of Iowa Carver College of Medicine and University of Iowa, USA, ²Department of Molecular Physiology and Biophysics, University of Iowa, USA, ³Solomon H. Snyder Department of Neuroscience, Johns Hopkins School of Medicine, USA, ⁴Mortimer B. Zuckerman Mind Brain Behavior Institute, Columbia University, USA

S45-5 Dopaminergic memory boost by two distinct novelty systems

Tomonori Takeuchi^{1,2,3}

¹Department of Biomedicine, Aarhus University, Denmark, ²The Danish Research Institute of Translational Neuroscience (DANDRITE), Aarhus University, Denmark, ³Aarhus Institute of Advanced Studies (AIAS), Aarhus University, Denmark

DAY 3

Symposium46

March 30, Sat., 10:00-12:00

[Room K] 2F, Exhibition Hall

S46 Plasticity of inhibitory signaling in Epilepsy: New Physiological Mechanisms

Chair: **Andrew Moorhouse** (UNSW Sydney, Australia)

Co-Chair: **Atsuo Fukuda** (Hamamatsu University School of Medicine, Japan)

S46-1 Neural circuits basis of temporal lobe epilepsy

Zhong Chen, Yi Wang, Cenglin Xu

Zhejiang University, China

S46-2 Conditional upregulation of KCC2 enhances inhibition during seizures in mice

Chelsea Goulton¹, M Watanabe², D Cheung^{1,2}, A Khoshaba¹, H Indada², K Eto^{2,3}, H Wake^{2,4}, J Nabekura^{2,3}, A Moorhouse¹

¹Department of Physiology, School of Medical Sciences, UNSW Sydney, Australia, ²National Institutes for Physiological Sciences, Japan, ³The Graduate University for Advanced Studies (SOKENDAI), Japan, ⁴Division of System Neuroscience, Kobe University Graduate School of Medicine, Japan

S46-3 Human epilepsy and animal model with mutations in KCC2

Atsuo Fukuda

Department of Neurophysiology, Hamamatsu University School of Medicine, Japan

S46-4 Altered Cl⁻-homeostasis during epileptogenesis

Claudio Rivera^{1,2,3}

¹Neuroscience Center, University of Helsinki, Finland, ²Inserm Unité 1249, INMED, Marseille, 13009 France, ³Aix-Marseille Université, UMR S1249, Marseille, 13009 France

S46-5 Upregulating KCC2 as a Target for Seizure Therapies

Dennis Lawrence Cheung¹, Chelsea Sarah Goulton², Miho Watanabe³, Junichi Nabekura¹, Andrew John Moorhouse²

¹Division of Homeostatic Development, National Institute for Physiological Sciences, Japan, ²School of Medical Sciences, Faculty of Medicine, UNSW Sydney, Australia, ³Department of Neurophysiology, Hamamatsu University School of Medicine, Japan

Symposium47

March 30, Sat., 13:30-15:00

【Room F】 5F, Conference Center

S47 **New Frontiers in Regenerative Medicine of Renal Function**
(Co-sponsored by Shinkoiwa Clinic)

Chair: **Yoshinori Marunaka** (Kyoto Industrial Health Association, General Incorporated Foundation, Japan; Ritsumeikan University, Japan; Kyoto Prefectural University of Medicine, Japan)

- S47-1** **Failure to sense energy depletion in chronic kidney disease**
Eisei Sohara, Hiroaki Kikuchi, Shinichi Uchida
Department of Nephrology, Tokyo Medical and Dental University, Japan
- S47-2** **Kidney reconstitution from iPS cells based on developmental biology**
Ryuichi Nishinakamura
Institute of Molecular Embryology and Genetics, Kumamoto University, Japan
- S47-3** **Next generation Therapy for dialysis patients using iPS cells**
Takashi Yokoo
Department of Internal Medicine, Jikei University School of Medicine, Japan

Symposium48 (Local Organizing Committee Symposium)

March 30, Sat., 15:10-17:10

【Room A】 1F, Conference Center

S48 Inter-tissue communications underlying metabolic and feeding control in living body
(whole day symposium) part II

Chairs: **Yasuhiko Minokoshi** (National Institute for Physiological Sciences, Japan)
Shingo Kajimura (University of California, USA)

- S48-1** Central insulin action and hepatic glucose metabolism
Hiroshi Inoue^{1,2}, Yuka Inaba¹, Emi Hashiuchi²
¹Institute for Frontier Science Initiative, Kanazawa University, Japan, ²Graduate School of Medical Sciences, Kanazawa University, Japan
- S48-2** Contribution of the hepatokine selenoprotein P to the various pathologies of type 2 diabetes
Hirofumi Misu
Department of Endocrinology and Metabolism, Kanazawa University, Japan
- S48-3** NeuroImmunoMetabolic regulation of cardiac physiology and heart failure
Ichiro Manabe
Chiba University, Japan
- S48-4** JMJD1A mediates acute and chronic thermogenic responses through complementary mechanisms
Juro Sakai^{1,2}
¹Tohoku University School of Medicine, Molecular Physiology div., Japan, ²The University of Tokyo, RCAST, Metabolic Medicine div., Japan
- S48-5** Metabolic adaptation and maladaptation in the adipose tissue
Shingo Kajimura
University of California, USA

Symposium49 (Local Organizing Committee Symposium)

March 30, Sat., 15:10-17:10

【Room B】 3F, Conference Center

S49 Frontiers in pain physiology - from detection to the survival behavior (under the auspices of Japanese Association for Study of Pain)

Chairs: **Fusao Kato** (Jikei University, Japan)

Seog Bae Oh (Seoul National University, Korea)

S49-1 Primary sensory neuron-secreted proteins modulate pain transmission in spinal level

Xu Zhang

Institute of Neuroscience and State Key Laboratory of Neuroscience, CAS Center for Excellence in Brain Science, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, China

S49-2 Immune Response to Peripheral Nerve Injury: Implication for Neuro-pathic Pain

Seog Bae Oh

Department of Neurobiology and Physiology School of Dentistry, Department of Brain and Cognitive Sciences College of Natural Sciences, Seoul National University, Korea

S49-3 How opioids and noxious stimuli regulate delivery of nociceptive information to the amygdala

Elena Bagley

Discipline of Pharmacology and Charles Perkins Centre, University of Sydney, Australia

S49-4 Lateralized amygdala plasticity independent of bilateral parabrachial activity in inflammatory pain

Yukari Takahashi^{1,2)}, Yuta Miyazawa^{1,2)}, Yae K Sugimura^{1,2)}, Fusao Kato^{1,2)}

¹Dept Neurosci, Jikei Univ Sch Med, Japan, ²Cntr Neurosci Pain, Jikei Univ Sch Med, Japan

S49-5 No pain no gain and no protection: Chronic pain protects heart from ischemia-reperfusion injury

Chien-Chang Chen, Yi-Fen Cheng, Ya-Ting Chang, Wei-Hsin Chen, Hsi-Chien Shih, Bai-Chuiang Shyu

Institute of Biomedical Sciences, Academia Sinica, Taiwan

DAY 3

Symposium50 (International Scientific Program Committee Symposium)

March 30, Sat., 15:10-17:10

【Room C】 3F, Conference Center

S50 Maternal influences on offspring development (AuPS, Australia)

Chair: **Deanne Hryciw** (Griffith University, Australia)

S50-1 Fetal origins of osteoarthritis induced by maternal xenobiotic exposure

Hui Wang^{1,4}, Liaobin Chen^{3,4}, Hao Kou^{2,4}, Yinxian Wen^{3,4}

¹Department of Pharmacology, School of Basic Medical Sciences, Wuhan 430071, China, ²Department of Pharmacy, Zhongnan Hospital of Wuhan University, Wuhan 430071, China, ³Department of Orthopedic Surgery, Zhongnan Hospital of Wuhan University, Wuhan 430071, China, ⁴Hubei Provincial Key Laboratory of Developmentally Originated Disease, Wuhan 430071, China

S50-2 How can maternal deprivation cause neurodevelopmental disorders?

Ken-Ichi Ohta, Shingo Suzuki, Takanori Miki

Department of Anatomy and Neurobiology, Faculty of Medicine, Kagawa University, Japan

S50-3 Role of linoleic acid in offspring development: Focus on inflammation and the placenta

Deanne Helena Hryciw^{1,2}, Nirajan Shrestha³, James SM Cuffe³,
Olivia J Holland³, Amanda Cox³, Andrew Bulmer³, Anthony V Perkins³,
Andrew J McAinch^{2,4}

¹School of Environment and Science, Griffith University, Australia, ²Institute for Health and Sport, Victoria University, Australia, ³School of Medical Science, Griffith University, Australia, ⁴Australian Institute for Musculoskeletal Science (AIMSS), Victoria University, Australia

Symposium51

March 30, Sat., 15:10-17:10

【Room D】 4F, Conference Center

S51 Cutting-edge Research in Neural Network Dynamics

(Organized by Women in Physiology of Japan (WPJ))

Chair: **Akiko Arata** (Hyogo College of Medicine, Japan)

Co-Chair: **Yumiko Yoshimura** (National Institute for Physiological Sciences, Japan)

S51-1 State-dependent multi-sensory integration in the posterior parietal cortex

Seung-Hee Lee

Department of Biological Sciences, KAIST, Korea

S51-2 Involvement of V1 neurons preferring low-contrast stimuli in difficult orientation discrimination

Rie Kimura^{1,2)}, Yumiko Yoshimura^{1,2)}

¹Division of Visual Information Processing, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, SOKENDAI, Japan

S51-3 mGRASP for high-resolution structural and functional synapse mapping

Jinhyun Kim^{1,2)}

¹Korea Institute of Science and Technology, Korea, ²University of Science and Technology, Korea

S51-4 Synaptic communication from subplate neurons controls neuronal migration in the developing neocortex

Chiaki Ohtaka-Maruyama

Neural Network Project, Tokyo Metropolitan Institute of Medical Science, Japan

DAY 3

Symposium52

March 30, Sat., 15:10-17:10

【Room E】 4F, Conference Center

S52 Sports and Brain

(Co-sponsored by De Luca Foundation)

Chair: **Kazuyuki Kanosue** (Waseda University, Japan)

Co-Chair: **Yukio Nishimura** (Tokyo Metropolitan Institute of Medical Science, Japan)

S52-1 Functional organization of spinal motor map in sport athletes

Toshiki Tazoe

Neural Prosthesis Project, Department of Dementia and Higher Brain Function, Tokyo Metropolitan Institute of Medical Science, Japan

S52-2 Neural Correlates of Intuitive Decision - Making in Soccer

Xiaohong Wan^{1,2)}, Tomohisa Nagano³⁾, Keiji Tanaka²⁾

¹School of Psychology, Beijing Normal University, China , ²Cognitive Brain Mapping Laboratory, RIKEN Center for Brain Science, Japan, ³Faculty of Policy Management, Keio University, Japan

S52-3 The Paralympic Brain - Brain reorganization appeared in Paralympic athletes -

Kimitaka Nakazawa

Department of Life Sciences, The University of Tokyo, Japan

S52-4 Why is muscle relaxation difficult during sports?

Kouki Kato, Kazuyuki Kanosue

Faculty of Sport Sciences, Waseda University, Japan

Symposium53

March 30, Sat., 15:10-17:10

【Room F】 5F, Conference Center

S53 Dynamic signaling of axon and presynaptic terminals revealed by direct recordings

Chair: **Shin-ya Kawaguchi** (Society-Academia Collaboration for Innovation, Kyoto University, Japan)

Co-Chair: **Haruyuki Kamiya** (Hokkaido University Graduate School of Medicine, Japan)

- S53-1** **Control of synaptic outputs by dynamic axonal excitability**
Shin-Ya Kawaguchi^{1,2,3)}
¹Society-Academia Collaboration for Innovation, Kyoto University, Japan, ²Graduate School of Science, Kyoto University, Japan, ³Institute for Advanced Study, Kyoto University, Japan
- S53-2** **Analog signaling in molecular layer interneurons of the cerebellar cortex**
Federico F Trigo^{1,2)}
¹Brain Physiology Laboratory, France, ²University Paris Descartes, France
- S53-3** **Presynaptic properties at lemniscal fiber terminals in the somato-sensory thalamus**
Mitsuharu Midorikawa, Mariko Miyata
Department of Physiology, Division of Neurophysiology, School of Medicine, Tokyo Women's Medical University, Japan
- S53-4** **Regulation of neuronal signaling by axonal ion channels and neurotransmitter receptors**
Yousheng Shu
State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, China
- S53-5** **Dynamic control of spike signaling by axonal afterdepolarization**
Haruyuki Kamiya
Department of Neurobiology, Hokkaido University Graduate School of Medicine, Japan

DAY 3

Symposium54

March 30, Sat., 15:10-17:10

【Room G】 5F, Conference Center

S54 Ca²⁺ signaling in health and disease

Chair: **Xiaoqiang Yao** (Chinese University of Hong Kong, China)

Co-Chair: **Ryuji Inoue** (Fukuoka University School of Medicine, Japan)

S54-1 A multi-hierarchical study on the arrhythmogenicity of a Ca-activated cation channel TRPM4

Ryuji Inoue¹, Yaopeng Hu¹, Yanghua Shen², Keizo Hiraishi¹,
Lin Hai Kurahara¹, Jun Ichikawa¹, Tomohiro Numata¹, Xin Zhu²

¹Department of Physiology, Fukuoka University School of Medicine, Japan, ²Department of Biomedical Information Technology, Aizu University, Japan

S54-2 TRPP2 acts through autophagy to exert cyto-protective role in human stem cell-derived cardiomyocytes

Xiaoqiang Yao, Jun Lu

School of Biomedical Sciences, Chinese University of Hong Kong, China

S54-3 Ca²⁺ signaling in early fate decision of cardiac lineage cells

Huangtian Yang, Yijie Wang, Jijun Huang, Ji Liang, Liming Chu

Laboratory of Molecular Cardiology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, China

S54-4 Use of tetrandrine to treat flavivirus infection

Jianbo Yue, Lihong Huang

Department of Biomedical Sciences, City University of Hong Kong, China

S54-5 Structure-function Study of TRPP Channels

Xiaodong Liu¹, Yuxia Liu^{1,2}

¹Beihang University, China, ²Tsinghua University, China

Symposium55

March 30, Sat., 15:10-17:10

【Room H】 5F, Conference Center

S55 Brain pathways linking between emotion, behaviour and autonomic responses

Chair: **Youichirou Ootsuka** (Flinders University, Australia)

Co-Chair: **Tomoyuki Kuwaki** (Kagoshima University, Japan)

S55-1 Contribution of medullary raphe serotonergic neurons in the stress-induced autonomic responses

Yoko Ikoma^{1,4)}, Ikue Kusumoto¹⁾, Akihiro Yamanaka²⁾,
Youichirou Ootsuka^{1,3)}, Tomoyuki Kuwaki¹⁾

¹Department of Physiology, Graduate School of Medical & Dental Sciences, Kagoshima University, Japan, ²Department of Neuroscience II, Research Institute of Environmental Medicine, Nagoya University, Japan, ³Centre for Neuroscience, Department of Human Physiology, School of Medicine, Flinders University, Australia, ⁴Super-network Brain Physiology, Graduate School of Life Sciences, Tohoku University, Japan

S55-2 Lateral habenula-ventral tegmental area pathways for emotional hyperthermia

Youichirou YoYo Ootsuka¹⁾, Mariana Brizuela¹⁾, Steven J Swoap²⁾,
Anna Antipov¹⁾, William W Blessing¹⁾

¹Centre for Neuroscience, College of Medicine and Public Health, Flinders University, Australia, ²Department of Biology, Williams College, USA

S55-3 The medial amygdala is critical for endocrine and behavioural responses to emotional stress

Christopher Vincent Dayas

School of Biomedical Sciences and Pharmacy, University of Newcastle, Australia

S55-4 Striatopallidal output pathways promoting and preventing motivated behaviour

Gavan McNally

School of Psychology, UNSW Sydney, Australia

DAY 3

Symposium56

March 30, Sat., 15:10-17:10

【Room I】 5F, Conference Center

S56 Optical neuroscience: reading and manipulating neural computation behind cognition, memory, and behavior

Chair: **Masakazu Agetsuma** (National Institute for Physiological Sciences, Japan)

Co-Chair: **Luis Alberto Carrillo-Reid** (National Autonomous University of Mexico, Mexico)

S56-1 Multiscale understanding of synaptic pathology of psychiatric disorders

Akiko Hayashi-Takagi

Lab of Medical Neurosci, IMCR, Gunma Univ, Japan

S56-2 Population coding of fear memory in prefrontal cortex

Masakazu Agetsuma^{1,2,3}, Yoshiyuki Arai³, Atsushi Kasai⁴,

Hitoshi Hashimoto⁴, Takeharu Nagai⁴

¹Division of Homeostatic Development, National Institute for Physiological Sciences, Japan, ²Japan Science and Technology Agency, PRESTO, Japan, ³The Institute of Scientific and Industrial Research, Osaka University, Japan, ⁴Graduate School of Pharmaceutical Sciences, Osaka University, Japan

S56-3 SLM-based methods for 3d control and imaging in the brain

Darcy Peterka

Zuckerman Mind Brain Behavior Institute, Columbia University, USA

S56-4 Manipulation of behavioral performance by targeted activation of cortical ensembles

Luis Alberto Carrillo-Reid

Department of Developmental Neurobiology and Neurophysiology, National Autonomous University of Mexico, Mexico

S56-5 Brain states through brainwide neuromodulation in zebrafish

Misha Benjamin Ahrens

Howard Hughes Medical Institute, Janelia Research Campus, USA

S57 Alternative GPCR and G-protein signaling in cardiovascular disease and therapy

Chair: **Utako Yokoyama** (Yokohama City University, Japan)

Co-Chair: **Motohiko Sato** (Aichi Medical University, Japan)

S57-1 The Membrane-Intracellular Organelle Interface: A Compartment for GPCR Regulation of Cell Physiology

Hemal Patel

UC San Diego, USA & VA San Diego, USA

S57-2 Role of activator of G-protein signaling (AGS) 8 in neovascularization

Hisaki Hayashi, Motohiko Sato

Department of Physiology, Aichi Medical University, Japan

S57-3 Uncovering new GPCR signaling pathways in prostaglandin E₂-mediated vascular inflammation

Utako Yokoyama, Al Mamun, Hiromi Taro, Yoshihiro Ishikawa

Cardiovascular Research Institute, Yokohama City University, Japan

S57-4 Age-dependent dimer formation of AT1R and P2Y6R promotes angiotensin II-induced hypertension

Akiyuki Nishimura¹, Caroline Sunggip², Takuro Numaga-Tomita^{2,3,4}, Motohiro Nishida^{1,2,3,4}

¹Department of Translational Pharmaceutical Sciences, Graduate School of Pharmaceutical Sciences, Kyushu University, Japan, ²National Institute for Physiological Sciences (NIPS), National Institutes of Natural Sciences, Japan, ³Department of Creative Research, Exploratory Research Center on Life and Living Systems (ExCELLS), National Institutes of Natural Sciences, Japan, ⁴School of Life Sciences, SOKENDAI, Japan

S57-5 A novel physiological role of tetrahydrobiopterin, a key GTP metabolite, in cardiovascular system

Jin Han¹, Hyoung Kyu Kim¹, Ippei Shimizu², Tohru Minamino², Bernd Nilius³

¹Cardiovascular and Metabolic Disease Center, Inje University, Korea, ²Department of Cardiovascular Biology and Medicine, Niigata University Graduate School of Medical and Dental Sciences, Japan, ³KU Leuven, Department of Cellular and Molecular Medicine, Belgium

Symposium58

March 30, Sat., 15:10-17:10

[Room K] 2F, Exhibition Hall

S58 Zinc physiology and pathophysiology

Chair: **Toshiyuki Fukada** (Tokushima Bunri University, Japan)

Co-Chair: **Taiho Kambe** (Kyoto University, Japan)

S58-1 Role of the zinc homeostatic system in skin and skeletal muscle development

Toshiyuki Fukada

Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Japan

S58-2 Zn²⁺ sensitivity of Hv1 channel: an evolutionary perspective

Adisorn Ratanayotha^{1,2)}, Takafumi Kawai¹⁾, Yasushi Okamura¹⁾

¹Laboratory of Integrative Physiology, Department of Physiology, Graduate School of Medicine, Osaka University, Japan, ²Department of Anatomy, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand

S58-3 How does zinc signaling control the fate determination of beige fat cells?

Ayako Fukunaka

Institute for Molecular & Cellular Regulation Gunma University, Japan

S58-4 Physiology and biochemistry of zinc enzymes

Taiho Kambe

Graduate School of Biostudies, Kyoto University, Japan

Symposium59

March 30, Sat., 15:10-17:10

【Room M】 3F, Exhibition Hall

S59 Contribution of microglia in health and disease of the brain

Chair: **Mami Noda** (Kyushu University, Japan)

Co-Chair: **Bo Peng** (Shenzhen Institutes of Advanced Technology, China)

S59-1 Deciphering the origins of repopulated microglia in the central nervous system

Bo Peng

Chinese Academy of Sciences, China

S59-2 Microglia in Post-stroke Axon Remyelination and Tissue Repair

Dandan Sun

Department of Neurology, University of Pittsburgh, USA

S59-3 Roles of lipid receptors expressed by microglia in traumatic nerve injury

Hiroshi Kiyama

Department of Functional Anatomy & Neuroscience, Nagoya University Graduate School of Medicine, Japan

S59-4 Sex- and age-dependent effect of thyroidism on microglia and brain function

Mami Noda

Kyushu University, Graduate School of Pharmaceutical Sciences, Japan

DAY 3

Luncheon Seminar6

🗨️ Talk in Japanese

March 30, Sat., 12:20-13:20

【Room A】 1F, Conference Center

LS6 Plasmalogen: The effects on Alzheimer's disease and its mechanism

(Co-sponsored by The Japanese Plasmalogen Society)

Chair: Junichi Nabekura (National Institute for Physiological Sciences, Japan)

LS6-1 Plasmalogens improve the memory and other functions in Alzheimer's disease and Mild Cognitive Impairment

Takehiko Fujino

The Japanese Plasmalogen Society, Japan

LS6-2 Plasmalogens are the key phospholipids to regulate memory and neuro-inflammation in the brain

Hossain Md Shamim

Faculty of Medical Sciences, Kyushu University, Japan

Luncheon Seminar7

🗨️ Talk in Japanese

March 30, Sat., 12:20-13:20

【Room B】 3F, Conference Center

LS7 Frailty and Ninjin'yoeito

(Co-sponsored by Kracie Pharmaceutical, Ltd.)

Chair: Yoshinori Marunaka (Kyoto Industrial Health Association, General Incorporated Foundation, Japan; Ritsumeikan University, Japan; Kyoto Prefectural University of Medicine, Japan)

LS7-1 Anti-frailty strategy:Ninjin-yoeito stimulates appetite center and restores feeding

Toshihiko Yada^{1,2)}

¹Kansai Electric Power Medical Research Institute Center for Integrative Physiology, Division of Integrative Physiology, Japan, ²Kobe University Graduate School of Medicine Division of System Physiology, Japan

LS7-2 Frailty and Ninjin'yoeito - toward healthy longevity

Akio Inui

Kagoshima University Graduate School of Medical and Dental Sciences Pharmacological Department of Herbal Medicine, Japan

Luncheon Seminar8

March 30, Sat., 12:20-13:20

【Room C】 3F, Conference Center

LS8 Imaging intracellular temperature using fluorescence lifetime imaging microscopy (FLIM) reveals novel thermal signaling

(Co-sponsored by Leica Microsystems K.K.)

Chair: **Makoto Tominaga** (National Institute for Physiological Sciences (NIPS), Japan; Exploratory Research Center on Life and Living Systems (ExCELLS), Japan)

Kohki Okabe^{1,2)}

¹Graduate School of Pharmaceutical Sciences, The University of Tokyo, Japan, ²PRESTO, JST, Japan

DAY
3

Luncheon Seminar9

🗣️ Talk in Japanese

March 30, Sat., 12:20-13:20

【Room D】 4F, Conference Center

LS9 ABIS Luncheon Event: Neurophysiological Sciences Assisted by Imaging Support Network

(Co-sponsored by Grant-in-Aid for Scientific Research on Innovative Areas "Advanced Bioimaging Support (ABIS)" of MEXT, Japan)

Chair: **Masanobu Kano** (National Institute for Physiological Sciences, Japan; University of Tokyo, Japan)

LS9-1 Support system for the electron microscopic investigation of ultrastructure and molecular localization

Yugo Fukazawa

University of Fukui, Japan

LS9-2 Causal link between cerebellar LTD and motor learning revealed by the optogenetic tool PhotonSABER and SDS-FRL

Shinji Matsuda

University of Electro-Communications, Japan

LS9-3 What's "ABIS"

ABIS-Office

LS10 The effects of Bedding based on Physiology of sleep

(Co-sponsored by airweave inc.)

Chair: **Motohiro Ozone** (The Jikei University school of Medicine, Japan)

LS10-1 Investigation of sleep surface selection and its influence on sleep
Shintaro Chiba^{1,2)}

¹Ota Memorial Sleep center, Japan, ²Department of Otorhinolaryngology, The Jikei University school of Medicine, Japan

LS10-2 The effects of high rebound mattress topper on sleep and approach to the medical field

Motokuni Takaoka
airweave inc., Japan

Technical Workshop2

March 30, Sat., 12:20-13:20

【Room G】 5F, Conference Center

- TW2** How to take advantage of new tools and techniques with Narishige products
(Co-sponsored by NARISHIGE SCIENTIFIC INSTRUMENT LAB.)

Chair: **Hidemasa Furue** (Hyogo College of Medicine, Japan)

- TW2-1** Adeno-associated virus vector micro injection into mice brain to reveal function of neural circuitry involved in the regulation of sleep/wakefulness
Akihiro Yamanaka
Research Institute of Environmental Medicine, Nagoya University, Japan
- TW2-2** Intrinsic plasticity of cerebellar Purkinje cells in motor learning circuits: Application of micro manipulators to patch clamping
Sang Jeong Kim
Department of Physiology, Seoul National University College of Medicine, Korea
- TW2-3** Synaptic responses evoked by optogenetic activation of descending pain modulatory system: Recording from anesthetized animals placed in a stereotaxic apparatus
Hidemasa Furue
Department of Neurophysiology, Hyogo College of Medicine, Japan

DAY 3

Iran Lunch

March 30, Sat., 12:20-13:20

【Room I】 5F, Conference Center



Iran lunch



Please join the Iran lunch!

Date: March 30, 2019, 12:20 - 13:20

Place: Room I (504 + 505)

The next FAOPS congress will be held in Tehran, Iran. Let's have a lunch together and get more familiar with the host of the next FAOPS congress, Tehran, Iran.



Javad Mirnajafi-Zadeh
1st vice president of FAOPS (2015-2019)
Email: mirnajaf@modares.ac.ir
Tel: +98-21-8288 3865
Fax: +98-21- 8288 4555
On behalf of:
Iranian Society of Physiology and Pharmacology

Educational Lecture2

🗣️ Talk in Japanese

March 30, Sat., 8:00-8:40

【Room D】 4F, Conference Center

EDL2 Mechanomedicine

EDL2-1 Mechanomedicine

Keiji Naruse

Cardiovascular Physiology, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Japan

This lecture provides the credit in the qualification update for Physiology Educator accredited by Physiological Society of Japan.

DAY 3

Poster (The 2nd Poster Presentation Day)

March 30, Sat., 13:20-14:10/14:10-15:00

1F, Exhibition Hall

★Young Scientist Travel Award, ★★Young Scientist Travel Award & Masao Ito Memorial Award

PSJ Awards

see P.96~97 for each presentation.

Skeletal muscle & locomotion (2)

- 2P-001** Application of CGRP upregulates MyHC I mRNA through cAMP-dependent manner in C2C12 cells
Yoshiaki Mori¹⁾, Junko Yamaji²⁾
¹Department of Rehabilitation Sciences, Kansai University of Welfare Sciences, Japan, ²Department of Nutrition Sciences, Kansai University of Welfare Sciences, Japan
- 2P-002** Essential role of calcineurin but not cAMP in mRNA expression of MyHC II and IL-6 in murine myocytes
Junko Yamaji¹⁾, Yoshiaki Mori²⁾
¹Dept. of Nutrition sciences, Kansai University of Welfare Sciences, Japan, ²Dept. of Rehabilitation sciences, Kansai University of Welfare Sciences, Japan
- 2P-003** Differential Scanning Calorimeter reveals interaction between water and myoproteins
Naoya Nakahara¹⁾, Tetsuo Ohno¹⁾, Masako Kimura²⁾, Sumiko Kimura¹⁾, Shigeru Takemori¹⁾
¹Dept. Mol. Physiol., Jikei Univ. Sch. Med., Japan, ²Dept. Integr. Physiol., Kagawa Nutri. Univ., Japan
- 2P-004** Microscopic heat pulses induce activation of cardiac thin filaments in the *in vitro* motility assay
Shuya Ishii¹⁾, Kotaro Oyama^{1,2,3,4)}, Tomomi Arai^{1,2)}, Hideki Itoh^{1,5)}, Seine A. Shintani⁶⁾, Madoka Suzuki^{4,7)}, Fuyu Kobirumaki-Shimozawa²⁾, Shin'ichi Ishiwata⁸⁾, Norio Fukuda²⁾
¹Department of Physics, School of Advanced Science and Engineering, Waseda University, Japan, ²Department of Cell Physiology, The Jikei University School of Medicine, Japan, ³Quantum Beam Science Research Directorate, National Institutes for Quantum and Radiological Science and Technology, Japan, ⁴PRESTO, Japan Science and Technology Agency, Japan, ⁵Epithelial Biology Laboratory, Institute of Medical Biology, Agency for Science, Technology and Research, Singapore, ⁶Department Biomedical Sciences, Chubu University, Japan, ⁷Institute for Protein Research, Osaka University, Japan, ⁸Faculty of Science and Engineering, Waseda University, Japan
- 2P-005** Functional organization of spinal motor map depends on sport experience
Kazutake Kawai^{1,2)}, Toshiki Tazoe²⁾, Yukio Nishimura²⁾
¹College of Sports Sciences, Nihon University, Japan, ²Neural Prosthesis Project, Department of Dementia and Higher Brain Function, Tokyo Metropolitan Institute of Medical Science
- 2P-006** Thalamocortical Axon Activity in Motor Cortex Exhibits Layer-Specific Dynamics during Motor Learning
Yasuhiro R. Tanaka^{1,2,3)}, Yasuyo H. Tanaka^{1,2,3)}, Masashi Kondo^{1,2)}, Shin-Ichiro Terada^{1,2,4)}, Yasuo Kawaguchi^{3,5,6)}, Masanori Matsuzaki^{1,2,3,5,7)}

¹Department of Physiology, The University of Tokyo, Japan, ²Division of Brain Circuits, NIBB, Japan, ³CREST, JST, Japan, ⁴Graduate School of Biostudies, Kyoto University, Japan, ⁵SOKENDAI, Japan, ⁶Division of Cerebral Circuitry, NIPS, Japan, ⁷WPI-IRCN, The University of Tokyo Institutes for Advanced Study, Japan

2P-007 Leg muscle activity during postural control under optokinetic stimulation in healthy subjects

Junya Komagata^{1,2)}, Atsushi Sugiura¹⁾, Hiroshi Takamura²⁾, Yujiro Masu²⁾, Toshihiro Kitama¹⁾

¹Center for Life Science Research, University of Yamanashi, Japan, ²Department of Physical Therapy, Health Science University, Japan

2P-008 Effects of neonatal dopamine depletion on behavioral responses to anxiogenic tasks in adult rats

Masanori Ogata, Hisanao Akita, Hitoshi Ishibashi

Department of Physiology, School of Allied Health Sciences, Kitasato University, Japan

2P-009 Primary motor cortex single cell activity during quadrupedal vs. bipedal gait in Japanese macaques

Marc A Maier¹⁾, Katsumi Nakajima^{2,3)}, Kazunori Morita^{2,3)}, Akira Murata²⁾, Masahiko Inase²⁾

¹FR3636, CNRS / Universite Paris Descartes, Sorbonne Paris Cite, France, ²Department of Physiology, Kindai University, Faculty of Medicine, Japan, ³Department of Physiology, School of Medicine, Iwate Medical University, Japan

2P-010 Features of fine motor skills in 5-year-old children with developmental coordination disorders

Misaki Mikami¹⁾, Shuhei Koeda¹⁾, Ayako Osato²⁾, Takahito Masuda³⁾, Manabu Saito²⁾, Kazuhiko Nakamura^{2,4)}, Junko Yamada¹⁾

¹Hirosaki University Graduate School of Health Sciences, Japan, ²Department of Neuropsychiatry, Hirosaki University Graduate School of Medicine, Japan, ³Hirosaki University Faculty of Education, Japan, ⁴Research Center for Child Mental Development, Hirosaki University Graduate School of Medicine, Japan

2P-011 Serotonin-induced synchronization to both respiratory rhythm and body movement in the pons

Hirotsuka Ooka, Chiaki Uchida, Reona Furukawa, Akiko Arata

Department of Physiology, Hyogo College of Medicine, Mukogawa, Japan

2P-012 Neuronal tuning to speed and acceleration of locomotion in mouse cerebellar cortex

Koji Ikezoe, Kazuo Kitamura

Faculty of Medicine, University of Yamanashi, Japan

2P-013 Characteristics of eye movements of 5-year-old children with developmental coordination disorder

Manabu Saito^{1,2,4)}, Shuhei Koeda³⁾, Misaki Mikami³⁾, Taihiro Aoki⁵⁾, Kazutaka Yoshida¹⁾, Yui Sakamoto¹⁾, Junko Yamada³⁾, Kenji Tsuchiya⁶⁾, Taiichi Katayama⁷⁾, Kazuhiko Nakamura^{1,2)}

¹Department of Neuropsychiatry, Hirosaki University Graduate School of Medicine, Japan, ²Research Center for Child Mental Development, Hirosaki University Graduate School of Medicine, Japan, ³Hirosaki University Graduate School of Health Sciences, Japan, ⁴Department of Neuropsychiatry, Hirosaki University Hospital, Japan, ⁵JVC KENWOOD Corporation, Japan, ⁶Hamamatsu University school of Medicine, Japan, ⁷Osaka University Graduate School of Medicine, Japan

2P-014 Postural adjustments associated with transition from quadrupedal to bipedal locomotion in monkeys

Takashi Suzuki¹), You Komagiri¹), Kazunori Morita¹), Akira Murata²),
Masahiko Inase²), Katsumi Nakajima¹)

¹Dept. Physiol., Iwate Med. Univ., Japan, ²Dept. Physiol., Facult. Med., Kindai Univ., Japan

2P-015 Distinctive compositions of nicotinic acetylcholine receptors in slow and fast muscles

Buntaro Zempo¹), Yasuhiro Yamamoto¹), Tory Williams²), Fumihito Ono^{1,2})

¹Department of Physiology, Division of Life Sciences, Faculty of Medicine, Osaka Medical College, Japan, ²Laboratory of Molecular Physiology, NIAAA, NIH.

2P-016 The effects of sensory and cognitive functions on motor coordination in 5-years old children

Ayako Osato¹), Misaki Mikami²), Manabu Saito¹), Shuhei Koeda²),
Tamaki Mikami³), Yui Sakamoto¹), Kazutaka Yoshida¹), Yuri Matsubara¹),
Junko Yamada²), Kazuhiko Nakamura^{1,3})

¹Department of Neuropsychiatry, Hirosaki University Graduate School of Medicine, Japan, ²Hirosaki University Graduate School of Health Sciences, Japan, ³Research Center for Child Mental Development, Hirosaki University Graduate School of Medicine, Japan

Exercise (2)

2P-017 Habitual physical exercise attenuates classical brown adipose tissue mass in interscapular region

Junetsu Ogasawara¹), Ken Shirato²), Amire Alimu¹), Takahiko Yoshida¹)

¹Department of Social Medicine, Asahikawa Medical University, School of Medicine, Japan, ²Department of Molecular Predictive Medicine and Sport Science, Kyorin University, School of Medicine

2P-018 Changes in Atf3 and Ankrd2 following denervation induced skeletal muscle atrophy

Ippei Yamato¹), Shuichi Soeda²), Tetsuro Tamaki²)

¹Department of Medical Education, Tokai University School of Medicine, Japan, ²Department of Human Structure and Function, Tokai University School of Medicine

2P-019 Understanding Cardiac Hypertrophy Process After Training with Different Intensity In Wistar Rats

Julia Windi Gunadi¹), Vita Murniati Tarawan²), Ronny Lesmana^{2,4}),
Setiawan Setiawan²), Hanna Goenawan^{2,4}), Teresa Liliana Wargasetia³),
Roro Wahyudianingsih⁵), Gina Melawati Sukma⁶), Septo Andry Soesanto⁶),
Rizky Regia Triseynesya⁶)

¹Physiology Department, Faculty of Medicine, Maranatha Christian University, Indonesia, ²Physiology Division, Basic Medical Science Department, Faculty of Medicine, Padjadjaran University, ³Biology Department, Faculty of Medicine, Maranatha Christian University, ⁴Biological Activity Division, Central Laboratory, Padjadjaran University, ⁵Anatomy Pathology, Faculty of Medicine, Maranatha Christian University, ⁶Faculty of Medicine, Maranatha Christian University

2P-020 Alteration of Autophagy Gene Expression by Different Intensity of Exercise in Skeletal Muscles

Vita Murniati Tarawan¹), Julia Windi Gunadi²), Ronny Lesmana^{1,5}),
Hanna Goenawan^{1,5}), Setiawan Setiawan¹), Teresa Liliana Wargasetia³),
Wahyu Widowati³), Yenni Limiyati⁴), Julidea Anggiriani Sipayung⁶),
Debby Eka Meilina⁶)

¹Physiology Division, Basic Medical Science Department, Faculty of Medicine, Padjadjaran University, Indonesia, ²Physiology Department, Faculty of Medicine, Maranatha Christian University, ³Biology Department, Faculty of Medicine, Maranatha

Christian University, ⁴Physical Medicine and Rehabilitation Department Immanuel Hospital Bandung, ⁵Biological Activity Division, Central Laboratory, Padjadjaran University, ⁶Faculty of Medicine, Maranatha Christian University

★ **2P-021**
(Y-01)

Effect of Swimming Exercise to Cardiac PGC-1 α and HIF-1 α Gene Expression in Mice

Nova Sylviana^{1,2)}, Hanna Goenawan^{1,2)}, Ronny Lesmana^{1,2)},
Badai Batara Tiksnadi³⁾, Hasrayati Agustina⁴⁾, Bethy S Hernowo⁴⁾,
Vita Murniati Tarawan¹⁾, Unang Supratman²⁾, Ambrosius Purba¹⁾,
Setiawan Setiawan^{1,2)}

¹Department Biomedical Sciences, Faculty Medicine, Padjadjaran University, Bandung, Indonesia, ²Laboratorium Central, Universitas Padjadjaran, Indonesia, ³Department of Cardiology and Vascular Medicine, Universitas Padjadjaran-Hasan Sadikin Hospital, Indonesia, ⁴Department of Pathology Anatomy, Universitas Padjadjaran-Hasan Sadikin Hospital, Indonesia

2P-022

Influence exercise intensity moderate (walking) delay changes of physiology aging for elderly

Gusbakti R¹⁾, S Sri Mukti²⁾

¹Department Physiology, Faculty of medicine, Universitas Muhammadiyah Sumatera Utara, Indonesia, ²Department Physiology Faculty of Medicine Univ. Gunadarma, Indonesia

2P-023

Drastic changes in arterial pressure during high intensity of treadmill exercise in rats

Kei Tsukioka¹⁾, Ko Yamanaka¹⁾, Hisashi Naito²⁾, Hidefumi Waki¹⁾

¹Department of Physiology, Graduate School of Health and Sports Science, Juntendo University, Japan, ²Department of Exercise Physiology, Graduate School of Health and Sports Science, Juntendo University, Japan

2P-024

Differential improvement of performance by motor imagery of human ankle dorsal and plantar flexion

Nan Liang^{1,2)}, Ayumi Tsubota²⁾, Masato Mukai²⁾, Aiko Takezawa²⁾,
Takahiro Masuhara²⁾, Kanji Matsukawa²⁾

¹Department of Human Health Sciences, Graduate School of Medicine, Kyoto University, Japan, ²Department of Integrative Physiology, Graduate School of Biomedical and Health Sciences, Hiroshima University

2P-025

The long-term exercise doesn't affect blood humoral immunity

Kihachiro Fukada¹⁾, Hidehiko Kushi²⁾, Terue Takashina¹⁾

¹Institute of Humanities and Social Sciences, Nihon University, Japan, ²Graduate School of Literature and Social Sciences, Nihon University, Japan

2P-026

Seasonal effect on resting energy expenditure is age and percent body fat dependent

Duong Duc Pham, Jeong Hun Lee, Ki Hwan Hong, Youn Joo Jung,
Sung Jin Kim, Chae Hun Leem

Department of Physiology, College of Medicine, University of Ulsan, Korea

2P-027

Exercise Prevents Hypertension by Modulating Sleep-Related Cardiovascular Autonomic Function in SHRs

Chieh-Wen Chen^{1,2)}, Terry B. J. Kuo^{1,2,3,5,6)}, Pei-Chi Hsu¹⁾, Jai-Yi Li^{2,7)},
Kuan-Liang Kuo^{4,8)}, Cheryl C. H. Yang^{1,2,3,5)}

¹Institute of Brain Science, National Yang-Ming University, Taiwan, ²Sleep Research Center, National Yang-Ming University, Taiwan, ³Brain Research Center, National Yang-Ming University, Taiwan, ⁴Institute of BioMedical Informatics, National Yang-Ming University, Taiwan, ⁵Department of Education and Research, Taipei City Hospital, Taiwan, ⁶Graduate Institute of Biomedical Informatics, College of Medical Science and

- 2P-028** Does sport discipline at a young age influence the incidence of hypertension? -J-Fit*study-
Hiroshi Kumagai^{1,2)}, Yuki Someya^{3,4)}, Masaki Yoshioka⁵⁾, Eri Miyamoto-Mikami¹⁾, Youngju Choi⁶⁾, Yoshimitsu Kohmura¹⁾, Koya Suzuki¹⁾, Shuichi Machida¹⁾, Hisashi Naito¹⁾, Seiji Maeda⁶⁾, Noriyuki Fuku¹⁾
¹Graduate School of Health and Sports Science, Juntendo University, Japan., ²Research Fellow of Japanese Society for the Promotion of Science, Japan., ³Department of Metabolism & Endocrinology, Graduate School of Medicine, Juntendo University, Japan., ⁴Sportology Center, Graduate School of Medicine, Juntendo University, Japan., ⁵Graduate School of Comprehensive Human Sciences, University of Tsukuba, Japan., ⁶Faculty of Health and Sport Sciences, University of Tsukuba, Japan
- 2P-029** Regular exercise suppresses obesity-associated HCC development
Naoki Takada¹⁾, Miho Kumagai²⁾, Tatsuya Ando^{2,3)}, Fumitaka Kamachi^{1,2)}, Naoko Ohtani^{1,2)}
¹Department of Pathophysiology, Osaka City University Graduate School of Medicine, ²Department of Applied Biological Science, Faculty of Science and Technology, Tokyo University of Science, ³Division of Clinical Laboratory, Gifu University, School of Medicine
- 2P-030** Lower urinary tract symptoms are associated with reduced peak aerobic capacity in old people
Yu Takeda¹⁾, Shizue Masuki^{1,2)}, Mayuko Morikawa^{1,2,3)}, Hiroshi Nose³⁾
¹Department of Sports Medical Sciences, Shinshu University Graduate School of Medicine, ²Institute for Biomedical Sciences, Shinshu University, ³Jukunen Taiikudaigaku Research Center
- 2P-031** Assessment of thermal load during exercise in junior high school students using wearable sensors
Issei Kato, Kei Nagashima, Shuri Marui, Yuta Masuda
Department of Human science, University of waseda, Japan
- ★ **2P-032** Respiratory Muscle Training (RMT), Aerobic Fitness and Performance in Sri Lankan Rowers
(Y-02)
Dilani Priyashanthi Perera¹⁾, Anoja Ariyasinghe²⁾, Anula Kariyawasam²⁾
¹Department of Physiotherapy, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka, ²Department of Physiology, Faculty of Medicine, University of Peradeniya, Sri Lanka
- 2P-033** The expression and distribution of mitsugumin53 in skeletal muscle after lengthening contraction
Yuhei Hibino¹⁾, Yuki Katanosaka²⁾, Kimiaki Katanosaka¹⁾
¹Department of Life and Health Science, Chubu University, Japan , ²Department of Cardiovascular Physiology, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Japan
- 2P-034** Neuroendocrine response to long-term exercise
Terue Takashina¹⁾, Hidehiko Kushi²⁾, Kihachiro Fukada¹⁾
¹Institute of Humanities and Social Sciences, Nihon University, Japan, ²Graduate School of Literature and Social Sciences, Nihon University, Japan
- 2P-035** The relationship of body mass index and aerobic capacity in primary school students in Jakarta

Nurul Paramita, Sophie Yolanda, Imelda Rosalyn Sianipar,
Dewi Irawati Soeria Santoso
Department of Medical Physiology, Universitas Indonesia, Indonesia

2P-036 The analgesic effect of voluntary running in a rat model of persistent inflammatory pain

Risa Yamauchi^{1,2)}, Hideshi Ikemoto¹⁾, Takayuki Okumo^{1,3)}, Nachi Ebihara¹⁾,
Mana Tsukada¹⁾, Hiroyuki Horikawa^{1,2)}, Shi-Yu Guo¹⁾, Yan-Qing Liu^{1,4)},
Tadashi Hisamitsu¹⁾, Masataka Sunagawa¹⁾

¹Department of Physiology, School of Medicine, Showa University, Japan, ²Faculty of Arts and Sciences at Fujiyoshida, Showa University, Japan, ³Department of Orthopaedic Surgery, Showa University Fujigaoka Hospital, Japan, ⁴Department of Combined Traditional Chinese and Western Medicine, Yangzhou University School of Medicine, China

2P-037 A Randomised Controlled Trial Evaluating Effect of Walking Advice on Improving Depressive Symptoms

Mei-Yuk Lam, Ka-Tik Cheung

School of Medical and Health Sciences, Tung Wah College, China

2P-038 Acute effects of mechanical compression in hypoxia on arterial stiffness

Masato Nishiwaki

Faculty of Engineering, Osaka Institute of Technology, Japan

★ **2P-039** Factors affecting oxygen pulse in a healthy Thai population

(Y-03)

Tichanon Promsrisuk, Napatr Sriraksa, Ratchaniporn Kongsui

Division of Physiology, School of Medical Sciences, University of Phayao, Thailand

2P-040 Circulatory dynamics and autonomic nervous activities between sprinters and distance runners

Xinru Sun¹⁾, Madoka Nozawa¹⁾, Sayaka Saito¹⁾, Junko Hoshi¹⁾,

Hiromasa Tanno¹⁾, Emi Kanno¹⁾, Ryoko Maruyama¹⁾

¹Department of Health Sciences, Tohoku University Graduate School of Medicine, Japan

2P-041 Exercise habit is correlated to lower fall risks among elderly people living in urban areas

Hisayo Yokoyama¹⁾, Hitoshi Watanabe¹⁾, Kazumi Saito²⁾, Ayane Shibata²⁾,
Yuta Suzuki¹⁾, Daiki Imai¹⁾, Kazunobu Okazaki¹⁾, Akira Ogita¹⁾

¹Research Center for Urban Health and Sports, Osaka City University, Japan, ²Social Welfare Bureau, Osaka City

2P-042 Asymmetry of plantar flexor muscle but not Achilles tendon in high jumpers

Keigo Tomoo, Tadashi Suga, Yusuke Izui, Hiromasa Ueno, Masafumi Terada,
Akinori Nagano, Tadao Isaka

Department of Sports and Health Science, Ritsumeikan University, Japan

Circulation & Respiration: Cardiac Physiology (2)

2P-043 nNOS regulation of myocyte contraction and $[Ca^{2+}]_i$ handling with fatty acid supplementation

Yin Hua Zhang

Department of Physiology, Seoul National University, College of Medicine, Korea

- 2P-044** A novel superforated-patch technique revealed the Ca²⁺-triggered arrhythmogenesis from the T-tubules
Takao Shioya
Department of Physiology, Faculty of Medicine, Saga University, Japan
- 2P-045** Propagation of repolarization induced in a cell array of human ventricular cell models
Shotaro Kiyokawa, Natsuki Yamamoto, Akinori Noma, Akira Amano
Department of Bioinformatics, Graduation school of Lifescience, University of Ritsumeikan, Japan
- 2P-046** Screening for novel RyR2 inhibitor by ER Ca²⁺ monitoring
Mai Tamura¹, Nagomi Kurebayashi¹, Takashi Murayama¹, Shuichi Mori², Mari Ishigami-Yuasa², Hiroyuki Kagechika², Junji Suzuki³, Kazunori Kanemaru⁴, Masamistu Iino⁴, Takashi Sakurai¹.
¹Dept Pharmacol, Fac Med, Juntendo Univ, Japan, ²Tokyo Med Dent Univ, Japan, ³Univ California San Francisco, USA, ⁴Nihon Univ Sch Med, Japan
- 2P-047** Molecular architecture of catecholamine-induced arrhythmogenicity in rat pulmonary vein
Yosuke Okamoto¹, Naing Ye Aung², Yoshinobu Nagasawa³, Daichi Takagi¹, Kyoichi Ono¹
¹Department of cell physiology, Akita University Graduate School of Medicine, Japan, ²Pathological and Image analysis center, Cancer Research center, Yamagata University Faculty of Medicine, ³Department of Pharmacology and Therapeutics, Faculty of Pharmaceutical Sciences, Toho University
- 2P-048** High throughout screening of RyR2 inhibitors as candidates for novel antiarrhythmic drugs
Masatoshi Ito¹, Nagomi Kurebayashi¹, Takashi Murayama¹, Mai Tamura¹, Mari Ishigami- Yuasa², Shuichi Mori², Hiroyuki Kagechika², Junji Suzuki³, Kazunori Kanemaru⁴, Masamitsu Iino⁴, Takashi Sakurai¹
¹Dept Pharmacol, Fac Med, Juntendo Univ, Tokyo, Japan, ²Tokyo Med Dent Univ, Japan, ³Univ California, USA, ⁴Nihon Univ Sch Med, Japan
- 2P-049** Anti-arrhythmic force of leak current enhancement in manufactured atrial fibrillation of rat
Kako Andoh, Yoriko Katoh, Yosuke Okamoto, Yui Takahashi, Daichi Takagi, Kyoichi Ono
Department of Cell Physiology, Akita Graduate School of Medicine, Japan
- 2P-050** Interventricular difference in calcium sensitivity with lower expression of calcium binding proteins
Young Keul Jeon^{1,2,3}, Ji Hyun Jang^{1,2,3}, Juhan Woo^{1,2,3}, Hae Jin Kim^{1,2,3}, Su Han Cho^{1,2,3}, Yin Hua Zhang^{1,2,3}, Sung Joon Kim^{1,2,3}
¹Department of Physiology, Seoul National University, College of Medicine, Republic of Korea, ²Department of Biomedical Sciences, Seoul National University, College of Medicine, Republic of Korea, ³Ischemic/Hypoxic Disease Institute, Seoul National University College of Medicine, Republic of Korea
- ★★**2P-051** Mitochondrial fusion promoter attenuates left ventricular dysfunction in pre-diabetic rats
(Y-04)
Chayodom Maneechote^{1,2,3}, Siripong Palee^{1,2,3}, Nattayaporn Apaijai^{1,2,3}, Thidarat Jaiwongkam^{1,2,3}, Sasiwan Kerdphoo^{1,2,3}, Siriporn C Chattipakorn^{1,2,4}, Nipon Chattipakorn^{1,2,3}

¹Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Center of Excellence in Cardiac Electrophysiology Research, Chiang Mai University, Thailand, ³Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand

2P-053 The use of fetal heart rate variability to identify evolving brain injury after asphyxia

Kyohei Yamaguchi¹⁾, Christopher Arther Lear²⁾, Alistair Jan Gunn²⁾, Tomoaki Ikeda¹⁾, Laura Bennet²⁾, Yoshiki Maeda¹⁾

¹Department of Obstetrics & Gynecology, Mie University Faculty of Medicine, Japan, ²The Fetal Physiology and Neuroscience Group, Department of Physiology, The University of Auckland, New Zealand

2P-054 Generation mechanism of transient EAD in a mathematical ventricular model

Yuichiro Ito, Hiroyuki Kitajima, Toru Yazawa

Department of Engineering and Design, Kagawa University, Japan

2P-055 Alternans in a Mathematical Crustacean Cardiac Model

Hiroyuki Kitajima, Toru Yazawa

Department of Engineering and Design, Kagawa University, Japan

2P-056 Dynamical mechanisms of phase-2 early afterdepolarizations in human ventricular myocyte models

Yasutaka Kurata¹⁾, Kunichika Tsumoto¹⁾, Mamoru Tanida¹⁾, Yuhichi Kuda¹⁾, Ichiro Hisatome²⁾

¹Department of Physiology II, Kanazawa Medical University, Japan, ²Division of Regenerative Medicine and Therapeutics, Institute of Regenerative Medicine and Biofunction, Tottori University Graduate School of Medical Science

2P-057 Mechanisms of L-type Ca²⁺ channel blockers to produce EAD in drug-induced arrhythmia

Shingo Murakami, Akira Kimura

Department of Electrical, Electronic, and Communication Engineering, Faculty of Science and Engineering, Chuo University, Japan

★★**2P-058** Crossbridge thermodynamics in right heart failure

(Y-05)

June-Chiew Han¹⁾, Toan Pham¹⁾, Kenneth Tran¹⁾, Andrew J. Taberner^{1,2)}, Denis S. Loiselle^{1,3)}

¹Auckland Bioengineering Institute, The University of Auckland, New Zealand,

²Department of Engineering Science, The University of Auckland, New Zealand,

³Department of Physiology, The University of Auckland, New Zealand

★★**2P-059** LysoPC plays a crucial role in cholesterol-induced nonobese MS cardiomyopathy

(Y-06)

Jiung-Pang Huang, Li-Man Hung

Department of Biomedical Sciences, Chang Gung University, Taiwan

2P-060 Successful establishment of a murine model of cardiac reverse remodeling

Tatsuyuki Sato¹⁾, Norihiko Takeda¹⁾, Yu Nakagama²⁾, Masaki Wake¹⁾, Katsura Soma¹⁾, Hiroaki Semba¹⁾, Takayuki Isagawa³⁾, Issei Komuro¹⁾

¹Department of Cardiovascular Medicine, University of Tokyo Graduate School of Medicine, Japan, ²Department of Pediatrics, University of Tokyo Graduate School of Medicine, Japan, ³Department of Cardiovascular Medicine, Nagasaki University Graduate School of Biomedical Sciences, Japan

- 2P-062** Forced expression of DFCP1 attenuates cardiac fibroblasts activation via promoting autophagic flux
Xiaojing Liu^{1,2}
¹Laboratory of Cardiovascular Diseases, University of Sichuan, China, ²Department of Cardiology, University of Sichuan, China
- 2P-063** Chronic isoproterenol stimulation induced different cardiac disorders in *Tric*-deficient mice
Daiju Yamazaki
Division of Pharmacology, National Institute of Health Sciences, Japan
- 2P-064** SDH deficiency induced metabolic switch and dilated cardiomyopathy
Wenwen Li, Xianhua Wang, Heping Cheng, Qi Ma
Peking University, China
- 2P-065** Chronic response of renal and lumbar sympathetic nerve activity to myocardial infarction in rats
Misa Yoshimoto, Shizuka Ikegame, Fumi Hyodo, Yuki Shiwa, Kenju Miki
Department of Health Science, University of Nara women's University, Japan
- ★ **2P-066** Inhibition of p16^{INK4a} protects against myocardial ischemia/reperfusion injury
(Y-07)
Zhou Qiulian, Bei Yihua, Meng Xiangmin, Xiao Junjie
Institute of Cardiovascular Sciences, School of Life Science, Shanghai University, China
- 2P-067** The cytotoxic effect of 2-APB in H9c2 cells
YanCheng Shen¹, KunTa Yang^{2,3}
¹Department of Pharmacology and Toxicology, School of Medicine, Tzu Chi University, Taiwan, ²Department of Physiology, School of Medicine, Tzu Chi University, Taiwan, ³Institute of Medical Sciences, Tzu Chi University, Taiwan
- 2P-068** Protective Effect of Intermittent Hypoxia Against Oxidative Stress Injury in Rat Cardiomyocytes
I-Chieh Wang¹, Chih-Feng Lien², Kun-Ta Yang³
¹PhD Program in Pharmacology and Toxicology, Tzu Chi University, Taiwan, ²Institute of Medical Sciences, Tzu Chi University, Taiwan, ³Department of Physiology, School of Medicine, Tzu Chi University, Taiwan
- 2P-070** The cardiac end-systolic pressure-volume (force-length) relation is contraction-mode dependent
Kenneth Tran¹, Toan Pham^{1,2}, Andrew J Taberner^{1,3}, Denis S Loiselle^{1,2}, June-Chiew Han¹
¹Auckland Bioengineering Institute, University of Auckland, New Zealand, ²Department of Physiology, University of Auckland, New Zealand, ³Department of Engineering Science, University of Auckland, New Zealand
- 2P-071** Glycolytic pathway is activated in rat embryonic heart just after the beginning of the heartbeat
Tatsuya Sato^{1,2}, Nobutoshi Ichise¹, Takeshi Kobayashi¹, Hiroya Yamazaki¹, Yoshinori Terashima¹, Shunsuke Jimbo¹, Noritsugu Tohse¹
¹Department of Cellular Physiology and Signal Transduction, Sapporo Medical university School of Medicine, Japan, ²Department of Cardiovascular, Renal, and Metabolic Medicines, Sapporo Medical university School of Medicine, Japan
- 2P-072** Rapid heating induces high-frequency sarcomeric oscillations in living rat neonatal cardiomyocytes

Seine A. Shintani¹⁾, Kotaro Oyama^{2,3)}, Shin'Ichi Ishiwata⁴⁾, Norio Fukuda⁵⁾

¹Department of Biomedical Sciences, College of Life and Health Sciences, The Chubu University, Japan, ²Quantum Beam Science Research Directorate, National Institutes for Quantum and Radiological Science and Technology, Japan, ³PRESTO, Japan Science and Technology Agency, Japan, ⁴Department of Physics, Faculty of Science and Engineering, Waseda University, ⁵Department of Cell Physiology, The Jikei University School of Medicine, Japan

2P-073 Roles of Epac1 in the regulation of contractility in cardiac muscle

Yoshiki Ohnuki, Kenji Suita, Satoshi Okumura

Department of Physiology, Tsurumi University School of Dental Medicine, Japan

2P-074 *In vivo* nano-analysis of the dynamics of individual sarcomeres in the beating mouse heart

Fuyu Kobirumaki-Shimozawa¹⁾, Kotaro Oyama^{2,3)}, Togo Shimozawa⁴⁾, Shin'Ichi Ishiwata⁵⁾, Norio Fukuda¹⁾

¹Department of Cell Physiology, The Jikei University School of Medicine, Japan, ²National Institutes for Quantum and Radiological Science and Technology, ³PRESTO, Japan Science and Technology Agency, ⁴Technical Division, School of Science, The University of Tokyo, ⁵Department of Physics, Faculty of Science and Engineering, Waseda University

2P-075 Role of pannexin hemichannel on stretch-induced mitochondrial hyperpolarization in cardiomyocytes

Daisuke Katsura¹⁾, Gentaro Iribe¹⁾, Keiko Kaihara¹⁾, Keiji Naruse¹⁾

¹Department of Cardiovascular Physiology, Okayama University, Japan

2P-076 Comparison of cardiomyocyte kinetics of rat left ventricle and turtle ventricle

Yoshihiro Ujihara^{1,2)}, Akira Hanashima²⁾, Takeshi Honda²⁾, Aya Kodama²⁾, Ken Hashimoto²⁾, Satoshi Mohri²⁾

¹Department of Electrical and Mechanical Engineering, Nagoya Institute of Technology, Japan, ²First department of Physiology, Kawasaki Medical School, Japan

2P-077 Hydrogen Sulfide Exerts Cardioprotection in Sepsis by Inhibiting Endoplasmic Reticulum Stress

Yuming Wu^{1,4,5)}, Yuhong Chen^{1,2)}, Sheng Jin¹⁾, Xu Teng¹⁾, Zhenjie Hu²⁾, Xuan Qiu³⁾

¹Department of Physiology, Hebei Medical University, China, ²Intensive care unit, The Fourth Hospital of Hebei Medical University, China, ³Department of endocrinology, The Third Hospital of Hebei Medical University, China, ⁴Hebei Collaborative Innovation Center for Cardio-Cerebrovascular Disease, China, ⁵Key Laboratory of Vascular Medicine of Hebei Province, China

2P-078 Physiological Studies on the Protective Effect of Melatonin against Doxorubicin Cardiotoxicity

Faten Mahmoud Diab

Physiology Department, Faculty of Medicine, Ain Shams University, Egypt

2P-079 Optogenetic cardiac pacing in freely-moving mice

Jun Kaminosono¹⁾, Yuki Kambe²⁾, Tomoyuki Kuwaki¹⁾, Akira Yamashita¹⁾

¹Dept. Physiol.1, Grad. Sch. Med. Dent. Sci., Kagoshima Univ., Japan, ²Dept. Pharmacol., Grad. Sch. Med. Dent. Sci., Kagoshima Univ., Japan

2P-080 The prevalence of low physical activity and its association with other risk factors in Iran

Majid Askaripour¹⁾, Masoomah Kahnooji²⁾, Mahboobeh Yeganeh²⁾, Fatemeh Tavakoli³⁾, Mitra Shadkam⁴⁾, Farzaneh Rostamzadeh¹⁾,

Hamid Najafipour²⁾

¹Physiology Research Center, Institute of Basic and Clinical Physiology Sciences and Department of Physiology and Pharmacology Kerman University of Medical Sciences, Kerman, Iran, ²Cardiovascular Research Center, Institute of Basic and Clinical Physiology Sciences and Shafa hospital, Kerman University of Medical Sciences, Iran, ³Department of Biostatistics and Epidemiology, Kerman University of Medical Sciences, Iran , ⁴Endocrinology and Metabolism Research Center, Institute of Basic and Clinical Physiology sciences, Kerman University of Medical Sciences, Iran

2P-081 Development of light-controllable nitric oxide releasing small compounds and biological application

Naoya Ieda, Hana Okuno, Ayaka Yamauchi, Yuji Hotta, Mitsuyasu Kawaguchi, Kazunori Kimura, Hidehiko Nakagawa
Graduate School of Pharmaceutical Sciences, Nagoya City University, Japan

Circulation & Respiration: Lung Physiology (2)

2P-082 Airway epithelial integrin $\beta 4$ expression deficiency leads to lung dysplasia in mice

Yang Xiang¹⁾, Yu Chen^{1,2)}, Wang Jiang¹⁾, Di Wu¹⁾, Jinmei Wang¹⁾, Chi Liu¹⁾, Xiaoqun Qin¹⁾

¹Department of Physiology, Xiangya School of Medicine, Central South University, China, ²Department of laboratory medicine, Hunan Normal University of medicine, China

2P-083 S1P₂ aggravates lung fibrosis through altering alveolar macrophage polarization in mice

Yasuo Okamoto^{1,2)}, Juanjuan Zhao¹⁾, Kazuaki Yoshioka¹⁾, Sho Aki¹⁾, Kazuhiro Ishimaru¹⁾, Noriko Takuwa^{1,3)}, Yoh Takuwa¹⁾

¹Dept. of Physiology, Kanazawa Univ. Sch. Med., Japan, ²Dept. of Pharmacology, Kawasaki Medical School, ³Dept. of Health & Med. Sci., Nursing Univ.

2P-084 Lung Functions and Feno Levels during Phases of Menstrual Cycle in Asthmatic and Healthy Females

Kushani Rasangika Atukorala¹⁾, Sharaine Fernando¹⁾, Nalinda Silva¹⁾, Lakmali Amarasiri²⁾

¹Department of Physiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka, ²Department of Physiology, Faculty of Medicine, University of Colombo

2P-085 The role of miR-126 on LPS-induced acute lung injury in mice

Yongsheng Gong, Haizeng Zhang, Danyang Chen, Qiuyun Tian, Sunzhong Mao, Xiaofang Fan, Shufang Liu

Institute of Hypoxia Medicine, School of Basic Medical Sciences, Wenzhou Medical University, China

2P-086 Chloramphenicol induces autophagy and inhibits the HIF1 α pathway in NSCLC cells

Ching-Hao Li¹⁾, Po-Lin Liao²⁾, Yu-Wen Cheng³⁾, Shih-Hsuan Huang³⁾, Han-Lin Hsu⁴⁾, Jaw-Jou Kang²⁾

¹Department of Physiology, School of Medicine, College of Medicine, Taipei Medical University, Taiwan, ²Institute of Food Safety and Health Risk Assessment, School of Pharmaceutical Sciences, National Yang-Ming University, Taiwan, ³College of Pharmacy, Taipei Medical University, Taiwan, ⁴Division of Pulmonary Medicine, Department of Internal Medicine, Taipei Medical University-Wan Fang Hospital, Taiwan

Circulation & Respiration: Vascular Physiology (2)

- ★ **2P-087** (Y-09) **Influence of Tobacco smoking on carboxyhaemoglobin levels and blood lipid levels**
Prasanna Herath¹⁾, Savithri Wimalasekera²⁾, Thamara Amarasekara³⁾
¹Department of Nursing and Midwifery, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka, ²Department of Physiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka, ³Department of Allied Health Sciences, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka
- 2P-088** **Stimulation of nitric oxide production in vascular endothelial cells by *Raphanus sativus* extract**
Misato Wakamatsu¹⁾, Rei Kuroda¹⁾, Kimiko Kazumura²⁾, Yuji Minami³⁾, Katsuko Kajiya³⁾
¹Department of Biochemical Science & Technology, Graduate School of Agriculture, Kagoshima University, Japan, ²Central Research Laboratory, Hamamatsu Photonics K.K., Japan, ³Department of Food Science & Biotechnology, Faculty of Agriculture, Kagoshima University, Japan
- 2P-089** **The vasodilatory effect of Tiliacorinine 12'-O-acetate in rat aorta**
Luckika Panthiya¹⁾, Jiraporn Tocharus²⁾, Rungusa Pantan¹⁾, Archawin Nakaew³⁾, Apichart Suksamrarn³⁾, Chainarong Tocharus¹⁾
¹Department of Anatomy, Faculty of Medicine, Chiang Mai University, Thailand, ²Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Department of Chemistry and Center of Excellence for Innovation in Chemistry, Faculty of Science, Ramkhamhaeng University, Thailand
- 2P-090** **Effects of adiponectin against CoCl₂ induced apoptosis of SMCs via HIF-1 α /cAMP/PKA/Cx43 pathway**
Jingjie Xiao^{1,2)}, Wei Zhang^{1,3)}, Lei Wu^{1,4)}, Liang Zhang^{1,2)}, Yang Wang^{1,2)}, Li Li^{1,2)}, Junqiang Si^{1,2)}, Xinzhi Li^{1,5)}, Ketao Ma^{1,2)}
¹Key Laboratory of Xinjiang Endemic and Ethnic Diseases, Medicine School of Shihezi University, China, ²Department of Physiology Medicine School of Shihezi University Shihezi, China, ³Department of Gerontology, the First Affiliated Hospital, Medicine School of Shihezi University, China, ⁴Department of Cardiology, the First Affiliated Hospital, Medicine School of Shihezi University, Shihezi, China, ⁵Department of Pathophysiology, Medicine School of Shihezi University, Shihezi, China
- 2P-091** **Hemodynamic responses to hyperbaric treatment in skeletal muscle of obesity and type 2 diabetes rats**
Natsuki Goto¹⁾, Naoto Fujita¹⁾, Ryosuke Ochi¹⁾, Wataru Nino¹⁾, Kazuyoshi Hisatsune¹⁾, Hisao Nishijo²⁾, Susumu Urakawa¹⁾
¹Dept of Musculoskeletal Functional Research and Regeneration, Grad. Sch. of Biomedical & Health Sciences, Hiroshima Univ, Japan, ²Dept. of System Emotional Science, Grad. Sch. of Medical and Pharmaceutical Science, Univ. of Toyama, Japan
- 2P-092** **Differential changes of flow-induced vasodilation mechanisms in coronary arteries from SHR and WKY**
Suhan Cho, Hae Jin Kim, Ming Zhe Yin, Sung Joon Kim
Department of Physiology, Seoul National University College of Medicine, Korea
- 2P-093** **Measurement of pulmonary arterial capacitance in the pathogenesis of pulmonary hypertension in rats**
Hirotsugu Tsuchimochi¹⁾, Ryohei Fukuba^{1,2)}, Takashi Sonobe¹⁾, Shigeki Taniguchi²⁾, James T Pearson^{1,3)}
¹Department of Cardiac Physiology, National Cerebral and Cardiovascular Research

- 2P-094** Advanced method for vessel identification and assessment of concurrent dynamic vascular events
Naoki Honkura^{1,2)}, Mark Richerds²⁾, Tetsumei Urano¹⁾, Lena Claesson-Welsh²⁾
¹Department of Medical Physiology, Hamamatsu University school of Medicine, Japan, ²Department of Immunology, Genetics and Pathology, Rudbeck Laboratory, Uppsala University, Sweden
- 2P-095** Resveratrol stimulates Na⁺-Ca²⁺ exchanger to reduce cytosolic Ca²⁺ in rat aortic smooth muscle cells
Yunting Zhang¹⁾, F Yan²⁾, Xiaoqiang Yao¹⁾
¹Department of Biomedical Sciences, The Chinese University of Hong Kong, China, ²Department of Physiology, Guangzhou University of Chinese Medicine, China
- 2P-096** The involvement of calpain in abnormal vascular smooth muscle contraction induced by SPC and U46619
Hiroko Kishi¹⁾, Qian Lu¹⁾, Tomoka Morita¹⁾, Ying Zhang¹⁾, Bochao Lyu¹⁾, Min Zhang¹⁾, Nan Li¹⁾, Sei Kobayashi¹⁾
¹Department of Molecular and Cellular Physiology, Yamaguchi University Graduate School of Medicine, Japan
- 2P-097** Effects of Capsaicinoid Nonivamide on Obesity-Related Vascular Dysfunction in Obese Rat
Sivanan Sivasinprasan¹⁾, Naruemon Wikan¹⁾, Apichart Suksamrarn²⁾, Jiraporn Tocharus³⁾, Chainarong Tocharus¹⁾
¹Department of Anatomy, Faculty of medicine, Chiang Mai University, Thailand, ²Department of Chemistry and Center of Excellence for Innovation in Chemistry, Faculty of Science, Ramkhamhaeng University, Thailand, ³Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand
- 2P-098** Deficiency of HIF2 α in VSMCs Protects Against Angiotensin II-Induced Abdominal Aortic Aneurysm
Yanting Song¹⁾, Dan Qi¹⁾, Xia Wang¹⁾, Ye Liu¹⁾, Huihua Li^{1,2)}, Jie Du^{2,3)}, Aijuan Qu^{1,2)}
¹Department of Physiology and Pathophysiology, School of Basic Medical Sciences, Capital Medical University, China, ²Key Laboratory of Remodeling-Related Cardiovascular Diseases, Ministry of Education, ³Beijing Anzhen Hospital of Capital Medical University and Beijing Institute of Heart Lung and Blood Vessel Diseases, China
- 2P-099** Intermedin reduces neointima formation by regulating vascular smooth muscle cell phenotype
Yong Fen Qi, Qing Zhu, Xian-Qiang Ni, Wei-Wei Lu, Jin-Sheng Zhang, Jin-Ling Ren, Di Wu, Yao Chen, Lin-Shuang Zhang, Yan-Rong Yu, Chao-Shu Tang
Peking University Health Science Center, China
- 2P-100** Role of mitochondrial phosphate transporters in vascular calcification
Nhung Thi Nguyen, Tuyet Thi Nguyen, Soo-Jin Kim, Luong Dai Ly, Dat Da Ly, Seung-Kuy Cha, Kyu-Sang Park
Department of Physiology, Wonju College of Medicine, Yonsei University, Korea
- 2P-101** Evolutional relationship between hearts and elastic protein connectins
Akira Hanashima, Yoshihiro Ujihara, Mayuko Tada, Mai Iwasa, Aya Kodama,

Takeshi Honda, Ken Hashimoto, Satoshi Mohri
First Department of Physiology, Kawasaki Medical school

2P-102 Changes in the Right Coronary Microvascular Function in Pulmonary Arterial Hypertension

Mark T Waddingham¹, Huiling Jin², Takashi Sonobe²,
Hirotosugu Tsuchimochi², Ryotaro Asano¹, Keiji Umetani³,
Mikiyasu Shirai¹, Takeshi Ogo¹, James T Pearson²

¹Department of Advanced Medical Research for Pulmonary Hypertension, National Cerebral and Cardiovascular Center Research Institute, Japan, ²Department of Cardiac Physiology, National Cerebral and Cardiovascular Center Research Institute, Japan, ³Japan Synchrotron Radiation Research Institute, Japan

2P-103 Decreased Kir and Kv of right coronary artery SMC in pulmonary arterial hypertensive rats

Sung Eun Kim^{1,2}, Ming Zhe Yin^{1,2}, Hae Jin Kim¹, Yin Hua Zhang^{1,2,3},
Sung Joon Kim^{1,2,3}

¹Department of physiology, Seoul National University College of Medicine, ²Department of Biomedical Sciences, Seoul National University College of Medicine, ³Ischemic/Hypoxic Disease Institute Seoul National University College of Medicine

★★★2P-104
(Y-10)

FUNDC2 regulates platelet activation through AKT/GSK-3 β /cGMP axis

Qi Ma¹, Weilin Zhang², Heping Cheng¹, Junling Liu³, Quan Chen²

¹Institute of Molecular Medicine, Peking University, China, ²Institute of Zoology, Chinese Academy of Sciences, Beijing, China, ³School of Medicine, Shanghai Jiao Tong University, China

2P-105 A Mathematical Model of Cardiac Cycle Driven by the Human Ventricular Cell Model

Sayaka Niwa¹, Yukiko Himeno², Akinori Noma², Akira Amano²

¹Bioinformatics course, Graduate School of Life Sciences, Ritsumeikan University, Japan, ²Department of Bioinformatics, College of Life Sciences, Ritsumeikan University, Japan

2P-106 Atypical antipsychotic drug olanzapine leads to aggravation of atherosclerosis in apoE-null mice

Chia-Hui Chen¹, Song-Kun Shyue², Chiao-Po Hsu^{3,4}, Tzong-Shyuan Lee^{1,5}

¹Department of Physiology, School of Medicine, National Yang-Ming University, Taiwan, ²Cardiovascular Division, Institute of Biomedical Sciences, Academia Sinica, Taiwan, ³Division of Cardiovascular Surgery, Department of Surgery, Taipei Veterans General Hospital, Taiwan, ⁴Faculty of Medicine, School of Medicine, National Yang-Ming University, Taipei, Taiwan; ⁵Graduate Institute and Department of Physiology, College of Medicine, National Taiwan University, Taiwan, ⁶Graduate Institute and Department of Physiology, College of Medicine, National Taiwan University, Taiwan

2P-107 Effect of Total Cholesterol on Blood Pressure and the Difference between Genders

Reza Ishak Estiko, Miranti Dewi Pramaningtyas
Faculty of Medicine, Universtas Islam Indonesia, Indonesia

2P-108 The prevalence of hypertension and incidence in Southeastern Iran: A Community-based Study

Soodeh Rajabi¹, HamidReza Nasri², Farzaneh Rostamzadeh³,
Freidoon Jahangir⁴, Mahboobeh Yeganeh-Hajahmadi¹, Mitra Shadkam⁵,
Hamid Ajafipour²

¹Physiology Research Center, Institute of Basic and Clinical Physiology Sciences, and Department of Physiology and Pharmacology, Kerman University of Medical Sciences,

Iran,²Cardiovascular Research Center, Institute of Neuropharmacology and Department of Physiology and Pharmacology, Kerman University of Medical Sciences, Iran, ³Endocrinology and Metabolism Research Center, Institute of Basic and Clinical Physiology Sciences and Department of Physiology and pharmacology, Kerman University of Medical Sciences, Iran, ⁴Department of Biostatistics and Epidemiology, Kerman University of Medical Sciences, Iran, ⁵Gastroenterology and Hepatology Research Center, Institute of Basic and Clinical Physiology Sciences, Kerman University of Medical Sciences, Iran

Endocrine, Reproduction & Development (2)

- ★ **2P-110** Genistein and running exercise modulates HDAC3 and the fibrosis markers in OVX rats with NASH
(Y-11)

Namthip Witayavanitkul¹, Duangporn Werawatganon¹,
Naruemon Klaikeaw², Prasong Siriviriyakul¹

¹Department of Physiology, Faculty of Medicine, Chulalongkorn University, Thailand,

²Department of Pathology, Faculty of Medicine, Chulalongkorn University, Thailand

- 2P-111** DHA Protects Against Hepatic Steatosis by Activating Sirt1 in Nonalcoholic Fatty Liver Disease Mice

Xiao Luo^{1,2}, Xinqian Gu^{2,3}, Xiaomin Su^{2,3}, Xin Liu⁴, Zhangya He^{2,3},
Xiaomin Li^{2,3}, Ru Jia⁵, Bei Han^{2,3}, Yan Yu^{2,3}, Xiaoqin Luo^{2,3},

¹Department of Physiology and Pathophysiology, School of Basic Medical Sciences, Xi'an Jiaotong University Health Science Center, China, ²Department of Nutrition and Food Safety, School of Public Health, Xi'an Jiaotong University, China, ³Nutrition and Food Safety Engineering Research Center of Shaanxi Province, School of Medicine, Xi'an Jiaotong University, China, ⁴Department of Epidemiology and Health Statistics, School of Public Health, Xi'an Jiaotong University, China, ⁵Department of Prosthodontics, Stomatological Hospital, College of Stomatology, Xi'an Jiaotong University, China

- 2P-112** Neurosecretory protein GL, a hypothalamic small protein, regulates appetite and energy homeostasis

Kenshiro Shikano^{1,2}, Daichi Matsuura², Takaya Saito²,
Eiko Iwakoshi-Ukena², Megumi Furumitsu², Kazuyoshi Ukena²

¹Department of Neurophysiology, Faculty of Medicine, Oita University, Japan, ²Section of Behavioral Sciences, Graduate School of Integrated Arts and Sciences, Hiroshima University, Japan

- 2P-113** Effect of long term high-fat diet and calorie restriction on the hepatic NAD metabolism in mice

Xiaojing Wei¹, Ru Jia², Qiqi Wang¹, Jiaqi Huang¹, Xiao Luo¹, Jianqun Yan¹

¹Department of Physiology and Pathophysiology, School of Basic Medical Sciences, Xi'an Jiaotong University Health Science Center, China, ²Department of Prosthodontics, College of Stomatology, Stomatological Hospital, Xi'an Jiaotong University, China

- 2P-114** Effect of flaxseed on a inflammatory response in patients with hypercholesterolemia-preliminary data

Dominika Kanikowska¹, Rafał Rutkowski¹, Krzysztof Pawlaczyk²,
Maki Sato³, Monika Misiian², Andrzej Bręborowicz¹, Janusz Witowski¹

¹Department of Pathophysiology, Poznan University of Medical Sciences, Poland, ²Department of Nephrology, Transplantology, and Internal Medicine, Poznan University of Medical Sciences, Poland, ³Department of Physiology, Aichi Medical University, Japan

- 2P-115** The hypothalamic feeding-related neuropeptides in the streptozotocin-induced diabetic rat

Satomi Sonoda^{1,2}, Kenya Sanada¹, Hiroki Beppu¹, Kazuaki Nishimura¹,

Haruki Nishimura¹, Kentaro Tanaka¹, Hiromichi Ueno¹,
Mitsuhiro Yoshimura¹, Takashi Maruyama¹, Yoshiya Tanaka², Yoichi Ueta¹
¹Department of Physiology, School of Medicine, University of Occupational and
Environmental Health, Japan, ²The First Department of Internal Medicine, School of
Medicine, University of Occupational and Environmental Health, Japan

2P-116 Effects of estradiol on an orexigenic function of ghrelin in ovariectomized rats fed high-fat diet

Naoko Yokota-Nakagi^{1,2}, Mizuho Kawakami¹, Haruka Takahashi¹,
Akira Takamata¹, Yuki Uchida¹, Keiko Morimoto¹

¹Department of Environmental Health, Faculty of Life Science and Human Technology,
Nara Womens University, Japan, ²Department of Health and Nutrition, Faculty of Health
Science, Kyoto Koka Womens University, Japan

2P-117 Possible involvement of central nesfatin-1 neurons in xenin-induced feeding suppression in rats

Hirofumi Hashimoto, Yoshiteru Seo
Department of Regulatory Physiology, Dokkyo Medical University, Japan

2P-118 Adrenomedullin enhances chorda tympani nerve responses to sugars in mice

Shusuke Iwata¹, Mayuko Inoue¹, Keiko Yasumatsu¹, Ryusuke Yoshida^{2,3},
Yuzo Ninomiya^{1,4}

¹Div Sensory Physiol, R&D Cent for Taste and Odor Sensing, Kyushu Univ, Japan, ²Sect
Oral Neurosci, Grad Sch Dent Sci, Kyushu Univ, Japan, ³OBT Res Cent, Grad Sch Dent Sci,
Kyushu Univ, Japan, ⁴Monell Chemical Senses Center, USA

2P-119 Dietary fat modulation of oral fatty acid sensitivity and preference in young men and women

Yuhō Yamauchi, Mamiko Inoshita, Kyoko Ueshima, Yuki Uchida,
Keiko Morimoto
Dept. Environm. Health, Facult. Human Life & Environm, Sci., Nara Women's Univ., Japan

2P-120 Nutritional status of Japanese children with developmental disorders
Shuhei Koeda¹, Misaki Mikami¹, Manabu Saito^{2,3}, Tamaki Mikami³,
Kazuhiko Nakamura^{2,3}, Junko Yamada¹

¹Hirosaki University Graduate School of Health Sciences, Japan, ²Department of
Neuropsychiatry, Hirosaki University Graduate School of Medicine, Japan, ³Research
Center for Child Mental Development, Hirosaki University Graduate School of Medicine,
Japan

★★**2P-121** The influence of central leptin signalling upon Obesity-induced hypertension
(Y-12)

Stephanie Elise Simonds, Jack T Pryor, Tony Tiganis, Michael A Cowley
Monash University, Australia

★★**2P-122** FKBP51 defect is resistant to diet induced obesity, inflammation and insulin resistance
(Y-13)

Luen-Kui Chen¹, Chi-Chang Juan^{1,2,3}
¹Institute of Physiology, School of Medicine, National Yang-Ming University,
²Department of Medical Research, Taipei Veterans General Hospital, ³Department of
Education and Research, Taipei City Hospital, Taiwan

2P-123 Leptin is a key regulator of glucose homeostasis in obesity

Jack Pryor, Stephanie Simonds, Michael Cowley
Department of Physiology, Monash University, Australia

- 2P-124** **Visfatin promotes monocyte-endothelial cell adhesion via activation of p38-PI3K-Akt signaling**
 Chi-Chang Juan^{1,2,3}, Yu-Ting Lin¹, Deng-Yuan Jian^{1,4}, Luen-Kui Chen¹, Tse-Ting Kuan¹, Shao-Yun Wu¹
¹Institute of Physiology, National Yang-Ming University, Taiwan, ²Department of Medical Research, Taipei Veterans General Hospital, Taiwan, ³Department of Education and Research, Taipei City Hospital, Taiwan, ⁴Division of Nephrology, Wen-Lin Hemodialysis Unit, Taiwan
- 2P-125** **Pin1 suppress thermogenesis through promoting the degradation of PRDM16**
 Masa-ki Inoue, Yusuke Nakatsu, Takeshi Yamamotoya, Yasuka Matsunaga, Yuki Inoue, Koji Ueda, Yu Mizuno, Tomoichiro Asano
 Department of Medical Science, Graduate School of Medicine, University of Hiroshima, Japan
- ★ **2P-127** **Effect of Dapagliflozin on Glucose Metabolism and Renal and Hepatic PEPCK Expression in Obese Rats**
 (Y-14)
 Myat Theingi Swe, Krit Jaikumkao, Laongdao Thonak, Anchalee Pongchaidecha, Anusorn Lungkaphin
 Epithelial Transport and Intracellular Signaling Regulation Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand
- 2P-128** **Tentonin 3/TMEM150C contributes to glucose-stimulated insulin secretion in pancreatic β -cells**
 Jungwon Wee^{1,2}, Gysang Hong¹, Sungmin Pak¹, Uhtaek Oh¹
¹Brain Science Institute, Korea Institute of Science and Technology, Korea, ²Molecular Medicine and Biopharmaceutical Sciences, Seoul National University, Korea
- 2P-129** **Cytosolic phospholipase A2 in hypothalamus modulates systemic glucose metabolism differently by meal**
 Ming-Liang Lee¹, Hirokazu Matsunaga¹, Takahiro Hayasaka², Yuko Okamatsu¹, Kazuhiro Kimura¹, Chitoku Toda¹
¹Dept Biochemistry, Graduate School of Veterinary Medicine, Hokkaido University, ²Dept Surgery, Graduate School of Medicine, Hokkaido University
- 2P-130** **Heterotypic endosomal fusion as an initial trigger for insulin-induced GLUT4 translocation**
 Hiroyasu Hatakeyama^{1,2,3}, Makoto Kanzaki³
¹Department of Physiology, Kitasato University School of Medicine, Japan, ²Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan, ³Graduate School of Biomedical Engineering, Tohoku University, Japan
- 2P-131** **Exogenous pyruvate maintains glycolysis-TCA cycle flux in Schwann cell under high glucose conditions**
 Hideji Yako¹, Naoko Niimi¹, Ayako Kato², Shizuka Takaku¹, Koichi Kato², Kazunori Sango¹
¹Diabetic Neuropathy Project, Tokyo Metropolitan Institute of Medical science, Japan, ²Laboratory of Medicine, Aichi Gakuin University, School of Pharmacy
- 2P-132** **Early life stress effect on pancreatic PDH level and Krebs cycle enzymes activity in young adult rat**
 Mina Salimi¹, Forouzan Sadeghimahalli^{2,4}, Homeira Zardoost^{1,2}, Fariba Khodaghali³, Fatemeh Shaerzadeh⁵, Roxana Karbaschi²
¹Neurophysiology Research Center, Shahid Beheshti University of Medical Sciences, Iran, ²Department of Physiology, School of Medicine, Shahid Beheshti University of

Medical Sciences, Iran, ³Neuroscience Research Center, Shahid Beheshti University of Medical Sciences, Iran, ⁴Education Development Center, Mazandaran University of Medical Science, Iran, ⁵Department of Physiology, Hormozgan University of Medical Sciences, Iran

2P-133 Chronic maternal separation impaired glucose-dependent insulin secretion from pancreatic islets

Homeira Zardooz^{1,2)}, Soheila Maghami²⁾, Roxana Karbaschi^{2,3)},
Mina Salimi^{1,2)}, Forouzan Sadeghimahalli⁴⁾

¹Neurophysiology Research Center, Shahid Beheshti University of Medical Sciences, Iran, ²Department of Physiology, School of Medicine, Shahid Beheshti University of Medical Sciences, Iran, ³Faculty of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Iran, ⁴Education Development Center, Mazandaran University of Medical Sciences, Iran

2P-134 Effect of maternal high-fat diet on HB9 expression and pancreatic insulin secretion in male rats

Roxana Karbaschi^{1,2,3)}, Homeira Zardooz^{1,2)}, Mina Salimi^{1,2)},
Forouzan Sadeghimahalli⁴⁾, Rezvan Arian^{2,5)}

¹Department of physiology, School of Medicine, Shahid Beheshti University of Medical Sciences, Iran, ²Neurophysiology Research Center, Shahid Beheshti University of Medical Sciences, Iran, ³Faculty of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Iran, ⁴Education Development Center, Educational Assistant, Mazandaran University of Medical Science, Iran, ⁵Department of Dentistry, Shahid Beheshti University of Medical Sciences, Iran

2P-135 Postnatal stress induces morphological changes in islets of Langerhans in stressed adult male rats

Forouzan Sadeghimahalli^{1,2)}, Homeira Zardooz^{2,3)}, Mina Salimi³⁾,
Roxana Karbaschi²⁾

¹Educational Development Center, Mazandaran University of Medical Sciences, Iran, ²Department of Physiology, Faculty of Medicine, Shahid Beheshti University of Medical Sciences, Iran, ³Neurophysiology Research Center, Shahid Beheshti University of Medical Sciences, Iran

★ **2P-136** Correlation of median nerve parameters with TSH values in hypothyroid patients
(Y-15)

Shital Gupta¹⁾, Rita Khadka¹⁾, Dilip Thakur¹⁾, Bishnu Hari Poudel¹⁾,
Kishun Deo Mehta²⁾, Robin Maskey³⁾

¹Department of Basic & Clinical Physiology, B.P.Koirala Institute of Health Science, Nepal, ²Department of Biochemistry, B.P.Koirala Institute of Health Science, Nepal, ³Department of Internal Medicine, B.P.Koirala Institute of Health Sciences, Nepal

2P-137 Role of PCSK9 in lipid metabolic disorders and ovarian dysfunction in polycystic ovary syndrome

Meijiao Wang¹⁾, Dan Zhao¹⁾, Liangzhi Xu^{2,3)}, Wenjing Guo¹⁾, Li Nie¹⁾,
Yun Long¹⁾, Min Liu¹⁾, Yichen Wang¹⁾, Xueqin Zhang¹⁾, Dongzhi Yuan¹⁾,
Limin Yue¹⁾

¹Department of Physiology, West China School of Basic Medical Sciences and Forensic Medicine, Sichuan University, China, ²Reproductive endocrinology and regulation joint laboratory, West China Second University Hospital, Sichuan University, China, ³Department of Obstetrics & Gynecology, West China Second University Hospital, China

2P-138 Norepinephrine inhibits Th17 cells via beta2-adrenoreceptor signaling in collagen-induced arthritis

Yi-Hua Qiu, Yan Liu, Yu-Ping Peng

Department of Physiology, School of Medicine, Nantong University, China

- 2P-139** Roles of macrophages and PAI-1 in diabetic delayed bone repair in female mice
Naoyuki Kawao¹, Takeshi Shimoide¹, Yukinori Tamura¹, Kiyotaka Okada¹, Katsumi Okumoto², Shinji Kurashimo², Yoshitaka Horiuchi², Kohei Tatsumi¹, Osamu Matsuo¹, Hiroshi Kaji¹
¹Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine, Japan, ²Life Science Research Institute, Kindai University
- 2P-140** Mechanical allodynia caused by peripheral nerve hyperexcitability in adult-onset hypothyroid mice
Machiko Suda¹, Yusuke Takatsuru², Noriyuki Koibuchi¹
¹Department of Integrative Physiology, Gunma University, Japan, ²Department of Medicine, Johmoh Hospital, Japan
- 2P-141** Ketogenic diet induces slow-type shift of skeletal muscle in male rat
Yuji Ogura¹, Mitsutoshi Kurosaka¹, Chiaki Kakehashi¹, Ryo Kakigi², Tatsuo Akema¹, Toshiya Funabashi¹
¹Department of Physiology, St. Marianna University School of Medicine, Japan, ²Department of Physiology, Juntendo University Faculty of Medicine, Japan
- 2P-142** Administration of xylooligosaccharides from rice husk delayed the progression of diabetic rat model
Narissara Lailerd¹, Parichart Toejing¹, Nuntawat Khat-Udomkiri², Sasithorn Sirilun², Chaivavat Chaayasut²
¹Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ²Innovation Center for Holistic Health, Nutraceuticals and Cosmeceuticals, Faculty of Pharmacy, Chiang Mai University, Thailand
- 2P-143** Improvement of organ bath technique as *ex vivo* systems in the insulin secretion assay
Motoshi Ouchi¹, Asuka Morita¹, Keitaro Satoh², Hidefumi Wakashin³, Hiroe Kon⁴, Misao Terada⁴, Tomoe Fujita¹
¹Department of Pharmacology and Toxicology, Dokkyo Medical University School of Medicine, Japan, ²Department of Pharmacology, Asahi University School of Dentistry, ³Department of Regulatory Physiology, Dokkyo Medical University School of Medicine, ⁴Laboratory Animal Research Center, Dokkyo Medical University
- 2P-144** Responsiveness of vomeronasal cells to a male-attractant, imorin in the newt, *Cynops pyrrhogaster*
Fumiyo Toyoda¹, Tomoaki Nakada², Kouhei Matsuda³, Takashi Nakakura⁴, Itaru Hasunuma⁵, Kazutoshi Yamamoto⁶, Sakae Kikuyama⁶
¹Department of Neurophysiology, Nara Medical University, Japan, ²Department of Comparative and Behavioral Medicine, Nippon Veterinary and Life Science University, Japan, ³Laboratory of Regulatory Biology, Graduate School of Science and Engineering, University of Toyama, Japan, ⁴Department of Anatomy and Cell Biology, Teikyo University School of Medicine, Japan, ⁵Department of Biology, Faculty of Science, Toho University, Japan, ⁶Department of Biology, Faculty of Education and Integrated Sciences, Waseda University, Japan
- 2P-145** Uterine environment regulates nurturing behavior in the offspring with prolactin as a key factor
Taku James Sairenji¹, Shinnosuke Masuda¹, Oh Kwan Ee¹, Ryosuke Kaneko², Saya Kodohira³, Yuri Shirakawa³, Chieko Yamazaki³, Noriaki Shimokawa^{1,3}, Noriyuki Koibuchi¹
¹Department of Integrative Physiology, Gunma University, Japan, ²Bioresource Center, Gunma University, Japan, ³Department of Nutrition, Takasaki University of Health and

2P-146 Effect of maternal high-fat diet and exercise during gestation on placental signaling

Lin Song, Bo Sun, Jianqun Yan

Department of Physiology & Pathophysiology, Xi'an Jiaotong University, China

2P-147 Fetal heart rate variability: a biomarker for evolving fetal hypoxic-ischaemic brain injury

Yoshiki Maeda^{1,2}), Christopher A Lear¹), Michi Kasai^{1,3}), Michael J Beacom¹), Victoria King¹), Joanne Davidson¹), Tomoaki Ikeda²), Alistair Jan Gunn¹), Laura Bennet¹)

¹Department of physiology, The University of Auckland, New Zealand, ²Department of Obstetrics and Gynecology, Mie University, Japan, ³Department of Obstetrics and Gynecology, Yokohama Municipal University, Japan

2P-148 Evaluation of spontaneous behaviors on an elevated plus maze using bisphenol A exposure model

Tetsuya Fujimoto¹), Shuji Aou²)

¹Department of Physiology, Osaka Dental University, Japan, ²Department of Human Intelligence Systems, Kyushu Institute of Technology, Japan

2P-149 Genistein and daidzein augments thyroid hormone-mediated dendritogenesis of cerebellar Purkinje cell

Winda Ariyani¹), Wataru Miyazaki¹), Yu Lu²), Toshiharu Iwasaki³), Noriyuki Koibuchi¹)

¹Department of Integrative Physiology, Gunma University, Japan, ²Department of Physiology, College of Basic Medical Sciences, Jilin University, China, ³Department of Liberal Arts and Human Development, Kanagawa University of Human Services, Japan

2P-150 Positive effects of reduced nocturnal screen light on sleep in bedtime phone users

Chuan Li, Augustine WL Li, Chun Lok Wu, Zenab Bibi

School of Medical and Health Sciences, Tung Wah College, Hong Kong

2P-151 Association of sex and sex hormones with the functional brain network at rest

Tomohiro Donishi¹), Masaki Terada²), Yoshiki Kaneoke¹)

¹Department of System Neurophysiology, Graduate School of Wakayama Medical University, Japan, ²Wakayama-Minami Radiology Clinic, Japan

2P-152 The relationships between embryogenic outcome and membrane potential of mouse ova

Masao Miyake¹), Susumu Yoshie¹), Satoru Kaneko²), Akihiro Hazama¹)

¹Department of Cellular and Integrative Physiology, Fukushima Medical University, Japan, ²Ichikawa General Hospital, Tokyo Dental College, Japan

2P-153 Regulation of hyperactivation by interactions among oviductal hormones in hamster sperm

Masakatsu Fujinoki

Department of Physiology, Dokkyo Medical University, Japan

2P-154 Proteomics analysis of whole testis in cordycepin treatment in streptozotocin-induced diabetic mice

Wirasak Fungfuang¹), Kongphop Paranyakul¹), Krittika Srisuksai¹), Sittiruk Roytakul²)

¹Department of Zoology, Faculty of Science, Kasetsart University, Thailand, ²Proteomics Research Laboratory, National Center for Genetic Engineering and Biotechnology, Thailand

★★2P-155
(Y-16)

Overexpression of Anthrax toxin receptor 2 (ANTXR2) promotes early development of endometriosis

Shih-Chieh Lin¹, Hsiu-Chi Lee², Ching-Ting Hsu¹, Yi-Han Huang¹, Wan-Ning Li², Pei-Ling Hsu¹, Meng-Hsing Wu³, Shaw-Jenq Tsai¹

¹Department of Physiology, College of Medicine, National Cheng Kung University, Taiwan, ²Institute of Basic Medical Sciences, College of Medicine, National Cheng Kung University, ³Department of Obstetrics & Gynecology, College of Medicine, National Cheng Kung University and Hospital

2P-156 Promoting follicle development by inducing ovarian angiogenesis

Kouji Komatsu, Satoru Masubuchi

Department of Physiology, Aichi Medical University, Japan

2P-157 Repression of COUP-TFII by proinflammatory cytokines contributes to endometriotic lymphangiogenesis

Wan-Ning Li¹, Kuei-Yang Hsiao⁵, Chu-An Wang³, Ning Chang², Meng-Hsing Wu⁴, Shaw-Jenq Tsai^{1,2}

¹The Institute of Basic Medical sciences, College of Medicine, National Cheng Kung University, Taiwan, ²Departments of Physiology, College of Medicine, National Cheng Kung University, Taiwan, ³Institute of Molecular Medicine, College of Medicine, National Cheng Kung University, Taiwan, ⁴Obstetrics & Gynecology, College of Medicine, National Cheng Kung University, Taiwan, ⁵Graduate Institute of Biochemistry, National Chung Hsing University, Taiwan

2P-158 Effects of exposure to mild hyperbaric oxygen on the outcome of infertility treatment

Tsuyoshi Shimizu¹, Fumihiko Yoshikawa², Yahiro Netsu³, Kaori Kamijou³, Hiromi Hoshina², Akihiko Ishihara⁴

¹Shimizu Institute of Space Physiology Suwa Maternity Clinic, Japan, ²Suwa Reproduction Center, Suwa Maternity Clinic, Japan, ³Suwa Maternity Clinic, Hospital for Obstetrics, Gynecology and Pediatrics, Japan, ⁴Laboratory of Cell Biology and Life Science, Graduate School of Human and Environmental Studies, Kyoto University, Japan

2P-159 Insufficient in utero prolactin exposure causes impaired maternal behavior in the offspring

Oh Kwan Ee¹, Shinnosuke Masuda¹, Taku James Sairenji¹, Noriaki Shimokawa², Noriyuki Koibuchi¹

¹Department of Integrative Physiology, Gunma University Graduate School of Medicine, Japan, ²Department of Nutrition, Takasaki University of Health and Welfare, Japan

2P-160 Dominantly expressed Serpina3n suppresses the phenotypes of osteoblasts of female mice

Masayoshi Ishida¹, Naoyuki Kawao¹, Kiyotaka Okada¹, Kohei Tatsumi¹, Kazuko Sakai², Kazuto Nishio², Hiroshi Kaji¹

¹Department of Physiology & Regenerative Medicine, Kindai University Faculty of Medicine, Japan, ²Department of Genome Biology, Kindai University Faculty of Medicine

2P-161 The role of CTCF in the mammalian cochlea

Ji-Hyun Ma¹, Jeong-Oh Shin¹, Jong-Joo Lee², Hyoung-Pyo Kim^{2,3}, Jinwoong Bok^{1,3,4}

¹Department of Anatomy, Yonsei University, Korea, ²Department of Environmental Medical Biology, Republic of Korea, ³BK21 PLUS project for Medical Science, ⁴Department of Otorhinolaryngology, Yonsei University College of Medicine

- 2P-162** Electric axon guidance in embryonic retina: Regulation of integrin activities by extracellular Ca²⁺
Masayuki Yamashita
Center for Medical Science, International University of Health and Welfare, Japan
- 2P-163** Improvement of motor function induced by skeletal muscle contraction in spinal cord injury rats
Norito Hayashi^{1,2)}, Naoyuki Himi¹⁾, Emi Nakamura-Maruyama¹⁾, Naohiko Okabe¹⁾, Issei Sakamoto^{1,2)}, Toru Hasegawa²⁾, Osamu Miyamoto¹⁾
¹Department of Physiology2, Kawasaki Medical School, Japan, ²Department of Orthopedics, Kawasaki Medical School, Japan
- 2P-164** TRPV4 is functionally expressed in cultured mouse Schwann cells
Xiaona Feng^{1,2,3)}, Yasunori Takayama^{1,2)}, Makoto Tominaga^{1,2,3)}
¹Division of Cell Signaling, National Institute for Physiological Sciences, Japan, ²Thermal Biology Group, Exploratory Research Center on Life and Living Systems (ExCELLS), ³Department of Physiological Sciences, The Graduate University for Advanced Studies (SOKENDAI)
- 2P-165** Spontaneous network activity in the embryonic CNS analyzed with voltage-sensitive dye recording
Katsushige Sato¹⁾, Yoko Momose-Sato²⁾
¹Department of Health and Nutrition Sciences, Faculty of Human Health, Komazawa Women's University, Japan, ²Department of Nutrition and Dietetics, College of Nutrition, Kanto-Gakuin University, Japan
- 2P-166** Optical analysis of functional development of the mouse vestibular nucleus
Yoko Momose-Sato¹⁾, Katsushige Sato²⁾
¹Department of Nutrition and Dietetics, College of Nutrition, Kanto-Gakuin University, Japan, ²Department of Health and Nutrition Sciences, Faculty of Human Health, Komazawa Women's University, Japan
- 2P-167** Sexual differentiation of the preoptic area by estrogen-induced cell migration through Rac1 pathway
Tomohiro Hamada¹⁾, Yasuo Sakuma²⁾
¹Clinical Departments Laboratory, Nippon Medical School, Japan, ²Faculty of Rehabilitation, School of Allied Health Sciences, University of Tokyo Health Sciences, Japan
- 2P-168** Neuronal differentiation induced by vitamin K and generation of derivatives to treat brain diseases
Yoshihisa Hirota^{1,2)}, Yuta Takagi²⁾, Yutaro Yamashita¹⁾, Mayu Okazeri¹⁾, Yoshitomo Suhara^{1,2)}
¹Department of Bioscience and Engineering, College of Systems Engineering and Sciences, Shibaura Institute of Technology, Japan, ²Systems Engineering and Science, Graduate School of Engineering and Science, Shibaura Institute of Technology
- 2P-169** Intranasal IGF-1 reduced neonatal LPS-induced behavioral deficits and inflammation in juvenile rats
Lu-Tai Tien¹⁾, Yih-Jing Lee¹⁾, Chih-Hsueh Tseng¹⁾, Lir-Wan Fan²⁾
¹School of Medicine, Fu Jen Catholic University, Taiwan, ²Department of Pediatrics, Division of Newborn Medicine, University of Mississippi Medical Center, USA

- 2P-170** Early exercise inhibits inflammation and promotes neuroprotection in intracerebral hemorrhage rats
Keigo Tamakoshi, Keishi Hayao, Hideaki Takahashi, Hiroyuki Tamaki
Department of Physical Therapy, Niigata University of Health and Welfare, Japan
- 2P-171** Glial cells missing 1 promote cell differentiation and angiogenesis in the mammalian brain
Yoshitaka Hayashi, Satoshi Fuke, Takahiro Fuchigami, Naoko Morimura, Natsu Koyama, Seiji Hitoshi
Department of Integrative Physiology, Shiga University of Medical Science, Japan
- 2P-172** The effect of forced limb training of rats under photochemically induced focal cerebral ischemia
Junko Yamada, Kazuki Akahira, Misaki Mikami, Yuuri Kato, Chihiro Sato
Department of Comprehensive Rehabilitation Science, Hirosaki University Graduate School of Health Sciences, Japan
- 2P-173** Role of SAD-A kinase in radial neuronal migration during development of cerebral cortex
Keiko Nakanishi^{1,2}), Hiroyuki Niida^{3,4}), Hidenori Tabata⁵), Yoshikazu Johmura^{3,6}), Kenichiro Yamada⁷), Koh-Ichi Nagata⁵), Nobuaki Wakamatsu⁷), Masashi Kishi⁸), Yujiro Higashi²), Makoto Nakanishi^{3,6}).
¹Department of Pediatrics, Central Hospital, Aichi Human Service Center, Japan, ²Department of Perinatology, Institute for Developmental Research, Aichi Human Service Center, Japan, ³Department of Cell Biology, Graduate School of Medical Sciences, Nagoya City University, Japan, ⁴Department of Molecular Biology, Hamamatsu University School of Medicine, Japan, ⁵Department of Molecular Neurobiology, Institute for Developmental Research, Aichi Human Service Center, Japan, ⁶Division of Cancer Cell Biology, Department of Cancer Biology, Institute of Medical Sciences, The University of Tokyo, Japan, ⁷Department of Genetics, Institute for Developmental Research, Aichi Human Service Center, Japan, ⁸Neuroscience Laboratory, Research Institute, Nozaki Tokushukai Hospital, Japan
- 2P-174** Voluntary and forced rehabilitation to promote motor palsy recovery in intracerebral hemorrhage rats
Chihiro Sato¹), Kunikazu Tanji²), Shuji Shimoyama²), Misaki Mikami¹), Kazuki Akahira¹), Junko Yamada¹)
¹Department of Health Science, University of Hirosaki, Japan, ²Department of Medicine, University of Hirosaki, Japan
- 2P-175** Alteration of gut microbiota and cerebellar structures in Glyphosate-exposure rat
Kana Miyamoto¹), Ken Futagami¹), Kwon Soon Thomas Tiong¹), Yuu Hirose¹), Jianzhong Hu²), Yoko Nomura³), Yasunari Kanda⁴), Sachiko Yoshida¹)
¹Department of Environmental and Life Science, Toyohashi University of Technology, Japan, ²Icahn school of medicine at Mount Sinai, USA, ³Queens College, the City University of New York, USA, ⁴National Institute of Health Sciences, Japan
- 2P-176** Analysis of rat fetal movement before and after anesthetic drug using non-anesthesia pregnant rat
Suzuka Hashiguchi^{1,2}), Hodaka Natsuka^{1,2}), Marin Tanimoto^{1,2}), Akira Tamaki¹), Akiko Arata²)
¹Physical Ther. for Int. Disorders, Sch. of Rehabilitation, Hyogo Univ of Helth Sci., Japan, ²Department of Physiology, Hyogo College of Medicine, Japan

- 2P-177** Altered gut flora and cerebellar development abnormalities in VPA rat model of ASD
 Kwong Soon Thomas Tiong¹, Seita Sato¹, Kana Miyamoto¹, Yuu Hirose¹, Yasunari Kanda², Sachiko Yoshida¹
¹Department of Environmental and Life Sciences, Toyohashi University of Technology, Japan, ²Division of Pharmacology, National Institute of Health Sciences, Japan
- 2P-178** Histological analysis of peripheral nerve injury in methylmercury-exposed rat
 Yo Shinoda¹, Shunsuke Ehara¹, Satoshi Tatsumi¹, Tatsuro Amemiya¹, Eiko Yoshida², Tsutomu Takahashi¹, Toshiyuki Kaji², Yasuyuki Fujiwara¹
¹Tokyo University of Pharmacy and Life Sciences, Japan, ²Tokyo University of Science
- 2P-179** The role of Cdon in differentiation of mouse embryonic stem cells into motor neurons
 Seul-Yi Lee^{1,3}, Hye-Been Kim^{2,3}, Jong-Sun Kang^{2,3}, Hana Cho^{1,3}
¹Department of Physiology, Korea, ²Department of Molecular Cell Biology, ³Cell Network Research Center, Sungkyunkwan University School of Medicine, Korea
- 2P-180** PlexinA1 is crucial for the midline crossing of callosal axons during corpus callosum development
 Md Mosharaf Hossain¹, Takuji Ito², Takamasa Tsuzuki¹, Fumitaka Imaizumi¹, Kana Kamiya¹, Mitsuki Okada¹, Ikuko Takahashi¹, Takayuki Negishi¹, Kazunori Yukawa¹
¹Department of Pharmacy, Meijo University, Japan, ²Aichi Medical University
- 2P-181** The maintenance of adult neural stem cells by *Klf5* gene
 Anri Kuroda¹, Takahiro Fuchigami¹, Natsu Koyama¹, Masatsugu Ema², Seiji Hitoshi¹
¹Department of Physiology, Shiga University of Medical Science, Japan, ²Research Center for Animal Life Science, Shiga University of Medical Science, Japan
- 2P-182** Upregulation of heat shock factor and Factor XIII-A after optic nerve injury in zebrafish
 Kayo Sugitani¹, Kazuhiro Ogai², Yoshiki Koriyama³, Satoru Kato²
¹Div Health Sci, Grad Sch Med Sci, Kanazawa Univ, Japan, ²Wellness Promotion Science Center, Institute of Medical, Pharmaceutical and Health Sci, Kanazawa Univ., Japan, ³Grad. Sch. Pharm Sci, Suzuka University of Med Sci, Japan
- 2P-183** Oligodendrocyte progenitor cells during development and upon sensory loss in mouse visual cortex
 Hyeryun Shin, Hideki Derek Kawai
 Department of Bioinformatics, Soka University, Japan
- 2P-184** Enhanced neuronal migration through activated glia promotes post-stroke neuronal regeneration
 Naoko Kaneko¹, Vicente Herranz-Pérez^{2,3}, Takeshi Otsuka⁴, Hiromi Sano⁵, Nobuhiko Ohno^{6,7}, Taichi Omata¹, Huy Bang Nguyen⁷, Truc Quynh Thai⁷, Jose Manuel García-Verdugo², Kazunobu Sawamoto^{1,8}.
¹Department of Developmental and Regenerative Biology, Nagoya City University Graduate School of Medical Sciences, Japan, ²Laboratory of Comparative Neurobiology, Instituto Cavanilles, Universidad de Valencia, CIBERNED, ³Predepartamental Unit of Medicine, Faculty of Health Sciences, Universitat Jaume I, ⁴Division of Cerebral Circuitry, National Institute for Physiological Sciences, ⁵Division of System Neurophysiology, National Institute for Physiological Sciences, ⁶Department of Anatomy, Division of Histology and Cell Biology, Jichi Medical University School of Medicine, ⁷Division of

- 2P-185** Postnatal development of core fields in the mouse auditory cortex
Feifan Chen, Wenjie Song, Makoto Takemoto, Masataka Nishimura, Ryohei Tomioka
Department of Sensory and Cognitive Physiology, University of Kumamoto, Japan
- 2P-186** Moduration of CRMP2 Accelerates Motor Function Recovery from Brain Damage
Susumu Jitsuki¹, Hiroki Abe¹, Waki Nakajima¹, Aoi Jitsuki-Takahashi¹, Hitoshi Masuyama², Takashi Komori², Nobuyuki Mochizuki², Tomohiro Okuda², Yoshio Goshima³, Takuya Takahashi¹
¹Department of Physiology, Yokohama City University, Japan, ²Pharmacology Research Department, Toyama Chemical Co., LTD, Japan, ³Department of Molecular Pharmacology and Neurobiology, Yokohama City University, Japan
- 2P-187** Neurochemical differentiation of hypothalamic MCH neurons derived from mouse embryonic stem cells
Yu Kodani¹, Hidetaka Suga², Yoko S Kaneko¹, Miho Kawata¹, Akira Nakashima³, Hiroshi Nagasaki¹
¹Department of Physiology, Fujita Health University School of Medicine, Japan, ²Department of Endocrinology & Diabetes, Nagoya University, Graduate School of Medicine, Japan, ³Department of Physiological Chemistry, Fujita Health University School of Medicine, Japan

Neuroscience: Synapse & neural cellular communication (2)

- 2P-188** Accelerated climbing fiber synapse elimination in cerebellar Purkinje cells lacking protocadherin 10
Takaki Watanabe^{1,2}, Shutaro Inoue¹, Tsubasa Akamatsu¹, Honoka Suzuki¹, Manabu Abe³, Kenji Sakimura³, Naofumi Uesaka^{1,2}, Masanobu Kano^{1,2}
¹Dept. of Neurophysiol., Grad. Sch. of Med., Univ. of Tokyo, Japan, ²WPI-IRCN, UTIAS, Univ. of Tokyo, Japan, ³Dept. of Cell. Neurobiol., Brain Res. Inst., Niigata Univ., Japan
- 2P-189** Vesicular GABA Uptake can be Rate-Limiting for Recovery of IPSCs from Synaptic Depression
Manami Yamashita^{1,2}, Shin-ya Kawaguchi³, Tetsuya Hori⁴, Tomoyuki Takahashi⁵
¹Department of Physiology, Osaka Medical College, Japan, ²Laboratory of Molecular Synaptic Function, Graduate School of Brain Science, Doshisha University, Japan, ³Society-Academia Collaboration for Innovation, Kyoto University, Japan, ⁴Department of Neurophysiology, Graduate School of Life and Medical Sciences, Doshisha University, Japan, ⁵Cellular and Molecular Synaptic Function Unit, Okinawa Institute of Science and Technology (OIST) Graduate University, Japan
- 2P-190** M1 receptor-mediated presynaptic inhibition of IPSCs in basal forebrain cholinergic neurons
Toshihiko Momiyama, Takuma Nishijo
Department of Pharmacology, The Jikei University School of Medicine, Japan
- 2P-191** Construction Rules of the Axospinous Synapses Revealed by FIB-SEM Imaging
Yugo Fukazawa^{1,2,3}, Taito Sakurai^{1,4}, Ruwaida Elhanbaly^{1,5}, Tatsuya Ishikawa^{1,6}
¹Division of Brain Structure and Function, University of Fukui, Japan, ²Life Science Innovation Center, University of Fukui, Japan, ³Research Center for Child Mental

Development, University of Fukui, Japan, ⁴Rakuhoku High School, Japan, ⁵Department of Anatomy, Histology and Embryology, Faculty of Veterinary Medicine, Assiut University, Egypt, ⁶Department of Functional Anatomy, Kanazawa University Graduate School of Medical Sciences, Japan

2P-192 Analysis of the central circadian clock in AVP neuron-specific VGAT deficient mice

Takashi Maejima¹⁾, Emi Hasegawa²⁾, Yusuke Tsuno¹⁾, Michihiro Mieda¹⁾

¹Department of Integrative Neurophysiology, Kanazawa University Graduate School of Medical Sciences, Japan, ²International Institute for Integrative Sleep Medicine, University of Tsukuba, Japan

2P-193 Regulation of reciprocal current in the mouse accessory olfactory bulb by vasopressin V1a receptors

Mutsuo Taniguchi, Yoshihiro Murata, Masahiro Yamaguchi, Hideto Kaba
Department of Physiology, Kochi Medical School, Kochi University, Japan

2P-194 The activity of metabotropic glutamate receptor affects drebrin localization in dendritic spines

Nobuhiko Kojima¹⁾, Mai Sawabe¹⁾, Kaiin Shu¹⁾, Kenji Hanamura²⁾,
Tomoaki Shirao²⁾

¹Faculty of Life Sciences, Toyo University, Japan, ²Gunma University, Graduate School of Medicine, Japan

2P-195 Dopamine induced long-lasting calcium increase in orexin neurons via D₁-like receptor

Yasutaka Mukai^{1,2,3,4)}, Kenji F Tanaka⁵⁾, Takeharu Nagai⁶⁾,
Akihiro Yamanaka^{1,2,3)}

¹Department of Neuroscience II, RIEM, Nagoya University, Japan, ²Department of Neuralregulation, Graduate School of Medicine, Nagoya University, Japan, ³CREST, Japan Science and Technology Agency, Japan, ⁴Research Fellowship for Young Scientists (DC1), Japan Society for the Promotion of Science, Japan, ⁵Department of Neuropsychiatry, Graduate School of Medicine, Keio University, Japan, ⁶Department of Biomolecular Science and Engineering, ISIR, Osaka University, Japan

2P-196 Drebrin depletion affects stability of microtubules in dendrites

Noriko Koganezawa, Hiroyuki Yamazaki, Tomoaki Shirao

Department of Neurobiology and Behavior, Gunma University Graduate School of Medicine, Japan

2P-197 Induction of electrophysiologically-active brain organoids showing human midbrain-specific structure

Takeshi Ken Matsui^{1,3)}, Nobuyuki Eura¹⁾, Hitoki Nanaura¹⁾, Tomo Shiota¹⁾,
Yasuhiko Saitoh²⁾, Kazuma Sugie¹⁾, Eiichiro Mori³⁾

¹Department of Neurology, Nara Medical University, Japan, ²Department of Physiology I, Nara Medical University, Japan, ³Department of Future Basic Medicine, Nara Medical University, Japan

2P-198 C1q1-Bai3 Signaling Dynamically Modulates Climbing Fiber Synapses in Adult Cerebellum

Takahiro Aimi, Wataru Kakegawa, Michisuke Yuzaki

Department of Physiology, Keio University School of Medicine, Japan

2P-199 Layer 5 sublayer-dependent excitatory-inhibitory connections in the rat frontal cortex

Mieko Morishima^{1,2)}, Yasuo Kawaguchi^{1,2)}

¹Division of Cerebral Circuitry, National Institute for Physiological Sciences, Japan, ²SOKENDAI

- 2P-200** Phasic inhibition in the interval of carbachol-induced β oscillation in rat hippocampal
Toyohiro Sawada, Kiyohisa Natsume
Dept. of Brain Sci. and Eng., Grad. Sch. of Life Sci. and Sys. Eng., Kyusyu Inst. of Tech., Japan

Neuroscience: Neuron-glia interactions / functions of glia

- 2P-201** Exendin-4 promotes myelination in a co-culture of DRG neurons and immortalized Schwann cells IFRS1
Kazunori Sango, Shizuka Takaku, Masami Tsukamoto, Naoko Niimi, Hideji Yako
Diabetic Neuropathy Project, Tokyo Metropolitan Institute of Medical Science, Japan
- 2P-202** Loss-of-function of glial ABCA1 increases the risk for pathogenesis of glaucoma
Youichi Shinozaki¹, Kazuhiko Namekata², Kenji Kashiwagi³, Nobuhiko Ohno^{4,5}, Akiko Takeda¹, Takayuki Harada², Schuichi Koizumi¹
¹Department of Neuropharmacology, University of Yamanashi, Japan, ²Vis. Res. Project, Tokyo Metr. Inst. Med. Sci., Japan, ³Dept. Ophthalmol, Interdiscip. Grad. Sch. Med. Univ. Yamanashi, JAPAN, ⁴Dev. Neurobiol. Bioinfo., Natl. Inst. Physiol. Sci., Japan, ⁵Div. Anatomy, Jichi Med. Univ. Japan
- 2P-203** Müller glial swelling activates TRPV4 and triggers photoreceptor cell death at body temperature
Koji Shibasaki¹, Hidetaka Matsumoto², François Seghers³, David Krizaj⁴, Hideo Akiyama², Yasuki Ishizaki¹, Philippe Gailly³
¹Dep. Mol. Cellular Neurobiology, Gunma Univ. Grad. Sch. Medicine, Japan, ²Dep. Ophthalmology, Gunma Univ., Japan, ³Instit. Neurosci., Univ. Catholique de Louvain, Belgium, ⁴Moran Eye Instit., Univer. Utah School of Medicine, United States
- 2P-204** Stress-Induced Microglial Activation Occurs through a beta-Adrenergic Receptor
Shuei Sugama, Hisayuki Ohata, Yasuhiro Takenaka, Yoshihiko Kakinuma
Department of Physiology, Nippon Medical School, Japan
- 2P-205** Electrophysiological approach with ex vivo trigeminal ganglia to clarify neuron-glia interactions
Asako Kubo¹, Shiori Sugawara^{1,2}, Koichi Iwata¹
¹Department of Physiology, School of Dentistry Nihon University, Japan, ²Department of Psychosomatic Dentistry, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Japan
- 2P-206** The role of primary somatosensory cortex in causing mirror image pain
Tatsuya Ishikawa^{1,2}, Kei Eto^{2,3}, Noriyuki Ozaki¹, Hitoshi Ishibashi⁴, Junichi Nabekura^{2,3}
¹Department of Functional Anatomy, Kanazawa University, Japan, ²Department of Development Physiology, National Institute for Physiological Sciences, Japan, ³Department of Physiological Sciences, The Graduate School for Advanced Study, Japan, ⁴Department of Physiology, Kitasato University School of Allied Health Sciences, Japan
- 2P-207** Visualization of spatiotemporal interaction of neurons and astrocytes
Eiji Shigetomi¹, Yukiho J Hirayama¹, Kazuhiro Ikenaka², Kenji F Tanaka³,

Haruhiko Bito⁴⁾, Schuichi Koizumi¹⁾

¹University of Yamanashi, Interdisciplinary Graduate School of Medicine, University of Yamanashi, Japan, ²Division of Neurobiology and Bioinformatics, NIPS, Japan, ³Department of Neuropsychiatry, Keio University School of Medicine, Japan, ⁴Department of Neurochemistry, Graduate School of Medicine, University of Tokyo, Japan

2P-208 Activation of TRPV4 induced significant ATP release in Müller glia
Shouta Sugio^{1,2)}, Hidetaka Matsumoto³⁾, Mai Oda²⁾, Yasuki Ishizaki²⁾,
Koji Shibasaki²⁾

¹Division of System Neuroscience, Kobe University School of Medicine, Japan, ²Department of Molecular and Cellular Neurobiology, Gunma University School of Medicine, Japan, ³Department of Ophthalmology, Gunma University School of Medicine, Japan

2P-209 Excitatory synaptic transmission is reduced by astrocytes previously exposed to amyloid β 1-40

Kohei Oyabu¹⁾, Hiroyuki Kawano¹⁾, Hideaki Yamamoto²⁾, Kei Eto^{3,4)},
Yuna Adaniya¹⁾, Kaori Kubota^{1,5)}, Takuya Watanabe^{1,5)},
Ayumi Hirano-Iwata^{6,7)}, Junichi Nabekura^{4,8,9)}, Shutaro Katsurabayashi¹⁾,
Katsunori Iwasaki^{1,5)}

¹Department of Neuropharmacology, University of Fukuoka, Japan, ²Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan, ³Division of Homeostatic Development, Department of Fundamental Neuroscience, National Institute for Physiological Sciences, Japan, ⁴Department of Physiological Sciences, The Graduate University for Advanced Studies (SOKENDAI), Japan, ⁵A.I.G. Collaborative Research Institute for Aging and Brain Sciences, Fukuoka University, Japan, ⁶Advanced Institute for Materials Research, Tohoku University, Japan, ⁷Research Institute of Electrical Communication, Tohoku University, Japan, ⁸Division of Homeostatic Development, Department of Developmental Physiology, National Institute for Physiological Sciences, Japan, ⁹CREST, Japan Science and Technology Agency (JST), Japan

2P-210 Acute stress induced the alterations of astrocytes and glutamate receptors in the hippocampus of rat

Ratchaniporn Kongsui¹⁾, Rohan Frederick Walker^{2,3)}, Napatr Sriraksa¹⁾,
Tichanon Promsrisk¹⁾

¹Division of Physiology, School of Medical Sciences, University of Phayao, Thailand, ²School of Biomedical Sciences and Pharmacy and the Priority Research Centre for Stroke and Brain Injury, University of Newcastle, Australia, ³Hunter Medical Research Institute, Australia

2P-211 Visualizing the Interaction of Immune Cells and Peripheral Sensory Fibers in Mice Neuropathic Model

Han-Yuan Yeh¹⁾, Chen-Chi Wang²⁾, Han-Hsiung Chi¹⁾, Jye-Chang Lee¹⁾,
Masakazu Agetsuma³⁾, Junichi Nabekura³⁾

¹Department of Life Science, National Taiwan University, Taiwan, ²Center of Experimental Animals, National Institute of Physiological Science, Japan, ³Division of Homeostatic Development, National Institute of Physiological Science, Japan

2P-212 Tonic release of D-serine through Best1 channel is critical for long term depression

Wuhyun Koh^{1,2,4)}, Jaekwang Lee³⁾, Mijeong Park³⁾, Ye Eun Chun^{2,4)},
Hey Yun Kim⁶⁾, Junsung Woo²⁾, Soo-Jin Oh⁶⁾, Changjoon Justin Lee^{1,2,4,5)}

¹Center for Glia-Neuron Interaction, Korea Institute of Science and Technology (KIST), Korea, ²Center for Functional Connectomics, Korea Institute of Science and Technology, Republic of Korea, ³Center for Neural Science, Korea Institute of Science and Technology, Republic of Korea, ⁴Bio-med Department, University of Science and Technology (UST),

Republic of Korea, ⁵KU-KIST School of Converging Science and Technology, Korea University, Republic of Korea, ⁶Convergence Research Center for Dementia DTC, Korea Institute of Science and Technology, Republic of Korea

★ **2P-213**
(Y-17)

TRPA1 channel is critical for gliotransmitter release from astrocyte by eliciting calcium entry

Jung Moo Lee^{1,2}, Soo-Jin Oh^{2,3}, Wuhyun Koh^{2,4}, Changjoon Justin Lee^{1,2}

¹KU-KIST Graduate School of Converging Science and Technology, Korea University, Korea, ²Center for Glia-Neuron Interaction, Korea Institute of Science and Technology (KIST), Republic of Korea, ³Convergence Research Center for Diagnosis, Treatment and Care System of Dementia, Korea Institute of Science and Technology, Republic of Korea, ⁴Division of Bio-Medical Science & Technology, KIST School, Korea University of Science and Technology, Republic of Korea

2P-215

Astrocytes mediate persistent respiratory augmentation in the recovery phase after hypoxic exposure

Isato Fukushi¹), Yosuke Kono^{1,2}), Kotaro Takeda^{1,3}), Shuntaro Okazaki⁴), Shigefumi Yokota⁵), Itaru Yazawa⁶), Hiroshi Onimaru⁷), Yasumasa Okada¹)

¹Clinical Research Center, Murayama Medical Center, Japan, ²Department of Pediatrics, Faculty of Medicine, University of Yamanashi, ³School of Health Sciences, Fujita Health University, ⁴Faculty of Human Sciences, Waseda University, ⁵Department of Anatomy and Neuroscience, Shimane University School of Medicine, ⁶Global Research Center for Innovative Life Science, Hoshi University, ⁷Department of Physiology, Showa University School of Medicine

2P-216

AQP4 involvement in normalization of extracellular potassium after acute ischemic stroke

Hiromu Monai^{1,2}), Xiaowen Wang²), Kazuko Yahagi²), Nanhong Lou³), Humberto Mestre³), Qiwu Xu³), Youichiro Abe⁴), Masato Yasui⁴), Youichi Iwai²), Hajime Hirase²)

¹Ochanomizu University, Japan, ²RIKEN Center for Brain Science, ³University of Rochester Medical Center, ⁴Keio University

2P-217

Efficacy of *Cinnamomi Cortex* & Coumarin on cold allodynia by oxaliplatin : modulating spinal gila

Ji Hwan Lee^{1,2}), Woojin Kim¹), Sun Kwang Kim^{1,2})

¹Department of Physiology, Korean Medicine, Kyung Hee University, Korea, ²Department of Science in Korean Medicine, Graduate School, Kyung Hee University, Korea

2P-218

Pioglitazone reversed the developmental programming of fructose in the astrocytic glucose metabolism

Kay LH Wu, Chih-Wei Wu, Chung-Ying Hung

Institute for Translational Research in Biomedicine, Kaohsiung Chang Gung Memorial Hospital, Taiwan

2P-219

Microglial activation caused by lipopolysaccharide and trimethyltin administration in the rat brain

Toshiyuki Saito^{1,2}), Wakako Nakajima¹), Nobuhiro Ishida¹), Takayo Imori²)

¹Department of Life Sciences, Kyoto Sangyo University, Japan, ²Graduate School of Life Sciences, Kyoto Sangyo University, Japan

2P-220

Brain area-dependent astrocyte heterogeneity detected in mice by dopamine receptor expressions

Katsuhiro Nagatomo¹), Kazuto Kobayashi²), Yoshio Yamamoto³), Katsuya Yamada¹)

¹Dept. Physiol., Hiroasaki Univ. Grad. Sch. Med., Japan, ²Dept. Mol. Genet., Inst. Biomed. Sci., Fukushima Med. Univ. Sch. Med., Japan, ³Lab. Vet. Anat. Cell Biol., F. Agri., Iwate Univ., Japan

2P-221 Social defeat stress reduces newly born oligodendrocytes and induces anxiety-like behavior in mice
Takeshi Shimizu, Sawa Kondo, Akimasa Ishida, Naoki Tajiri, Hideki Hida
Department of Neurophysiology and Brain Science, Graduate School of Medical Sciences, Nagoya City University, Japan

2P-222 Rediscovery of GIT1 hetero mice as more practical model for hyperactivity
Yoo Sung Kim¹), Junsung Woo²), C. Justin Lee²), Bo-Eun Yoon¹)
¹Department of Molecular Biology, University of Dankook, Korea, ²Center for Neuroscience and Functional Connectomics, Korea Institute of Science and Technology, Korea

Neuroscience: Imaging of brain

2P-223 Functional connectivity changes after rTMS used to detect plasticity decline associated with obesity
Shuyan Han¹), Takahiro Osada¹), Akitoshi Ogawa¹), Masaki Tanaka¹), Masaaki Hori²), Shigeki Aoki²), Takahiro Shimizu³), Hiroyuki Enomoto⁴), Ritsuko Hanajima³), Yoshikazu Ugawa⁴), Seiki Konishi¹)
¹Department of Neurophysiology, Juntendo University School of Medicine, Japan, ²Department of Radiology, Juntendo University School of Medicine, Japan, ³Department of Neurology, Tottori University School of Medicine, Japan, ⁴Department of Neuro-Regeneration, Fukushima Medical University, Japan

2P-224 Visualization of the activation pattern causality during pain chronification using DREADD-MEMRI
Daigo Arimura^{1,2,3}), Kei Shinohara³), Yukari Takahashi^{1,2}), Tomokazu Tsurugizawa^{1,2,4}), Ryo Ikeda³), Keishi Marumo³), Fusao Kato^{1,2})
¹Department of Neuroscience, The Jikei University School of Medicine, Japan, ²Center for Neuroscience of Pain, The Jikei University School of Medicine, Japan, ³Department of Orthopaedics, The Jikei University School of Medicine, Japan, ⁴Neurospin, France

2P-225 Correlation analysis of sister mitral and tufted cells
Yusuke Tsuno^{1,2}), Matt Wachowiak¹)
¹Department of Neurobiology and Anatomy, University of Utah, USA, ²Department of Integrative Neurophysiology, Graduate School of Medical Science, Kanazawa University, Japan

2P-226 Novel fluoropolymer nanosheets extending *in vivo* two-photon imaging of living mouse brain
Taiga Takahashi^{1,2}), Kenji Yarinome³), Hong Zhang⁴), Ryosuke Kawakami⁵), Yosuke Okamura^{3,4}), Tomomi Nemoto^{1,2})
¹Research Institute for Electronic Science, Hokkaido University, Japan, ²Graduate School of Information Science and Technology, Hokkaido University, Japan, ³Graduate School of Engineering, Tokai University, Japan, ⁴Micro/Nano Technology Center, Tokai University, Japan, ⁵Department of Molecular Medicine for Pathogenesis, Graduate School of Medicine, Ehime University, Japan

2P-227 Wide-field imaging of neural activity with high spatial resolution
Masanori Matsuzaki, Shin-Ichiro Terada, Eriko Yoshida
Department of Physiology, The University of Tokyo, Japan

2P-228 3-D visualization of avian brainstem auditory circuits using Brainbow labeling and tissue clearing
Hiroshi Sekikawa^{1,2}), Ryo Egawa²), Hiroshi Kuba²)
¹Dept. of Med., Japan, ²Cell. Physiol., Grad. Sch. of Med., Nagoya Univ.

- 2P-229** Anesthesia alters orientation and direction selective properties in mouse superior colliculus
Masatoshi Kasai, Tadashi Isa
Department of Neuroscience, Graduate School of Medicine, Kyoto University, Japan
- 2P-230** Analysis of a novel higher visual area, ECT, in the mouse ventral stream
Nana Nishio^{1,2)}, Hiroaki Tsukano²⁾, Ryuichi Hishida²⁾, Manabu Abe³⁾, Junichi Nakai⁴⁾, Meiko Kawamura³⁾, Atsushi Aiba⁵⁾, Kenji Sakimura³⁾, Katsuei Shibuki²⁾, Kenichi Ohki¹⁾
¹Dept. Physiol, Univ of Tokyo, Japan, ²Dept Neurophysiol, BRI, Niigata Univ., Japan, ³Dept Cell Neurobiol, BRI, Niigata Univ., Japan, ⁴BBSSI, Saitama Univ., Japan, ⁵Animal Resources, CDBIM, Univ. of Tokyo., Japan
- 2P-231** An fMRI Study of Brain Network Involved in Elderly Teeth Tapping
Yosinori Sahara¹⁾, Hideyuki Fukami^{1,2)}
¹Department of Physiology, Iwate Medical University School of Dentistry, Japan, ²Department of Oral Health Science, Baika Women's University, Japan
- 2P-232** Hippocampus abnormalities evaluated by density imaging in COPD patients
Natsuko Iizuka^{1,2)}, Yuri Masaoka¹⁾, Masaki Yoshida³⁾, Ryo Manabe⁴⁾, Koji Kamagata⁵⁾, Yuki Takenaka⁵⁾, Kentaro Okuda⁶⁾, Akira Yoshikawa¹⁾, Satomi Kubota^{1,2)}, Masahiro Ida⁷⁾, Masahiko Izumizaki¹⁾
¹Dept Physiol, Showa Univ, Japan, ²Dept Neurol, Showa Univ, Japan, ³Dept Ophthalmol, Jikei Univ, Japan, ⁴Dept Respiratory Medicine and Allergology, Showa Univ, Japan, ⁵Dept Radiol, Juntendo University Graduate School of Medicine, Japan, ⁶Dept Medicine, Ebara Hospital, Japan, ⁷Dept Radiol, Ebara Hospital, Japan
- 2P-233** Relationship between Resting-State Functional Connectivity and cognitive function
Akira Yoshikawa¹⁾, Yuri Masaoka¹⁾, Masaki Yoshida²⁾, Nobuyoshi Koiwa³⁾, Satomi Kubota^{1,4)}, Ryo Manabe^{1,5)}, Natsuko Iizuka^{1,4)}, Masahiro Ida⁶⁾, Masahiko Izumizaki¹⁾
¹Department of Physiology, Showa University School of Medicine, Japan, ²Department of Ophthalmology, Jikei University School of Medicine, Japan, ³Human Arts and Sciences Research Center, University of Human Arts and Sciences, Japan, ⁴Department of Neurology, Showa University School of Medicine, Japan, ⁵Department of Medicine, Division of Respiratory Medicine and Allergology, Showa University School of Medicine, Japan, ⁶Department of Radiology, Comprehensive Stroke Center, Ebara Hospital, Japan
- 2P-234** Decoder construction for MEG signals in a subitizing task
Kouji Takano¹⁾, Kenji Kansaku^{1,2,3)}
¹Department of Rehabilitation for Brain Functions, Research Institute of National Rehabilitation Center For Persons with Disabilities, Japan, ²Department of Physiology and Biological Information, Dokkyo Medical University School of Medicine, Japan, ³Brain Science Inspired Life Support Research Center, The University of Electro-Communications, Japan
- 2P-235** Application of a Spatiotemporal Neural Network to Segment Low Contrast Calcium Fluorescence Images
Pelonomi Moilola, Noriyasu Homma, Makoto Osanai
Tohoku University, Japan
- 2P-236** Circuitry changes in Parkinson's disease assessed by qAIM-MRI
Makoto Osanai^{1,2)}, Satomi Kikuta^{1,3)}, Pelonomi Moilola²⁾, Hiroki Tanihira¹⁾,

Noriyasu Homma^{1,2)}

¹Tohoku University Graduate School of Medicine, Japan, ²Graduate School of Biomedical Engineering, Tohoku University, ³Primate Research Institute, Kyoto University

- 2P-237** Positron Emission Tomography Tracer for AMPA receptors Characterizes Psychiatric Disorders in Human
Mai Hatano
Department of Physiology, University of Yokohama City University, Japan
- ★ **2P-238** (Y-18) Molecular profiling of the subthalamic nucleus
Jiwon Kim^{1,2)}, Hyungju Jeon¹⁾, Hojin Lee^{1,2)}, Linqing Feng¹⁾, Jinhyun Kim^{1,2)}
¹Center for Functional Connectomics, Korea Institute of Science and Technology (KIST), Republic of Korea, ²Division of Bio-Medical Science & Technology, KIST-School, University of Science and Technology (UST), Republic of Korea
- 2P-239** Dynamics of local networks in the motor cortex during sleep and wakefulness
Takeshi Kanda¹⁾, Takehiro Miyazaki¹⁾, Daiki Nakatsuka¹⁾, Hideitsu Hino²⁾, Masashi Yanagisawa¹⁾
¹University of Tsukuba, Japan, ²The Institute of Statistical Mathematics
- 2P-240** Relation between Montreal Cognitive Assessment and amygdala-hippocampus volumes in the elderly
Satomi Kubota^{1,2)}, Yuri Masaoka¹⁾, Masaki Yoshida³⁾, Ryuta Kinno²⁾, Akira Yoshikawa¹⁾, Ryo Manabe⁴⁾, Natsuko Iizuka^{1,2)}, Masahiro Ida⁵⁾, Kenjiro Ono²⁾, Masahiko Izumizaki¹⁾
¹Department of Physiology, Showa University, Japan, ²Department of Neurology, Showa University, Japan, ³Department of Ophthalmology, Jikei University, Japan, ⁴Department of Respiratory Medicine and Allergology, Showa University, Japan, ⁵Department of Radiology, Ebara Hospital, Japan
- 2P-241** Sensory integration and behavioral choice regulated by the metabotropic glutamate receptor
Yuji Suehiro, Shohei Mitani
Department of Physiology, Tokyo Women's Medical University School of Medicine, Japan
- 2P-242** Two-photon imaging of neuronal activity in motor cortex of non-human primate during reaching tasks
Tepppei Ebina, Yoshito Masamizu, Keitaro Obara, Masanori Matsuzaki
Department of Physiology, Graduate School of Medicine, The University of Tokyo, Japan
- 2P-243** Calcium imaging data from premotor area predict features of upcoming movement
Wing-Ho Yung, Chunyue Li, Ya Ke
School of Biomedical Sciences, The Chinese University of Hong Kong, Hong Kong
- 2P-244** *In vivo* Ca²⁺ imaging of mouse brain by two-photon excitation spinning-disk confocal microscopy
Mitsutoshi Ataka^{1,2)}, Takafumi Kamada^{1,2)}, Kohei Otomo^{1,2)}, Tomomi Nemoto^{1,2)}
¹Graduate School of Information Science and Technology, Hokkaido University, Japan, ²Laboratory of Molecular and Cellular Biophysics, Research Institute for Electronic Science, Hokkaido University, Japan
- 2P-245** Uptake and Release of Mn Ions from Neuron as a Basis of Mn MRI
Akio Inoue¹⁾, Yuriko Inoue²⁾, Hiromitsu Ezure²⁾, Naruto Ohtsuka²⁾,

Yoshinobu Manome³⁾, Koichi Shiraishi⁴⁾, Akitoshi Inoue⁵⁾

¹Human Brain Research Center, Graduate School of Medicine, Kyoto University, ²Department of Anatomy, Showa University, School of Medicine, ³Division of Molecular and Cellular Biology, Research Center for Medicine, Jikei University, School of Medicine, ⁴Division of Medical Engineering, Jikei University, School of Medicine, ⁵Department of Molecular and Functional Biology, Kansai Medical University

2P-246 Two-photon laser ablation cut sole neural processes without severe damage on surrounding astrocytes

Kazushi Yamaguchi¹⁾, Ryosuke Kawakami^{1,2)}, Tomomi Namoto^{1,2)}

¹Graduate School of Information Science and Technology, Hokkaido University, Japan, ²Research Institute for Electronic Science, Hokkaido University, Japan

2P-247 Topical pH change in the brain by visual stimulation revealed by CCD pH image sensor

Junko Ishida¹⁾, Hiroshi Horiuchi¹⁾, Masakazu Agetsuma¹⁾, Kazuaki Sawada²⁾, Junichi Nabekura¹⁾

¹Division of Homeostatic Development, National Institute for Physiological Sciences, Japan, ²Department of Electronic and Information Engineering, Toyohashi University of Technology, Japan

2P-248 Differential characteristics of D1 and D2-type medium spiny neuron via cortico-striatal stimulation

Ryo Inagaki^{1,2)}, Masato Sasagawa³⁾, Noriyasu Homma³⁾, Makoto Osanai³⁾

¹Tohoku University Graduate School of Medicine, Japan, ²Brain/MINDS, ³Tohoku University Graduate School of Medicine, Graduate School of Biomedical Engineering, Tohoku University

Neuroscience: Learning, memory & neuronal plasticity (2)

2P-249 Error signals in the red nucleus drive adaptation in reaching

Masato Inoue¹⁾, Shigeru Kitazawa^{2,3,4)}

¹Global Center for Medical Engineering and Informatics, Osaka University, Japan, ²Graduate School of Frontier Biosciences, Osaka University, ³Graduate School of Medicine, Osaka University, ⁴Center for Information and Neural Networks (CiNet), National Institute of Information and Communications Technology, and Osaka University

2P-250 Modulatory effects of dopamine on synaptic plasticity in hippocampus of kindled mice

Nahid Roohi, Yaghub Fathollahi, Mahboubeh Ahmadi, Javad Mirnajafi-Zadeh

Department of Physiology, Tarbiat Modares University of Medical Sciences, Iran

2P-251 LTD is regulated by drebrin isoforms conversion likely due to the difference in the isoform dynamics

Tomoaki Shirao¹⁾, Kenji Hanamura¹⁾, Nobuhiko Kojima²⁾, Hiroki Yasuda³⁾, Yuko Sekino⁴⁾

¹Dept. of Neurobiology and Behavior, Gunma Univ. Grad. Sch. of Med., Japan, ²Dept. of Life Sci., Faculty of Life Sci, Toyo University, Japan, ³Dept. of Physiol., Saga Univ. Sch. of Med., Japan, ⁴Lab. of Human-Cell based Drug Discovery, Grad. Sch. of Pharm. Sci., Univ. of Tokyo, Japan

2P-253 A strategy of NMDA receptor-dependent oscillation in the visual cortex of rats

Hiroshi Yoshimura

Department of Molecular Oral Physiology, Institute of Biomedical Sciences, Tokushima University Graduate School, Japan

- 2P-254** Retrieval-Induced Forgetting in Young Mice
Asahi Haijima, Noriyuki Koibuchi
Department of Integrative Physiology, Gunma University Graduate School of Medicine, Japan
- 2P-255** The mitochondrial system of hippocampal adult-born neurons in the Tg2576 mouse model
Trinovita Andraini^{1,2)}, Kevin Richetin²⁾, Petnoi Petsophonsakul²⁾, Laurent Roybon³⁾, Marie-Christine Miquel²⁾, Claire Rampon²⁾
¹Department of Physiology, Medical Faculty, Universitas Indonesia, Indonesia, ²Centre de Recherches sur la Cognition Animale, Centre de Biologie Intégrative, Université de Toulouse, France, ³Stem Cell Laboratory for CNS Diseases Modeling, Department of Experimental Medical Science, Wallenberg Neuroscience Center, Lund Stem Cell Center and MultiPark, Lund University, Sweden
- 2P-256** Effects of PDIA3 on Neurogenesis in the Dentate Gyrus of Normal and Ischemic Gerbils
In Koo Hwang¹⁾, Woosuk Kim¹⁾, Dae Young Yoo²⁾, Su Bin Cho³⁾, Jong Whi Kim¹⁾, Yeo Sung Yoon¹⁾, Dae Won Kim⁴⁾
¹Department of Anatomy, College of Veterinary Medicine, Seoul National University, South Korea, ²Department of Anatomy, College of Medicine, Soonchunhyang University, South Korea, ³Department of Biomedical Sciences, and Research Institute for Bioscience and Biotechnology, Hallym University, South Korea, ⁴Department of Biochemistry and Molecular Biology, Research Institute of Oral Sciences, College of Dentistry, Gangneung-Wonju National University, South Korea
- 2P-257** Different mechanism of actions of testosterone and estradiol on cognitive impairment in male rats
Taratorn Fainanta, Sukanya Jaroenporn, Thaweechai Saetae, Patteera Wititsuwankul, Suchinda Malaivijitnond
Department of Biology, Chulalongkorn University, Thailand
- 2P-258** Modulation of dentate granule cell activity during fear memory extinction in freely moving mice
Alvaro Carrier Ruiz^{1,2)}, Yuki Sugaya^{1,2)}, Masanobu Kano^{1,2)}
¹Department of Neurophysiology, Graduate School of Medicine, The University of Tokyo, Japan, ²WPI-IRCIN, UTIAS, The University of Tokyo, Japan
- 2P-259** Impairment of memory and hippocampal synaptic plasticity induced by high-fat diet in animal model
Yun-Chi Chang¹⁾, Han-Fang Wu¹⁾, Ting-Yi Lu¹⁾, Yi-Ju Chen¹⁾, Hui-Ching Lin^{1,2,3)}
¹Department and Institute of Physiology, National Yang Ming University, Taiwan, ²Ph.D. Program for Neural Regenerative Medicine, College of Medical Science and Technology, Taipei Medical University, Taiwan, ³Brain Research Center, National Yang-Ming University, Taiwan
- 2P-260** Overexpression of K+ Cl- cotransporter promotes activity dependent synaptic plasticity and learning
Kayo Nakamura, Junichi Nabekura
Department of Physiological Sciences, National Institute for Physiological Science, Japan
- 2P-261** Investigating the effects of muscle wasting on Alzheimer's disease
Ya-Hsin Hsiao, Yung-Shuen Lin, Fang-Yu Lin
Department of Pharmacology, College of Medicine, National Cheng Kung University, Taiwan

- 2P-262** HSYA improves cognitive function in MCAO rats via recovering synaptic plasticity in the hippocampus
Lu Yu¹, Yanhong Duan², Zheng Zhao², Wendi He², Ming Xia¹, Qiujuan Zhang³, Xiaohua Cao²
¹Comprehensive Department of Traditional Chinese Medicine, Putuo Hospital Affiliated to Shanghai University of Traditional Chinese Medicine, China, ²Key Laboratory of Brain Functional Genomics, Ministry of Education, Shanghai Key Laboratory of Brain Functional Genomics, School of Life Sciences, East China Normal University, China, ³Department of Neurology, Yueyang Hospital of Integrated Chinese and Western Medicine Affiliated to Shanghai University of Traditional Chinese Medicine, China
- 2P-263** The response to whisker stimulation in the visual cortex of monocular deprived mice *in vivo*
Akari Hashimoto, Akiko Miyamoto, Yoshihisa Tachibana, Koichiro Haruwaka, Hiroaki Wake
Department of System Neuroscience, University of Kobe, Japan
- 2P-264** Metabotropic glutamate receptor 5 (mGluR5) has a critical role in behavioral flexibility
Chul Hoon Kim, Shinwon Kang, Jisoo Lim, Hyun Jong Noh
Pharmacology, Yonsei University College of Medicine, Korea
- 2P-265** Increase of sleep spindle density induced by rTMS for major depression
Takuji Izuno^{1,2}, Motoaki Nakamura³, Takashi Saeki⁴, Nobuhide Hirai⁵, Mana Tsukada¹, Hideshi Ikemoto¹, Chiaki Tezuka¹, Kana Takahashi¹, Masataka Sunagawa¹, Masahiko Izumizaki¹
¹Department of Physiology, School of Medicine, Showa University, Japan, ²Kanagawa Psychiatric Center, Japan, ³Medical Institute of Developmental Disabilities Research, Showa University Japan, ⁴Department of Psychiatry, Yokohama City University School of Medicine, Japan, ⁵Tokyo Medical and Dental University, Japan
- 2P-266** Speed representation in the hippocampus and entorhinal cortex
Motosada Iwase, Takuma Kitanishi, Kenji Mizuseki
Department of Physiology, Osaka City University Graduate School of Medicine
- 2P-267** Single Purkinje Neuron Voltage Imaging to Detect Cerebellar Parallel Fibre Long Term Depression
Ruth M Empson^{1,2}, Emmet m Power¹, Emma Deeney¹, Dan Potapov¹, Kay Potapov¹, Thomas Knopfel²
¹University of Otago, New Zealand, ²Imperial College, UK
- 2P-268** Hippocampal, amygdala neuronal, and sympathetic nerve activities in odor-cue fear conditioned rats
Kana Yaguchi, Sizuka Ikegame, Kana Nagao, Misa Yoshimoto, Kenju Miki
Department of Health Science, University of Nara Woman's University, Japan
- 2P-269** Two groups of SPNs in cholinergic modulation of corticostriatal plasticity in dorsomedial striatum
Atsushi Tamura, Kiyoto Kurima, Yumiko Akamine, Jeffery R Wickens
Neurobiology Reserch Unit, Okinawa Institute of Science and Technology, Japan
- 2P-270** Contribution of Thyrotropin-Releasing Hormone to Cerebellar Long-Term Depression and Motor Learning
Masashi Watanabe¹, Yasunori Matsuzaki¹, Yasuyo Nakajima², Atsushi Ozawa², Masanobu Yamada², Hirokazu Hirai¹

- 2P-271** Sharp-wave ripples facilitate memory consolidation via activation of cAMP
Constantine Pavlides, Jiyeon Cho, Krzysztof A Sypniewski
University of Tsukuba, Japan
- 2P-272** Real-time dynamism of hippocampal CA1 firings after the 4 different episodic stimuli
Takuto Tomokage, Junko Ishikawa, Dai Mitsushima
Department of Physiology, Yamaguchi University Graduate School of Medicine, Japan
- 2P-273** Understanding the mechanism of odor-specific memory formation in *Caenorhabditis elegans*
Kyoung-Hye Yoon, Hee Kyung Lee
Department of Physiology, Mitohormesis Research Center, Yonsei University Wonju College of Medicine, Korea
- 2P-274** Nitric oxide into the basolateral amygdala potentiates stress-induced spatial memory disorder in rat
Roya Ranjbar Saber¹), Hedayat Sahraei²), Esmaeil Nikkar³), Hassan Ghoshooni³), Mohammad Hadipour³)
¹Neurophysiology Research Center, Shahid Beheshti University of Medical Science, Iran, ²Neuroscience Research Center, Baqiyatallah University of Medical Science, Iran, ³Department of Physiology and Biophysics, School of Medicine, Baqiyatallah University of Medical Science, Iran

Neuroscience: Neurologic and psychiatric diseases (2)

- ★ **2P-276** (Y-19) Characterization of a novel and potent neuronal Kv7/M opener SCR2682 for anti-epilepsy
Yani Liu¹), Fan Zhang²), Feng Tang³), Bo Liang³), Huanming Chen³), Ge Jin⁴), Qi Sun³), Hailin Zhang²), Kewei Wang¹)
¹Department of Pharmacology, School of Pharmacy, Qingdao University, China, ²Department of Pharmacology, Hebei Medical University, China, ³Medicinal Chemistry, Simcere Pharmaceuticals, China, ⁴Department of Pharmacology, Shenyang Medical College, China, ⁵Department of Medicinal Chemistry, School of Pharmaceutical Sciences, Peking University, China
- 2P-277** (AP-1) Chronic stress causes excessive aggression by altering synaptic actin dynamics in the mPFC
Hirobumi Tada^{1,2}), Takuya Takahashi²)
¹Section of Neuroendocrinology, National Center for Geriatrics and Gerontology, Japan, ²Department of Physiology, Yokohama City University
- 2P-278** ASD-like Behaviors and Synaptic Defects Inherit to Subsequent Generations in VPA-Induced Rat Model
Ming-Chia Chu¹), Han-Fang Wu¹), Hui-Ching Lin^{1,2,3})
¹Department and Institute of Physiology, School of Medicine, National Yang-Ming University, Taiwan, ²Brain Research Center, National Yang-Ming University, Taiwan, ³Ph.D. Program for Neural Regenerative Medicine, College of Medical Science and Technology, Taipei Medical University, Taiwan
- 2P-279** The antiseizure activities of new hydrazine derivatives: behavioral and electrophysiological studies
Elmira Heidarli¹), Hamid Irannejad²), Nima Naderi³)

¹Department of Toxicology and Pharmacology, PhD student, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Iran, ²Department of Medicinal Chemistry, Associate professor, Mazandaran University of Medical Sciences, Iran, ³Department of Toxicology and Pharmacology, Associate professor, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Iran

2P-280 Genome-wide screening of genes involved in tau aggregation by CRIPSR/Cas9 system

Ihori Ebinuma, Yu Nemoto, Takanobu Suzuki, Yukiko Hori, Taisuke Tomita
Laboratory of Neuropathology and Neuroscience, Graduate School of Pharmaceutical Sciences, University of Tokyo, Japan

2P-281 Berberine attenuated the cytotoxicity induced by t-BHP via inhibiting oxidative stress and mitophagy

Zhengmao Li
Key Laboratory of Biotechnology and Pharmaceutical Engineering, School of Pharmaceutical Sciences, Wenzhou Medical University, China

2P-282 Chloroquine promotes the recovery of SCI by inhibiting inflammation and ER stress

Hongyu Zhang¹), Xiaojie Wei²)
¹Molecular Pharmacology Research Center, School of Pharmaceutical Science, Wenzhou Medical University, China, ²Department of Orthopaedics, Cixi People's Hospital, Wenzhou Medical University, China

2P-283 GLYX-13 alleviates chronic stress-induced depression-like behavior through its actions in midbrain

Yu-Cheng Ho
Department of Medicine, Mackay Medical College, Taiwan

2P-284 Effects of optogenetic inhibition of 5-HT neurons in the dorsal raphe nucleus on respiratory control

Mitsuko Kanamaru^{1,2}), Mana Tsukada²), Akira Yoshikawa²), Hiroshi Onimaru²), Ayako Mochizuki³), Masataka Sunagawa²), Tomio Inoue³), Masahiko Izumizaki²)
¹Physiology, Faculty of Arts and Sciences, Showa University, Japan, ²Department of Physiology, Showa University School of Medicine, Japan, ³Department of Oral Physiology, Showa University School of Dentistry, Japan

2P-285 Astrocytic Ca²⁺ signals via IP₃ receptor type2 mediate reactive astrocytes after status epilepticus

Fumikazu Sano^{1,2}), Eiji Shigetomi¹), Schuichi Koizumi¹), Hideaki Kanemura²), Katsuhiko Mikoshiba³), Masao Aihara²)
¹Department of Neuropharmacology, Interdisciplinary Graduate School of Medicine, University of Yamanashi, Japan, ²Department of Pediatrics, Faculty of Medicine, University of Yamanashi, Japan, ³Laboratory for Developmental Neurobiology, RIKEN Brain Science Institute, Japan

2P-286 CSD is accompanied by mitochondrial oxidization wave revealed with Flaboprotein autofluorescence

Hitoshi Maeda, Kohta Terada, Sohta Katohno, Syunichi Kuwana
Department of Physical Therapy, Faculty of Health Sciences, Uekusagakuen University, Japan

2P-287 Impaired olfactory identification in patients with cerebrovascular disease

Fumino Okutani¹), Kazuyuki Omori²)
¹Department of Occupational Health, Kochi Medical School, Japan, ²Matsuyama

- 2P-288** Physiological characteristics of rhythmic masticatory muscle activity during sleep in children
 Yuki Shiraishi^{1,2)}, Masaya Tachibana³⁾, Sheng-Yun Lu³⁾, Ai Shiota¹⁾, Ikuko Mohri³⁾, Shingo Haraki⁴⁾, Atsuko Tsujisaka⁴⁾, Masako Taniike³⁾, Takashi Yamashiro²⁾, Takafumi Kato²⁾
¹Department of Oral Physiology, Osaka University Graduate School of Dentistry, Japan, ²Department of Orthodontics and Dentofacial Orthopedics, Osaka University Graduate School of Dentistry, ³United Graduate School of Child Development, Osaka University, ⁴Department of Fixed Prosthodontics, Osaka University Graduate School of Dentistry
- 2P-289** Masseter muscle activity during REM sleep in young adults with sleep bruxism
 Risa Toyota^{1,2)}, Mutsumi Okura^{1,3)}, Shigeru Nonoue^{4,5)}, Shingo Haraki⁶⁾, Akiko Tsujisaka⁶⁾, Hiroyoshi Adachi^{4,5,7)}, Kazunori Ikebe²⁾, Takafumi Kato¹⁾
¹Department of Oral Physiology, Osaka University Graduate School of Dentistry, Japan, ²Department of Prosthodontics, Gerodontology and Oral Rehabilitation, Osaka University Graduate School of Dentistry, Japan, ³Sleep Medical Center, Osaka Kaisei Hospital, Japan, ⁴Sleep Medicine Center, Osaka University Hospital, Japan, ⁵Department of Psychiatry, Osaka University Graduate School of Medicine, Japan, ⁶Department of Fixed Prosthodontics, Osaka University Graduate School of Dentistry, Japan, ⁷Health and Counseling Center, Osaka University, Japan
- 2P-290** Role of cortico-brainstem circuits in poststroke rehabilitation-induced functional recovery
 Akimasa Ishida¹⁾, Takeshi Shimizu¹⁾, Naoki Tajiri¹⁾, Kenta Kobayashi²⁾, Tadashi Isa³⁾, Hideki Hida¹⁾
¹Dept. Neurophysiol. and Brain Sci., Nagoya City Univ. Grad. Sch. Med. Sci., Japan, ²Sec. Viral Vector Dev, Natl, Inst. Physiol. Sci., Japan, ³Dept. Physiol and Neurobiol., Kyoto Grad Sch Med., Japan
- 2P-291** The effect of orally-administered baclofen on spinocerebellar ataxia type 3 (SCA3) model mice
 Nobutake Hosoi, Hirokazu Hirai
 Department of Neurophysiology and Neural Repair, Gunma University Graduate School of Medicine, Japan
- 2P-292** Metabotropic Glutamate Receptor as a potential therapeutic target for the treatment of SCA1
 Mohamed Fasil Ibrahim, Daniil Potapov, Kay Potapov, Ruth M Empson
 Department of Physiology, School of Biomedical Sciences, University of Otago, New Zealand
- 2P-293** Transgeneration of environmental chemicals-primed rat hyperactivity
 Masami Ishido
 Center for Environ Risk Res, Natl Inst Environ Studies, Japan
- 2P-294** Social isolation during developmental critical window affects inhibitory neuronal circuits in mPFC
 Hiroki Yoshino¹⁾, Kazuhiko Yamamuro¹⁾, Yoichi Ogawa²⁾, Manabu Makinoda¹⁾, Yasuhiko Saito²⁾, Toshifumi Kishimoto¹⁾
¹Department of Psychiatry, Nara Medical University, Japan, ²Department of Physiology 1, Nara Medical University
- 2P-295** The 40Hz-ASR may be a good predictor of conscious outcome in patients with severe head injury
 Shun-ichiro Hirano

Department of Physiology, Osaka Dental University, Japan

2P-296 Deep brain stimulation for depression in rats: correction of left/right hemispheric imbalance

Yukitoshi Sakaguchi, Yoshio Sakurai

Graduate School of Brain Science, Doshisha University, Japan

2P-297 Experience and cell type-dependent induction of MeCP2 in the visual thalamus

Yuki Yagasaki, Goichi Miyoshi, Mariko Miyata

Department of Physiology, Division of Neurophysiology, School of Medicine, Tokyo Women's Medical University, Japan

2P-298 Function of the primate medial frontal cortex in the control of mood and affect: an rTMS study

Shinya Nakamura, Ken-Ichiro Tsutsui

Laboratory of Systems Neuroscience, Graduate School of Life Sciences, Tohoku University, Japan

Neuroscience: Somatosensory & Pain (2)

2P-299 Inflammatory pain changes the electrophysiological properties of locus coeruleus neurons

Fatemeh Farahani, Hossein Azizi, Saeed Semnianian

Department of Physiology, Faculty of Medical Sciences, Tarbiat Modares University, Iran

2P-300 Widespread Hyperalgesia and Autonomic Dysregulation in a Rat Model of Chronic Back Pain

Ryota Tokunaga^{1,2)}, Harumi Hotta⁴⁾, Nobuhiro Watanabe⁴⁾, Sara Touj^{1,2)}, Hugues Leblond^{2,3)}, Mathieu Piché^{1,2)}

¹Department of Chiropractic, Université du Québec à Trois-Rivières, Canada, ²CogNAC Research Group, Université du Québec à Trois-Rivières, Canada, ³Department of Anatomy, Université du Québec à Trois-Rivières, Canada, ⁴Department of Autonomic Neuroscience, Tokyo Metropolitan Institute of Gerontology, Japan

2P-301 TRPA1 mediates the uterine PGE2-induced cross-organ reflex sensitization in anesthetized rats

Tzer-Bin Lin

Department of Physiology, Taipei Medical University, Taiwan

2P-302 Inhibitory effects of Sake lees (Sake Kasu) on stress-induced hyperalgesia in the rats

Shiho Shimizu^{1,2)}, Yoshito Kakihara^{3,4)}, Mayumi Taiyoji⁵⁾, Yosuke Nakatani^{1,2)}, Masayuki Kurose¹⁾, Nobuyuki Ikeda²⁾, Makio Saeki³⁾, Ritsuo Takagi²⁾, Kensuke Yamamura¹⁾, Keiichiro Okamoto¹⁾

¹Division of Oral Physiology, Niigata University Graduate School of Medical and Dental Sciences, Japan, ²Division of Oral and Maxillofacial Surgery, Niigata University Graduate School of Medical and Dental Sciences, Japan, ³Division of Dental Pharmacology, Niigata University Graduate School of Medical and Dental Sciences, Japan, ⁴Department of Sakeology, Niigata University, Japan, ⁵Food Research Center, Niigata Agricultural Research Institute, Japan

2P-303 Renin-angiotensin system and angiotensin II receptors in rat geniculate ganglion

Takeshi Suwabe, Toshiaki Yasuo, Noritaka Sako

Department of Oral Physiology, School of Dentistry, Asahi University, Japan

- 2P-304** Inhibitory effect of bee venom on the reserpine-induced pain and depression-like behavior in mice
 Jae-Gyun Choi¹, Dong-Wook Kang¹, Cuk-Seong Kim², Sang Do Lee²,
 Byeong Hwa Jeon², Jin Bong Park¹, Hyun-Woo Kim¹
¹Department of Physiology and Medical Science, Brain Research Institute, College of Medicine, Chungnam National University, Republic of Korea, ²Department of Physiology and Medical Science, Research Institute of Medical Science, College of Medicine, Chungnam National University, Republic of Korea
- 2P-305** Distribution of HCN4 positive cell in mouse spinal dorsal horn
 Taku Nakagawa¹, Toshiharu Yasaka², Noriyuki Nakashima¹,
 Makoto Takano¹
¹Department of Physiology, Kurume University, Japan, ²Department of Immunology, Graduate School of Medical and Dental Sciences, Kagoshima University, Japan
- 2P-306** Response properties of premotor heat-sensitive neurons in awake behaving monkeys
 Shumpei Unno¹, Masamichi Shinoda², Koichi Iwata²
¹Department of Oral Physiology, Matsumoto Dental University, Japan, ²Department of Physiology, School of Dentistry, Nihon University, Japan
- ★ **2P-307** Molecular mechanism of dopamine-induced itch in mice
 (Y-20)
 YoungIn Choi¹, PyungSun Cho^{1,2}, HanKyu Lee¹, SungJun Jung¹
¹Department of Biomedical Science, Hanyang University, Korea, ²Department of Physiology, Korea University, Republic of Korea
- 2P-308** Negative modulation of TRPV1 by alpha 2 adrenergic receptor agonist, Dexmedetomidine
 Byeong-min Lee^{1,3}, Yoonsun Jang¹, Yong Ho Kim⁴, Chul-kyu Park⁴,
 Teo Jeon Shin², Gehoon Chung^{1,3}
¹Department of Oral Physiology and Neurobiology, School of Dentistry, Seoul National University, Korea, ²Department of Pediatric Dentistry, School of Dentistry, Seoul National University, Republic of Korea, ³Dental Research Institute, Seoul National University, Republic of Korea, ⁴Department of Physiology, Gachon University, Republic of Korea
- 2P-309** Direct Mechanical stimulation evoked Gd³⁺-sensitive inward current in trigeminal ganglion neurons
 Asuka Higashikawa¹, Maki Kimura¹, Miyuki Shimada¹, Hidetaka Kuroda³,
 Wataru Ofusa¹, Sadao Ohyama^{1,2}, Masayuki Ando¹, Kyousuke Kono¹,
 Hiroyuki Mochizuki¹, Yoshiyuki Shibukawa¹
¹Department of Physiology, Tokyo Dental College, Japan, ²Department of Oral Surgery, Tokyo Metropolitan Komagome Hospital, ³Department of Critical Care Medicine and Dentistry, Division of Anesthesiology, Kanagawa Dental University
- 2P-310** ASIC 3 contributes to mechanical hypersensitivity in the rat model of cold exposed osteoarthritis
 Sungtae Koo^{1,2,3}, So-Hee Kim^{3,4}, Byeong Uk Ji^{1,3}, Ji Eun Lee³
¹Department of Korean Medical Science, School of Korean Medicine, Pusan National University, Korea, ²Division of Meridian and Structural Medicine, School of Korean Medicine, Pusan National University, ³Healthy Aging Korean Medical Research Center, School of Korean Medicine, Pusan National University, ⁴Institute of Korean Medical Science, School of Korean Medicine, Pusan National University
- 2P-311** Increased transport of spinal l-lactate from astrocytes causes mechanical hyperalgesia via PKA

- 2P-312** Neuronal representation in the S1 cortex during formalin-induced spontaneous pain in mice
Heera Yoon¹⁾, Yoo Rim Kim²⁾, Sa-Yoon Park³⁾, Chang-Eop Kim³⁾,
Geehoon Chung¹⁾, Sang Jeong Kim²⁾, Sun Kwang Kim¹⁾
¹⁾Department of Physiology, College of Korean Medicine, Kyung Hee University, Korea,
²⁾Department of Physiology, College of Medicine, Seoul National University, Korea,
³⁾Department of Physiology, College of Korean Medicine, Gachon University, Korea
- 2P-313** Effects of Cinnamic Acid on Chemotherapy-Induced Peripheral Neuropathy
Hyeonkyeong Chae, Woojin Kim, Sun Kwang Kim
Department of Physiology, College of Korean Medicine, Kyung Hee University, Korea
- 2P-314** Effect of Bee Venom Derived Phospholipase A2 on Nerve Injury-Induced Neuropathic Pain
Seunghui Woo, Geehoon Chung, Sun Kwang Kim
Department of Physiology, College of Korean Medicine, Kyung Hee University, Korea
- 2P-315** EP₄ receptor-mediated augmentation of I_h currents in Abeta DRG neurons underlies neuropathic pain
Mitsuhiro Yamada¹⁾, Hao Zhang^{1,2)}, Toshihide Kashihara¹⁾,
Tsutomu Nakada¹⁾, Satoshi Tanaka²⁾, Kumiko Ishida²⁾, Satoshi Fuseya²⁾,
Hiroyuki Kawagishi¹⁾, Kenkichi Kiyosawa^{1,2)}, Mikito Kawamata²⁾
¹⁾Department of Molecular Pharmacology, Shinshu University School of Medicine, Japan,
²⁾Department of Anesthesiology and Resuscitology, Shinshu University School of Medicine, Japan
- 2P-316** Effects of Venlafaxine on Oxaliplatin and Paclitaxel Induced Neuropathic Pain in Mice
Daxian Li^{1,2)}, Woojin Kim¹⁾, Sun Kwang Kim¹⁾
¹⁾Department of Physiology, College of Korean Medicine, Kyung Hee University, Korea,
²⁾Department of Science in Korean Medicine, Graduate School, Kyung Hee University
- 2P-317** Plastic changes in cortical excitatory responses in the model rat with infraorbital nerve ligation
Manabu Zama^{1,2)}, Masayuki Kobayashi²⁾, Morio Tonogi¹⁾,
Tadayoshi Kaneko¹⁾
¹⁾Department of Oral and Maxillofacial Surgery, University of Nihon, Japan, ²⁾Department of Pharmacology, University of Nihon, Japan
- 2P-318** Perineural expression of TNF- α contributes to long-term mechanical allodynia in CRPS model mice
Shiho Shibata^{1,2)}, Hideaki Tagashira¹⁾, Satomi Kita^{1,3)}, Tomo Kita¹⁾,
Sari Suzuki¹⁾, Ken Yamaura²⁾, Takahiro Iwamoto¹⁾
¹⁾Department of Pharmacology, Faculty of Medicine, Fukuoka University, Japan,
²⁾Department of Anesthesiology, Faculty of Medicine, Fukuoka University, Japan,
³⁾Department of Pharmacology, Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Japan
- 2P-319** Acute nociceptive stimuli induce the activity of serotonin and noradrenalin neurons in awake mice
Akira Yamashita¹⁾, Shunpei Moriya¹⁾, Ryusei Nishi¹⁾, Yoko Ikoma¹⁾,
Akihiro Yamanaka²⁾, Tomoyuki Kuwaki¹⁾
¹⁾Department of Physiology 1, Graduate School of Medical and Dental Sciences,

2P-320 Effects of naftopidil in substantia gelatinosa neurons of the rat spinal dorsal horn

Daisuke Uta¹, Tsuyoshi Hattori², Megumu Yoshimura^{3,4}

¹Department of Applied Pharmacology, Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Japan, ²Asahi Kasei Pharma Co., Japan,

³Graduate School of Health Sciences, Kumamoto Health Science University, Japan, ⁴Nogata Nakamura Hospital, Japan

2P-321 Profiles of excitatory projection from the insular cortex to trigeminal spinal subnucleus caudalis

Yuka Nakaya, Kiyofumi Yamamoto, Masayuki Kobayashi

Department of Pharmacology, Nihon University School of Dentistry, Japan

2P-322 Dexmedetomidine inhibits voltage-gated sodium channels in trigeminal ganglion neurons

Chul-Kyu Park, Sang-Taek Im, Ki Whan Kim, Joong Soo Kim, Yong Ho Kim

Gachon Pain Center and Department of Physiology, College of Medicine, Gachon University, Korea

2P-323 *In vivo* Ca²⁺ imaging of somatosensory cortex in postoperative and inflammatory pain models of mice

Takuya Okada^{1,2,3}, Yoshihisa Tachibana^{1,3}, Yuki Nomura², Norihiko Obata², Satoshi Mizobuchi², Hiroaki Wake^{1,3}

¹Department of System Neuroscience, Kobe University Graduate School of Medicine, Japan, ²Department of Anesthesiology, Kobe University Graduate School of Medicine, ³CREST, JST

2P-324 Alteration of spinal sensory processing from the LUT in rats with streptozotocin-induced diabetes

Tatsuki Nakagawa^{1,2,3}, Atsushi Hakozaki², Nozomi Akimoto²,

Noriyuki Ozaki³, Masahito Kawatani⁴, Keiji Imoto², Hidemasa Furue^{1,2}

¹Department of Neurophysiology, Hyogo College of Medicine, Japan, ²Department of Information Physiology, National Institute for Physiological Sciences, Japan,

³Department of Functional Anatomy, Graduate School of Medicine, Kanazawa University, Japan, ⁴Department of Neurophysiology, Graduate School of Medicine, Akita University, Japan

2P-325 Effects of ethanol on nociceptive synaptic transmission in the rat spinal dorsal horn

Akihiro Yamada^{1,2,3}, Kohei Koga¹, Kazuhiko Kume³, Masahiro Ohsawa³, Keiji Imoto², Hidemasa Furue^{1,2}

¹Department of Neurophysiology, Hyogo College of Medicine, Japan, ²Department of Information Physiology, National Institute for Physiological Sciences, Japan,

³Department of Neuropharmacology, Nagoya City University, Japan

Neuroscience: Autonomic physiology (2)

2P-326 Dexmedetomidine suppresses rat nodose ganglion tetrodotoxin-resistant voltage-gated sodium current

Ryoji Ide, Kosuke Iwasaki, Chikako Saiki, Toshio Imai, Shigeji Matsumoto

Department of Physiology, Nippon Dental University, School of Life Dentistry at Tokyo, Japan

- 2P-327** Expression of c-Fos and the cardiovascular response evoked by an odor fear stressor in the rat
Seita Hori, Ena Yamamoto, Jouji Horiuchi
Department of Biomedical Engineering, Toyo University, Japan
- 2P-328** Does listening to Mozart's or Bach's music have any effects on autonomic nervous activity?
Junko Hoshi, Xinru Sun, Hiromasa Tanno, Emi Kanno, Ryoko Maruyama
Department of Health Sciences, Tohoku University Graduate School of Medicine, Japan
- 2P-329** Effects of GABA agonist injection into the ventrolateral medulla on oropharyngeal swallowing
Shinya Fuse^{1,2)}, Yoichiro Sugiyama²⁾, Rishi Dhingra³⁾,
Mathias Dutschmann³⁾, Shigeru Hirano²⁾, Yoshitaka Oku¹⁾
¹Department of Physiology, Hyogo College of Medicine, Japan, ²Department of Otolaryngology-Head and Neck Surgery, Kyoto Prefectural University of Medicine, Japan, ³Florey Institute of Neuroscience and Mental Health, Australia
- 2P-330** Coordinated involvement of the amygdala and claustrum for blood pressure control during exercise
Ko Yamanaka, Jimmy Kim, Hidefumi Waki
Department of Physiology, Health and Sports Science, Juntendo University, Japan
- 2P-331** Hormonal secretion from the thyroid gland is promoted by mechanical stimulation of the pharynx
Kaori Imura, Harue Suzuki, Harumi Hotta
Department of Autonomic Neuroscience, Tokyo Metropolitan Institute of Gerontology, Japan
- 2P-332** Exercise improve stress-induced high blood pressure and abnormal gene expression in the amygdala
Keisuke Tomita¹⁾, Ko Yamanaka¹⁾, Kei Tsukioka¹⁾, Makoto Suzuki¹⁾,
Linh Pham²⁾, Sabine S. Gouraud²⁾, Hidefumi Waki¹⁾
¹Graduate School of Health and Sports Science, Juntendo University, Japan, ²Department of Biology, Ochanomizu University, Japan
- 2P-333** Ethanol injection differently activated autonomic nerve activity in anesthetized rats
Chen Fu^{1,2)}, Tanida Mamoru¹⁾
¹Physiology 2, Kanazawa Medical University, Japan, ²General Surgery Department, the Fourth Affiliated Hospital of China Medical University, China
- 2P-334** Estradiol-dependent gene expression profile in the amygdala of ovariectomized SHRs
Linh Thuy Pham^{1,2)}, Onishi Makiko^{1,4)}, Yamanaka Ko⁵⁾,
Miyamoto Yasunori^{1,2,4)}, Waki Hidefumi⁵⁾, Gouraud Sabine^{2,3)}
¹Graduate School of Humanities and Sciences, Ochanomizu University, Japan, ²Grad Sch General Educational Research, Ochanomizu University, Japan, ³Dept. Biology, Ochanomizu University, Japan, ⁴Institute of Human Life Innovation, Ochanomizu University, Japan, ⁵Dept. Physiology, Grad Sch Health and Sports Science, Juntendo University, Japan
- 2P-335** Discharge activities of diaphragm motor units during inspiratory load
Ryosuke Takei¹⁾, Kenta Kawamura¹⁾, Yukako Sedaka¹⁾, Kazumasa Sasaki²⁾,
Seiichi Sasaki³⁾, Kazuhide Tomita¹⁾
¹Ibaraki Prefectural University of Health Science, Japan, ²Toho University, Japan, ³Toyo

- 2P-336** A role of TRPA1 in oxygen detection
Sichong Chen^{1,2)}, C. Kuroki¹⁾, N. Takahashi^{1,3)}, Ly. Hao²⁾, Y. Mori³⁾,
T. Kuwaki¹⁾
¹Department of Physiology, Kagoshima University Graduate School of Medical and
Dental Sciences, Japan, ²Department of Pharmaceutical Toxicology, China Medical
University School of Pharmacy, China, ³Department of Synthetic Chemistry and
Biological Chemistry, Graduate School of Engineering, Kyoto University, Japan
- 2P-337** Descending inhibition on spinal seizure-like activity in the phrenic
nerve output
Shih Tien Lin
Department of Physiology, Showa University School of Medicine, Japan
- 2P-338** Measurement of paraventricular nucleus neuronal and sympathetic
nerve activities in conscious rats
Shizuka Ikegame, Misa Yoshimoto, Kenju Miki
Department of Health science, Nara Women's University, Japan
- 2P-339** Projection from the midbrain to the rostroventral medulla and the
cardiovascular response to stress
Mio Matsuyama, Ena Yamamoto, Jouji Horiuchi
Department of Biomedical Engineering, Toyo University, Japan
- 2P-340** Gut hormone signal alters lick microstructure and taste reactivity to
sweet stimulation in mice
Yasunobu Yasoshima, Erina Yamaguchi
Division of Behavioral Physiology, Graduate School of Human Sciences, Osaka
University, Japan
- 2P-341** Hyposalivation and impaired parasympathetic vasodilation in parotid
glands with diabetes mellitus
Toshiya Sato, Kohei Mito, Hisayoshi Ishii
Division of Physiology, Department of Oral Biology, School of Dentistry, Health Sciences
University of Hokkaido, Japan
- 2P-342** Acute myocardial infarction activates hypothalamic vasopressin and
oxytocin neurons
Colin Hamilton Brown, Ranjan K Roy, Rachael A Augustine,
Daryl O Schwenke
Department of Physiology, University of Otago, New Zealand

Neuroscience: Others (2)

- 2P-343** Phospholipase C-related inactive protein type-1 deficiency alters
propofol-induced EEG activity
Yoshikazu Nikaido^{1,2)}, Tomonori Furukawa³⁾, Shuji Shimoyama²⁾,
Yoshiki Ogata²⁾, Tetsuya Kushikata¹⁾, Kazuyoshi Hirota¹⁾, Masato Hirata^{3,4)},
Takashi Kanematsu⁵⁾, Shinya Ueno²⁾
¹Department of Anesthesiology, Hirosaki University, Japan, ²Department of
Neurophysiology, Hirosaki University, Japan, ³Laboratory of Molecular and Cellular
Biochemistry, Faculty of Dental Science, Kyushu University, Japan, ⁴Fukuoka Dental
College, Japan, ⁵Department of Cellular and Molecular Pharmacology, Division of Basic
Life Sciences, Institute of Biomedical and Health Sciences, Hiroshima University, Japan

- 2P-344** A microsensing system for the *in vivo* real-time detection of local drug kinetics and dynamics
Genki Ogata¹⁾, Kai Asai²⁾, Seishiro Sawamura¹⁾, Madoka Takai³⁾, Hiroyuki Kusuhara⁴⁾, Yasuaki Einaga²⁾, Hiroshi Hibino¹⁾
¹Dept Mol Physiol, Sch Med, Niigata Univ, Japan, ²Dept of Chem, Fac of Sci and Tech, Keio Univ, Japan, ³Dept of Bioeng, Grad Sch of Eng, Univ of Tokyo, Japan, ⁴Lab of Mol Pharmacokinetic, Grad Sch of Pharmaceut Sci, Univ of Tokyo, Japan
- 2P-345** Treatment of Alzheimer's disease by a disease-modifying small molecule
Ya Ke, Xiao Man Zhang, Sheng Xi Yang, Ming Dao Mu, King Lin Rong, Wing Ho Yung
School of Biomedical Sciences, The Chinese University of Hong Kong
- 2P-346** Andrographolide relieved pain generated by post-operative pain model in rat
Meng-Jen Lee¹⁾, Yilo Lin²⁾, Siendong Huang³⁾
¹Department of Applied Chemistry, Chaoyang University of Technology, Taiwan, ²Graduate Institute Veterinary Pathobiology, National Chung Hsing University, Taiwan, ³Department of Applied Mathematics, National Dong Hwa University
- 2P-347** Comparing the natural and morphine induced reward in conditioning place preference paradigm
Shoele Jamali, Abbas Haghparast
Neuroscience Research Center, Shahid Beheshti University of Medical Sciences, Iran
- 2P-348** Mouse strain-dependent BBB (blood-brain barrier) permeability of AAV-PHP.B
Yasunori Matsuzaki, Masami Tanaka, Sachiko Hakoda, Tatsuki Masuda, Ryota Miyata, Ayumu Konno, Hirokazu Hirai
Department of Neurophysiology and Neural Repair, Gunma university, Japan
- 2P-349** A coagulation factor IX peptide regulates endothelial barrier function in brain
Yuusuke Fujiwara¹⁾, Hisataka Kitano^{1,2)}, Chiaki Hidai²⁾, Shinichiro Kokubun²⁾
¹Division of Dental Surgery, Nihon University School of Medicine, Japan, ²Division of Physiology, Nihon University School of Medicine
- 2P-350** Fatty acid-responding neurons in mouse glossopharyngeal nerve
Keiko Yasumatsu¹⁾, Shusuke Iwata¹⁾, Mayuko Inoue¹⁾, Yuzo Ninomiya^{1,2)}
¹Division of Sensory Physiology, Research and Development Center for Taste and Odor Sensing, Kyushu University, Japan, ²Monell Chemical Senses Center, Philadelphia, PA, USA
- 2P-351** The role of HCN4-positive cells in the gastrointestinal development and motility of zebrafish
Kensuke Fujii¹⁾, Koichi Nakajyo^{2,3)}, Koichi Kawakami⁴⁾, Yoshihiro Egashira²⁾, Yasuhiro Yamamoto²⁾, Kohei Tanigushi¹⁾, Masaru Kawai¹⁾, Hideki Tomiyama¹⁾, Kazuhisa Uchiyama¹⁾, Fumihito Ono²⁾
¹Department of General and Gastroenterological Surgery, Osaka Medical College, Japan, ²Department of Physiology, Division of Life Sciences, Osaka Medical College, Japan, ³Division of Integrative Physiology, Department of Physiology, Jichi Medical University, Japan, ⁴Division of Molecular and Developmental Biology, National Institute of Genetics, Japan

- 2P-352** NHEJ and BER are Concurrently Engaged by APE1 in Oxidative DNA Damage Repair in Rat Cortical Neurons
Jenq-Lin Yang¹), Shu-Fang Sun¹), Yun-Ru Yang¹), Shang-Der Chen^{1,2})
¹Institute for Translational Research in Biomedicine, Kaohsiung Chang Gung Memorial Hospital, Taiwan, ²Department of Neurology, Kaohsiung Chang Gung Memorial Hospital
- 2P-353** Remote control of neuronal function using X-ray
Takanori Matsubara^{1,2}), Shin-Ichiro Horigane^{3,4}), Shuhei Ueda^{3,4}), Sayaka Takemoto-Kimura^{3,4,6}), Noriaki Kawaguchi⁵), Takayuki Yanagida⁵), Akihiro Yamanaka^{1,2,7}), Takayuki Yamashita^{1,2,6,7})
¹Department of Neuroscience II, Research Institute of Environmental Medicine, Nagoya University, Japan, ²Department of Neural Regulation, Graduate School of Medicine, Nagoya University, Japan, ³Department of Neuroscience I, Research Institute of Environmental Medicine, Nagoya University, Japan, ⁴Department of Molecular Neuroscience, Graduate School of Medicine, Nagoya University, Japan, ⁵Graduate School of Materials Science, Nara Institute of Science and Technology, Japan, ⁶PRESTO, Japan Science and Technology Agency, Japan, ⁷CREST, Japan Science and Technology Agency, Japan
- 2P-354** Development of lentiviral vectors for glutamatergic-selective gene expression in cultured neurons
Yoshihiro Egashira^{1,2}), Yasunori Mori²), Yuchio Yanagawa³), Shigeo Takamori²)
¹Department of Physiology, Osaka Medical College, Japan, ²Graduate School of Brain Science, Doshisha University, ³Graduate School of Medicine, Gunma University
- 2P-355** Effects of Cigarette Smoking on the motor nerve conduction study parameters among young adults
Rama Mohammed Baba Musa¹), Lamis Kaddam¹), Mustafa Abdelrahman¹), Humeda Suekit²)
¹Al-Neelain University faculty of Medicine, Sudan, ²International University of Africa
- 2P-356** Dysregulated microRNA expression profiles in extracellular vesicles of schizophrenia
Kittima Lekmanee^{1,2}), Woraphat Ratta-Apha³), Chanatip Metheetrairut⁴), Wittawin Worakitchanon^{1,2}), Pholphat Losatiankij⁵), Natini Jinawath⁶), Witchuda Saengsawang^{1,2}), Arthit Chairoungdua^{1,2,7})
¹Department of Physiology, Faculty of Science, Mahidol University, Thailand, ²Excellent Center for Drug Discovery (ECDD), Mahidol University, Thailand, ³Department of Psychiatry, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand, ⁴Department of Biochemistry, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand, ⁵Somdet Chaopraya Institute of Psychiatry, Thailand, ⁶Program in Translational Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand, ⁷Toxicology Graduate Program, Faculty of Science, Mahidol University, Thailand
- 2P-357** Oral capsaicin sensitivity and preference for spicy food in Japanese medical students
Yoshihiro Murata¹), Kiwamu Shibano¹), Masahiro Yamaguchi¹), Fumino Okutani^{1,2})
¹Department of Physiology, Kochi Medical School, Japan, ²Department of Occupational Health, Kochi Medical School, Japan
- 2P-358** Hypnotic and anti-inflammatory actions of bromovalerylurea
Haruna Takeda, Naoto Seo, Kohdai Fujita, Arisa Sato, Nanako Kihara, Me Choudhury, Hajime Yano, Junya Tanaka

- 2P-359** Memantine selectively ameliorates gait impairment to hyperalgesia in MPTP-injected mice
Ramesh Sharma^{1,2}, Chiranjivi Neupane^{1,2}
¹Department of medical sciences, Chungnam National University, Korea, ²Department of BK21plus CNU Integrative Biomedical Education Initiative, Korea
- 2P-360** Physiologic process before rhythmic jaw movements after ketamine injections in guinea pigs
Takafumi Kato¹, Yutaka Matsuura¹, Hiroshi Yano³, Makoto Higashiyama¹, Hiroki Toyoda¹, Ayano Katagiri¹, Hajime Sato¹, Narikazu Uzawa³, Atsushi Yoshida²
¹Department of Oral Physiology, Osaka University Graduate School of Dentistry, Japan, ²Department of Oral Anatomy and Neurobiology, Osaka University Graduate School of Dentistry, Japan, ³Department of Oral & Maxillofacial Surgery II, Osaka University Graduate School of Dentistry, Japan
- 2P-361** Mitochondrial disease diagnosis by urinary tRNA modification analysis
Tetsuya Watanabe^{1,2}, Kazuhito Tomizawa¹, Fanyan Wei¹, Yukio Ando²
¹Department of Molecular Physiology, Graduate School of Medical Sciences, Kumamoto University, Japan, ²Department of Neurology, Graduate School of Medical Sciences, Kumamoto University
- 2P-362** Age-related changes in hemodynamics and their mechanisms in the orofacial area
Kohei Mito¹, Toshiya Sato¹, Hisayoshi Ishii¹
¹Div. of Physiol., Dept. of Oral Biol., Sch. of Dent., Health Sci. Univ. of Hokkaido, Japan
- 2P-363** Proteomic analysis of the transport system in a connective tissue of the mammalian cochlea
Seishiro Sawamura¹, Yoriko Nonomura^{1,2}, Fumiaki Nin¹, Arata Horii², Sugata Takahashi², Shushi Nagamori³, Yoshikatsu Kanai⁴, Hiroshi Hibino¹
¹Department of Molecular Physiology, Niigata University School of Medicine, Japan, ²Department of Otorhinolaryngology-Head and Neck Surgery, Niigata University School of Medicine, Japan, ³Department of Collaborative Research for Bio-Molecular Dynamics, Nara Medical University, Japan, ⁴Department of Pharmacology, Graduate School of Medicine, Osaka University, Japan
- 2P-364** Rodent posterior parietal cortex controls ipsilateral as well contralateral movement
Shogo Soma¹, Junichi Yoshida², Shigeki Kato³, Satoshi Nonomura², Yae K Sugimura⁴, Alain Rios², Masanori Kawabata², Kazuto Kobayashi³, Fusao Kato⁴, Yutaka Saka², Yoshikazu Isomura²
¹Department of Anatomy and Neurobiology University of California, ²Brain Science Institute, Tamagawa University, ³Department of Molecular Genetics, Institute of Biomedical Sciences, Fukushima Medical University School of Medicine, ⁴Department of Neuroscience, The Jikei University School of Medicine
- 2P-365** Development of a Low-cost, Comprehensive Recording System for Circadian Rhythm Behavior
Jea Kwon Kwon, Changjoon Justin Lee
Korea Institute of Science and Technology, Korea

- ★ **2P-366** (Y-21) **Molecule REST interacts with brain 5-HT system in tilapia fish during social stress**
Shingo Nakajima, Tomoko Soga, Ishwar S Parhar
Brain Research Institute Monash Sunway (BRIMS), School of Medicine and Health Sciences, Monash University Malaysia
- ★ **2P-367** (Y-22) **Altered electrical responsiveness of CA1 pyramidal neurons in a valproic acid rat model of autism**
Mona Rahdar, Raziieh Hajisoltani, Shima Davoudi, Narges Hosseinmardi, Mahyar Janahmadi
Neuroscience Research Center and Dept. of Physiology, Medical School, Shahid Beheshti University of Medical Sciences, Iran
- ★ **2P-368** (Y-23) **Lumbrokinase improves neurological deficit by preventing endoplasmic reticulum stress**
Yi Hsin Wang¹, Hsing Hui Su², Jiuan Miaw Liao³, Shiang Suo Huang⁴
¹Institute of Medicine, Chung Shan Medical University, Taiwan, ²Department and Institute of Pharmacology, School of Medicine, National Yang-Ming University, Taiwan, ³Department of Physiology, Chung Shan Medical University and Chung Shan Medical University Hospital, Taiwan, ⁴Department of Pharmacology and Institute of Medicine, Chung Shan Medical University, and Department of Pharmacy, Chung Shan Medical University Hospital, Taiwan
- ★ **2P-369** (Y-24) **Oxytocin effects on nicotine aversion and anxiety in nicotine-exposed early adolescent rats**
Minji Jang, Taesub Jung, Jihyun Noh
Department of Science education, University of Dankook, South Korea
- ★ **2P-370** (Y-25) **Mesenchymal stem cell conditioned medium therapy modulates neuroinflammatory symptoms**
Vida Nazemian, Jalal Zaringhalam
Physiology Department, Shahid Beheshti University of Medical Sciences
- ★ **2P-371** (Y-26) **Depolarized subicular microcircuits mediate generalized seizure in temporal lobe epilepsy**
Yi Wang, Cenglin Xu, Zhenghao Xu, Caihong Ji, Ying Wang, Shuang Wang, Xiaoming Li, Zhong Chen
School of Medicine, Zhejiang University, China
- ★ **2P-372** (Y-27) **Mitochondrial fission inhibitor attenuates brain mitochondrial dysfunction in pre-diabetic rats**
Siripong Palee^{1,2}, Chayodom Maneechote^{1,2,3}, Nattayaporn Apaijai^{1,2}, Thidarat Jaiwongkam^{1,2}, Sasiwan Kerdphoo^{1,2}, Nipon Chattipakorn^{1,2,3}, Siriporn C Chattipakorn^{1,2,4}
¹Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Center of Excellence in Cardiac Electrophysiology Research, Chiang Mai University, Thailand, ³Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand
- 2P-373** **Effects of vagotomy and area postrema lesion on induction of emesis by emetine**
Makoto Funahashi, Yoshiyuki Hirai, Mayu Fujita, Kazunari Hisadome, Hitoshi Maezawa
Oral Physiology, Department of Oral Functional Science, Faculty of Dental Medicine and Graduate School of Dental Medicine, Hokkaido University

- 2P-374** Kampo medicine Junchoto promotes intestinal Cl⁻/water secretion by cAMP-dependent CFTR activation
Tomohiro Numata¹), Kaori Sato-Numata²), Yasunobu Okada³), Ryuji Inoue¹)
¹Department of Physiology, Graduate School of Medical Sciences, Fukuoka University, Japan., ²Japan Society for the Promotion of Science, Japan., ³Department of Physiology and Systems Bioscience, Kyoto Prefectural University of Medicine, Japan
- 2P-375** CFTR function and *CFTR* mutations of cystic fibrosis in Japan
Yuka Kozawa¹), Akiko Yamamoto¹), Miyuki Nakakuki¹), Kotoyo Fujiki²), Shiho Kondo³), Itsuka Taniguchi¹), Satoru Naruse⁴), Hiroshi Ishiguro¹)
¹Department of Human Nutrition, Nagoya University Graduate School of Medicine, ²Department of Nutritional Sciences, Nagoya University of Arts and Sciences, ³Department of Food Science and Nutrition, Nagoya Women's University, ⁴Miyoshi Municipal Hospital
- 2P-376** Characterization of the Most Frequent Cfr-Mutant Found in Japanese Cystic Fibrosis Patients
Yoshiro Sohma^{1,2}), Kanako Wakabayashi-Nakao¹), Yingchun Yu²), Miyuki Nakakuki³), Tzyh-Chang Hwang²), Hiroshi Ishiguro³)
¹Department of Pharmaceutical Sciences, International University of Health and Welfare, Japan, ²John M Dalton Cardiovascular Research Center, University of Missouri-Columbia, USA, ³Department of Human Nutrition, Nagoya University Graduate School of Medicine, Japan
- 2P-377** Non-morphogenic function of Sonic Hedgehog as a negative regulator of gastric H⁺,K⁺-ATPase
Takuto Fujii, Siriporn Phutthathiraphap, Takahiro Shimizu, Hideki Sakai
Department of Pharmaceutical Physiology, Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Japan
- 2P-378** Aldosterone action on epithelial Na⁺ channel trafficking under the insulin-stimulated condition
Rie Marunaka¹), Yoshinori Marunaka^{1,2,3})
¹Department of Molecular Cellular Physiology, Kyoto Prefectural University of Medicine, ²Research Institute for Clinical Physiology, Kyoto Industrial Health Association, ³Research Center for Drug Discovery and Pharmaceutical Development Science, Research Organization of Science and Technology, Ritsumeikan University
- 2P-379** Loss of ezrin causes impaired proximal tubular solute reabsorption in the kidney
Ryo Hatano¹), Mikiko Takayama²), Kotoku Kawaguchi²), Toru Kimura³), Toshiyuki Fukutomi³), Hiroyuki Sakurai³), Takashi Miki¹), Shinji Asano²)
¹Department of Medical Physiology, Chiba University Graduate School of Medicine, ²Department of Molecular Physiology, College of Pharmaceutical Sciences, Ritsumeikan University, ³Department of Pharmacology and Toxicology, Korin University School of Medicine
- 2P-380** Inhibition of prostaglandin E₂-induced Cl⁻ secretion by dihydropyrazole derivatives in rat colon
Hideki Sakai¹), Nozomi Murata¹), Kenji Sugimoto²), Yuka Miura²), Takahiro Shimizu¹), Takuto Fujii¹), Yuji Matsuya²)
¹Department of Pharmaceutical Physiology, University of Toyama, Japan, ²Department of Synthetic and Medicinal Chemistry, University of Toyama, Japan

- 2P-381** ZO family proteins regulate epithelial polarity independent of Tight Junction strand assembly
Tetsuhisa Otani^{1,2)}, Shinsaku Tokuda³⁾, Mikio Furuse^{1,2)}
¹Division of Cell Structure, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, School of Life Sciences, The Graduate School for Advanced Studies (SOKENDAI), Japan, ³Division of Nephrology and Hypertension, Department of Internal Medicine, University of Kansas Medical Center, USA
- 2P-382** Establishment of a tight junction-deficient epithelial cell line by genome editing of claudin genes
Mikio Furuse¹⁾, Tetsuhisa Otani¹⁾, Daichi Sugawara¹⁾, Shinsaku Tokuda²⁾, Mika Watanabe¹⁾, Kyoko Furuse¹⁾, Osamu Nagata¹⁾
¹Division of Cell Structure, National Institute for Physiological Sciences, Japan, ²Kidney Institute, KUMC School of Medicine, USA

Epithelial Transport, Secretion & Absorption: G-I tract (2)

- 2P-383** Electrogenic K⁺ secretion induced by butyrate in rat rectal colon
Akihiro Inagaki¹⁾, Mikio Hayashi²⁾, Naaz Andharia²⁾, Hiroko Matsuda²⁾
¹Institute of Biomedical Sciences, Tokushima University Graduate School, Japan, ²Department of Physiology, Kansai Medical University, Japan
- 2P-384** Dragon fruit oligosaccharide ingestion enhances mouse intestinal motility
Pissared Khuituan¹⁾, Sakena K-Da^{1,2)}, Kanrawee Bannop^{1,2)}, Fittree Hayeeawaema¹⁾, Santad Wichienchot³⁾, Saranya Peerakietkhajorn²⁾, Narattaphol Charoenphandhu⁴⁾
¹Department of Physiology, Faculty of Science, Prince of Songkla University, Thailand, ²Department of Biology, Faculty of Science, Prince of Songkla University, Thailand, ³Interdisciplinary Graduate School of Nutraceutical and Functional Food, Prince of Songkla University, Thailand, ⁴Department of Physiology, Faculty of Science, Mahidol University, Thailand
- 2P-386** The Effect of Fermented Milk and Soy for Controlling Blood Glucose and Lipid Level on Rats
Lovita Adriani¹⁾, Ronny Lesmana²⁾
¹Animal Husbandry Faculty, Padjadjaran University, Indonesia, ²Departement of Basic Science, Faculty of Medicine, Padjadjaran University, Indonesia
- 2P-387** Effects of dragon fruit oligosaccharide on microbiota in proximal and distal colon of mouse
Saranya Peerakietkhajorn¹⁾, Nilobon Jeanmard¹⁾, Papatsorn Chuenpanitkit¹⁾, Sakena K-Da^{1,2)}, Kanrawee Bannop¹⁾, Pissared Khuituan²⁾
¹Department of Biology, Faculty of Science, Prince of Songkla University, Thailand, ²Department of Physiology, Faculty of Science, Prince of Songkla University, Thailand
- 2P-388** Daikenchuto ameliorates intestinal fibrosis by activating myofibroblast TRPA1 channel
Keizo Hiraishi¹⁾, Lin-Hai Kurahara¹⁾, Yaopeng Hu¹⁾, Kaori Koga²⁾, Miki Onitsuka²⁾, Ryuji Inoue¹⁾
¹Department of Physiology, School of Medicine, Fukuoka university, Japan, ²Department of Pathology, School of Medicine, Fukuoka university, Japan
- 2P-389** The peripheral regulation of rectal visceral sensation by 5-HT₄-cAMP and NO-cGMP pathways

Kazumasa Matsumoto-Miyai¹), Junichi Hashimoto¹),
Eriko Okuyama-Shinzawa²), Masahito Kawatani²)

¹Graduate School of Comprehensive Rehabilitation, Osaka Prefecture University, Japan,

²Department of Neurophysiology, Akita University Graduate School of Medicine, Japan

2P-390 Calcium Oscillation Complexes in Colonic Musculatures of Mice

Shinsuke Nakayama¹), Chiho Takai¹), Takana Yamada¹), Naoko Iwata¹),
Kazunori Kanemaru^{2,3}), Kenji Tanaka⁴), Masamitsu Iino^{2,3})

¹Department of Cell Physiology, Nagoya University Graduate School of Medicine,

²Department of Pharmacology, Graduate School of Medicine, The University of Tokyo,

³Division of Cellular and Molecular Pharmacology, Nihon University School of Medicine,

⁴Department of Neuropsychiatry, Keio University School of Medicine

2P-391 Chronic vomiting observed in captive common marmosets

Yumiko Yamazaki¹), Shinpei Kawarai²), Hidetoshi Morita³),
Takefumi Kikusui⁴), Atsushi Iriki¹)

¹Laboratory for Symbolic Cognitive Development, RIKEN Center for Biosystems

Dynamics Research, ²Laboratory of Small Animal Clinics, Veterinary Teaching Hospital,

Azabu University, ³Graduate School of Environmental and Life Science, Okayama

University, ⁴Companion Animal Research, School of Veterinary Medicine, Azabu

University

2P-392 *Clostridium difficile* disrupts epithelial barrier function by altering tight junction proteins

Pei-Jane Tsai, Tai-Chieh Wu, Yi-Hsin Lai

Department of Medical Laboratory Science and Biotechnology, University of National
Cheng-Kung University

2P-393 Characterization of physiological function of IBD-associated gene LRRK2 in mouse intestine

Yuta Ishikawa, Fumitaka Kawakami, Rei Kawashima, Tatsunori Maekawa,
Fumitaka Ichikawa

Department of regulation Biochemistry, Graduate School of Medical Sciences, Kitasato
University

2P-394 Analysis of the effect of high-fat diet on intestinal barrier using mouse colitis model

Mayuka Yamashita, Fumitaka Kawakami, Rei Kawashima,
Tatsunori Maekawa, Fumitaka Ichikawa

Department of Regulation Biochemistry, Graduate School of Medical Sciences, Kitasato
University

Epithelial Transport, Secretion & Absorption: Renal Physiology (2)

★ **2P-395** Protective effects of dapagliflozin and atorvastatin on renal function in insulin-resistant rats (Y-28)

Laongdao Thongnak, Myat Theingi Swe, Krit Jaikumkao,
Anchalee Pongchaidecha, Anusorn Lungkaphin

Epithelial Transport and Intracellular Signaling Regulation Unit, Department of
Physiology, Chiang Mai University, Thailand

2P-396 Protective Effects of Agomelatine on Inflammation in Obesity-Induced Kidney Injury

Sasivimon Promsan, Rada Chenwelling, Anchalee Pongchaidecha,
Anusorn Lungkaphin

Epithelial Transport and Intracellular Signaling Regulation Unit, Chiang Mai University,
Thailand

- ★ **2P-397** Melatonin activates sirtuin 3 to protect the kidney from long-term consequences of bisphenol A
(Y-29)
Anongporn Kobroob¹, Wachirasek Peerapanyasut², Sirinart Kumfu³, Nipon Chattipakorn³, Orawan Wongmekiat²
¹Division of Physiology, School of Medical Sciences, University of Phayao, Thailand, ²Renal Physiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Cardiac Electrophysiology Research and Training Center, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand
- 2P-398** Effects of chronic renal failure on cognitive function and neurogenesis in rats
Rina Murata Murata, Masanori Katakura, Haruka Matsuzawa
Department of Pharmaceutical Sciences, University of Josai, Japan
- 2P-399** The application of predictive equation on estimation sodium intake in Hong Kong young adults
Ka Tik Cheung, Samuel Sze Ming Wong
School of Medical and Health Sciences, Tung Waha College, Hong Kong

Molecular & Cellular Biology: Channels & Transporters (2)

- 2P-400** Withdrawn
- 2P-401** Inhibitory effect of a novel less-odorous TRPA1 antagonist
Masayuki Takaishi¹, Yutaro Koide¹, Maki Sawada¹, Yoshiro Suzuki^{2,3}, Fumitaka Fujita¹, Makoto Tominaga^{2,3}
¹Mandom Corp., Japan, ²National Institute for Physiological Sciences (Exploratory Research Center on Life and Living Systems), National Institutes of Natural Sciences, Japan, ³Department of Physiological Sciences, SOKENDAI, (The Graduate University for Advanced Studies), Japan
- 2P-402** Regulation of the leak channel NALCN by H₂O₂
Hyunsu Kang¹, Jong-Sun Kang², Hana Cho¹
¹Department of Physiology, Single Cell Network Research Center, Sungkyunkwan University School of Medicine, South Korea, ²Department of Molecular Cell Biology, Single Cell Network Research Center, Sungkyunkwan University School of Medicine, South Korea
- 2P-403** Regulation of reactive oxygen species and calcium by chloride intracellular channel 1 in A549 cells
Jongyoon Lee¹, Jaerin Lee², Myongjoon Hahn², Jongsun Kang², Hana Cho¹
¹Department of Physiology, University of Sungkyunkwan, School of Medicine, South Korea, ²Department of Molecular Cell Biology, Single Cell Network Research Center, University of Sungkyunkwan, School of Medicine, South Korea
- 2P-404** Ferulic acid enhanced L-type Ca²⁺ channel function in rat insulinoma cell line
Katesirin Ruamyod, Wattana B Watanapa, Pimchanok Nambandit, Sukrit Treewaree, Parin Wongsanupa
Department of Physiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand
- 2P-405** High Glucose-Induced Alterations in Ion Channel and Vascular Functions in Human Umbilical Vein

Aung Hein Nyan^{1,2)}, Wattana B Watanapa³⁾, Suwattanee Kooptiwut²⁾,
Pinpat Tripatara³⁾

¹Defence Services Medical Research Center, Myanmar, ²Department of Physiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand, ³Department of Pharmacology, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand

2P-406 Mechanism of ginsenoside Re effect on SK_{Ca} current in human coronary artery endothelial cell

Kitinat Rodthongdee, Luecha Boontaveekul, Wattana B Watanapa

Department of Physiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand

2P-407 Gq-mediated activation of non-selective cation channels in insulin releasing b-cells

Dezaki Katsuya¹⁾, Masashi Yoshida²⁾, Toshihiko Yada¹⁾

¹Department of Physiology, Jichi Medical University, Japan, ²Saitama Medical Center, Jichi Medical University, Japan

2P-408 Polyamine-mediated inward rectification of TRPC4 channel

Jinsung Kim, Insuk So

Department of Physiology, Seoul National University, Korea

2P-409 Effect of STIM1 knockdown on calcium response in bovine ciliary myocytes

Miyazu Motoi, Kosuke Takeya, Toshiyuki Kaneko, Akira Takai

Dept Physiol, Asahikawa Med, Univ., Japan

2P-410 TRPM4 channel is involved in cellular damage caused by simulated ischemia-reperfusion injury

Chen Wang, Heng Wei

Department of Cardiovascular Physiology, University of Okayama, Japan

2P-411 Molecular property changes of endoplasmic reticulum IK_{Ca} channels in early diabetic hepatocytes

Maedeh Ghasemi¹⁾, Afsaneh Eliassi^{2,3)}

¹Department of Physiology, School of Medicine, Isfahan University of Medical Sciences, Iran, ²Department of Physiology, School of Medicine, Shahid Beheshti University of Medical Sciences, Iran, ³Neurophysiology research centre, School of Medicine, Shahid Beheshti University of Medical Sciences, Iran

2P-412 TRPM2 channel-Stat3 complex regulates the polarity of tumor-associated macrophage

Yuji Yamada, Yoshifumi Ueda, Ryuhei Kurogi, Yoshiaki Hasegawa,

Tarek Mohamed Abd El-Aziz, Masayuki x Mori, Yasuo Mori

Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University, Japan

2P-413 Regulation of neuronal excitability by Trim69 E3 ubiquitin ligase

Chankyo Kim¹⁾, Seul-Yi Lee¹⁾, Hyeon-Ju Jeong²⁾, Hyun-Kyung So²⁾,

Yoo-Bin Kim¹⁾, Jae-Rin Lee²⁾, Myong-Joon Hahn²⁾, Jong-Sun Kang²⁾,

Hana Cho¹⁾

¹Department of Physiology, Single Cell Network Resarch Center, Sungkyunkwan University School of Medicine, Korea, ²Department of Molecular Cell Biology, Single Cell Network Resarch Center, Sungkyunkwan University School of Medicine, Korea

2P-414 Activation of TRPM6 current by 2-aminoethyldiphenyl borate is impaired by hydrogen peroxide

Ryo Mizumoto¹⁾, Dai Masui²⁾, Hana Inoue¹⁾, Masato Konishi¹⁾

2P-415 Structure-based virtual screening for G protein-gated inwardly rectifying K⁺ (GIRK) channel blockers

Atsushi Inanobe, Yoshihisa Kurachi

Department of Pharmacology, Osaka University Graduate School of Medicine, Japan

2P-416 A novel variant of TRPV3 p.A628T in East Asians showing fast sensitization by chemical agonists

Choi Si Won^{1,3}, Seong Woo Choi^{7,8}, Jeeseo Chae^{2,5,6}, Jong-Il Kim^{2,5,6}, Sung Joon Kim^{1,3,4}

¹Department of Physiology Seoul National University College of Medicine, ²Department of Biochemistry and Molecular Biology Seoul National University College of Medicine, ³Department of Biomedical Sciences Seoul National University College of Medicine, ⁴Ischemic/Hypoxic Disease Institute Seoul National University College of Medicine, ⁵Genomic Medicine Institute Seoul National University College of Medicine, ⁶Cancer Research Institute Seoul National University College of Medicine, ⁷Department of Stem Cell Biology Konkuk University School of Medicine, ⁸Konkuk University School of Medicine, Republic of Korea

2P-417 Structure analysis of the binding between Cav1.2 channel and calmodulin

Masaki Kameyama, Etsuko Minobe, Jianjun Xu, Qinghua Gao

Kagoshima University, Japan

2P-418 Voltage-clamp fluorometry analyses of voltage-dependent gating of ATP receptor channel P2X2

Andriani Tsari Rizki^{1,2}, Yoshihiro Kubo^{1,2}

¹Div Biophys and Neurobiol, Natl Inst Physiol Sci, Japan, ²Dept Physiol Sci, SOKENDAI, Japan

2P-419 Functional Coupling of Metabolic Sensors, TRPM2 and Sirtuin

Makiko Kashio¹, Makoto Tominaga^{2,3,4}, Satoru Masubuchi¹

¹Aichi Med Univ, Japan, ²ExCELLS, NIPS, ³SOKENDAI, ⁴Juntendo Univ

2P-420 Examination of the contribution of SLCO2A1 to maxi-anion channel currents in murine cells

Toshiaki Okada¹, Yasunobu Okada^{1,2}

¹Division of Cell Signaling, National Institute for Physiological Sciences, Japan, ²Dept. Physiol., Kyoto Pref. Univ. Med., Japan

★★**2P-421** Protein arginine methyltransferase 1-dependent regulation of slow delayed rectifier K⁺ current

(Y-30)

Hyun-Ji Kim^{1,3}, Bok-Geon Kim^{2,3}, Chang-Seok Ki⁴, Jong-Sun Kang^{2,3}, Hana Cho^{1,3}

¹Department of Physiology, University of Sungkyunkwan, Korea, ²Department of Molecular and Cellular Biology, Sungkyunkwan University School of Medicine, Republic of Korea, ³Single Cell Network Research Center, Sungkyunkwan University School of Medicine, Republic of Korea, ⁴Department of Laboratory Medicine and Genetics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Republic of Korea

2P-422 Effects of chemical chaperone on surface expression of PHHI mutant K_{ATP} channel (SUR1/A28VKir6.2)

Chen Pei-Chun^{1,2}, Yu-Chi Lin¹, Yen-Yu Yang³, Shi-Bing Yang³

¹Department of Physiology, National Cheng Kung University, Taiwan, ²Graduate Institute of Basic Medicine, ³Institute of Biomedical Sciences, Academia Sinica, Taiwan

2P-423 Effects of antihistamine drugs on G-protein-gated inwardly rectifying K⁺ channels

Chang Liu^{1,2)}, I-Shan Chen^{1,2)}, Yoshihiro Kubo^{1,2)}

¹Division Biophysics and Neurobiology, Department of Molecular and Cellular Physiology, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, School of Life Science, SOKENDAI, Japan

2P-424 Measurements of water flux across a lipid bilayer membrane with evaluation of unstirred water layer

Keita Yano, Masayuki Iwamoto, Shigetoshi Oiki

Department of Molecular Physiology & Biophysics, University of Fukui Faculty of Medical Sciences, Japan

2P-425 *in bulla* channel synthesis and functional expression system under applied membrane potentials

Masayuki Iwamoto, Shigetoshi Oiki

Department of Molecular Physiology and Biophysics, University of Fukui, Japan

2P-426 Regulation of TRPV1 and TRPA1 function by free fatty acid receptor

Pyo Hyun-Jeong¹⁾, Myong-Ho Jeong²⁾, Tong Mook Kang¹⁾, Jong-Sun Kang²⁾, Hana Cho¹⁾

¹Department of Physiology, Single Cell Network Research Center, Sungkyunkwan University School of Medicine, Korea, ²Department of Molecular Cell Biology, Single Cell Network Research Center, Sungkyunkwan University School of Medicine, Korea

2P-427 Cav1.2 channel inactivation induced by two molecules of calmodulin

Etsuko Minobe¹⁾, Masayuki X Mori²⁾, Masaki Kameyama¹⁾

¹Department of Physiology, Kagoshima University, Japan, ²Laboratory of Molecular Biology, Department of Synthetic Chemistry and Biological Chemistry, Kyoto University, Japan

2P-428 Dipole Potential Evaluated by Hydrophobic Ions using the Contact Bubble Bilayer Method

Yuka Matsuki^{1,2)}, Masayuki Iwamoto²⁾, Mariko Yamatake²⁾, Shigetoshi Oiki²⁾

¹Department of Anesthesiology & Reanimatology, University of Fukui, Faculty of Medicine Sciences, Japan, ²Departments of Molecular Physiology and Biophysics, Faculty of Medicine Sciences, The University of Fukui, Japan

★★**2P-429**
(Y-31)

TTYH family encodes the pore-forming subunits of the volume-regulated anion channel in the brain

Han Youn-Eun^{1,2,3)}, Jea Kwon^{1,2,4)}, Joungha Won^{1,2,5)}, Heeyoung An^{1,2,4)}, Minwoo Wendy Jang^{1,2,4)}, Junsung Woo^{1,2)}, Je Sun Lee⁶⁾, Min Gu Park^{1,2,4)}, Soo-Jin Oh^{1,2,7)}, Changjoon Justin Lee^{1,2,3)}

¹Center for Neural Science and Functional Connectomics, Korea Institute of Science and Technology (KIST), Korea, ²Center for Glia-Neuron Interaction, Korea Institute of Science and Technology (KIST), Republic of Korea, ³Department of Neuroscience, Division of Bio-Medical Science & Technology, KIST School, Korea University of Science and Technology, Republic of Korea, ⁴KU-KIST, Graduate School of Converging Science and Technology, Korea University, Republic of Korea, ⁵Department of Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea, ⁶Molecular Neurobiology Laboratory, Dept. of Structure and Function of Neural Network, Korea Brain Research Institute, Republic of Korea, ⁷Convergence Research Center for Diagnosis, Treatment and Care System of Dementia, Korea Institute of Science and Technology (KIST), Republic of Korea

- ★ **2P-430** The Arginine in the side portal determines the physiological [pH]_i sensing of TALK1

(Y-32)

Tsai Wen-Hao^{1,2)}, Shi-Bing Yang¹⁾¹Institute of Biomedical Science, Academia Sinica, Taiwan, ²Taiwan International Graduate Program-Molecular Medicine, National Yang-Ming University Taiwan

- 2P-431** Down-regulation of K_{Ca} 3.1 K⁺ channels by the treatment with VDR agonists in mouse pre-osteoblasts

Hiroaki Kito¹⁾, Haruka Morihira²⁾, Susumu Ohya¹⁾¹Department of Pharmacology, Graduate School of Medical Sciences, Nagoya City University, Japan, ²Department of Pharmacology, Division of Pathological Sciences, Kyoto Pharmaceutical University

Molecular & Cellular Biology: Cellular Physiology (2)

- 2P-432** Cell imaging with magnetic particle with on a diamond sensor

Yoshie Harada¹⁾, Takeharu Sekiguchi^{1,2)}, Takayuki Iwasaki³⁾,Mutsuko Hatano³⁾, Yuji Hatano¹⁾¹Institute for Protein Research, Osaka University, Japan, ²Graduate School of Science and Technology, Keio University, ³School of Engineering, Tokyo Institute of Technology

- 2P-433** A novel mechanism responsible for the intracellular zinc-sensing

Zhelong Xu, Huanhuan Zhao, Liang Zhao

Department of Physiology and Pathophysiology, Tianjin Medical University, China

- 2P-434** TRPA1 receptors mediate the hypoxia-induced surfacing response of goldfish

Masanori Kasai, Aika Kawabata, Rina Nakashima, Takuya Iwao,

Yuya Horinouchi, Mitsuhiro Kimura, Yukiko Yokogawa

Chemistry and BioScience Course, Research Field in Science, Science and Engineering Area, Research and Education Assembly, Kagoshima University, Japan

- 2P-435** MicroRNAs in mouse salivary glands as a putative Bio-Marker of stress-dependent diseases

Kinji Kurihara

Department of Physiology, Meikai University, School of Dentistry, Japan

- ★★ **2P-436** Circadian gene Clock post-transcriptionally regulates mitochondrial morphology and functions

(Y-33)

Lirong Xu¹⁾, Qianyun Cheng¹⁾, Bingxuan Hua³⁾, Tingting Cai¹⁾, Jiixin Lin¹⁾,Gongsheng Yuan¹⁾, Zuoqin Yan³⁾, Xiaobo Li¹⁾, Ning Sun¹⁾, Chao Lu^{1,2)},Ruizhe Qian^{1,2)}¹Department of Physiology and Pathophysiology, School of Basic Medical Sciences, Fudan University, China, ²Basic Research Institute for Aging and Medicine, School of Basic Medical Sciences, Fudan University, China, ³Department of Orthopedics, Zhongshan Hospital, Fudan University, China

- 2P-437** Improvement of genetically encoded probe to measure Ca²⁺ dynamics in subcellular compartments

Naoya Murooka, Takashi Kikuchi, Hideki Shirakawa

Department of Engineering Science, The University of Electro-Communications, Japan

- 2P-438** Method to Record Single-Molecule Fluctuations and Conformational Changes in Proteins

Hiroyuki Shimizu¹⁾, Masayuki Iwamoto¹⁾, Kentaro Kajiwara²⁾,

Yoshikazu Hirai³, Osamu Tabata³

¹Department of Molecular Physiology and Biophysics, University of Fukui, Japan,
²Spring-8/JASRI, ³Department of Micro Engineering, Kyoto University

- 2P-439** Development of a photo-activatable CaMKII and its application to the study of synaptic plasticity
Akihiro Shibata, Hideji Murakoshi
National Institute for Physiological Sciences, Japan
- 2P-440** Truncated dystrophin ameliorates the dystrophic phenotype by sarcolipin-mediated SERCA inhibition
Jun Tanihata^{1,2}, Tetsuya Nagata², Naoki Ito², Takashi Saito²,
Akinori Nakamura³, Susumu Minamisawa¹, Yoshitsugu Aoki², Urs Ruggel⁴,
Shin'ichi Takeda²
¹Department of Cell Physiology, The Jikei University School of Medicine, Japan,
²Department of Molecular Therapy, National Institute of Neuroscience, National Center of Neurology and Psychiatry (NCNP), Japan, ³Third Department of Internal Medicine, Shinshu University School of Medicine, Japan., ⁴Pharmacology, Geneva-Lausanne School of Pharmaceutical Sciences, University of Geneva, Switzerland
- 2P-441** Flonicamid affects insect proprioception and feeding through 5-HT₇ receptors
Fen Mao, Yixiang Qi, Gongyin Ye, Jia Huang
Institute of insect science, University of Zhejiang, China
- 2P-442** Analysis of electrically-modulated molecules that enhance bone marrow stromal cell proliferation
Jun Ichikawa, Ryuji Inoue
Department of Physiology, Fukuoka University School of Medicine, Japan
- 2P-443** Involvement of VNUT-exocytosis in TRPV4 ion channel-dependent ATP release from colonic epithelium
Hiroshi Mihara^{1,2}, Kunitoshi Uchida³, Schuichi Koizumi⁴,
Yoshinori Moriyama⁵
¹Center for Medical Education and Career Development, University of Toyama, Japan,
²Department of Gastroenterology, University of Toyama, Japan, ³Department of Physiological Science and Molecular Biology, Fukuoka Dental College, Japan,
⁴Department of Neuropharmacology, University of Yamanashi, Japan, ⁵Department of Membrane Biochemistry, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Japan
- 2P-444** Essential role of Ca²⁺ and pH for in vitro cornification in isolated mouse stratum granulosum cells
Takeshi Matsui¹, Masayuki Amagai^{1,2}
¹Laboratory for Skin Homeostasis, RIKEN Center for Integrative Medical Sciences, Japan,
²Department of Dermatology, Keio University School of Medicine
- 2P-445** CTLA4-Ig suppressed intracellular calcium oscillation and inhibited murine osteoclast formation
Hiroyuki Okada¹, Hiroshi Kajiya², Yasunori Omata¹, Jun Hirose¹,
Takumi Matsumoto¹, Koji Okabe², Takeshi Miyamoto³, Sakae Tanaka¹
¹Department of Orthopaedic Surgery, the University of Tokyo, Japan, ²Department of Physiological Science and Molecular Biology, Fukuoka Dental College, ³Department of Orthopaedic Surgery, Keio University School of Medicine
- 2P-446** Metabotropic glutamate receptor mGlu₂ regulates signaling via Gq-coupled serotonergic receptor

Michihiro Tateyama^{1,2)}, Yoshihiro Kubo^{1,2)}

¹Division of Biophysics and Neurobiology, Department of Molecular and Cellular Physiology, National Institute for Physiological Sciences, Japan, ²Department of Physiological Sciences, SOKENDAI, Japan

2P-447 Altered expression of taste signaling elements in jejunal tissue of obese patients

Toshiaki Yasuo^{1,2)}, Peihua Jiang²⁾, Craig Wood³⁾, Xin Chu³⁾, Peter Benotti³⁾, Christopher Still³⁾, David DK Rolston³⁾, Robert F Margolskee²⁾, Yuzo Ninomiya^{2,4)}

¹Department of Oral Physiology, Asahi University School of Dentistry, Japan, ²Monell Chemical Senses Center, USA, ³Geisinger Medical Center, USA, ⁴Research and Development Center for Taste and Odor Sensing, Kyushu University, Japan

2P-448 The intracellular C-terminal domain is responsible for cell surface expression of mGluR6

Dilip Rai, Takumi Akagi, Atsushi Shimohata, Ikuo Ogiwara, Makoto Kaneda
Department of Physiology I, Nippon Medical School, Japan

2P-449 Effects of PCSK9 inhibitor and atorvastatin on mitochondria of red muscle fibers in obesity

Chanisa Thonusin^{1,2,3)}, Siripong Palee^{1,2)}, Wasana Pratchayasakul^{1,2,3)}, Patchareeya Amput^{1,2)}, Sasiwan Kerdpoo^{1,2)}, Thidarat Jaiwongkam^{1,2)}, Nattayaporn Apaijai^{1,2)}, Siriporn C Chattipakorn^{1,2,4)}, Nipon Chattipakorn^{1,2,3)}

¹Cardiac Electrophysiology Research and Training Center, Chiang Mai University, Thailand, ²Center of Excellence in Cardiac Electrophysiology Research, Chiang Mai University, Thailand, ³Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand

2P-450 Intracellular calcium responses to mechanical stimulation in mouse and human synoviocytes

Keiji Asada^{1,2)}, Yu Okumura^{2,3)}, Miyako Takaki²⁾

¹Department of Physical Therapy, Faculty of Medical Science, Suzuka University of Medical Science, Japan, ²Department of Orthopaedic Surgery, Nara Medical University, Japan, ³Department of Physical Therapy, Faculty of Human Science, Osaka University of Human Science, Japan

2P-451 Global analysis of specific gene expression in thymus gland of AQP11 null mice

Yasuko Tanaka, Yumi Tsuji, Natsumi Kato, Minoru Nakae, Haruka Okada, Kei Masaka, Kenichi Ishibashi

Department of Medical Physiology, Meiji Pharmaceutical University, Japan

2P-452 Different expression of Olig2 and O4 in cultured mouse brain cells

Hiromi Hiruma

Department of Physiology, Kitasato University School of Medicine, Japan

2P-453 L6H21 reduces EtOH-LPS-induced liver injury through inhibition of NLRP3 inflammasome activation

Kong Xiaoxia¹⁾, Guicheng Wu^{2,4)}, Fengyuan Li⁴⁾, Hongyu Zhang³⁾, Wenke Feng⁴⁾

¹Institute of Hypoxia Research, Wenzhou Medical University, China, ²Department of Hepatology, Three Gorges Central Hospita, China, ³School of Pharmaceutical Sciences, Wenzhou Medical University, China, ⁴Departments of Pharmacology & Toxicology and Medicine, Alcohol Research Center, Hepatobiology & Toxicology Program, University of Louisville, USA

- 2P-454** MitoQ protects endothelial barrier injury and inflammation by inhibiting ROS and autophagy in HUVECs
Chen Sha¹, Yu Wang¹, Hailin Zhang², Ran Chen¹, Li Yang³
¹School of Basic Medical Sciences, Institute of Hypoxia Research, Wenzhou Medical University, China, ²Department of Children's Respiration, The Second Affiliated Hospital & Yuying Children's Hospital, Wenzhou Medical University, China, ³Department of Respiratory Medicine, The First Affiliated Hospital of Wenzhou Medical University, China
- 2P-455** MR-1 promotes cardiomyogenic differentiation of H9c2 cells via the myogenin-mediated pathway
Wang Xiaoreng, Dandan Song, Tianqi Tao, Xiuhua Liu
Department of Pathophysiology, 301 hospital, China
- 2P-456** Nardilysin in hepatocyte regulates adaptive thermogenesis in brown adipose tissue
Eiichiro Nishi¹, Hirotaka Iwasaki¹, Kiyoto Nishi³, Mikiko Ohno¹, Shintaro Matsuda²
¹Department of Pharmacology, Shiga University of Medical Science, Japan, ²Department of Cardiovascular Medicine, Graduate School of Medicine, Kyoto University, ³Department of Anesthesiology & Pain Medicine University of Washington
- 2P-457** Structure Development of Oxolinic Acid, a Novel Inhibitor of Type 1 Ryanodine Receptor
Yoshiaki Nishijima¹, Takashi Murayama¹, Shuichi Mori², Hiroto Iinuma², Noriaki Manaka², Nagomi Kurebayashi¹, Mari Ishigami-Yuasa², Hiroyuki Kagechika², Takashi Sakurai¹
¹Department of Pharmacology, Juntendo University School of Medicine, Japan, ²Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan
- 2P-458** Ribosome binding protein GCN1L1 controls cell cycle and is essential for embryonic development
Hiromi Yamazaki, Shuya Kasai, Junsei Mimura, Peng Ye, Atsushi Inose Maruyama, Ken Itoh
Department of Stress Response Science, Hirosaki University Graduate School of Medicine, Japan
- 2P-459** Malignancy of cancer cell lines correlates with NKCC1 expression and intracellular Cl⁻ concentration
Hiroaki Miyazaki
Department of Life Science, Setsunan University, Japan
- 2P-460** Structure of bound water in myofibril suspension: A role of ATP
Tetsuo Ohno
Department Molecular Physiology, The Jikei University School of Medicine, Japan
- 2P-461** mTORC2 signaling is critical for lysosomal activation by isorhamnetin treatment in J774.1
Maiko Sakai¹, Kohta Ohnishi¹, Teppei Fukuda¹, Masashi Masuda¹, Naomi Abe-Kanoh², Hisami Yamanaka-Okumura¹, Yoshichika Kawai³, Yutaka Taketani¹
¹Department of Clinical Food Management, Graduate School of Biomedical Sciences, Tokushima University, Japan, ²Department of Public Health and Applied Nutrition, Graduate School of Biomedical Sciences, Tokushima University, Japan, ³Department of Food Science, Graduate School of Biomedical Sciences, Tokushima University, Japan

- 2P-462** Novel RyR1 Inhibitors Identified by High-Throughput Screening Using ER Ca²⁺ Measurement
 Hiroyuki Matsukawa¹, Takashi Murayama¹, Takuya Kobayashi¹, Nagomi Kurebayashi¹, Mari Ishigami-Yuasa², Shuichi Mori², Hiroyuki Kagechika², Takashi Sakurai¹
¹Department of Pharmacology, Juntendo University School of Medicine, Japan, ²Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan
- 2P-463** Regulation of cell cycle by N⁶-methyladenosine modification in cancer cells
 Mayumi Hirayama^{1,2}, Fanyan Wei¹, Hideki Nakayama², Kazuhito Tomizawa¹
¹Department of Molecular Physiology, Faculty of Life Sciences, Kumamoto University, Japan, ²Department of Oral and Maxillofacial Surgery, Faculty of Life Sciences, Kumamoto University, Japan
- 2P-465** Inhibition of the frequency of airway ciliary beating by PDE1 activation in Down syndrome mouse
 Haruka Kogiso^{1,2}, Yukiko Ikeuchi^{1,2}, Saori Tanaka³, Shigekuni Hosogi¹, Chikao Shimamoto³, Matthieu Raveau⁴, Kazuhiro Yamakawa⁴, Takashi Nakahari⁵, Shinji Asano², Yoshinori Marunaka^{1,5,6}
¹Department of Molecular Cell Physiology, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, Japan, ²Department of Molecular Physiology, College of Pharmaceutical Sciences, Ritsumeikan University, Japan, ³Laboratory of Pharmacotherapy, Osaka University of Pharmaceutical Sciences, Japan, ⁴Laboratory for Neurogenetics, RIKEN, Brain Science Institute, Japan, ⁵Research Center for Drug Discovery and Pharmaceutical Development Science, Research Organization of Science and Technology, BKC, Ritsumeikan University, Japan, ⁶Research Institute for Clinical Physiology, Kyoto Industrial Health Association, Japan
- 2P-466** Microscale liquid layer on the olfactory receptors affects on the vapor chemical detection
 Koji Sato
 Biofunctional Systems Construction Research Group, Exploratory Research Center on Life and Living Systems, Japan
- 2P-467** Differential effects of Fe²⁺ and Fe³⁺ on the proliferation and differentiation of osteoblasts
 Ketsaraporn Nammultriputtar^{1,2}, Kornkamon - Lertsuwan^{1,3}, Narattaphol Charoenphandhu^{1,2,4,5}
¹Center of Calcium and Bone Research (COCAB), Faculty of Science, Mahidol University, Thailand, ²Department of Physiology, Faculty of Science, Mahidol University, Thailand, ³Department of Biochemistry, Faculty of Science, Mahidol University, Thailand, ⁴Institute of Molecular Biosciences, Mahidol University, Thailand, ⁵The Academy of Science, The Royal Society of Thailand, Thailand
- 2P-468** Synergistic effect of histone deacetylase inhibitors in intravesical instillation of bladder cancer
 Wen-Wei Sung^{1,2,3}, Chia-Ying Yu², Jr-Rou Sun², Shao-Chuan Wang^{1,2,3}, Wen-Jung Chen^{1,2,3}, Tzuo-Yi Hsieh^{1,2,3}, Sung-Lang Chen^{1,2,3}
¹Department of Urology, Chung Shan Medical University Hospital, Taiwan, ²School of Medicine, Chung Shan Medical University, Taiwan, ³Institute of Medicine, Chung Shan Medical University, Taiwan

- 2P-469** Neferine selectively alters LPS-induced inflammatory responses in RAW 264.7 macrophages
 Amnart Onsa-Ard¹, Jiraporn Tocharus², Chainarong Tocharus³, Apichart Suksamran⁴
¹Division of Biochemistry, Faculty of Medical Sciences, University of Phayao, Thailand, ²Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Department of Anatomy, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Chemistry and Center of Excellence for Innovation in Chemistry, Faculty of Science, Ramkhamhaeng University, Thailand
- 2P-470** The influence of KATP channel abnormality on calcium handling of endoplasmic reticulum
 Hiroki Takanari
 Tokushima University Hospital, Japan
- 2P-471** Dinaciclib inhibits Aurora A expression and proliferation of prostate cancer cells
 Ho Lin¹, Ting-Chieh Chang¹, Chang-Tze Ricky Yu³, Chun-Chi Wu², Mei-Chih Chen^{4,5}
¹Department of Life Sciences, National Chung Hsing University, Taiwan, ²Institute of Medicine, Chung-Shan Medical University, Taiwan, ³Department of Applied Chemistry, National Chi Nan University, Taiwan, ⁴Medical Research Center for Exosomes and Mitochondria Related Diseases, China Medical University Hospital, Taiwan, ⁵Department of Nursing, Asia University, Taiwan
- 2P-472** Dose-response relationship of free radical scavenging activity of dexmedetomidine
 Osamu Tokumaru¹, Kota Yoshida², Kazue Ogata³, Hiroki Takanari⁴, Shigekiyo Matsumoto³, Takaaki Kitano³
¹Faculty of Welfare and Health Sciences, Oita University, Japan, ²School of Medicine, Oita University Faculty of Medicine, ³Department of Anesthesiology, Oita University Faculty of Medicine, ⁴Clinical Research Center for Diabetes, Tokushima University Hospital
- 2P-473** Airway ciliary beating activated by enhanced Ca²⁺ signal in Hochu-ekki-to (TJ-41) treated mice
 Yukiko Ikeuchi^{1,2}, Haruka Kogiso^{1,2}, Saori Tanaka⁴, Shigekuni Hosogi¹, Takashi Nakahara³, Shinji Asano², Yoshinori Marunaka^{1,3,5}
¹Department of Molecular Cell Physiology, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, Japan, ²Department of Molecular Physiology, College of Pharmaceutical Sciences, Ritsumeikan University, Japan, ³Research Center for Drug Discovery and Pharmaceutical Development Science, Research Organization of Science and Technology, BKC, Ritsumeikan University, Japan, ⁴Laboratory of Pharmacotherapy, Osaka University of Pharmaceutical Sciences, Japan, ⁵Research Institute for Clinical Physiology, Kyoto Industrial Health Association, Japan
- 2P-474** Influence of TRPC knockout on mouse pupillary sphincter
 Toshiyuki Kaneko, Akira Takai
 Department of Physiology, Asahikawa Medical University, Japan
- 2P-475** The inhibitory effects of microRNA-107 on p35/CDK5-regulated prostate cancer cell growth
 Fang-Ling Liu¹, Wei-Hsiang Kao¹, Hsin-Yi Wang², Mei-Chih Chen^{3,4}, Ho Lin¹
¹Department of Life Sciences, National Chung Hsing University, Taiwan, ²Department of Nuclear Medicine, Taichung Veterans General Hospital, Taiwan, ³Medical Research

- 2P-476** The inhibitory effects of valproic acid on androgen receptor and prostate cancer cell growth
Cheng-En Hsieh¹, Hsiao-Han Kao¹, Mei-Chih Chen^{2,3}, Ching-Han Yu⁴, Ho Lin¹
¹Department of Life Sciences, National Chung Hsing University, Taiwan, ²Medical Research Center for Exosomes and Mitochondria Related Diseases, China Medical University Hospital, Taiwan, ³Department of Nursing, Asia University, Taiwan, ⁴Department of Medicine, Chung-Shan Medical University, Taiwan
- 2P-477** CDK5 promotes androgen receptor transactivation under Akt inhibition stress
Wei-Hsiang Kao¹, Mei-Chih Chen^{2,3}, Ho Lin¹
¹Department of Life Sciences, National Chung Hsing University, Taiwan, ²Medical Research Center for Exosomes and Mitochondria Related Diseases, China Medical University Hospital, Taiwan, ³Department of Nursing, Asia University, Taiwan
- 2P-478** CDK5 down-regulates p21 expression through inhibiting STAT3
Wan-Ling Liao¹, Jo-Hsin Wang¹, Pao-Hsuan Huang¹, Hsin-Yi Wang², Mei-Chih Chen^{3,4}, Ho Lin¹
¹Department of Life Sciences, National Chung Hsing University, Taiwan, ²Department of Nuclear Medicine, Taichung Veterans General Hospital, Taiwan, ³Medical Research Center for Exosomes and Mitochondria Related Diseases, China Medical University Hospital, Taiwan, ⁴Department of Nursing, Asia University, Taiwan
- 2P-479** Circadian rhythms in nicotinamide adenine dinucleotide concentration in mouse liver
Aya Shimada, Hiroki Nakamura, Daisuke Yarimizu, Masao Doi
Department of Pharmaceutical Sciences, Kyoto University, Japan
- 2P-480** Integrins are involved in mechano-electrical transduction in arterial baroreceptors
Haixia Huang¹, Haiyan Zhao², Ping Liu¹, Sitao Zhang¹, Fang Xin¹, Wei Wang¹
¹Department of Physiology and Pathophysiology, School of Basic Medical Sciences, Capital Medical University, China, ²Department of Functional Medicine, Yanjing Medical College, Capital Medical University, China
- 2P-481** Vapor detection and discrimination with a panel of odorant receptors
Yosuke Fukutani^{1,2}, Hitoshi Kida^{2,3}, Joel D. Mainland⁴, Claire A. De March², Masaharu Kameda³, Masafumi Yohda¹, Hiroaki Matsunami²
¹Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Japan, ²Department of Molecular Genetics and Microbiology, Duke University Medical Center, USA, ³Department of Mechanical System Engineering, Tokyo University of Agriculture and Technology, Japan, ⁴Monell Chemical Senses Center, USA
- 2P-482** Metabolic alterations in cells transformed by oncogenic Lck kinase
Chao-Lan Yu^{1,2,3,4}, Szu-Yuan Chen², Mei-Ling Cheng^{1,2,3}, Pei-Ting Wu^{2,3}, Fu-Shin Chueh⁵, Shin-Yu Wu¹, Fu-Yu Chueh^{1,6}
¹Department of Biomedical Sciences, Chang Gung University, Taiwan, ²Graduate Institute of Biomedical Sciences, Chang Gung University, Taiwan, ³Healthy Aging Research Center, Chang Gung University, Taiwan, ⁴Division of Hematology, Chang Gung Memorial Hospital, Taiwan, ⁵Department of Food Nutrition and Health Biotechnology, Asia University, Taiwan, ⁶Department of Pharmacy, Asia University Hospital, Taiwan

- 2P-483** Effects of chloride ion channel blocker on the adipogenic differentiation of rabbit ASCs
Kanae Ouchi^{1,2}, Masao Miyake¹, Susumu Yoshie¹, Akihiro Hazama¹
¹Dept. Cellular and Integrative of Physiol., Fukushima Med. Univ. Grad. Sch. Med., Japan, ²Dept. Judo Therapy, Koriyama Inst. Health Sci., Japan
- 2P-484** ITAM receptors regulate two frequency components in calcium oscillations during osteoclastogenesis
Hiroschi Kajiya¹, Hiroyuki Okada², Shunichi Sudo¹, Masashi Shin¹, Fujio Okamoto¹, Takeshi Miyamoto³, Sakae Tanaka², Koji Okabe¹
¹Department of Physiological Science and Molecular Biology, Fukuoka Dental College, Japan, ²Department of Orthopaedic Surgery, The University of Tokyo, Japan, ³Department of Orthopaedic Surgery, Keio University School of Medicine, Japan
- 2P-485** RNF20/BRE1a regulates proliferation and differentiation of GBM cancer stem-like cells
Kenny Daun¹, Naoko Morimura¹, Kazuhiko Nozaki², Kenji Tanigaki³, Seiji Hitoshi¹
¹Department of Integrative Physiology, Shiga University of Medical Science, Japan, ²Department of Neurosurgery, Shiga University of Medical Science, Japan, ³Research Institute Shiga Medical Center, Japan
- 2P-486** Analysis of the mechanism regulating intercellular transport of silencing RNA in *C. elegans*
Keita Yoshida, Sawako Yoshina, Yuji Suehiro, Shohei Mitani
Department of Physiology, Tokyo Women's Medical University School of Medicine, Japan
- 2P-487** Swallowing reflex-inducible stimulations in rats
Izumi Ujihara, Suzuro Hitomi, Kentaro Ono
Division of physiology, Kyushu Dental University, Japan
- 2P-488** Intracellular Ca²⁺ source for SK channels in cartwheel cells of the mouse dorsal cochlear nucleus
Tomohiko Irie
Division of Pharmacology, National Institute of Health Sciences, Japan
- 2P-489** Investigation into functions and molecular mechanisms of hesperetin on human cancer cells
Yukari Ogawa¹, Akiyoshi Shiroto¹, Kenta Suzuki¹, Masami Nishina², Shu-ichi Watanabe³, Kazunori Yoshimura^{1,3}
¹Fac Health Sci, Nihon Inst Med Sci, Japan, ²Biomed Res Ctr, Fac Med, Saitama Med Univ, Japan, ³Dept Physiol, Fac Med, Saitama Med Univ, Japan
- 2P-490** STARD10 promotes lipid droplet formation cooperatively with LPCAT1
Masanori Ito, Taichiro Tomida, Yoshinori Mikami, Daisuke Ohshima, Satomi Adachi-Akahane
Department of Physiology, Faculty of Medicine, Toho University, Japan
- 2P-491** ATP dependent H⁺transport in endoplasmic reticulum membrane
Yoshimichi Murata, Yoshio Maruyama
Department of Physiology, Graduate school of Medicine, Tohoku University, Japan
- 2P-492** Highly localized pH sensing on the outer membrane of cells using surface enhanced Raman spectroscopy

Leonardo Puppulin¹), Shigekuni Hosogi^{1,2}), Hideo Tanaka³),
Yoshinori Marunaka^{1,4,5})

¹Department of Molecular Cell Physiology, Kyoto Prefectural University of Medicine, Japan, ²Department of Clinical and Translational Physiology, Kyoto Pharmaceutical University, Japan, ³Department of Pathology and Cell Regulation, Graduate School of Medical Sciences, Kyoto Prefectural University of Medicine, Japan, ⁴Research Center for Drug Discovery and Pharmaceutical Development Science, Research Organization of Science and Technology, Ritsumeikan University, Japan, ⁵Research Institute for Clinical Physiology, Kyoto Industrial Health Association, Japan

2P-493 High-level of homocysteine alters cell viability of endothelial cell and Müller cell

Yih-Jing Lee¹), Yi-Ching Chen^{1,2}), Hsin-Jen Hsieh^{1,2}), Chia-Ying Ke¹),
Ni Tien¹), Po-Kang Lin^{3,4})

¹School of Medicine, Fu-Jen Catholic University, Taiwan, ²Department of Life Science, Fu-Jen Catholic University, Taiwan, ³Department of Ophthalmology, School of Medicine, National Yang-Ming University, Taiwan, ⁴Department of Ophthalmology, Taipei Veterans General Hospital, Taiwan

2P-494 Expression of Mechanosensitive Ion Channel in Osteoblasts
Sayoko Nagai¹), Asuka Higashikawa²), Sadao Ooyama²), Maki Kimura²),
Yoshiyuki Shibukawa²), Akira Katakura¹)

¹Department of Oral Pathobiological Science and Surgery, Tokyo Dental College, Japan, ²Department of Physiology, Tokyo Dental College

2P-495 Exploratory search for therapeutic target genes to cure MELAS using CRISPR activation

Hitomi Kaneko, Takeshi Chujo, Fan-Yan Wei, Kazuhito Tomizawa

Department of Molecular Physiology, Faculty of Life Sciences, Kumamoto University, Japan

2P-496 The effect of benzodiazepine on proliferation and survivals of CNS cells

Tomonori Furukawa¹), Shuji Shimoyama^{1,2}), Yoshiki Ogata¹), Shinya Ueno^{1,2})

¹Department of Neurophysiology, Hirosaki University Graduate School of Medicine, Japan, ²Research Center for Child Mental Development, Hirosaki University Graduate School of Medicine

★ **2P-497** The impact of DNA methyltransferase 3A in erythrocytic differentiation
(Y-34)

Eric Chang-Yi Lin, Po-Shu Tu, Hsiao-Wen Chen, Yuan-I Chang

Department of physiology, National Yang-Ming University, Taiwan

2P-498 Calcium response in human synovial cells induced by shear stress in normal and rheumatoid arthritis

Yu Okumura^{1,2}), Keiji Asada³), Miyako Takaki¹)

¹Department of Orthopaedic Surgery, Nara Medical University, Japan, ²Department of Physical Therapy, Faculty of Human Science, Osaka University of Human Science, Japan, ³Department of Physical Therapy, Faculty of Health Science, Suzuka University of Medical Science, Japan

Adaptation, Environment & Evolution (2)

2P-499 Relationship between dehydration and amount of drinking water before shifts : a preliminary study

Ryutaro Kase, Yuji L Tanaka, Hisayoshi Sugawara, Erina Matsushima, Masatoshi Komiyama, Ayumi Amemiya

★ **2P-500** Hearing status of Rickshaw's drivers in Karachi, Pakistan assessed by Pure tone audiometry
(Y-35)

Muhammad Adnan Kanpurwala^{1,2}, Furqan Mirza³

¹Department of Physiology, Karachi Institute of Medical Sciences, Pakistan, ²Department of Physiology, University of Karachi, ³Department of Health Management, Institute of Business Management

2P-501 A corticohypothalamic neural pathway that drives sympathetic responses to psychological stress

Naoya Kataoka, Keisuke Nakajima, Kazuhiro Nakamura

Department of Integrative Physiology, Nagoya University Graduate School of Medicine, Japan

2P-502 Expanded plasma volume after a bout of exercise increases erythropoietin secretion to hypoxia

Kazunobu Okazaki^{1,2}, Ryosuke Takeda¹, Daiki Imai^{1,2}, Eriko Kawai², Akemi Ota², Kosuke Saho², Emiko Morita^{2,3}, Yuta Suzuki^{1,2}, Kazushige Goto³, Hisayo Yokoyama^{1,2}.

¹Research Center for Urban Health and Sports, Osaka City University, Japan, ²Department of Environmental Physiology for Exercise, Osaka City University Graduate School of Medicine, Japan, ³Faculty of Sport & Health Sciences, Ritsumeikan University, Japan

2P-503 The effect of aging on event-related potentials during mild-hyperthermia

Akemi Ota^{1,2}, Ryosuke Takeda³, Daiki Imai^{2,3}, Eriko Kawai², Kosuke Saho², Emiko Morita², Yuta Suzuki^{2,3}, Hisayo Yokoyama^{2,3}, Kazunobu Okazaki^{2,3}

¹Faculty of Biomed. Eng., Osaka Electrocommun Univ., Japan, ²Dept. of Environ. Physiol. for Exercise, Osaka City Univ. Grad. Sch. of Med., Japan, ³Res. Ctr. for Urban Health & Sports, Osaka City Univ., Japan

2P-504 Thermosensory changes in heat resistant tadpoles of Ryukyu kajika frogs inhabiting hot springs

Shigeru Saito^{1,2,3}, Claire T. Saito^{1,2}, Takeshi Igawa⁴, Shohei Komaki⁵, Makoto Tominaga^{1,2,3}

¹Division of Cell Signaling, National Institute for Physiological Sciences, Japan, ²Thermal Biology Group, Exploratory Research Center on Life and Living Systems (ExCELLS), Japan, ³Department of Physiological Sciences, SOKENDAI (The Graduate University for Advanced Studies), Japan, ⁴Amphibian Research Center, Hiroshima University, Japan, ⁵Division of Biomedical Information Analysis, Iwate Tohoku Medical Megabank Organization, Japan

2P-505 Influence of combined stimulus of cold, hypoxia and dehydration status on thermoregulation in rats

Tadashi Uno, Tatsuya Hasegawa, Masahiro Horiuchi

Division of Human Environmental Science, Mount Fuji Research Institute, Japan

2P-506 Possible central mechanism of acquired heat tolerance in exercise-trained rats

Kentaro Matsuzaki¹, Masanori Katakura², Naotoshi Sugimoto³, Eri Sumiyoshi¹, Toshiko Hara¹, Osamu Shido¹

¹Department of Environmental Physiology, Faculty of Medicine, Shimane University, Japan, ²Department of Nutritional Physiology, Faculty of Pharmaceutical Sciences, Josai University, Japan, ³Department of Physiology, Graduate School of Medical Science, Kanazawa University, Japan

- 2P-507** Estimation of basal body temperature from breast skin temperature during sleep
Shuri Marui, Kei Nagashima
Faculty of Human Sciences, Waseda University, Japan
- 2P-508** Wearable patch-type sensors for core temperature monitoring by a modified dual-heat-flux method
Ken Tokizawa¹, Tatsuo Oka¹, Hirofumi Tsuchimoto², Toru Shimuta²
¹National Institute of Occupational Safety and Health, Japan, ²Murata Manufacturing Co., Ltd,
- 2P-509** Operant behaviors affected by warm ambient temperature are task-dependent and hippocampus involved
Ruey-Ming Liao^{1,2,3}, Shuo-Fu Chen^{1,2}, Chuen-Yu Chuang^{1,2}, Chih-Chang Chao^{2,3}
¹Department of Psychology, National Cheng-Chi University, Taiwan, ²Institute of Neuroscience, National Cheng-Chi University, Taiwan, ³Center for Mind, Brain and Learning, National Cheng-Chi University, Taiwan
- 2P-510** The effect of environmental temperature on spontaneous exercise in mice
Yuta Mausda¹, Shuri Marui², Ken Tokizawa³, Issei Kato¹, Kei Nagashima³
¹Department of Human sciences, Waseda University, Japan, ²Faculty of Human Sciences, Waseda University, Japan, ³National Institute of Occupational Safety and Health, Japan
- 2P-511** Function of polyunsaturated fatty acid in thermoregulation
Takuto Suito, Kohjiro Nagao, Naoto Juni, Masato Umeda
Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University, Japan
- 2P-512** Cold induced sleep-related sympathovagal imbalance and sleep fragmentation in rats
Cheng-Han Wu^{1,2}, Terry B.J. Kuo^{1,2,3,5,6}, Chieh-Wen Chen^{1,2}, Yu-Syuan Liou^{1,2}, Kuan-Liang Kuo^{4,7}, Cheng-Hung Chung^{1,2}, Yu-Ting Lin^{1,2}, Cheryl C.H. Yang^{1,2,3,5}
¹Institute of Brain Science, National Yang Ming University, Taiwan, ²Sleep Research Center, National Yang Ming University, Taiwan, ³Brain Research Center, National Yang Ming University, Taiwan, ⁴Institute of Bio Medical Informatics, National Yang-Ming University, Taiwan, ⁵Department of Education and Research, Taipei City Hospital, Taiwan, ⁶Graduate Institute of Biomedical Informatics, College of Medical Science and Technology, Taipei Medical University, Taiwan, ⁷Family Medicine Department, Taipei City Hospital Ren-Ai Branch, Taiwan
- 2P-513** A mouse model that can evaluate fever and hyperalgesia due to peripheral inflammation
Hiromu Kitagawa¹, Takae Ibuki², Kiyoshi Matsumura¹
¹Graduate School of Engineering, Osaka Institute of Technology, Japan, ²Department of Anesthesiology, Kyoto Prefectural University of Medicine, Japan
- 2P-514** Induction of long-term torpor by enhancing the adenosine receptor signal via PPARs activation
Miho Sato-Hashimoto, Hiroshi Ohnishi
Department of Laboratory Sciences, Gunma University Graduate School of Health Sciences, Japan

- 2P-515** Involvement of the vagus nerve in autonomic thermoregulation responses induced by TRPM8 agonist
Noriyuki Mori^{1,2}, Tomomi Urata², Tsutomu Fukuwatari²
¹Department of Food Science and Nutrition, Doshisha Women's College of Liberal Arts, Japan, ²Department of Nutrition, the University of Shiga Prefecture, Japan
- 2P-516** *Aurelia Aurita* venom evoke hyperpolarization and SOCS1 expression in toad urothelium membrane
Yang Wang^{1,2}, Han Wang¹, Linghua Piao¹, Tong He¹, Lingfeng Gao¹
¹Faculty of Basic Medicine and Life Sciences, Hainan Medical College, China, ²Laboratory of Extreme Environment Sports Medicine, Hainan Medical College
- 2P-517** Withdrawn
- 2P-518** Seasonal differences in cardiac autonomic nervous activity during exercise in obese men
Maki Sato^{1,2}, Hisaki Hayashi¹, Tatsunori Ikemoto³, Takahiro Ushida³, Dominika Kanikowska⁴, Satoshi Iwase¹, Motohiko Sato¹
¹Department of Physiology, Aichi Medical University, Japan, ²Institutional Research, Aichi Medical University, Japan, ³Institute of Physical Fitness, Sports Medicine and Rehabilitation, Aichi Medical University, Japan, ⁴Department of Pathophysiology, Poznan University of Medical Sciences, Poland

Genomics & Biodiversity

- 2P-519** PAI-1 is crucial in osteoblastic differentiation of mesenchymal stem cells
Yoshimasa Takafuji, Kohei Tatsumi, Masayoshi Ishida, Naoyuki Kawao, Kiyotaka Okada, Osamu Matsuo, Hiroshi Kaji
Department of Physiology and Regenerative Medicine Kindai University Faculty of Medicine, Japan
- 2P-520** Regenerative capacity of stem cells in the skeletal muscle: Comparison between human, mouse and pig
Tetsuro Tamaki¹, Ippei Yamato², Shuichi Soeda¹, Yoshiyasu Uchiyama³
¹Department of Human Structure and Function, Tokai University School of Medicine, Japan, ²Department of Medical Education, Tokai University School of Medicine, ³Department of Orthopedics, Tokai University School of Medicine
- ★ **2P-521** Alpha-5 integrin mediates simvastatin-induced osteogenesis of bone marrow mesenchymal stem cells
(Y-37)
Pei Lin Shao¹, Shun Cheng Wu^{2,3}, Zih Yin Lin^{2,3}, Chau Zen Wang^{2,3}, Chung-Hwan Chen², Mei-Ling Ho^{2,3}
¹Department of Nursing, Asia University, Taiwan, ²Orthopaedic Research Center, College of Medicine, Kaohsiung Medical University, Taiwan, ³Department of Physiology, College of Medicine, Kaohsiung Medical University, Taiwan
- 2P-522** Molecular network search for *bcl-7* related factors
Luna Izuhara¹, Sawako Yoshina¹, Sayaka Higuchi², Yuji Suehiro¹, Shohei Mitani^{1,2}
¹Department of Physiology, Tokyo Women's Medical University School of Medicine, Japan, ²Tokyo Women's Medical University Institute for Integrated Medical Sciences, Japan

- 2P-523** Platelet-rich plasma supplementation increase CD34 hematopoietic stem cell proliferation in vitro
 Imelda Rosalyn Sianipar¹, Beryl Alodia², Yosafat L Prasetyadi², Retno Wahyu Nurhayati³, Gita Pratama^{4,5}, Radiana Dhewayani Antarianto^{6,7}
¹Department of Medical Physiology, Universitas Indonesia, Indonesia, ²Undergraduate program in Medicine, Faculty of Medicine, Universitas Indonesia, Indonesia, ³Stem Cell and Tissue Engineering Research Cluster IMERI, Faculty of Medicine, Universitas Indonesia, Indonesia, ⁴Department of Obstetry and Gynecology, Faculty of Medicine Universitas Indonesia, Indonesia, ⁵Integrated Service Unit and Technology Stem Cell National General Hospital Ciptomangunkusumo, Indonesia, ⁶Department of Histology, Faculty of Medicine, Universitas Indonesia, Indonesia, ⁷Doctoral program in Biomedical Science, Faculty of Medicine, Universitas Indonesia, Indonesia
- 2P-524** Identifying heterogeneity of ground state pluripotency in mouse embryonic stem cells
 Kyoji Horie, Junko Yoshida
 Department of Physiology II, Nara Medical University, Japan
- 2P-525** Bioactive Ligands-Based Neuronal Reprogramming of Human Dedifferentiated Fat Cells
 Rei Nakano^{1,2}, Yoshiyuki Shibukawa³, Koichiro Kano⁴, Taro Matsumoto⁵, Hiroshi Sugiya²
¹Laboratory for Cellular Function Conversion Technology, RIKEN Center for Integrative Medical Sciences (IMS), Japan, ²Laboratory of Veterinary Biochemistry, College of Bioresource Sciences, Nihon University, ³Department of Physiology, Tokyo Dental College, ⁴Laboratory of Cell and Tissue Biology, College of Bioresource Sciences, Nihon University, ⁵Department of Functional Morphology, Division of Cell Regeneration and Transplantation, Nihon University School of Medicine
- 2P-526** Determining Deubiquitinating Enzymes Regulating Adipose Derived Mesenchymal Stem Cells Senescence
 Dong Hyeon Lee¹, Soonchul Lee²
¹Department of Physiology, CHA University School of Medicine, Republic of Korea, ²Department of Orthopaedic Surgery, CHA Bundang Medical Center, CHA University School of Medicine, Republic of Korea
- 2P-527** Grafted hypothalamic Neurons from Mouse ES Cells survived in hypothalamus or pituitary
 Miho Kawata¹, Yu Kodani¹, Hidetaka Suga², Yoko Kaneko¹, Akira Nakashima¹, Hiroshi Nagasaki¹
¹Department of Physiology, School of Medicine, Fujita Health University, Japan, ²Department of Endocrinology and Diabetes, Nagoya University Graduate School of Medicine
- 2P-528** Effects of beta 3-adrenergic receptor gene Trp64Arg mutation on high-fat sweet food preference
 Kei Watanabe¹, Guang Hong², Kanako Tominami¹, Kazushi Hirose¹, Yuki Watabe¹, Youhei Hayashi³, Tada-Aki Kudo¹
¹Division of Oral Physiology, Tohoku University Graduate School of Dentistry, Japan, ²Liaison Center for Innovative Dentistry, Tohoku University Graduate School of dentistry Japan, ³Cell Resource Center for Biomedical Research, Institute of Development, Aging and Cancer, Tohoku University, Japan
- ★ **2P-529** Vitamin D Receptor Polymorphism Fok1 and Chest X-ray in Tuberculosis Patients of Batak Ethnic
 (Y-38)
 Debby Mirani Lubis¹, Seri Rayani Bangun², Yahwardiah Siregar²,

Bintang YM Sinaga³⁾

¹Department of Physiology, University of Muhammadiyah Sumatera Utara, Indonesia,

²Biomedical Science, University of North Sumatera, ³Pulmonology Department, University of North Sumatera

Education

- 2P-530** Quick eating elevates blood glucose level, a practice for registered dietitians students
Masaru Ishimatsu, Junko Machidori, Kanako Nanashima, Haruka Suzuki, Kazue Kuno
Faculty of Health and Nutrition Sciences, Nishikyushu University, Japan
- 2P-531** Design and Application of Blended Learning in the Teaching Reform of Medical Functional Experiments
Ran Chen, Xiaofang Fan, Ping Wang, Feng Xue, Jianshe Ma, Yongsheng Gong
School of Basic Medical Sciences, Wenzhou Medical University, China
- 2P-532** Active learning on topics related to physiology by the first year medical students
Eriko Daikoku
Department of Physiology, Osaka Medical College, Japan
- 2P-533** Do 1st-year medical students' knowledge, attitudes & physical activity affect their physical fitness?
Yhusi Karina Riskawati¹⁾, Narulita Septi Ailina²⁾, Saptadi Yulianto³⁾, Christyaji Indradmojo⁴⁾
¹Departement of Physiology, Faculty of Medicine, Universitas Brawijaya, Indonesia, ²School of Medicine Faculty of Medicine, Universitas Brawijaya, Indonesia, ³Pediatric Department of Faculty of Medicine, Universitas Brawijaya, Indonesia, ⁴Medical Faculty, Maulana Malik Ibrahim Islamic State University Malang
- 2P-534** Multiple intelligence and its relationship with academic achievements of medical students
Nirmala Limbu¹⁾, Nidesh Sapkota²⁾, Priza Subedi¹⁾
¹Department of Basic & Clinical Physiology, B. P. Koirala Institute of Health Sciences, Nepal, ²Department of Psychiatry, B. P. Koirala Institute of Health Sciences, Nepal
- ★ **2P-535** Flipped classroom in Faculty of Medicine Universitas Indonesia: a personal experience
(Y-39)
Sophie Yolanda
Department of Medical Physiology, Faculty of Medicine Universitas Indonesia, Indonesia
- 2P-536** Withdrawn
- 2P-537** Across-instructor divergence in scoring on practice reports in the orthoptics education with rubrics
Haruo Toda, Hokuto Ubukata, Noriaki Murata, Fumiatsu Maeda, Haruki Abe
Department of Orthoptics and Visual Sciences, Niigata University of Health and Welfare, Japan
- 2P-538** The relationship between anemia, dietary habits and subjective symptoms of females

Noriko Takahashi
Showagakuin Junior College, Japan

2P-539 Comparison of two models which explain negative feedback at a junior college

Masato Shibuya^{1,2}, Kaname Higuchi^{1,2}, Kei Tajima^{1,2}, Mieka Inagaki^{1,2}

¹Department of Physiology, Kagawa Nutrition Junior College, Japan, ²Life Science Education Sharing Group

Alternative Medicine (2)

2P-540 A new criterion for inclusion/exclusion from acupuncture treatment with blood pressure balance

Mayumi Watanabe, Zaigen Oh

Faculty of Health Sciences, Kansai University of Health Science, Japan

★ **2P-541** The Anti-depressive and the Involvement of ERK Pathway of Electroacupuncture on Depression Model
(Y-40)

Shao-Yuan Li¹, Pei-Jing Rong^{1,2}, Xiao Guo¹

¹Institute of Acu-Moxi, China Academy of Chinese Medical Sciences, China, ²Guangzhou University of Chinese Medicine

2P-542 Vasorelaxant induced by cucurbitacin B 3-oxime 22,24-dihydroisoxazole in rat thoracic aorta

Chainarong Tocharus¹, Pimchanok Mungmuang¹, Jiraporn Tocharus², Parichat Suebsakwong³, Apichart Suksamran³

¹Department of Anatomy, Chiang Mai University, Thailand, ²Department of Physiology, Chiang Mai University, Thailand, ³Department of Chemistry and Center of Excellence for Innovation in Chemistry, Ramkhamhaeng University

2P-543 Pomegranate Juice Protects Rat Skeletal Muscle from Ischemia/Reperfusion Induced-Oxidative Stress

Kusuma Ruamthum, Rungrudee Srisawat

School of Preclinic, Institute of Science, Suranaree University of Technology, Thailand

2P-544 *Ex-vivo* investigation on the anti-coagulation effect of a Chinese medicinal herb

Ellie SM Chu, Ly Ho, Ricky Wk Wu

School of Medical and Health Sciences, Tung Wah College, China

2P-545 Nutmeg Extract Increases Skeletal Muscle Mass in Ageing Rats and Inhibition of Autophagy

Yuni Susanti Pratiwi^{1,2}, Ronny Lesmana^{1,2}, Hanna Goenawan^{1,2}, Nova Sylviana^{1,2}, Setiawan Setiawan^{1,2}, Vita Murniati Tarawan^{1,2}, Keri Lestari³, Rizky Abdullah³, Lazuardhi Dwipa³, Ambrosius Purba^{1,2}, Unang Supratman^{2,4}

¹Division of Physiology, Department Basic Medical Science, Faculty of Medicine Universitas Padjadjaran, Indonesia, ²Central Laboratory, Universitas Padjadjaran, ³Faculty of Pharmacy, Universitas Padjadjaran, ⁴Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran, ⁵Department of Internal Medicine, Faculty of Medicine-Hasan Sadikin Hospital, Universitas Padjadjaran

2P-546 Analgesic effect of isoliquiritigenin on oral ulcer-induced pain by blocking of Na_v channels

Yuichi Miyamura^{1,2}, Suzuro Hitomi¹, Izumi Ujihara¹, Kiyoshi Terawaki³, Yuji Omiya³, Yasuhiro Morimoto², Kentaro Ono¹

¹Division of Physiology, Kyushu Dental University, Japan , ²Division of Dentomaxillofac Radiology, Kyushu Dental University, Japan , ³Tsumura Kampo Research Laboratories, Kampo Research & Development Div, Tsumura & Co., Japan

- 2P-547** *Flos Magnoliae* suppresses CD4+ T lymphocyte activation via store-operated calcium entry
Joo Hyun Nam^{1,2)}, Hyun Jong Kim^{1,2)}, Yu Ran Nam^{1,2)}, Woo Kyung Kim^{2,3)}
¹Department of Physiology, Dongguk University, South Korea, ²Chanelopathy Research Center, Dongguk University College of Medicine, South Korea, ³Department of Internal Medicine, Dongguk University College of Medicine, South Korea
- ★ **2P-549** (Y-41) Malaysian Tualang Honey Protects Endothelial Barrier Integrity from Insults by Hydrogen Peroxide
Yoke Keong Yong¹⁾, Kogilavane Devasvaran¹⁾, Jun Jie Tan²⁾
¹Department of Human Anatomy, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia, ²Advance Medical and Dental Institute, Universiti Sains Malaysia, Malaysia
- 2P-550** Acetophenone dimers from *Acronychia pendunculata* induce an apoptotic effect on human leukaemia cells
Takuya Matsui¹⁾, Chihiro Ito²⁾, Tian-Shung Wu³⁾, Masataka Itoigawa⁴⁾
¹Department of Physiology, Aichi Medical University, Japan, ²Faculty of Pharmacy, Meijo University, Japan, ³Department of Chemistry, National Cheng Kung University, Taiwan, ⁴School of Sports and Health Science, Tokai Gakuen University, Japan
- 2P-551** Purple rice husk extract preserves mitochondrial integrity and reduces diabetic kidney injury
Orawan Wongmekiat¹⁾, Narissara Lailerd²⁾, Anongporn Kobroob³⁾, Wachirasek Peerapanyasut¹⁾
¹Renal Physiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ²Nutrition and Exercise Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Division of Physiology, School of Medical Science, University of Phayao, Thailand
- 2P-552** Addition of hexachlorocyclohexane provokes insulin resistance in 3T3-L1 mature adipocytes
Amire Alimu, Junetsu Ogasawara, Takahiko Yoshida
Department of Hygiene, Asahikawa Medical University, School of Medicine, Japan

Special Lecture8

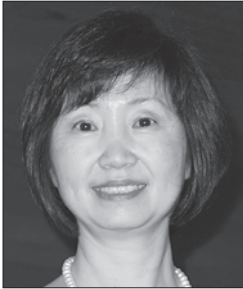
The Sunao Tawara Memorial Lecture

March 31, Sun., 9:40-10:30

【Room A】 1F, Conference Center

Chair: Yoshihiro Kubo (National Institute for Physiological Sciences, Japan)

SL8 Mitochondria in fetal programming of metabolic syndrome-associated end organ dysfunctions in adults



Julie YH Chan¹⁾,
Yung-Mei Chao¹⁾, You-Lin Tain²⁾

¹Institute for Translational Research in Biomedicine, Kaohsiung Chang Gung Memorial Hospital, Taiwan, ²Department of Pediatric Nephrology, Kaohsiung Chang Gung Memorial Hospital, Taiwan

DAY 4

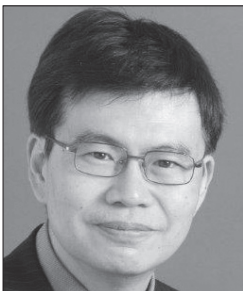
Special Lecture9

March 31, Sun., 9:40-10:30

【Room B】 3F, Conference Center

Chair: Yukari Ohki (Kyorin University School of Medicine, Japan)

SL9 Modeling Human Neurological/Psychiatric Disorders using iPS cells and Transgenic Non-Human Primates



Hideyuki Okano

Department of Physiology, Keio University School of Medicine, Japan

Symposium60

March 31, Sun., 8:00-9:30

【Room C】 3F, Conference Center

S60 Hibernation and Torpor in mammals

Chair: **Yoshifumi Yamaguchi** (Hokkaido University, Japan)

Co-Chair: **Genshiro A Sunagawa** (RIKEN Center for Biosystems Dynamics Research, Japan)

- S60-1** Daily torpor in mice as a model of active hypometabolism
Genshiro A Sunagawa
Laboratory for Retinal Regeneration, RIKEN Center for Biosystems Dynamics Research, Japan
- S60-2** Hypothalamic control of mouse daily torpor
Hiroshi Yamaguchi, Luis De Lecea
Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, USA
- S60-3** Cold-inducible RNA-binding protein may participate in cold tolerance in hibernating hamsters
Yasutake Shimizu^{1,2)}, Yuuki Horii¹⁾, Hiroki Shimaoka¹⁾, Takahiko Shiina¹⁾
¹Department of Basic Veterinary Science, Laboratory of Physiology, The United Graduate School of Veterinary Sciences, Gifu University, Japan, ²Center for Highly Advanced Integration of Nano and Life Sciences (G-CHAIN), Gifu University, Japan
- S60-4** IPSCs from hibernators: a way to study hibernation-related cell protection mechanisms
Jingxing Ou, Wei Li
National Eye Institute, National Institute of Health, USA
- S60-5** Systemic body remodelling preceding hibernation in a mammalian hibernator, Syrian hamster
Yoshifumi Yamaguchi¹⁾, Daisuke Anegawa^{1,2)}, Yuya Sato^{1,2)}, Yuichi Chayama²⁾, Lisa Ando²⁾, Shuji Shigenobu³⁾, Yutaka Tamura⁴⁾, Masayuki Miura²⁾
¹Institute of Low Temperature Science, Hokkaido University, Japan, ²Department of Genetics, Graduate School of Pharmaceutical Science, The University of Tokyo, Japan, ³National Institute of Basic Biology, Japan, ⁴Fukuyama University, Japan

Symposium61

March 31, Sun., 8:00-9:30

【Room D】 4F, Conference Center

S61 The Social Brain: Recent Progress in Understanding Molecules and Networks of Social Behavior

Chair: **Sonoko Ogawa** (University of Tsukuba, Japan)

Co-Chair: **Nandini Vasudevan** (University of Reading, UK)

S61-1 Non-genomic action by gonadal steroids drives social behaviours
Nandini Vasudevan

School of Biological Sciences, University of Reading, UK

S61-2 Neuroendocrine Regulation of Neural Networks for Social Behavior
Sonoko Ogawa

Laboratory of Behavioral Neuroendocrinology, University of Tsukuba, Japan

S61-3 Serotonin interactions with the gonadotropin-inhibitory hormone system during social isolation

Tomoko Soga

Brain Research Institute, School of Medicine and Health Science, Monash University, Malaysia

S61-4 The Neurobiology of Pair Bonding in Monogamous Prairie Voles

Larry James Young^{1,2)}

¹Center for Social Neural Networks, University of Tsukuba, Japan, ²Center for Translational Social Neuroscience, Department of Psychiatry and Behavioral Sciences, Emory University, USA

DAY
4

Symposium62

March 31, Sun., 8:00-9:30

【Room E】 4F, Conference Center

S62 Integrative neural processing of sound information in the higher auditory centers

Chair: **Munenori Ono** (Kanazawa Medical University, Japan)

Co-Chair: **Ling Qin** (China Medical University, China)

S62-1 Excitatory and inhibitory neural circuits in the auditory midbrain
Munenori Ono
Department of Physiology, Kanazawa Medical University, Japan

S62-2 Characterization of the secondary auditory field in the mouse auditory cortex
Hiroaki Tsukano
Department of Neurophysiology, Brain Research Institute, Niigata University, Japan

S62-3 Acute restraint stress alters sound-evoked neural responses in the rat auditory cortex
Ma Lanlan, Jiaozhen Zhang, Ling Qin
Department of Physiology, China Medical University, China

S62-4 Sound representation of long-lasting sustained activity in rat auditory cortex
Tomoyo Isoguchi Shiramatsu, Hirokazu Takahashi
Research Center for Advanced Science and Technology, The University of Tokyo, Japan

Symposium63

March 31, Sun., 8:00-9:30

【Room F】 5F, Conference Center

S63 Implication of tonic inhibition for Brain function

Chair: **Bo-Eun Yoon** (Dankook University, Korea)

Co-Chair: **C. Justin Lee** (Korea Institute of Science and Technology, Korea)

S63-1 Function of cerebellar tonic inhibition

Bo-Eun Yoon

Department of Molecular Biology, Dankook University, Korea

S63-2 Pathophysiological impact of diverse deregulation of tonic inhibition in Angelman syndrome

Kiyoshi Egawa¹⁾, Atsuo Fukuda²⁾

¹Department of Pediatrics, Hokkaido University School of Medicine, Japan, ²Department of Neurophysiology, Hamamatsu University School of Medicine, Japan

S63-3 Critical role of tonic GABA from reactive astrocytes in neurodegenerative diseases

C Justin Lee

Institute for Basic Science, Korea

S63-4 Best1-mediated tonic GABA release alleviating seizure susceptibility in kainate-induced epilepsy

Jin Bong Park

Department of Physiology, College of Medicine, Chungnam National University, Korea

DAY
4

Symposium64

March 31, Sun., 8:00-9:30

【Room G】 5F, Conference Center

S64 New insights into the cellular and molecular mechanisms of neurological diseases using experimental model systems

Chair: **Ching-Yi Tsai** (Chang Gung Memorial Hospital, Taiwan)

Co-Chair: **Sujira Mukda** (Mahidol University, Thailand)

S64-1 Modulatory roles of Pnn in glial apoptosis induced by disrupted energy homeostasis during ischemia

Sujira Mukda

Research Center for Neuroscience, Institute of Molecular Biosciences, Mahidol University, Thailand

S64-2 Emerging the synaptopathology-based therapies in the environmental-toxin induced rat model of autism

Hui-Ching Lin

Department and Institute of Physiology, National Yang-Ming University, Taiwan

S64-3 The roles of microglial on the molecular mechanism of painful diabetic neuropathy in the rat

Idris Long¹, Che Aishah Nazariah Ismail², Che Badariah Ab Aziz², Rapeah Suppian¹

¹School of Health Sciences, Health Campus, Universiti Sains Malaysia, Malaysia, ²School of Medical Sciences, Health Campus, Universiti Sains Malaysia, Malaysia

S64-4 Role of PI3K/Akt signaling in experimental brain stem death: Modulations by FLJ10540 and PTEN

Ching-Yi Tsai

Institute for Translational Research in Biomedicine, Chang Gung Memorial Hospital, Taiwan

S65 Intervention factors of neuronal irregular development: from gut bacteria to mental situation via chemicals

Chair: **Sachiko Yoshida** (Toyoashi University of Technology, Japan)

Co-Chair: **Yasunari Kanda** (National Institute of Health Sciences (NIHS), Japan)

S65-1 Development of in vitro developmental neurotoxicity testing

Yasunari Kanda, Daiju Yamazaki

Division of Pharmacology, National Institute of Health Sciences (NIHS), Japan

S65-2 *Prenatal* maternal depression and stress on infant temperament at: A disaster research in the USA

Yoko Nomura^{1,2,3,4,10}, Kei Davey⁵, Patricia Pehme^{1,2}, Jackie Finik^{1,6},
Wei Zhang^{1,7}, Melissa Haung^{1,2}, Jessica Buthmann^{1,2}, Kathryn Dana^{1,2},
Yasunari Kanda⁸, Sachiko Yoshida⁹, Kenji J Tsuchiya¹⁰

¹Queens College, The City University of New York, USA, ²Graduate Center, The City University of New York, USA, ³Department of Psychiatry, Icahn School of Medicine at Mount Sinai, USA, ⁴Advanced Science Research Center, Japan, ⁵Bryn Mawr College, USA, ⁶CUNY Graduate School of Public Health, USA, ⁷New Jersey City University, USA, ⁸Division of Pharmacology, National Institute of Health Sciences, Japan, ⁹Department of Environmental and Life Sciences, Toyoashi University of Technology, Japan, ¹⁰Department of Child and Adolescent Psychiatry, Hamamatsu University School of Medicine, Japan

S65-3 Language development is affected by maternal postpartum depression, not by unwanted pregnancy

Kenji J Tsuchiya^{1,2}, Sona Sanae Aoyagi², Yoko Nomura^{1,3,4,5,6},
Sachiko Yoshida⁷, Tomoko Nishimura^{1,2}, Damee Choi^{1,2}, Taeko Harada^{1,2},
Toshiki Iwabuchi^{1,2}, Ryuji Nakahara¹, Akemi Okumura^{1,8}

¹Research Center for Child Mental Development, Hamamatsu University School of Medicine, Japan, ²United Graduate School of Child Development, Hamamatsu University School of Medicine, Japan, ³Department of Psychology, Queens College, City University of New York, USA, ⁴Graduate Center, City University of New York, USA, ⁵Department of Psychiatry, Icahn School of Medicine at Mount Sinai, USA, ⁶Advanced Science Research Center, CUNY, USA, ⁷Department of Environmental and Life Sciences, Toyoashi University of Technology, Japan, ⁸Department of Child and Adolescent Psychiatry, Hamamatsu University School of Medicine, Japan

S65-4 Meconium microbiota is associated with maternal anxiety experienced during pregnancy

Jianzhong Hu¹, Jenny Ly², Wei Zhang², Yonglin Huang², Vivette Glover⁴,
Inga Peter¹, Yasmin L Hurd^{5,6,7}, Yoko Nomura^{2,3,5}

¹Department of Genetics and Genomic Sciences, Icahn School of Medicine at Mount Sinai, USA, ²Department of Psychology, Queens College, City University of New York, USA, ³Graduate Center, City University of New York, USA, ⁴Institute of Reproductive and Developmental Biology, Imperial College London, UK, ⁵Department of Psychiatry, Icahn School of Medicine at Mount Sinai, USA, ⁶Department of Neuroscience, Icahn School of Medicine at Mount Sinai, USA, ⁷Department of Pharmacological Sciences, Icahn School of Medicine at Mount Sinai, USA

S65-5 Developmental neurotoxicity and immune abnormality with chemicals and stress exposure on the rat

Sachiko Yoshida¹, Yukiko Fueta², Susumu Ueno³, Yuko Sekino⁴,
Yoko Nomura⁵, Yasunari Kanda⁶

¹Department of Environmental and Life Sciences, Toyoashi University of Technology, Japan, ²Department of Environmental Management and Control, School of Health Sciences, University of Occupational and Environmental Health, Japan, ³Department of Occupational Toxicology, Institute of Industrial Ecological Sciences, University of Occupational and Environmental Health, Japan, ⁴Graduate School of Pharmaceutical Sciences, The University of Tokyo, Japan, ⁵Department of Psychology, Queens College, City University of New York, USA, ⁶Division of Pharmacology, National Institute of Health Sciences, Japan

Symposium66

March 31, Sun., 8:00-9:30

【Room I】 5F, Conference Center

S66 Inflammation and Atherosclerosis

Chair: **Yi Zhu** (Tianjin Medical University, China)

Co-Chair: **Ding Ai** (Tianjin Medical University, China)

S66-1 Flow and Atherosclerosis - Roles of MicroRNAs

Jeng-Jiann Chiu

National Health Research Institutes, Taiwan

S66-2 Nectin-Like Molecules as Novel Regulators in Angiogenesis and Atherosclerosis

Yoshiyuki Rikitake

Laboratory of Medical Pharmaceutics, Kobe Pharmaceutical University, Japan

S66-3 YAP promotes angiogenesis via STAT3 in endothelial cells

Ding Ai

Department of Physiology, Tianjin Medical University, China

S66-4 Integrin-YAP/TAZ-JNK cascade mediates atheroprotective effect of unidirectional shear flow

Yi Zhu

Department of Physiology, Tianjin Medical University, China

Symposium67

March 31, Sun., 8:00-9:30

【Room J】 2F, Exhibition Hall

S67 The potential roles of NMDAR in neurological and neuropsychiatric disorders: new findings and therapeutic targets

Chair: **Wen-Sung Lai** (National Taiwan University, Taiwan)

Co-Chair: **Hisashi Mori** (University of Toyama, Japan)

S67-1 Roles of D-serine, an endogenous co-agonist of NMDAR in psychiatric and neurodegenerative disorders

Hisashi Mori

Department of Molecular Neuroscience, Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Japan

S67-2 The therapeutic potentials and underlying mechanism of sarcosine and RS-D7 in schizophrenia

Wen-Sung Lai^{1,2,3}

¹Department of Psychology, National Taiwan University, Taiwan, ²Graduate Institute of Brain and Mind Sciences, National Taiwan University, Taiwan, ³Neurobiology and Cognitive Science Center, National Taiwan University, Taiwan

S67-3 The roles of NMDA receptors in regulating real-time motor control and parkinsonian motor behaviors

Ming-Kai Pan^{1,2}

¹Department of Medical Research, National Taiwan University Hospital, Taiwan, ²Department of Neurology, College of Medicine, National Taiwan University, Taiwan

S67-4 Novel mechanism of Ketamine's rapid action through the cytoplasmic domain of the NMDA receptor

Noboru Komiyama

Centre for Clinical Brain Sciences, University of Edinburgh, UK

DAY 4

Symposium68

March 31, Sun., 8:00-9:30

[Room K] 2F, Exhibition Hall

S68 Pulmonary hypertension and inflammation: the interdependent processes triggered by each other

Chair: **Xiaoqun Qin** (Central South University, China)

Co-Chair: **Qinghua Hu** (Tongji Medical College, China)

S68-1 MicroRNA-9 drives the development of severe asthma by modulating the function of lung macrophages

Ming Yang

University of Newcastle, Australia

S68-2 Monocrotaline Induces Pulmonary Hypertension By Targeting the Extracellular Calcium-Sensing Receptor

Qinghua Hu

Department of Pathophysiology, Tongji Medical College, China

S68-3 Endothelial Cell Integrin $\beta 4$ Knockout Attenuates LPS-Induced Murine Acute Lung Injury

Weiguo Chen, Zhigang Hong, Patrick Belvitch, Jeffrey R Jacobson

Department of Medicine, University of Illinois at Chicago, USA

S68-4 The regulation of pulmonary immunity and stress response by airway expressed adhesion molecules

Xiaoqun Qin, Chi Liu, Yang Xiang, Yurong Tan, Xiangping Qu, Huijun Liu

Department of Physiology, Xiangya School of Medicine, Central South University, China

Symposium69

March 31, Sun., 8:00-9:30

【Room L】 3F, Exhibition Hall

S69 Optogenetics: Contributions to Physiology and Medicine Beyond Brain Circuit-Breaking

Chair: **Hiromu Yawo** (Tohoku University Graduate School of Life Sciences, Japan)

Co-Chair: **George J. Augustine** (Nanyang Technological University, Singapore)

S69-1 Using optogenetics to elucidate the function of pancreatic delta cells
George J. Augustine

Nanyang Technological University, Singapore

S69-2 Optical control of the genome

Moritoshi Sato

Graduate School of Arts and Sciences, The University of Tokyo, Japan

S69-3 Optogenetic study of cell polarity - a simple assay

Takao Nakata

Department of Cell Biology, Tokyo Medical and Dental University, Japan

S69-4 Glial optogenetics for understanding the cross talk between metabolism and information processing

Ko Matsui

Super-network Brain Physiology, Graduate School of Life Sciences, Tohoku University, Japan

S69-5 Organelle-optogenetics - direct manipulation of intracellular Ca²⁺ dynamics by light

Hiromu Yawo¹, Toshifumi Asano², Hiroyuki Igarashi³, Toru Ishizuka¹

¹Department of Integrative Life Sciences Developmental Biology and Neurosciences, Tohoku University Graduate School of Life Sciences, Japan, ²Department of Cell Biology, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University (TMDU), Japan, ³Department of Physiology and Pharmacology, Schulich School of Medicine and Dentistry, Robarts Research Institute, Western University, Canada

DAY 4

Symposium70

March 31, Sun., 8:00-9:30

【Room M】 3F, Exhibition Hall

S70 Contribution of brain research to the understanding of the physiology, psychology and communication of acute and chronic pain

Chair: **Mathieu Piché** (Université du Québec à Trois-Rivières, Canada)

Co-Chair: **Pierre Rainville** (University of Montreal, Canada)

S70-1 Imaging pain in the human brain: classical debates revisited with new methods

Pierre Rainville^{1,2)}

¹Department of Stomatology, University of Montreal, Canada, ²Centre de recherche, Institut universitaire de gériatrie de Montréal, Canada

S70-2 The cerebral correlates of pain decoding: from overexposure to other people's pain to empathy

Philip L. Jackson

School of Psychology, Laval University, Canada

S70-3 Improving cognitive pain inhibition using neuromodulation of the dorsolateral prefrontal cortex

Alice Wagenaar-Tison

Department of Chiropractic, Université du Québec à Trois-Rivières, Canada

S70-4 Influence of inflammation on cardiac responses to skeletal muscle stimulation

Nobuhiro Watanabe, Harumi Hotta

Department of Autonomic Neuroscience, Tokyo Metropolitan Institute of Gerontology, Japan

Symposium71 (Local Organizing Committee Symposium)

March 31, Sun., 10:30-12:30

【Room A】 1F, Conference Center

S71 **Toward understanding the neural basis of memory**
(Co-organized by the Japan Neuroscience Society)

Organizers: **Kazuhiro Nakamura** (Nagoya University Graduate School of Medicine, Japan)
Michisuke Yuzaki (Nagoya University Graduate School of Medicine, Japan)
(Chair) **Kaoru Inokuchi** (University of Toyama, Japan)
(Chair) **Naoki Matsuo** (Osaka University, Japan)

S71-1 **Robustness and Flexibility of Neuronal Ensembles in Memory**

Naoki Matsuo
Graduate School of Medicine, Osaka University, Japan

S71-2 **Association and identity of memory**

Kaoru Inokuchi
Faculty of Medicine, University of Toyama, Japan

S71-3 **Understanding Synaptic Basis of Learning and Memory**

Bong-Kiun Kaang
School of Biological Sciences, Seoul National University, Korea

S71-4 **Social memory engram in the hippocampus**

Teruhiro Okuyama
Institute for Quantitative Biosciences (IQB), The University of Tokyo, Japan

S71-5 **Hippocampal encoding of spatial information of self and other**

Shigeyoshi Fujisawa
RIKEN Center for Brain Science, Japan

DAY 4

Symposium72 (International Scientific Program Committee Symposium)

March 31, Sun., 10:30-12:30

【Room B】 3F, Conference Center

S72 Neurobiology of reward system in the Brain (ISPP, Iran)

Chairs: **Abbas Haghparast** (Shahid Beheshti University of Medical Sciences, Iran)
Abdolrahman Sarihi (Hamadan University of Medical Science, Iran)

- S72-1** Effects of Stress on Brain Reward Centres and Circadian Rhythms
Dipesh Chaudhury
New York University Abu Dhabi (NYUAD), United Arab Emirates
- S72-2** Roles of Parvalbumin interneurons in ventral hippocampus in social behavior and memory
Jing Liang^{1,2)}
¹Institute of Psychology, Chinese Academy of Sciences, China, ²Department of Psychology, University of Chinese Academy of Sciences, China
- S72-3** Brain Orexinergic System and Reward-related Behaviors
Abbas Haghparast
Neuroscience Research Center, Shahid Beheshti University of Medical Sciences, Iran
- S72-4** Early detection and intervention on methamphetamine addiction: Towards bibehavioral markers
Yonghui Li
Institute of Psychology, Chinese Academy of Sciences, China
- S72-5** Specificity in the Role of Different Metabotropic Glutamate Receptor Subtypes in Reward Circuitry
Abdolrahman Sarihi¹⁾, Nahid Roohi¹⁾, Negar Baharlou¹⁾,
Mahsaneh Vatankhah¹⁾, Abass Haghparast²⁾
¹Neurophysiology Research Center, Hamadan Uni. of Med. Sci., Iran, ²Neuroscience Research Center, Shahid Beheshti University of Medical Sciences, Iran

S73 New Twists in Understanding Taste

(Co-sponsored by AJINOMOTO CO., INC.)

Chairs: **Yuzo Ninomiya** (Kyushu University, Japan)

Robert F. Margolskee (Monell Chemical Senses Center, USA)

S73-1 Gingival solitary chemosensory cells serve as immune sentinels to protect against periodontitis

Robert F. Margolskee

Monell Chemical Senses Center, USA

S73-2 Structural basis of amino acid-perception by T1r taste receptors

Atsuko Yamashita

Division of Pharmaceutical Sciences, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan

S73-3 Ion channel synapses of the taste bud

Akiyuki Taruno^{1,2)}, Zhongming Ma³⁾, Makoto Ohmoto⁴⁾, Mizuho A. Kido⁵⁾, Michael G. Tordoff⁴⁾, Ichiro Matsumoto⁴⁾, J. Kevin Foskett³⁾

¹Department of Molecular Cell Physiology, Kyoto Prefectural University of Medicine, Japan, ²JST, PRESTO, Japan, ³Department of Physiology, University of Pennsylvania, USA, ⁴Monell Chemical Senses Center, USA, ⁵Department of Anatomy and Physiology, Saga University, Japan

S73-4 Novel taste sensory pathways for sugars and fatty acids in the mouse periphery

Yuzo Ninomiya^{1,2)}, Keiko Yasumatsu¹⁾, Shusuke Iwata¹⁾, Ryusuke Yoshida³⁾

¹Division of Sensory Physiology, R&D Center for Five-Sense Devices, Kyushu University, Japan, ²Monell Chemical Senses Center, USA, ³Department of Oral Physiology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan

Symposium74 (International Scientific Program Committee Symposium)

March 31, Sun., 10:30-12:30

【Room D】 4F, Conference Center

- S74** The consequences of preterm birth, intrauterine growth restriction and hypoxia-ischemia (PSNZ, New Zealand)

Chair: **Laura Bennet** (The University of Auckland, New Zealand)

- S74-1** Therapeutic potential of recombinant human erythropoietin for hypoxic-ischaemic encephalopathy

Simerdeep Kaur Dhillon, Guido Wassink, Christopher A Lear,
Joanne O Davidson, Alistair J Gunn, Laura Bennet

The University of Auckland, New Zealand

- S74-2** A vessel's a vessel, no matter how small: microvascular tone regulation in the preterm neonate

Rebecca Maree Dyson^{1,2}, Ian MR Wright³, Max J Berry^{1,2}

¹Department of Paediatrics & Child Health, University of Otago Wellington, New Zealand, ²Centre for Translational Physiology, University of Otago Wellington, New Zealand, ³Illawarra Health and Medical Research Institute, University of Wollongong, Australia

- S74-3** High prevalence, low severity problems with neurodevelopment after common complications of pregnancy

Julia B Pitcher, Jago M Van Dam

Robinson Research Institute, Adelaide Medical School, University of Adelaide, Australia

- S74-4** Longer half-life phosphodiesterase 5 inhibitor, tadalafil therapy for fetal growth restriction

Tomoaki Ikeda

Department of Obstetrics and Gynecology, Mie University Graduate School of Medicine, Japan

Symposium75

March 31, Sun., 10:30-12:30

【Room E】 4F, Conference Center

S75 Ca²⁺-permeable channels of excitable and non-excitable cells in health and disease

Chair: Masayuki X Mori (Kyoto University, Japan)

S75-1 Ca-secretion coupling at mammalian CNS synapses

Takeshi Sakaba

Graduate School of Brain Science, Doshisha University, Japan

S75-2 CELF1 mediates connexin 43 mRNA degradation in dilated cardiomyopathy

Guey-Shin Wang¹, Kuei-Ting Chang¹, Ching-Feng Cheng^{2,3},
Pei-Chih King¹

¹Institute of Biomedical Sciences, Academia Sinica, Taiwan, ²Department of Medical Research, Tzu Chi General Hospital, Taiwan, ³Department of Pediatrics, Tzu Chi University, Taiwan

S75-3 Fine tuning of neuronal Ca_v1.3 channels functions by alternative splicing and A-to RNA editing

Hua Huang, Tuck Wah Soong

Department of Physiology, National University of Singapore, Singapore

S75-4 Glomerular disease-associated mutations impair Ca²⁺-dependent inactivation of TRPC6 channels

Masayuki X Mori¹, Onur K Polat¹, Yasuo Mori¹, Masatoshi Uno²,
Hidehito Tochio²

¹Department of Synthetic Chemistry and Biological Chemistry, Kyoto University, Japan,

²Department of Biophysics, Kyoto University, Japan

S75-5 Structural basis of regulation of the endolysosomal calcium channel TRPML3

Jian Yang^{1,3}, Minghui Li¹, Xiaoyuan Zhou², Deyuan Su¹, Huan Li³,
Xueming Li²

¹Biological Sciences, Columbia University, USA, ²School of Life Sciences, Tsinghua University, China, ³Kunming Institute of Zoology, China

DAY 4

Symposium76 (International Scientific Program Committee Symposium)

March 31, Sun., 10:30-12:30

【Room F】 5F, Conference Center

S76 Physiome for organ function (KPS, Korea)

Chairs: **Eun Bo Shim** (Kangwon National University, Korea)

Chae-Hun Leem (University of Ulsan College of Medicine/Asan Medical Center, Korea)

S76-1 Image-based modeling of flow and transport processes at organ level

Vartan Kurtcuoglu

Institute of Physiology, University of Zurich, Switzerland

S76-2 In silico screening system for drug-induced arrhythmogenic risk

Seiryu Sugiura¹, Jun-Ichi Okada¹, Takashi Yoshinaga², Junko Kurokawa³,
Takumi Washio¹, Tetushi Furukawa⁴, Kohei Sawada², Toshiaki Hisada¹

¹UT-Heart Inc., Japan, ²Eisai Co., Ltd., Japan, ³University of Shizuoka, Japan, ⁴Tokyo Medical and Dental University, Japan

S76-3 Model based interpretation of diabetes and prediabetes

Chaehun Leem, Young Boum Lee, Jeong Hoon Lee, Ki Hwan Hong,

Pham Duc Duong

Department of Physiology University of Ulsan College of Medicine/Asan Medical Center, Korea

S76-4 A virtual stenosis method to predict plaque progression in coronary arteries

Eun Bo Shim¹, Kyung Eun Lee¹, Eun Seok Shin²

¹Department of Mechanical and Biomedical Engineering, Kangwon National University, Korea, ²Department of Cardiology, School of Medicine, University of Ulsan, Korea

Symposium77 (International Scientific Program Committee Symposium)

March 31, Sun., 10:30-12:30

【Room G】 5F, Conference Center

S77 Advances in the role of adipocyte in health and disease (CPS, Taiwan)

Chair: **Po-Shiuan Hsieh** (National Defense Medical Center, Taiwan)

- S77-1** Physiological Role and Therapeutic Potential of Thermogenic Fat
Yu-Hua Tseng
Joslin Diabetes Center, Harvard Medical School, USA
- S77-2** Adipose tissue stiffness in the development of metabolic diseases
Yau-Sheng Tsai¹, Ann Huang², Yi-Shiuan Lin², Yu-Wei Chiou²,
Hsi-Hui Lin², Ming-Jer Tang²
¹Institute of Clinical Medicine, National Cheng Kung University, Taiwan, ²Department of Physiology, National Cheng Kung University, Taiwan
- S77-3** Modulation of adipokine biosynthesis and secretion in adipocytes
Juu-Chin Lu^{1,2}, Yu-Ting Chiang¹, Chia-Yun Lu¹, Ying-Yu Wu¹
¹Department of Physiology and Pharmacology, Chang Gung University, Taiwan,
²Division of Endocrinology and Metabolism, Department of Internal Medicine, Chang Gung Memorial Hospital, Taiwan
- S77-4** Novel structures and functions of adiponectin receptors
Toshimasa Yamauchi
Department of Diabetes and Metabolic Diseases, The University of Tokyo, Japan

DAY 4

Symposium78

March 31, Sun., 10:30-12:30

【Room H】 5F, Conference Center

S78 “Ins” and “outs” of smooth muscle

Chair: **Hikaru Hashitani** (Nagoya City University, Japan)

Co-Chair: **Dirk Ferdinand van Helden** (University of Newcastle, Australia)

- S78-1** Novel mechanism of electrical rhythmicity in smooth muscle
Nick John Spencer
College of Medicine and Public Health, Flinders University, Australia
- S78-2** Regulation of spontaneous contractile activity of the bladder muscularis mucosa
Russ Chess-Williams, Christian Moro
Centre for Urology Research, Bond University, Australia
- S78-3** Regulation and dysregulation of airway smooth muscle contractility
Jane Elizabeth Bourke
¹Biomedicine Discovery Institute, Department of Pharmacology, Monash University, Australia
- S78-4** New insights into understanding labour contractions in women
Helena C. Parkington¹, Mary A. Tonta¹, Ranga I. Siriwardhana¹,
Penelope J. Sheehan², Harold A. Coleman¹, Shaun P. Brennecke³
¹Department of Physiology, Monash University, Australia, ²The Royal Women's Hospital, Australia, ³Department of Obstetrics and Gynecology, The University of Melbourne, Australia
- S78-5** Regulatory mechanisms underlying the contractility of intra-organ microvasculature
Hikaru Hashitani, Retsu Mitsui
Department of Cell Physiology, Nagoya City University, Japan

Symposium79 (Local Organizing Committee Symposium)

March 31, Sun., 10:30-12:00

【Room I】 5F, Conference Center

S79 Mechanomedicine

(Co-sponsored by Grant-in-Aid for Scientific Research (S): Mechanomedicine)

Chairs: **Keiji Naruse** (Okayama University, Japan)

Hyoung kyu Kim (Inje University, Korea)

S79-1 Plasma membranes can act as mechanosensors in vascular endothelial cells

Kimiko Yamamoto¹⁾, Joji Ando²⁾

¹The University of Tokyo, Japan, ²Dokkyo Medical University, Japan

S79-2 Wall stretch-induced anti-contractile signaling via smooth muscle expressed eNOS in pulmonary artery

Sung Joon Kim, Hae Jin Kim

Department of Physiology, Ischemic/Hypoxic Disease Institute, Seoul National University College of Medicine, Korea

S79-3 Analysis of nanoscale vibrations in the inner ear by advanced vibrometries

Hiroshi Hibino^{1,2)}, Takeru Ota^{1,2)}, Samuel Choi^{2,3)}, Fumiaki Nin^{1,2)}

¹Department of Molecular Physiology, Niigata University School of Medicine, Japan, ²AMED-CREST, AMED, Japan, ³Department of Electrical and Electronics Engineering, Niigata University, Japan

S79-4 Mechano-property of tendon/ligament and its application to regenerative medicine

Hiroshi Asahara^{1,2)}

¹Tokyo Medical and Dental University, Japan, ²The Scripps Research Institute, Japan

DAY 4

Symposium80

March 31, Sun., 10:30-12:30

【Room J】 2F, Exhibition Hall

S80 Daily/adaptable Yin-Yang transitions in diverse physiological processes coordinated by multi-cellular Chrono-molecular signal

Chair: **Masaaki Ikeda** (Saitama Medical University, Japan)

Co-Chair: **Teruya Tamaru** (Toho University School of Medicine, Japan)

S80-1 Cellular and molecular basis of chronotherapy for cancer

Masaaki Ikeda¹, Megumi Kumagai¹, Yasutsuna Sasaki⁴,
Yoshihiro Nakajima³, Ken-Ichi Fujita²

¹Department of Physiology, Faculty of Medicine, Saitama Medical University, Japan, ²Cancer Cell Biology, School of Pharmacy, Showa University, Japan, ³Cellular Imaging Research Group, AIST Health Research Institute, Japan, ⁴Department of Oncology, School of Medicine, Showa University, Japan

S80-2 Initial protein events synchronizing cellular clocks to elicit environmental stress adaptation

Teruya Tamaru¹, Genki Kawamura², Hikari Yoshitane³,
Yoshitaka Fukada³, Takeaki Ozawa², Ken Takamatsu¹

¹Department of Physiology, Toho University School of Medicine, Japan, ²Department of Chemistry, School of Science, The University of Tokyo, Japan, ³Department of Biological Sciences, School of Science, The University of Tokyo, Japan

S80-3 Dysregulation of Hepatic SREBP1c-CRY1 Axis Promotes Hyperglycemia in Obese Animals

Jae Bum Kim, Ye Young Kim, Hagoon Jang, Yong Keun Jeon

Center for Adipose Tissue Remodeling, Institute of Molecular Biology and Genetics, School of Biological Sciences, Seoul National University, Korea

S80-4 Mechanism of circadian regulation of memory in mice

Kimiko Shimizu, Erika Nakatsuji, Yodai Kobayashi, Yoshitaka Fukada

Department of Biological Sciences, The University of Tokyo, Japan

S80-5 Good times, bad times Impact of the circadian clock on health and disease

Gijsbertus Van Der Horst

Department of Molecular Genetics, Erasmus University Medical Center, The Netherlands

S81 Mechanisms of systemic beauty and health

Chair: **Motohiro Nishida** (ExCELLS, National Institutes of Natural Sciences, Japan)

Co-Chair: **Jin Han** (Inje University, Korea)

S81-1 How to use the natural products?: Inhibition of UV-induced melanogenesis by targeting ion channels

Joo Hyun Nam^{1,2}

¹Department of Physiology, Dongguk University College of Medicine, Korea,

²Channelopathy Research Center, Dongguk University College of Medicine, Korea

S81-2 PKC β II facilitates desmoglein internalization in *Rpgrip11* mutant mice and pemphigus

Yeun Ja Choi¹, Li Li², Ning Yang³, Xuming Mao⁴, Kenneth R Shroyer³, Peter J Koch⁵, Yusuf A Hannun⁶, Richard A Clark⁷, Jiang Chen^{3,7}

¹Department of Biopharmaceutical Engineering, Dongguk University Korea, ²Department of Dermatology, Peking Union Medical College Hospital, China, ³Department of Pathology, Stony Brook University, USA, ⁴Department of Dermatology, University of Pennsylvania, USA, ⁵Department of Dermatology and Center for Regenerative Medicine and Stem Cell Biology, University of Colorado, USA, ⁶Department of Medicine, Stony Brook University, USA, ⁷Department of Dermatology, Stony Brook University, USA

S81-3 Chiral amino acid analysis using 2D/3D-HPLC for the screening of functional molecules and biomarkers

Kenji Hamase

Graduate School of Pharmaceutical Sciences, Kyushu University, Japan

S81-4 Transport system of amino acids

Shushi Nagamori

Nara Medical University, Japan

S81-5 Importance of receptor-activated Ca²⁺ influx in wound healing

Takuro Numaga-Tomita^{1,2,3}, James W Putney, Jr³, Motohiro Nishida^{1,2,3,4}

¹Department of Creative Research, Exploratory Research Center on Life and Living Systems: ExCELLS, National Institutes of Natural Sciences, Japan, ²National Institute for Physiological Sciences (NIPS), National Institutes of Natural Sciences, Japan, ³School of Life Sciences, SOKENDAI, Japan, ⁴Graduate School of Pharmaceutical Sciences, Kyushu University, Japan, ⁵National Institute of Environmental Health Sciences, National Institutes of Health, USA

Symposium82

March 31, Sun., 10:30-12:30

【Room L】 3F, Exhibition Hall

S82 Amygdala Neuronal Circuits in Adaptive Behaviors

Chair: **Ayako M Watabe** (Jikei University School of Medicine, Japan)

Co-Chair: **Pankaj Sah** (The University of Queensland, Australia)

S82-1 Neural Circuits Between the Central Amygdala and Basal Forebrain mediate Anxiety behaviours

Pankaj Sah, Ya-Jie Sun, Lei Qian, Li Xu

Queensland Brain Institute, The University of Queensland, Australia

S82-2 Neuronal circuits underlying the regulation of aversive valence in mice

Ayako M Watabe

Institute of Clinical Medicine and Research, Jikei University School of Medicine, Japan

S82-3 Brain circuits for triggering and reversing emotional memories

Joshua Johansen

RIKEN Center for Brain Science, Japan

S82-4 Exploring molecular pathways involved in central amygdala-dependent control of emotional behaviors

Sayaka Takemoto-Kimura^{1,2)}

¹Neurosciencel, RIEM, Nagoya University, Japan, ²PRESTO-JST, Japan

S83 Neurobiology of obesity and its metabolic comorbidities

Chair: **Makoto Fukuda** (Baylor College of Medicine, USA)

Co-Chair: **Toshihiko Yada** (Kansai Electric Power Medical Research Institute, Japan)

S83-1 Postprandial hormones regulate feeding and glucose metabolism via interacting with vagal afferents

Yusaku Iwasaki¹⁾, Toshihiko Yada^{2,3)}

¹Graduate School of Life and Environmental Sciences, Kyoto Prefectural University, Japan, ²Center for Integrative Physiology, Kansai Electric Power Medical Research Institute, Japan, ³System Physiology, Graduate School of Medicine, Kobe University, Japan

S83-2 Disruption of Steroid Receptor Coactivator-1 Signaling is Associated with Obesity

Yong Xu, Yongjie Yang, Liangru Zhu

Department of Pediatrics, Baylor College of Medicine, USA

S83-3 Central and peripheral mechanisms underlying glucocorticoid-increased adiposity

Feifan Guo

Shanghai Institute of Nutrition and Health(SINH), Chinese Academy of Sciences, China

S83-4 Gut hormone GIP drives hypothalamic pathogenesis of obesity via Epac-Rap1 signaling

Makoto Fukuda

Baylor College of Medicine, USA

S83-5 Neurohormonal mechanism for circadian feeding rhythm that prevents obesity

Toshihiko Yada^{1,2)}, Masanori Nakata³⁾

¹Center for Integrative Physiology, Kansai Electric Power Medical Research Institute, Japan, ²System Physiology, Graduate School of Medicine, Kobe University, Japan, ³Physiology, Wakayama Prefectural Medical University, Japan

Tutorial for Physiologists

March 31, Sun., 8:00-9:10

【Room B】 3F, Conference Center

T Practical Approaches to Protein Structural Information

Organizer: **Yuichiro Fujiwara** (Kagawa University, Japan)

Lecturers: **Takushi Shimomura**

National Institute for Physiological Sciences, Japan

1. Displaying protein structures
2. Analysis of structural information

Katsumasa Irie

Nagoya University, Japan

1. Making homology model
2. Making ligand binding model
3. Analysis ligand binding mode

In this tutorial, the audiences will learn how to process structure files using the softwares:

Pymol, Ligplot+ and SWISS-MODEL (web-based).

Main analyses are following;

- Making homology model
- Structural alignment
- Investigating protein-ligand integration

A carry-on of your laptop computer is recommended.

For more information and file download, see http://www.nips.ac.jp/faops2019/tutorial_html

No pre-registration is required.

Young Scientist Travel Awards

- Y-01** Effect of Swimming Exercise to Cardiac PGC-1 α and HIF-1 α Gene Expression in Mice
Nova Sylviana^{1,2}), Hanna Goenawan^{1,2}), Ronny Lesmana^{1,2}),
Badai Batara Tiksnadi³), Hasrayati Agustina⁴), Bethy S Hernowo⁴),
Vita Murniati Tarawan¹), Unang Supratman²), Ambrosius Purba¹),
Setiawan Setiawan^{1,2})
¹Department Biomedical Sciences, Faculty Medicine, Padjadjaran University, Bandung, Indonesia, ²Laboratorium Central, Universitas Padjadjaran, Indonesia, ³Department of Cardiology and Vascular Medicine, Universitas Padjadjaran-Hasan Sadikin Hospital, Indonesia, ⁴Department of Pathology Anatomy, Universitas Padjadjaran-Hasan Sadikin Hospital, Indonesia
- Y-02** Respiratory Muscle Training (RMT), Aerobic Fitness and Performance in Sri Lankan Rowers
Dilani Priyashanthi Perera¹), Anoja Ariyasinghe²), Anula Kariyawasam²)
¹Department of Physiotherapy, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka, ²Department of Physiology, Faculty of Medicine, University of Peradeniya, Sri Lanka
- Y-03** Factors affecting oxygen pulse in a healthy Thai population
Tichanon Promsrisuk, Napatr Sriraksa, Ratchaniporn Kongsui
Division of Physiology, School of Medical Sciences, University of Phayao, Thailand
- Y-04** Mitochondrial fusion promoter attenuates left ventricular dysfunction in pre-diabetic rats **Masao Ito Memorial Awards**
Chayodom Maneechote^{1,2,3}), Siripong Palee^{1,2,3}), Nattayaporn Apaijai^{1,2,3}),
Thidarat Jaiwongkam^{1,2,3}), Sasiwan Kerdphoo^{1,2,3}),
Siriporn C Chattipakorn^{1,2,4}), Nipon Chattipakorn^{1,2,3})
¹Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Center of Excellence in Cardiac Electrophysiology Research, Chiang Mai University, Thailand, ³Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand
- Y-05** Crossbridge thermodynamics in right heart failure
Masao Ito Memorial Awards
June-Chiew Han¹), Toan Pham¹), Kenneth Tran¹), Andrew J. Taberner^{1,2}),
Denis S. Loiselle^{1,3})
¹Auckland Bioengineering Institute, The University of Auckland, New Zealand, ²Department of Engineering Science, The University of Auckland, New Zealand, ³Department of Physiology, The University of Auckland, New Zealand
- Y-06** LysoPC plays a crucial role in cholesterol-induced nonobese MS cardiomyopathy **Masao Ito Memorial Awards**
Jiung-Pang Huang, Li-Man Hung
Department of Biomedical Sciences, Chang Gung University, Taiwan
- Y-07** Inhibition of p16^{INK4a} protects against myocardial ischemia/reperfusion injury
Zhou Qiulian, Bei Yihua, Meng Xiangmin, Xiao Junjie

Y-09 Influence of Tobacco smoking on carboxyhaemoglobin levels and blood lipid levels

Prasanna Herath¹), Savithri Wimalasekera²), Thamara Amarasekara³)

¹Department of Nursing and Midwifery, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka, ²Department of Physiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka, ³Department of Allied Health Sciences, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka

Y-10 FUNDC2 regulates platelet activation through AKT/GSK-3 β /cGMP axis **Masao Ito Memorial Awards**

Qi Ma¹), Weilin Zhang²), Heping Cheng¹), Junling Liu³), Quan Chen²)

¹Institute of Molecular Medicine, Peking University, China, ²Institute of Zoology, Chinese Academy of Sciences, Beijing, China, ³School of Medicine, Shanghai Jiao Tong University, China

Y-11 Genistein and running exercise modulates HDAC3 and the fibrosis markers in OVX rats with NASH

Namthip Witayavanitkul¹), Duangporn Werawatganon¹), Naruemon Klaikeaw²), Prasong Siriviriyakul¹)

¹Department of Physiology, Faculty of Medicine, Chulalongkorn University, Thailand, ²Department of Pathology, Faculty of Medicine, Chulalongkorn University, Thailand

Y-12 The influence of central leptin signalling upon Obesity-induced hypertension **Masao Ito Memorial Awards**

Stephanie Elise Simonds, Jack T Pryor, Tony Tiganis, Michael A Cowley
Monash University, Australia

Y-13 FKBP51 defect is resistant to diet induced obesity, inflammation and insulin resistance **Masao Ito Memorial Awards**

Luen-Kui Chen¹), Chi-Chang Juan^{1,2,3})

¹Institute of Physiology, School of Medicine, National Yang-Ming University, ²Department of Medical Research, Taipei Veterans General Hospital, ³Department of Education and Research, Taipei City Hospital, Taiwan

Y-14 Effect of Dapagliflozin on Glucose Metabolism and Renal and Hepatic PEPCK Expression in Obese Rats

Myat Theingi Swe, Krit Jaikumkao, Laongdao Thonak, Anchalee Pongchaidecha, Anusorn Lungkaphin

Epithelial Transport and Intracellular Signaling Regulation Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand

Y-15 Correlation of median nerve parameters with TSH values in hypothyroid patients

Shital Gupta¹), Rita Khadka¹), Dilip Thakur¹), Bishnu Hari Poudel¹), Kishun Deo Mehta²), Robin Maskey³)

¹Department of Basic & Clinical Physiology, B.P.Koirala Institute of Health Science, Nepal, ²Department of Biochemistry, B.P.Koirala Institute of Health Science, Nepal, ³Department of Internal Medicine, B.P.Koirala Institute of Health Sciences, Nepal

Y-16 Overexpression of Anthrax toxin receptor 2 (ANTXR2) promotes early development of endometriosis **Masao Ito Memorial Awards**

Shih-Chieh Lin¹), Hsiu-Chi Lee²), Ching-Ting Hsu¹), Yi-Han Huang¹), Wan-Ning Li²), Pei-Ling Hsu¹), Meng-Hsing Wu³), Shaw-Jenq Tsai¹)

¹Department of Physiology, College of Medicine, National Cheng Kung University,

Y-17 TRPA1 channel is critical for gliotransmitter release from astrocyte by eliciting calcium entry

Jung Moo Lee^{1,2)}, Soo-Jin Oh^{2,3)}, Wuhyun Koh^{2,4)}, Changjoon Justin Lee^{1,2)}

¹KU-KIST Graduate School of Converging Science and Technology, Korea University, Korea, ²Center for Glia-Neuron Interaction, Korea Institute of Science and Technology (KIST), Republic of Korea, ³Convergence Research Center for Diagnosis, Treatment and Care System of Dementia, Korea Institute of Science and Technology, Republic of Korea, ⁴Division of Bio-Medical Science & Technology, KIST School, Korea University of Science and Technology, Republic of Korea

Y-18 Molecular profiling of the subthalamic nucleus

Jiwon Kim^{1,2)}, Hyungju Jeon¹⁾, Hojin Lee^{1,2)}, Linqing Feng¹⁾, Jinhyun Kim^{1,2)}

¹Center for Functional Connectomics, Korea Institute of Science and Technology (KIST), Korea, ²Division of Bio-Medical Science & Technology, KIST-School, University of Science and Technology (UST), Republic of Korea

Y-19 Characterization of a novel and potent neuronal Kv7/M opener SCR2682 for anti-epilepsy

Yani Liu¹⁾, Fan Zhang²⁾, Feng Tang³⁾, Bo Liang³⁾, Huanming Chen³⁾, Ge Jin⁴⁾, Qi Sun⁵⁾, Hailin Zhang²⁾, Kewei Wang¹⁾

¹Department of Pharmacology, School of Pharmacy, Qingdao University, China, ²Department of Pharmacology, Hebei Medical University, China, ³Medicinal Chemistry, Simcere Pharmaceuticals, China, ⁴Department of Pharmacology, Shenyang Medical College, China, ⁵Department of Medicinal Chemistry, School of Pharmaceutical Sciences, Peking University, China

Y-20 Molecular mechanism of dopamine-induced itch in mice

Youngin Choi¹⁾, Pyungsun Cho^{1,2)}, Hankyu Lee¹⁾, Sungjun Jung¹⁾

¹Department of Biomedical Science, Hanyang University, Korea, ²Department of Physiology, Korea University, Republic of Korea

Y-21 Molecule REST interacts with brain 5-HT system in tilapia fish during social stress

Shingo Nakajima, Tomoko Soga, Ishwar S Parhar

Brain Research Institute Monash Sunway (BRIMS), School of Medicine and Health Sciences, Monash University Malaysia

Y-22 Altered electrical responsiveness of CA1 pyramidal neurons in a *valproic acid rat model* of autism

Mona Rahdar, Razieh Hajisoltani, Shima Davoudi, Narges Hosseinmardi, Mahyar Janahmadi

Neuroscience Research Center and Dept. of Physiology, Medical School, Shahid Beheshti University of Medical Sciences, Iran

Y-23 Lumbrokinase improves neurological deficit by preventing endoplasmic reticulum stress

Yi Hsin Wang¹⁾, Hsing Hui Su²⁾, Juan Miaw Liao³⁾, Shiang Suo Huang⁴⁾

¹Institute of Medicine, Chung Shan Medical University, Taiwan, ²Department and Institute of Pharmacology, School of Medicine, National Yang-Ming University, Taiwan, ³Department of Physiology, Chung Shan Medical University and Chung Shan Medical University Hospital, Taiwan, ⁴Department of Pharmacology and Institute of Medicine, Chung Shan Medical University, and Department of Pharmacy, Chung Shan Medical University Hospital, Taiwan

- Y-24** Oxytocin effects on nicotine aversion and anxiety in nicotine-exposed early adolescent rats
 Minji Jang, Taesub Jung, Jihyun Noh
 Department of Science education, University of Dankook, South Korea
- Y-25** Mesenchymal stem cell conditioned medium therapy modulates neuroinflammatory symptoms
 Vida Nazemian, Jalal Zaringhalam
 Physiology Department, Shahid Beheshti University of Medical Sciences
- Y-26** Depolarized subicular microcircuits mediate generalized seizure in temporal lobe epilepsy
 Yi Wang, Cenglin Xu, Zhenghao Xu, Caihong Ji, Ying Wang, Shuang Wang, Xiaoming Li, Zhong Chen
 School of Medicine, Zhejiang University, China
- Y-27** Mitochondrial fission inhibitor attenuates brain mitochondrial dysfunction in pre-diabetic rats
 Siripong Palee^{1,2}, Chayodom Maneechote^{1,2,3}, Nattayaporn Apaijai^{1,2}, Thidarat Jaiwongkam^{1,2}, Sasiwan Kerdphoo^{1,2}, Nipon Chattipakorn^{1,2,3}, Siriporn C Chattipakorn^{1,2,4}
¹Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Thailand, ²Center of Excellence in Cardiac Electrophysiology Research, Chiang Mai University, Thailand, ³Cardiac Electrophysiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ⁴Department of Oral Biology and Diagnostic Sciences, Faculty of Dentistry, Chiang Mai University, Thailand
- Y-28** Protective effects of dapagliflozin and atorvastatin on renal function in insulin-resistant rats
 Laongdao Thongnak, Myat Theingi Swe, Krit Jaikumkao, Anchalee Pongchaidecha, Anusorn Lungkaphin
 Epithelial transport and Intracellular signaling regulation unit, Department of Physiology, Chiang Mai University, Thailand
- Y-29** Melatonin activates sirtuin 3 to protect the kidney from long-term consequences of bisphenol A
 Anongporn Kobroob¹, Wachirasek Peerapanyasut², Sirinart Kumfu³, Nipon Chattipakorn³, Orawan Wongmekiat²
¹Division of Physiology, School of Medical Sciences, University of Phayao, Thailand, ²Renal Physiology Unit, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand, ³Cardiac Electrophysiology Research and Training Center, Department of Physiology, Faculty of Medicine, Chiang Mai University, Thailand
- Y-30** Protein arginine methyltransferase 1-dependent regulation of slow delayed rectifier K⁺ current **Masao Ito Memorial Awards**
 Kim Hyun-Ji^{1,3}, Bok-Geon Kim^{2,3}, Chang-Seok Ki⁴, Jong-Sun Kang^{2,3}, Hana Cho^{1,3}
¹Department of physiology, University of Sungkyunkwan, Korea, ²Department of Molecular and Cellular Biology, Sungkyunkwan University School of Medicine, Republic of Korea, ³Single Cell Network Research Center, Sungkyunkwan University School of Medicine, Republic of Korea, ⁴Department of Laboratory Medicine and Genetics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Republic of Korea
- Y-31** TTYH family encodes the pore-forming subunits of the volume-regulated anion channel in the brain **Masao Ito Memorial Awards**

Han Youne-Eun^{1,2,3}), Jea Kwon^{1,2,4}), Joungha Won^{1,2,5}), Heeyoung An^{1,2,4}),
Minwoo Wendy Jang^{1,2,4}), Junsung Woo^{1,2}), Je Sun Lee⁶), Min Gu Park^{1,2,4}),
Soo-Jin Oh^{1,2,7}), Changjoon Justin Lee^{1,2,3}).

¹Center for Neural Science and Functional Connectomics, Korea Institute of Science and Technology (KIST), Korea, ²Center for Glia-Neuron Interaction, Korea Institute of Science and Technology (KIST), Republic of Korea, ³Department of Neuroscience, Division of Bio-Medical Science & Technology, KIST School, Korea University of Science and Technology, Republic of Korea, ⁴KU-KIST, Graduate School of Converging Science and Technology, Korea University, Republic of Korea, ⁵Department of Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea, ⁶Molecular Neurobiology Laboratory, Dept. of Structure and Function of Neural Network, Korea Brain Research Institute, Republic of Korea, ⁷Convergence Research Center for Diagnosis, Treatment and Care System of Dementia, Korea Institute of Science and Technology (KIST), Republic of Korea

Y-32 **The Arginine in the side portal determines the physiological [pH]_i sensing of TALK1**

Tsai Wen-Hao^{1,2}), Shi-Bing Yang¹)

¹Institute of Biomedical Science, Academia Sinica, Taiwan, ²Taiwan International Graduate Program-Molecular Medicine, National Yang-Ming University Taiwan

Y-33 **Circadian gene Clock post-transcriptionally regulates mitochondrial morphology and functions** Masao Ito Memorial Awards

Xu Lirong¹), Qianyun Cheng¹), Bingxuan Hua³), Tingting Cai¹), Jiaxin Lin¹),
Gongsheng Yuan¹), Zuoqin Yan³), Xiaobo Li¹), Ning Sun¹), Chao Lu^{1,2}),
Ruizhe Qian^{1,2})

¹Department of Physiology and Pathophysiology, School of Basic Medical Sciences, Fudan University, China, ²Basic Research Institute for Aging and Medicine, School of Basic Medical Sciences, Fudan University, China, ³Department of Orthopedics, Zhongshan Hospital, Fudan University, China

Y-34 **The impact of DNA methyltransferase 3A in erythrocytic differentiation**

Lin Chang-Yi Eric, Po-Shu Tu, Hsiao-Wen Chen, Yuan-I Chang

Department of physiology, National Yang-Ming University, Taiwan

Y-35 **Hearing status of Rickshaw's drivers in Karachi, Pakistan assessed by Pure tone audiometry**

Muhammad Adnan Kanpurwala^{1,2}), Furqan Mirza³)

¹Department of Physiology, Karachi Institute of Medical Sciences, Pakistan, ²Department of Physiology, University of Karachi, ³Department of Health Management, Institute of Business Management

Y-36 **Life-span Interventions Exhibit a Sex specific Strehler? Mildvan Inverse Relationship**

Jie Shen

College of Life Information Science & Instrument Engineering, Hangzhou Dianzi University, China

Y-37 **Alpha-5 integrin mediates simvastatin-induced osteogenesis of bone marrow mesenchymal stem cells**

Pei Lin Shao¹), Shun Cheng Wu^{2,3}), Zih Yin Lin^{2,3}), Chau Zen Wang^{2,3}),
Chung-Hwan Chen²), Mei-Ling Ho^{2,3})

¹Department of Nursing, Asia University, Taiwan, ²Orthopaedic Research Center, College of Medicine, Kaohsiung Medical University, Taiwan, ³Department of Physiology, College of Medicine, Kaohsiung Medical University, Taiwan

- Y-38** Vitamin D Receptor Polymorphism Fok1 and Chest X-ray in Tuberculosis Patients of Batak Ethnic
Debby Mirani Lubis¹, Seri Rayani Bangun², Yahwardiah Siregar², Bintang YM Sinaga³
¹Department of Physiology, University of Muhammadiyah Sumatera Utara, Indonesia, ²Biomedical Science, University of North Sumatera, ³Pulmonology Department, University of North Sumatera
- Y-39** Flipped classroom in Faculty of Medicine Universitas Indonesia: a personal experience
Sophie Yolanda
Department of Medical Physiology, Faculty of Medicine Universitas Indonesia, Indonesia
- Y-40** The Anti-depressive and the Involvement of ERK Pathway of Electroacupuncture on Depression Model
Shao-Yuan Li¹, Pei-Jing Rong^{1,2}, Xiao Guo¹
¹Institute of Acu.-Moxi., China Academy of Chinese Medical Sciences, China, ²Guangzhou University of Chinese Medicine
- Y-41** Malaysian Tualang Honey Protects Endothelial Barrier Integrity from Insults by Hydrogen Peroxide
Yoke Keong Yong¹, Kogilavane Devasvaran¹, Jun Jie Tan²
¹Department of Human Anatomy, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia, ²Advance Medical and Dental Institute, Universiti Sains Malaysia, Malaysia

JGP Poster Awards

The Journal of General Physiology (JGP) poster awardees have poster presentation. See p.26

PSJ Awards

See p.96-97 for each presentation.

Science Outreach Program

Spring Science Program for Children (pre-registration required)

Co-organized by Global Center for Medical Engineering and Informatics (MEI Center) Osaka University
and Consortium Kansai for Advanced Medical Engineering and Informatics

[Lecture]

Date & Time: March 30, Sat., 10:30-12:00

Room : Room M (Meeting room 3B, 3F, Kobe International Exhibition Hall,
No.2 Building)

[Training]

Date & Time: March 30, Sat., 13:00-16:00

Room : Room L (Meeting room 3A, 3F, Kobe International Exhibition Hall,
No.2 Building)

Spring Science Program is a day program in which elementary and junior high school students experience a hands-on project in physiology. Four programs, entitled the brain, circulation, visual system, auditory sensation will run on March 30th on the 2nd floor of Kobe International Exhibition Hall. In two lectures and practical training, students are expected to learn the basics of biology and medicine, which accelerates their intellectual development, sparks their interest in science, and inspires them to seek careers as scientists. The program draws more than 60 participants from the Kansai region including Osaka, Kyoto, Nara, and Kobe. Distinguished guest speakers will include Prof. Yoshinori Ohsumi, a Nobel laureate in physiology or medicine from the Tokyo Institute of Technology, Prof. David Julius, the pioneer of sensation biology from The University of California, San Francisco. Participants in all of the programs for children must complete pre-registration.

10th FAOPS CONGRESS

Federation of the Asian and Oceanian Physiological Societies

TEHRAN, IRAN

May 9-12, 2023





北京

39th IUPS Congress
Marvels of Life - Integration and Translation

CNCC, Beijing, China, August 20-24, 2021

Warmest Invitation from

**The Chinese Association for Physiological Sciences
(CAPS)**





生理學ノスゝメ

分子から
個体まで



**The 97th
Annual Meeting of
the Physiological Society of Japan
March 17 (Tue) - 19 (Thu), 2020**

Beppu, Oita  日本一の
おんせん景おおいた 

Beppu International Convention Center B-ConPlaza

Presidents: Prof. Katsushige Ono

(Department of Pathophysiology, Faculty of Medicine, Oita University)

Prof. Reiko Hanada

(Department of Neurophysiology, Faculty of Medicine, Oita University)

Pre-registration: August 15 (Thu), 2019 - January 15 (Wed), 2020

Abstract submission: August 15 (Thu), 2019 - October 18 (Fri), 2019

<http://psj2020.umin.jp/>



<Secretary Office>

Secretary general: Tatsuki Kurokawa
Department of Pathophysiology, Faculty of Medicine,
Oita University
1-1 Idaigaoka, Hasama, Yufu, Oita 879-5593, Japan
TEL: +81-97-586-5652 FAX: +81-97-586-6646
E-mail: patphys@oita-u.ac.jp

<Administrative Office>

Convention Linkage, Inc.
1-3-18 Funaimachi, Oita 870-0021, Japan
TEL: +81-97-529-6730
FAX: +81-97-529-6731

Acknowledgements

Acknowledgements

FAOPS 2019 wishes to express our sincere gratitude to the following companies / organizations for their generous support towards the congress.

(as of 28 Feb, 2019)

■ **Subsidies**

- Grant-in-Aid for Publication of Scientific Research Results, MEXT, Japan
- Portopia 81 Memorial Fund
- The Federation of Pharmaceutical Manufacturers' Associations of JAPAN
- The Journal of General Physiology (Rockefeller University Press)
- The Naito Foundation
- The Tokyo Biochemical Research Foundation
- The Uehara Memorial Foundation
- TSUTOMU NAKAUCHI FOUNDATION

■ **Auspices**

- Japan Neuroendocrine Society
- Japan Society for the Study of Obesity
- Japan Society of Neurovegetative Research
- Japanese Society of Pathophysiology
- Kobe City
- National Institute for Physiological Sciences
- The Biophysical Society of Japan
- The Japan Neuroscience Society
- The Japanese Association of Anatomists
- The Japanese Pharmacological Society
- The Japanese Society of Physical Fitness and Sports Medicine
- The Japanese Society of Veterinary Science

■ **Co-organized / Co-sponsored Symposia**

- De Luca Foundation
- Department of Plasmabio Science, Center for Novel Science Initiatives (CNSI), National Institutes of Natural Sciences (NINS)
- Grant-in-Aid for Scientific Research (S): Mechanomedicine
- Grant-in-Aid for Scientific Research on Innovative Areas 'ABIS' of MEXT, Japan
- Grant-in-Aid for Scientific Research on Innovative Areas 'Thermal Biology' of MEXT, Japan
- Japan Neuroscience Society.
- Japanese Society of Anti-Aging Medicine
- Japanese Society of Physical Fitness and Sports Medicine
- Society for Promotion of International Oto-Rhino-Laryngology

- Spectra-Physics
- Uno Hospital

■Donations

- Alfresa Pharma Corporation
- ARGUS SCINCE CO., LTD.
- Asahi Kasei Pharma Corporation
- ASKA Pharmaceutical Co., Ltd.
- Astellas Pharma Inc.
- Astra Zeneca K.K.
- Bayer Yakuhin, Ltd
- Boehringer Ingelheim Japan, Inc.
- Bristol-Myers Squibb Company
- CHUGAI PHARMACEUTICAL CO., LTD.
- DAIICHI SANKYO COMPANY LIMITED
- DAISHIN CO., LTD.
- Eiken Chemical Co.,Ltd.
- Eisai Co., Ltd.
- ELMED EISAI Co.,Ltd.
- FUSO Pharmaceutical Industries, Ltd.
- GlaxoSmithKline K.K.
- IKEDAMOHANDO CO., LTD
- JAPAN TOBACCO INC.
- Jikei Jitsugyo Co., Ltd
- KAKEN Pharmaceutical Co.,Ltd
- Kinoshita Rika Co., Ltd.
- KISSEI Pharmaceutical Co., Ltd
- Koshin Kagaku K.K.
- Kowa Company, Limited
- Kracie Holding, Ltd.
- KYORIN Pharmaceutical Co.,Ltd
- KYOWA HAKKO BIO CO.,Ltd
- KYUDO COMPANY
- Maruho Co., Ltd.
- Maruishi Pharmaceutical Co.,Ltd.
- Meiji Seika Pharma Co., Ltd.
- Minophagen Pharmaceutical Co.,Ltd.
- Mitsubishi Tanabe Pharma Corporation.
- MOCHIDA PHARMACEUTICAL CO.,LTD
- MSD K.K.
- NACALAI TESQUE, INC.
- NANZANDO Co., Ltd.
- NIHON PHARMACEUTICAL CO., LTD,
- Nippon Chemiphar Co., Ltd.
- Nippon Kayaku Co.,Ltd.
- NIPPON SHINYAKU CO.,LTD.
- Nippon Zoki Pharmaceutical Co., Ltd.
- NIPRO PHARMA CORPORATION
- ONO PHARMACEUTICAL Co., Ltd
- otobe Corporation
- Otsuka Pharmaceutical Co.,Ltd.
- Otsuka Pharmaceutical Factory, Inc
- Pfizer Japan Inc.
- ProDevice Co., LTD.
- RIKAKEN CO.,LTD.
- ROHTO Pharmaceutical Co.,Ltd,
- SANKYO LABO SERVICE CORPORATION,INC.
- Sanofi K.K.
- Santen Pharmaceutical Co., Ltd
- SANWA KAGAKU KENKYUSHO CO., LTD.
- SASAKI CHEMICAL CO LTD
- Sato Pharmaceutical Co., Ltd.
- Sawai Pharmaceutical Co., Ltd
- SHIONOGI & CO., LTD
- SOPHION BIOSCIENCE
- SSP Co.,Ltd.
- Sumitomo Dainippon Pharma Co., Ltd.
- TAIHO PHARMACEUTICAL CO., LTD.
- Taisho Pharmaceutical Co., Ltd
- TAKACHO CO., LTD.
- Takeda Pharmaceutical Company Limited.
- Teijin Pharma Limited.
- TERUMO CORPORATION
- TOA EIYO LTD.
- Torii Pharmaceutical Co.,Ltd
- TOWA PHARMACEUTICAL CO.,LTD.
- TSUMURA CO.
- Uno Hospital
- WAKAMOTO Co., Ltd
- Yakult Honsya Co.,Ltd

- Zeria Pharmaceutical Co., Ltd.
- We also acknowledge generous donations from many individuals.

■ Exhibitions / Book stores

- ADInstruments Japan Inc
- Advanced Bioimaging Support
- airweave inc.
- AMED iD3 Catalyst Unit
- ASKA COMPANY
- B&S CORPORATION CO., LTD.
- BEX CO.,LTD
- Bio Research Center Co.,Ltd.
- Chengdu Techman Software Co., LTD.
- Committee on Promoting Collaboration in Life Sciences
- DOJINDO LABORATORIES
- DOSAKA EM CO.,LTD.
- Exploratory Research Center on Life and Living Systems (ExCELLS), National Institutes of Natural Sciences
- HAMAMATSU PHOTONICS K.K.
- IBRO 2019
- Inter Medical co.,ltd.
- Japan Laser Corporation
- Menicon Co.,Ltd.
- Mitsui machine & Tools Co., Ltd
- Mitutoyo Corporation
- MUROMACHI KIKAI CO., LTD.
- NARISHIGE SCIENTIFIC INSTRUMENT LAB.
- NIKON INSTECH CO., LTD.
- OLYMPUS CORPORATION
- ORIENT SYSTEM, Inc.
- Physio-tech Co.,Ltd.
- Platform of Advanced Animal Model Support
- Platform of Supporting Cohort Study and Biospecimen Analysis
- PRIME TECH Ltd.
- RWD Life Science Co., Ltd.
- Shimadzu Corporation
- SHINFACTORY CO.,LTD.
- SHOSHIN EM CORPORATION
- The Japanese Plasmalogen Society
- The Physiological Society
- TSUMURA & CO.
- UNIQUE MEDICAL CO.,LTD.
- Wolters Kluwer

■ Advertisements

- AbbVie GK
- ADInstruments Japan Inc
- Bio Research Center Co.,Ltd.
- BROTHER PRINTING COMPANY & ASSOCIATES
- CaHC CO., LTD.
- FUJI OIL HOLDINGS INC.
- IGAKU-SHOIN Ltd.
- International Chemistry Co., LTD.
- Ishiyaku Publishers, Inc.
- JMedical
- KEYENCE CORPORATION
- KYOCERA Corporation
- Mandom Corporation
- MIYUKI GIKEN CO.LTD
- Molecular Devices Japan KK
- Muranaka Medical Instruments Co., Ltd.
- NARISHIGE SCIENTIFIC INSTRUMENT LAB.
- NIDEK.CO.,LTD.
- NIPPON Genetics Co.,Ltd.
- Nippon Zoki Pharmaceutical Co., Ltd.
- OLYMPUS CORPORATION
- Osaka Yakken Co., Ltd.
- PHC Corporation
- PHYSIO-TECH CO.,LTD.

- SAKAEYARIKA CO.,LTD.
- SEIKO CO.,LTD.
- Shiseido Company, Limited
- Spectra-Physics K.K.

- Thorlabs Japan Inc.
- Tsumura & Co.
- YODOSHA CO., LTD.

■ **Luncheon Seminars / Technical Workshops / Sponsored Symposia**

- | | |
|--|--|
| <ul style="list-style-type: none"> • airweave inc. • AJINOMOTO CO., INC. • DOJINDO LABORATORIES • Grant-in-Aid for Scientific Research on Innovative Areas "Advanced Bioimaging Support (ABiS)" of MEXT, Japan • Human Metabolome Technologies, Inc. • Kracie Pharmaceutical, Ltd. | <ul style="list-style-type: none"> • Leica Microsystems K.K. • Matsutani Chemical Industry CO., LTD • NARISHIGE SCIENTIFIC INSTRUMENT LAB. • NIKON INSTECH CO., LTD. • Shinkoiwa Clinic • The Japanese Plasmalogen Society • Thermo Fisher Scientific • Yamada bee Company, Inc. • YASKAWA ELECTRIC CORPORATION |
|--|--|

■ **Content supports**

- NARISHIGE SCIENTIFIC INSTRUMENT LAB.
- The 6th Asian College of Neuropsychopharmacology

■ **Beverage Service**

- ASAHI CALPIS WELLNESS CO., LTD.
- POKKA SAPPORO FOOD & BEVERAGE LTD.
- Shiseido Company, Limited

実習の準備と進行を 円滑にする 次世代教育 プラットフォーム Lt LabStation



Lt LabStation では、豊富な生命科学の教育コンテンツにアクセスでき、PowerLab と一緒に使用することでリアルタイムの記録・解析を行えます。

また、自身の好みの実験内容にオンライン上でウェブブラウザを使用して、編集・作成ができます。レッスンとしてエクスポートし、学生はオフラインで実験に当たることができます。



レッスンをオンラインで
どこからでも作成・編集



リアルタイムデータ収録
・解析



効率的な実習運用



学生が実習に集中

【LabChart を実習でご使用の方】

今お使いの LabChart 設定ファイルを Lt Labstation に組み込むことができます。機器の接続・実験の手順・データの記録・解析手順を含めた Lt Labstation ファイルを、LabChart 設定 / 実験ファイルのように扱い、実習を進められます。

【LabTutor をご使用の方】

学生がログインする必要もなく、インターネット接続も必須ではありません。既存のコースを Lt LabStation に変更するサポートもご提供します。

Lt LabStationワークフロー



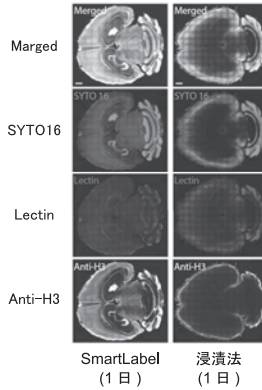
SMARTLABEL

世界初の3次元高速イムノラベリングシステム



SMARTLABEL

 lifecanvas
technologies
Illuminating life like never before



- 抗体の浸潤と結合のプロセスを分けて、均一な染色を実現
- 電気泳動を利用して高速に抗体染色
- 半透膜を利用して組織のダメージを軽減
- 透明化サンプルに適したラベリング技術

- CLARITY (Chung, Nature, 2013)
- SWITCH (Murray, Cell, 2015)
- MAP (Ku, Nature Biotechnology, 2016)



バイオリサーチセンター株式会社

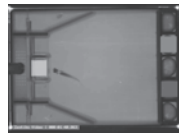
www.brck.co.jp ◀ お得な情報が満載です!! sales@brck.co.jp ◀ お問い合わせはこちらまで!

ZANTIKS AD

ゼブラフィッシュ用オペラントシステム



CPP 用チャンバー



5-CSRTT 用チャンバー

魚だって学習できるんです!

1台でたくさんの行動実験ができる:

- CPP 場所嗜好性テスト
- 5CSRTT 5 選択反応時間課題
- 自発運動量測定 (複数匹同時)
- 弁別逆転学習課題
- 古典的回避学習課題

…など



バイオリサーチセンター株式会社

www.brck.co.jp ◀ お得な情報が満載です!! sales@brck.co.jp ◀ お問い合わせはこちらまで!

関連書籍のご案内



定番を超えさらなる高みへ。盤石の改訂第3版

プロメテウス 解剖学コア アトラス 第3版

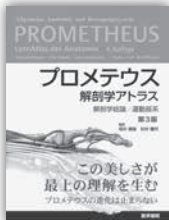
監訳 坂井 建雄
訳 市村 浩一郎／澤井 直

2019年
改訂

PROMETHEUS
Atlas der Anatomy 3rd Edition

美麗なイラストと読みやすい誌面構成はそのまま、画像解剖の充実をはじめ、さらなる読みやすさを追求し、すべてのイラストと解説を再吟味した。

●A4変型 頁768 2019年
定価：本体9,500円＋税
[ISBN978-4-260-03553-4]



さらに洗練された解剖学アトラスの最高峰

プロメテウス 解剖学アトラス

解剖学総論／運動器系 第3版

監訳 坂井建雄／松村謙児

Allgemeine Anatomie und Bewegungssystem
PROMETHEUS
LernAtlas der Anatomie 4.Auflage

美麗なイラストに的確な解説文を組み合わせた従来の良さ・強みを残したまま、図版の配置や解説文の推敲を重ね、さらなるわかりやすさを追求した待望の改訂版。

●A4変型 頁628 2017年
定価：本体12,000円＋税
[ISBN978-4-260-02534-8]



脳の構造と神経機能系、血管分布が手に取るようになる

脳の機能解剖と 画像診断 [第2版]

監訳 Heinrich Lanfermann / Peter Raab
Hans-Joachim Kretschmann / Wolfgang Weirich

訳 真柳 佳昭／渡辺 英寿

脳の基本構造と主な神経機能系伝導路をCT、MRIの基準断面に投影、シエマと色図で図示・解説し、好評を博した参考書が待望の改訂。

●A4 頁552 2018年
定価：本体20,000円＋税
[ISBN978-4-260-03551-4]



生きているってこういうこと 体はうまくできている

生きている しくみがわかる 生理学

監訳 大橋 俊夫／河合 佳子

本書を読めば、あなたの体で進行中の様々なしくみがみえてきます。わかりやすい文章と本格的なイラストが理解を深めます。日々の生活に、明日の臨床に役立つ、とっつきやすい生理学の本。

●A5 頁258 2016年
定価：本体2,300円＋税
[ISBN978-4-260-02833-2]



「カラダってどうなってるの？」がわかります

みるよむわかる

生理学

ヒトの体は
こんなにすごい

監訳 岡田 隆夫

医療専門職をめざす学生に薦める生理学のサブテキスト。わかりやすくユニークなたとえ、柔らかな語り口、豊富な図やコミカルなイラストなど、生理学理解の敷居を下げる工夫が満載。

●B5 頁184 2015年
定価：本体3,200円＋税
[ISBN978-4-260-02120-3]



医学書院

〒113-8719 東京都文京区本郷1-28-23 [WEBサイト] <http://www.igaku-shoin.co.jp>
[販売・PR部] TEL: 03-3817-5650 FAX: 03-3815-7804 E-mail: sd@igaku-shoin.co.jp

OLYMPUS

Your Vision, Our Future



Discover the Possibilities

Demand More, Detect Faster, Deliver Superior Results

Due to their varying complexity, live cell imaging experiments require smart, innovative solutions. Discover Olympus' next-generation FLUOVIEW FV3000 confocal laser scanning microscope.

- See more than ever before from high resolution cell to macro tissue imaging
- Save time and protect samples with high speed imaging
- Accelerate stem cell research with precise long-term and multipoint time lapse studies
- Observe dynamic in vivo processes in real-time

Learn more at www.olympus-lifescience.com

Sample Courtesy of Jana Doehner and Urs Ziegler, Center for Microscopy and Image Analysis, University of Zurich.

OLYMPUS CORPORATION

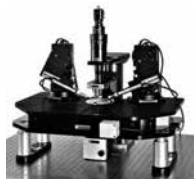
Shinjuku Monolith, 2-3-1 Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-0914, Japan

www.olympus-lifescience.com

ライフサイエンス研究機器

弊社取扱製品をカテゴリー分けでご紹介しております。
記載されていない製品もございますので、お探しの製品がございましたらご連絡ください。

In Vitro



Scientifica

電動マニピュレーター



Maxwell

CMOS Multi Electrode Array



WPI

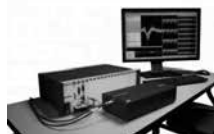
各種アンプ・手術器具



WARNER

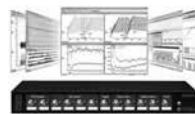
電気生理関連

In Vivo



Plexon

マルチ神経スパイク活動電位解析装置



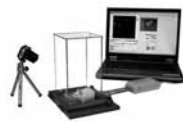
CED

神経スパイク活動電位解析装置



Avisoft

超音波対応 動物音響研究システム



BIOSEB

痛覚測定システム

Human Science



Brain Products

脳波測定システム



NordicNeuroLab

MRI対応LCDモニター



VPixx

視覚刺激装置



cognionics

ドライEEGヘッドセット

Others



Biolin Scientific

オートパッチクランプシステム



自社製品

ランゲンドルフ式抽出心臓循環装置



SCANBUR

動物飼育施設関連製品



自社製品

マイクロティッシュオーガンバス

※弊社取扱製品は一部を除き研究用機器です

*Tested on 116 women aged 30-49 over 8 weeks.



SHISEIDO
White Lucent
Brightening Gel Cream
Crème Gelée Eclat

THE LUMINOUS

**GLOW VISIBLY BRIGHTER WITH
RENEURA TECHNOLOGY+™**

HARNESS THE BRILLIANT POWER OF NEUROSCIENCE. EXPERIENCE
INSTANT LIGHT AND CLARITY WITH SAKURA-BRIGHT COMPLEX.
REAWAKEN SKIN'S FUNDAMENTAL ABILITY TO SELF-REPAIR.
VISIBLY IMPROVE DARK SPOTS: 93%*. MADE WITH SOUL.

NEW WHITE LUCENT BRIGHTENING GEL CREAM.

SHISEIDO
GINZA TOKYO

私たちができる全てを、
待っている人のために



アッヴィ合同会社
<http://www.abbvie.co.jp/>

abbvie

People. Passion.
Possibilities.™

B

伝わる、つながる、ビジネス。

B **BROTHER PRINTING**
BROTHER PRINTING COMPANY & ASSOCIATES

ブラザー印刷株式会社

〒444-0834 岡崎市柱町字福部池 1-200
TEL 0564-51-0651 FAX 0564-54-2405
URL <http://brother-p.com/>

研究開発 支援企業として、 「産・学・官・医」を 支えています。

株式会社カークは、「創造と努力」
「誠実と感謝」の企業理念のもと、
試薬、分析機器、検査薬、工業薬品などの
販売を通して社会に貢献しています。
研究開発支援企業として
あらゆるニーズにお応えいたします。



〒460-0002 名古屋市中区丸の内 3-9-5 TEL.052-971-6533(代)
 営業一部 TEL.052-971-6771 営業二部 TEL.052-971-6551
 営業三部 TEL.052-971-6772 愛知東営業所 TEL.0564-66-1580
 愛知南営業所 TEL.052-624-5819 浜松営業所 TEL.0564-431-6801
 岐阜営業所 TEL.058-268-8151 三重営業所 TEL.059-236-2531
 東京営業所 TEL.03-3868-3951 神奈川営業所 TEL.045-326-6651
 四日市営業所 TEL.059-337-9700 大阪営業所 TEL.06-6389-2411
 静岡営業所 TEL.054-267-3361

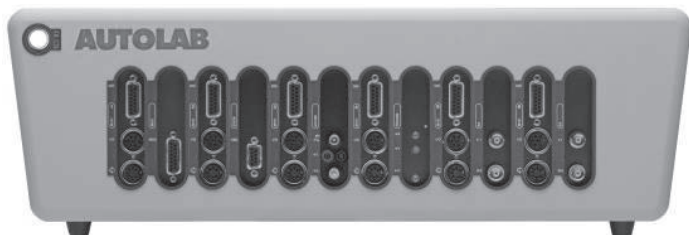
Analytical Center
for Food Safety
食品安全分析センター

「技術」で 食の未来に 貢献します

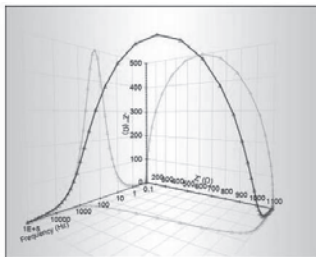
不二製油グループは創業以来、
食品素材における新領域を開拓してきました。
そして今、挑戦と革新の伝統を継承し、
新たな「食」の可能性につながる。
独自の新素材と新技術の創出に取り組んでいます。
これからは「食」の未来創造カンパニーとして、
食べる喜びと健康への貢献をめざしていきます。

不二製油

マルチポテンシヨ/ガルバノスタット&インピーダンスアナライザー



独立マルチチャンネルポテンシヨ/ガルバノスタットです。キャビネットと12個モジュールで構成されます。最大12チャンネルの独立ポテンシヨ/ガルバノスタットになります。特徴はインピーダンスモジュールを含める5種類のモジュールを内蔵することができます。色んなアプリケーションに対応できます。

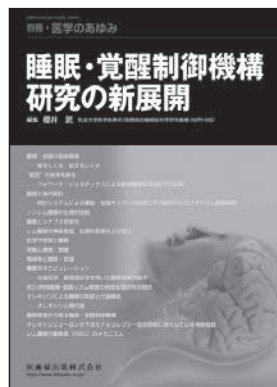


インターケミ株式会社
〒270-0013 千葉県松戸市小金きよヶ丘3-7-7
Tel: 047-344-8558 Fax: 047-344-8108
<http://www.autolabj.com>

別冊「医学のあゆみ」

睡眠・覚醒制御機構 研究の新展開

◆櫻井 武 編
◆B5判 128頁 定価(本体4,200円+税)



- 体内時計の細胞内メカニズムに比べて、睡眠覚醒制御機構には未解明な部分が残されているが、近年、光・化学遺伝学やウイルスを用いたトレーシング技術、脳内内視鏡によるイメージングなど神経科学的な手法の発達に伴い、睡眠覚醒制御機構に関してもあらたな知見が蓄積しつつある。
- 本特集号では、多岐にわたる脳機能の影響を受ける睡眠と覚醒の制御機構についてエキスパートが解説し、ノンレム睡眠・レム睡眠の生理的意義、睡眠障害の臨床的側面についても基礎研究の知見を交えながら解説。



安全で人にやさしい、
 安心できる医療のお手伝いを
 かわらぬ思いで
 ずっと続けてまいります。

ジェイメディカル株式会社

〒950-8701 新潟市東区紫竹卸新町1808-22 TEL. 025-272-3311 (代) FAX. 025-272-3321 (代)
 事業所：新潟・長岡・上越・佐渡・山形・鶴岡・高崎・熊谷・さいたま・市川・佐倉
 ホームページ <http://www.jeimedical.com/> e-mail info@jeimedical.com



お使いのカニューラ、海外製品で調達に苦労していませんか？
 Please leave the supply of the Ceramic Fiber Optic Cannula to us.



・発注から納品まで、時間がかかってしまう…
 ・困ったときにすぐ相談したいのに…
 そんなお悩みはありませんか？ KYOCERAなら、通常ラインナップに加えてセラミック
 メーカーだからこそできるカスタム対応品で、お客様の幅広いご要望にお応えします！

国内生産だから、困った時はすぐ相談！！ 調達もスムーズ！！

セラミック製 光ファイバカニューラ	Ceramic Fiber Optic Cannula
国内外の研究部門へ納入実績多数あり。お試しサンプルご提供中！ ■ Φ1.25mm/Φ2.5mmの2つのタイプをご用意 ■ 通常品である白色と、遮光目的の黒色をラインナップ ■ 頭部からの抜け防止に、溝付きタイプもございます ■ 複数カニューラを、最適な間隔で保持できるカスタム品も！	

セラミック製 割スリーブ	Ceramic Sleeve
バッチコード着脱時の力を抑制、カニューラの抜け防止に！ ■ カニューラ側とレーザー側のフェールル同士の接続を固定 ■ Φ1.25mm/Φ2.5mmの2つのタイプをご用意 ■ 通常品である白色と、遮光目的の黒色をラインナップ ■ Φ1.25タイプは、業界標準6.8mmタイプに加え、用途別 に6.3mmや5.8mmなどの短尺版もラインナップ	<p>6.8mm：業界標準長さ 6.3mm：フリームービング向け 5.8mm：頭部固定向け</p>

※詳細の仕様はお問合せ下さい。 ※Please feel free to contact us for further information.
 ※本掲載品は一例です。その他製品、カスタム対応可能です。お悩みの際はお気軽にご相談下さい。

お問合せ：半導体部品セラミック材料国内営業部 関西営業所

Tel 075-604-3414(直通) FAX: 075-604-3413 E-Mail: sc-kansai-salesrep@gp.kyocera.jp >>

Inquiry: Domestic Sales Division Corporate Ceramic Materials Semiconductor Components Group

Tel: +81-75-604-3414 FAX: +81-75-604-3413 E-Mail: sc-kansai-salesrep@gp.kyocera.jp >>

WEBサイトKEYSTONEに、インタビュー記事掲載中！！

アメリカから日本に帰国後、オプトジェネティクスの実験を始めるに当たり、実験器材の調達を始めた【鹿児島大学 橋本郁恵先生】レーザー光源や光ファイバはみんなか入手する事ができましたが、光ファイバを動物に接続する部分の小さな部品がなかなか手に入らなかったそうです。記事では、先生のご研究や弊社製品の紹介がされています。詳しくは、<https://keystone-lab.com/feature/0014/0014.html>へアクセス！！



※製品改良の為、仕様・外観は予告なしに変更することがありますのでご了承ください。
 ※当広告に記載の情報は2018年12月時点のものです。
 ※当広告について無断で複製、転載することを禁じます。

© 2019 KYOCERA Corporation
 資料No. AA000-NT02-OE218

京セラ株式会社



これ一本で、肌キマる。

GATSBY

なんだ有能か。



This skin care product gives your skin moisture, smoothness and a clear impression.

PERFECT SKIN LOTION



マンダム ※化粧水・乳液・美容液効果のオールインワンローション お客様相談室 ☎0120-37-3337 商品情報・テクニクはこちら! www.gatsby.jp

携帯型生体信号収録装置

確かな技術が提供する小型、軽量、高性能。

Polymate

検査・研究に高いパフォーマンスを発揮します。

■ポリメイトミニ AP108 【基礎医学研究用機器】

生体アンプとBluetooth®を内蔵したワイヤレス生体計測装置。約80gの超小型・軽量で、脳波、筋電図、心電図、眼球運動などの生体信号をBluetooth®経由でPCに4時間以上のリアルタイムモニタ・収録が可能。



- 入力チャンネル：8ch（アクティブ電極専用）
- サンプリング周波数：500/1000Hz ※
- 外部入力チャンネル：2ch
- 電源：バッテリー

※ 収録条件による

■ポリメイトV AP5148 【基礎医学研究用機器】

本体400gの生体アンプとBluetooth®を内蔵した生体信号収録装置。携帯可能な小型・軽量でありながら最大48chの生体信号記録が可能で、各種生体信号をCFメモリアードに最長約12時間以上連続収録が可能。



- 入力チャンネル：最大48ch
- サンプリング周波数：最大8kHz ※
- 収録メディア：最大32GB
- 電源：バッテリー / ACアダプタ

※ 収録条件による

製造販売元

株式会社 ミユキ技研

〒113-0033 東京都文京区本郷三丁目18番14号 本郷ダイヤビル 6階
TEL. 03(3818)8631 FAX. 03(3818)8632

<http://www.miyuki-net.co.jp/>

Unparalleled performance on a personalized platform

SpectraMax® iD3 Multi-Mode Microplate Reader

• FLEXIBLE TEMPERATURE CONTROL

Simple-to-use temperature control allows you to adjust your experiment's conditions from ambient up to 65° C, expanding your laboratory's capabilities to include temperature sensitive assays.

• A COMPLETE SOLUTION TO ANSWER ALL YOUR RESEARCH NEEDS

Featuring orbital shaking, a four-monochromator optical pathway with high efficiency gratings, well scanning up to a 20x20 read matrix, spectral scanning and detection of plate formats from 6- to 384-wells, the SpectraMax iD3 reader is the complete solution to all your research needs.



Pull up custom protocols with a single tap



Large high-res touchscreen



Network connectivity



Quick initialization time

Contact Us

Molecular Devices Japan

Phone: 0120-993-656

Web: www.moleculardevices.co.jp

Email: info.japan@moldev.com



Muranaka

For The Future.
心を、医療の最先端へ。

一般外科手術器械
カタログ
WEB公開中

Muranaka General Surgery
Instruments Catalog

村中医療器 株式会社

〒540-0036 大阪市中央区船越町 2-3-6

☎06-6943-1221(代)

総合センター 〒594-1157 大阪府和泉市あゆみ野 2-8-2

☎0725-53-5541(代)

<http://www.muranaka.co.jp/>

東京支店 ☎03-3813-9211(代)

仙台営業所 ☎022-274-7780(代)

金沢営業所 ☎076-286-4531(代)

村中船越ビル ☎06-6943-1159(代)

広島営業所 ☎082-532-1800(代)

札幌営業所 ☎011-737-9121(代)

埼玉営業所 ☎048-844-3500(代)

名古屋営業所 ☎052-709-7111(代)

米子営業所 ☎0859-33-6231(代)

福岡営業所 ☎092-473-0123(代)



リアルタイム定量PCRシステム

ライトサイクラー

LightCycler® 96 System



直感的に操作できるタッチスクリーンインターフェースと、データ解析ソフトの卓越したパフォーマンス

- 日常的な使い易さと利便性を追求したオールインワンのリアルタイムPCR装置
- 独自の光学ユニットやサーマルブロックユニットなどの革新的なツールが、実験に求められるバイアスの無い結果を導きます。
- 用途に合わせて8連チューブも96ウェルプレートも使用可能

Cat.No. 05 815 916 001

本体価格 (税抜) **¥3,800,000**



日本ジェネティクス株式会社

<http://www.n-genetics.com> info@genetics-n.co.jp

本社 〒112-0004 東京都文京区後楽 1丁目4番14号 後楽森ビル18F Tel. 03 (3813) 0961 Fax. 03 (3813) 0962

慢性化しやすい痛みに

腰痛症



頸肩腕症候群



変形性関節症



帯状疱疹後神経痛



肩関節周囲炎



下行性疼痛抑制系賦活型 疼痛治療剤 (非オピオイド、非シクロオキシゲナーゼ阻害)

ノイロトピン®錠4単位

ワクシニアウイルス接種家兎炎症皮膚抽出液含有製剤 (薬価基準収載)

【禁忌】(次の患者には投与しないこと) :
本剤に対し過敏症の既往歴のある患者

【効能・効果】

帯状疱疹後神経痛、腰痛症、頸肩腕症候群、肩関節周囲炎、変形性関節症

【用法・用量】

通常、成人には1日4錠を朝夕2回に分けて経口投与する。なお、年齢、症状により適宜増減する。

【用法・用量に関連する使用上の注意】

帯状疱疹後神経痛に対しては、4週間で効果の認められない場合は漫然と投薬を続けられないよう注意すること。

【使用上の注意】

1. 副作用

承認時までの調査では、1,706例中89例(5.22%)に、市販後の副作用頻度調査(再審査終了時点)では、18,140例中98例(0.54%)に副作用が認められている。以下の副作用は、上記の調査及び自発報告等で認められたものである。

(1) 重大な副作用

1) 肝機能障害、黄疸 (いずれも頻度不明) : AST(GOT)、ALT(GPT)、γ-GTPの上昇等を伴う肝機能障害、黄疸があらわれることがあるので、観察を十分に行い、異常が認められた場合には、投与を中止するなど適切な処置を行うこと。

2) 本薬の注射剤において、ショック、アナフィラキシーがあらわれたとの報告があるため、観察を十分に行い、異常が認められた場合には、直ちに投与を中止し、適切な処置を行うこと。

その他の使用上の注意などにつきましては、添付文書をご参照下さい。

製造販売元

日本臓器製薬

〒541-0046 大阪市中央区平野町 2丁目1番2号 <すりの相談窓口> ☎06-6233-6085 資料請求先: 宇野部 土・日・祝日を除く 9:00~17:00

試薬と環境の未来を拓く

Leading the Way into Future

— 試薬・理化学機器の販売から収集 ~ 運搬 ~ 処分まで —

バイオサイエンス、ライフサイエンス、ファインケミカル、そしてメディカルの各分野に至るまで、
国内外の優れた試薬を調査・手配・輸入し、お客様にお届けします。
また、不要となった試薬・薬品の収集・運搬・処分についても承っております。

試薬・理化学機器・分析の販売
設備の設計・制作・施工

廃液・廃試薬・ボンベの処理

試薬

環境



試薬と環境の未来を拓く
大阪薬研株式会社

URL: <http://www.yakken.co.jp/>
E-mail: oyk@yakken.co.jp

【本社】 〒562-0015 大阪府箕面市稲5丁目13-10
TEL: 072-726-1151 FAX: 072-726-1154
【東京営業所】 〒273-0034 千葉県船橋市二子町565
TEL: 047-302-3271 FAX: 047-302-3270
【滋賀営業所】 〒520-3047 滋賀県栗東市手原4丁目7-13-101
TEL: 077-553-8641 FAX: 077-553-8646

PHCbi

超低温フリーザー

デュアル冷却システム [TwinGuard] シリーズ



MDF-DU702VX (729 L)
本体価格 ¥2,600,000円 (税別)



MDF-DU502VX (538 L)
本体価格 ¥2,350,000円 (税別)



MDF-DU302VX (360 L)
本体価格 ¥1,750,000円 (税別)

単相100V [VIP ECO] シリーズ



MDF-DU502VHS1 (528 L)
本体価格 ¥1,980,000円 (税別)



MDF-DU702VHS1 (729 L)
本体価格 ¥2,350,000円 (税別)

●当社では製品の内容物の補償は出来ませんので予めご了承ください。
●本チラシ掲載商品の価格には、消費税・地方消費税・配送料・設置料・関連工事費などは含まれておりません。

お問い合わせは

PHC株式会社
バイオメディカ事業部
〒105-8433
東京都港区西新橋2丁目38番5号

北海道出張所 TEL 011-231-7113 FAX 011-271-0714
北日本営業所 TEL 022-266-2131 FAX 022-215-5582
東京営業所 TEL 03-5408-7277 FAX 03-5408-0873
南関東営業所 TEL 045-978-5134 FAX 045-978-5150
中部営業所 TEL 052-551-0822 FAX 052-551-3490
近畿営業所 TEL 06-6136-1415 FAX 06-6136-1449
中国営業所 TEL 082-247-7532 FAX 082-240-2701
九州営業所 TEL 092-292-7719 FAX 092-291-5353

記載内容は2019年1月現在のものです



本社 〒514-0816 三重県津市高茶屋小森上野町 2836 番地の1

TEL059-234-3025 FAX059-234-8602

伊勢営業所 〒516-0067 三重県伊勢市中島1-14-16

TEL0596-28-2955 FAX0596-28-2733

四日市営業所 〒510-0946 三重県四日市市小林町字小林新田3025-508

TEL0593-20-2288 FAX0593-20-2278

岡崎営業所 〒444-0846 愛知県岡崎市六名新町2-1

TEL0564-53-4468 FAX0564-53-4525

取扱商品

ライフサイエンス関連機器・理化学機器・光学機器・環境測定機器・臨床用検査機器・
実験室設備・実験用消耗器材・試薬等の販売

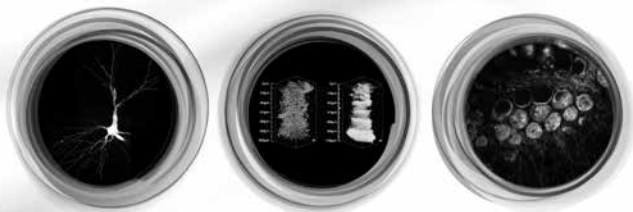


医療・科学の専門商社として
 社は、誠正精（誠意・正義・精力）のもと
 豊かな社会の発展に貢献します。



Spectra-Physics®

#1 in multiphoton lasers



Mai Tai™ DeepSee™



InSight™ X3™



Spirit™ 1030-100



HighQ-2™

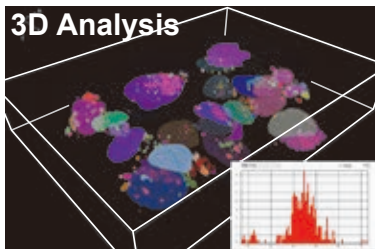
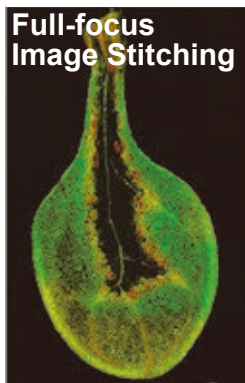
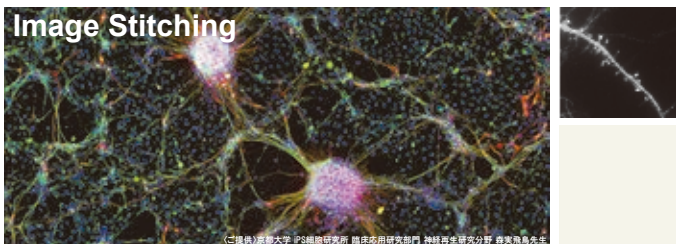
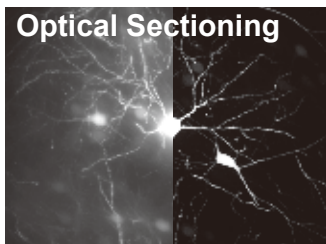
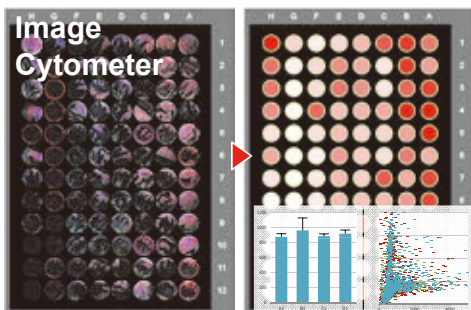
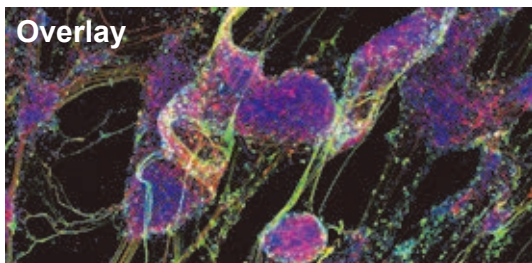


femtoTrain™

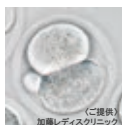
For more information, visit
<http://www.spectra-physics.com/bio-imaging>

Images provided by Karina Alvina, Albert Einstein College of Medicine (left); Courtesy of Chris Xu, with permission from SPIE Publications; Wang, et. al., "In vivo three-photon imaging of deep cerebellum," Proc. SPIE: Multiphoton Microscopy in the Biomedical Sciences XVIII, vol. 10498, 2018. (center); Marie Irondelle, Institut Curie/CNRS, Paris, France (right)

1台で何役も。進化する顕微鏡。



データ撮りの
ご依頼は
こちらまで
www.keymsp.jp/BZ



株式会社 キーエンス

本社・研究所／マイクロスコプ事業部
〒533-8555 大阪市東淀川区東中島1-3-14 Tel. 06-6379-1141

顕微鏡
お客様相談窓口 **0120-739-007**

Copyright © 2018 KEYENCE CORPORATION. All rights reserved.

覚醒下の脳定位実験・オペラント実験に
チャンバー貼付式 脳定位固定装置

New!
EB-6
マウス用補助イヤバー
鼓膜を破らずしっかり固定
ダメージの少ない
マウスにやさしい補助イヤバー

New!
SMM-HE
マウスホルダー
3.2mm
光ファイバーカニューラの保持に
最適なツール
*対応保持径: 0.2mm ~ 4mm

マウス固定イメージ

◇ SR-9M-HT (脳定位固定装置マウス慢性用) と SMM-200 (固定装置用マニピュレーター) の使用例

正立顕微鏡 In vitro 向け
パッチクランプシステム

NMN-25A
スライドベース (NMN-25用)

4th axis (T軸) 切替スイッチ
Coarse/ Fine / S.Fine 切替スイッチ

NMN-25
マイクロマニピュレーター
高倍率下の手動操作でも電極の揺れがほとんど見られない
刺激用の優れた手動マニピュレーター

EMM2
三次元電動マイクロマニピュレーター
記録用に適した最小駆動制御 5nm
駆動精度は最大 12 段階から
選択可能