

Enteropeptidase inhibitor SCO-792



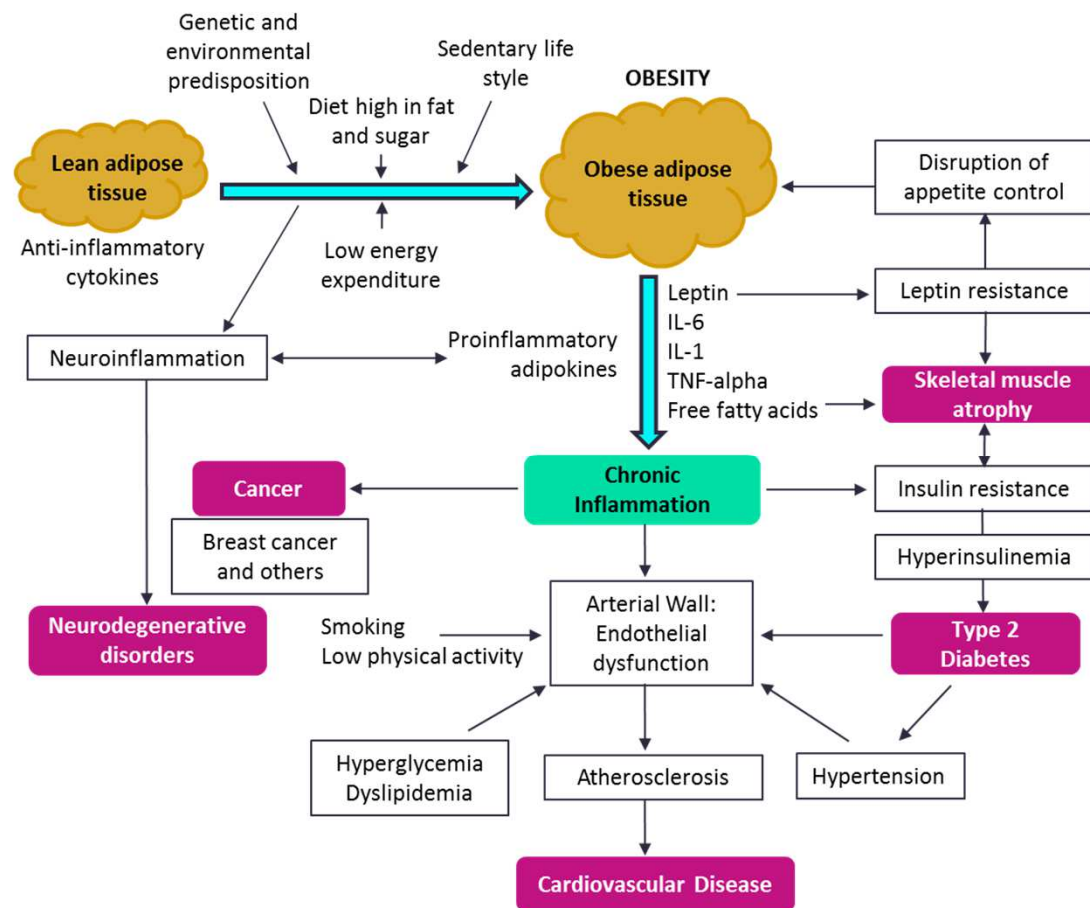
SCOHIA

Disease overview of obesity

Key Facts

- Caused by a complex interplay of genetic, behavioral, and environmental factors, which lead to a chronic positive energy balance and excessive fat accumulation².
- It has become an epidemic and recognized as one of the major health issues due to its associated high rates of morbidity, mortality, and health cost².
- Over 1.9 billion people were overweight or obese worldwide in 2016; of these, over 650 million were obese.
- Associated with elevated BP, blood lipids, and glucose, and accompanied by endothelial dysfunction, and inflammation.

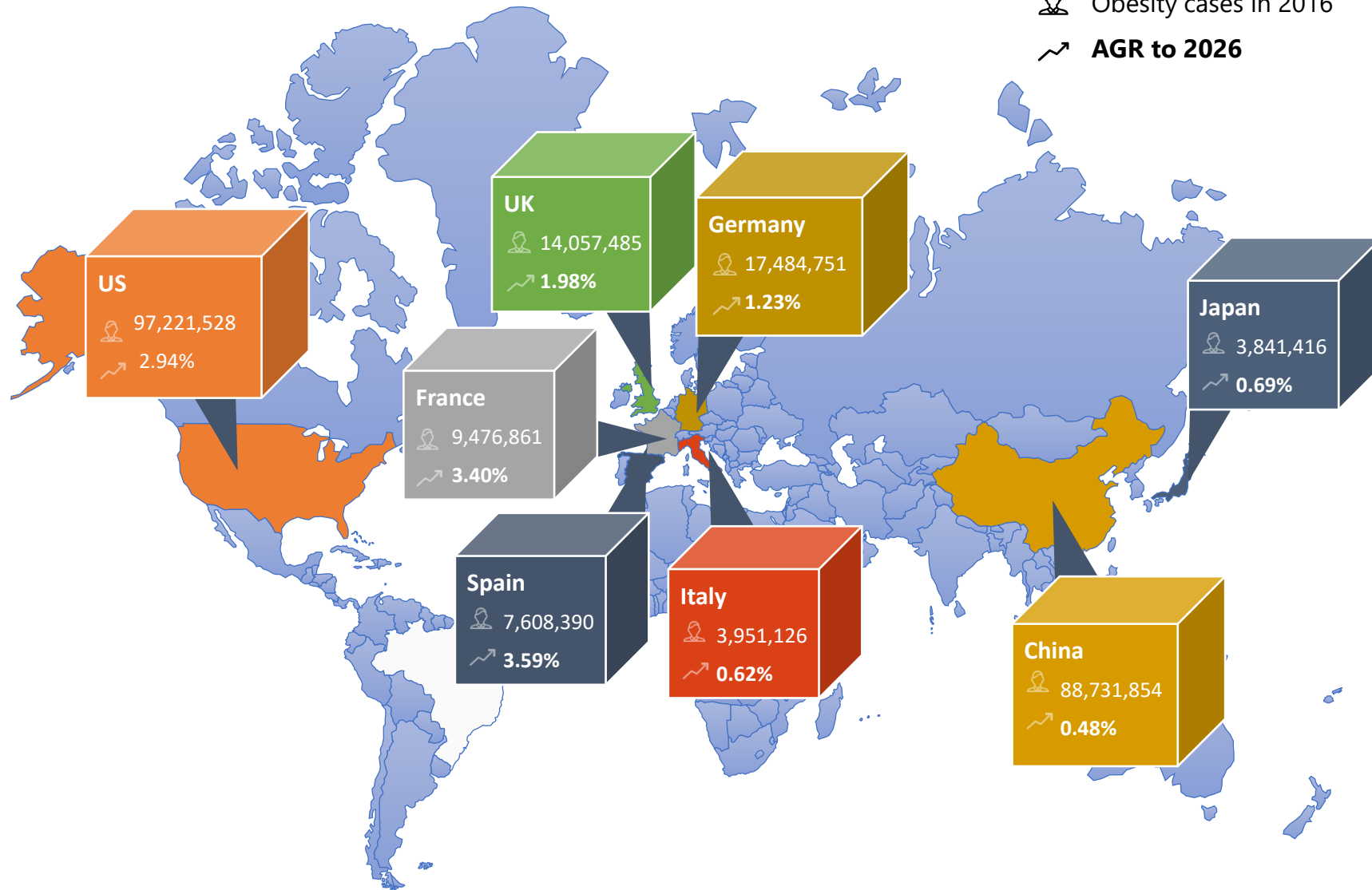
Obesity is a preventable chronic condition, defined as abnormal or excessive fat accumulation characterized by raised body mass index (BMI ≥ 30), which is a major risk factor for chronic diseases such as cardiovascular diseases (CVD), diabetes, musculoskeletal disorders, and several major cancers¹.



Epidemiology Overview – Prevalent Cases of Obesity in 2016

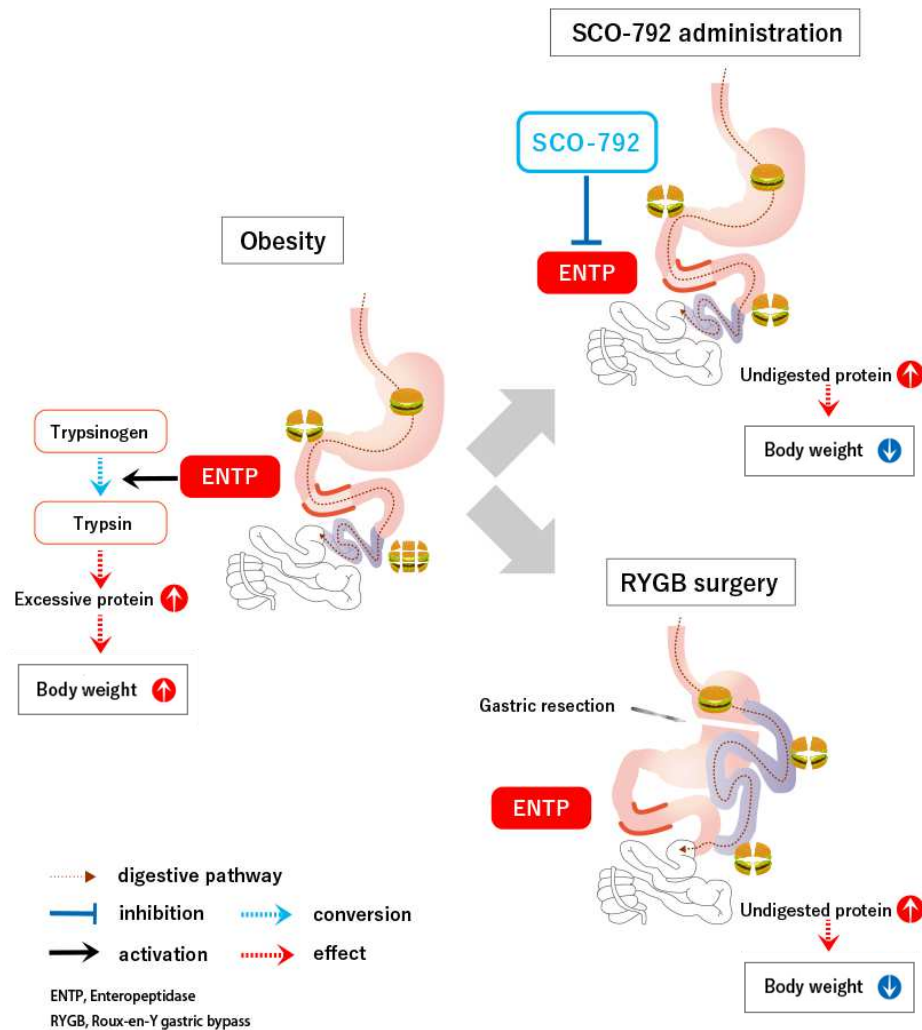


Obesity cases in 2016
 AGR to 2026



SCO-792 Enteropeptidase Inhibitor

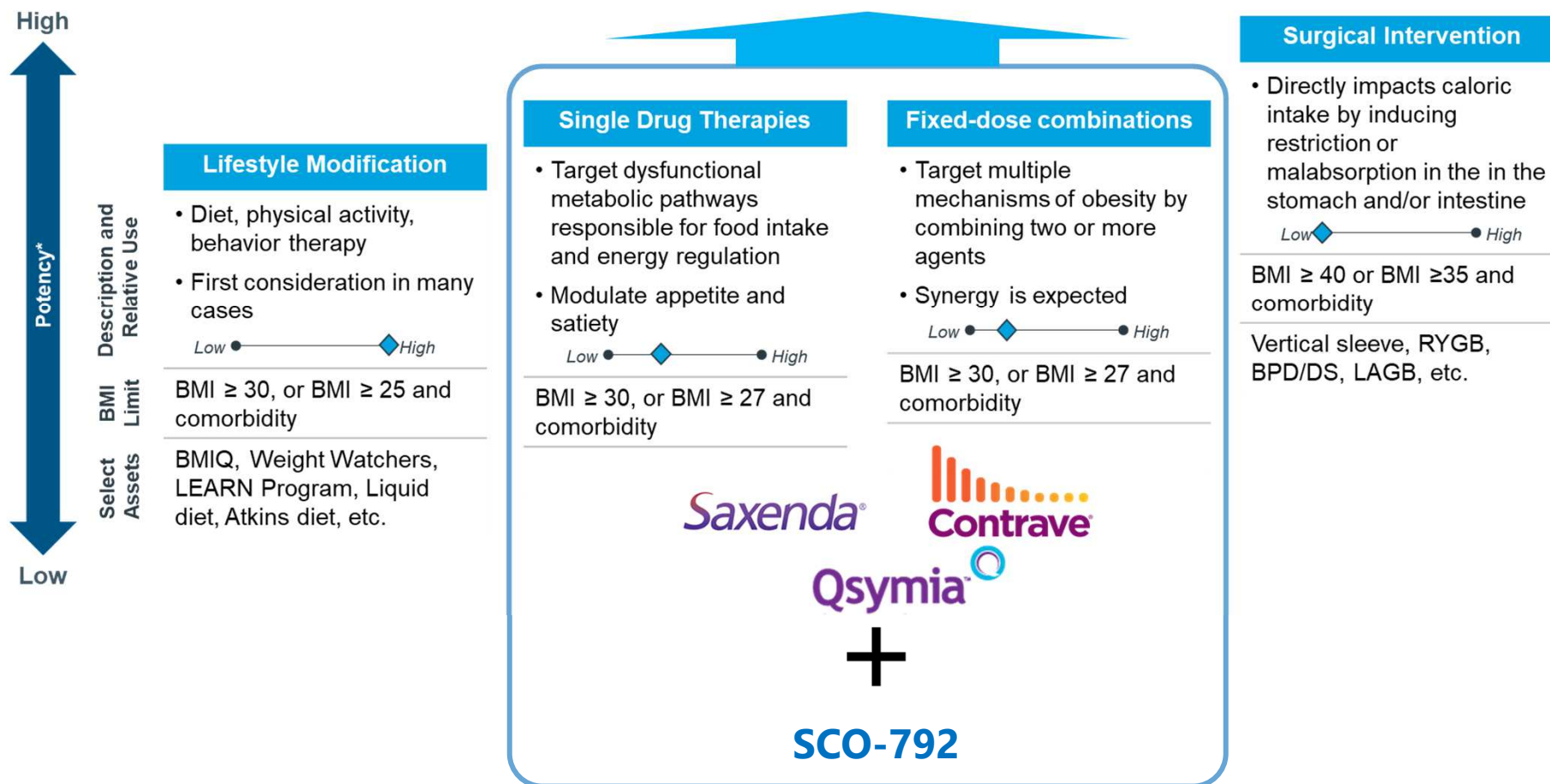
Inhibiting duodenum enteropeptidase, thereby reducing protein digestion leads to the therapeutic efficacy



- ◆ A first-in-class enteropeptidase inhibitor
 - Highly effective to inhibit enteropeptidase
 - Reversible competitive inhibition and slow dissociation
 - Low systemic exposure
 - Good tox profiles
- ◆ Robust efficacy in pre-clinical disease models
 - Marked therapeutic effects on obesity, kidney diseases and NASH in the condition of once-daily dose
- ◆ Ph1/Ph2a study completed
 - Low oral absorption
 - Good safety and tolerability
 - Body weight loss effect with time dependency
- ◆ Robust patent protection

SCO-792 Target Product Profile

The use of bariatric surgeries is more potent than other interventions in current treatment options. After launch of SCO-792, Best combination therapy with several classes of existing anti-obesity and SCO-792 has the same potency as bariatric surgeries.



*Potency includes many factors, such as the amount, rate, and sustainability of weight loss, and the long-term resolution of adiposopathy and fat mass disease. Potency varies greatly for each individual (i.e., long-term adherence to a lifestyle program can be as potent as gastric bypass surgery). Source: Obesity Medication Association; American Society for Metabolic and Bariatric Surgery

SCO-792 Target Product Profile



Target Indication	Core Segments	Target Position	Benchmark
Obesity	BMI ≥ 30, or BMI ≥ 27 and comorbidity	<ul style="list-style-type: none"> • First-in-class • Best combination with several classes of existing anti-obesity and anti-diabetes drugs • Potential indication hopping to CKD and NASH 	5% < /year body weight loss
Key Claim	Target Position	SCO HIA sight	
Safety	Safer than existing drugs	High safety profile compared to existing anorectic drugs <i>[Our Data]</i> ✓ High safety of SCO-792 was confirmed in a 12-week intervention study in obese T2DM patients dosed ≤1500 mg/day	
Efficacy	“Equivalence to existing drugs when treated alone” or “More potency when treated in combination with existing drugs”	✓ Sustained weight loss derived from anorectic-independent effects, such as calorie loss and microbiome changes ✓ Best combination with existing anorectic drugs accompanied by additive effects <i>[Our data]</i> ✓ Statistically significant weight-loss effect confirmed in 12-week treated obese T2DM patients ✓ Anorectic-independent effects confirmed in preclinical studies	
Characteristic Profile	Could be treated in combination with various drugs without increasing safety risk	Due to its low oral absorption, combination available with various existing drugs and low risk in treating patients with renal and/or hepatic dysfunction <i>[Our data]</i> ✓ Extremely low exposure observed in the Ph1 study	
Dosage and administration	Once daily oral	Once daily dosing, the requisite for most metabolic disease drugs <i>[Our data]</i> Weight loss observed in a 12-week intervention study in obese T2DM patients with once-daily dose of 250 mg/day or 500 mg/day	

Table of Contents

1. Product Strategy

2. Anti-obese effect

2-1. Clinical

2-2. Pre-clinical

3. Other indication

4-1. Kidney disease

4-2. NASH

4. Intellectual Property

Table of Contents

1. Product Strategy

2. Anti-obese effect

2-1. Clinical

2-2. Pre-clinical

3. Other indication

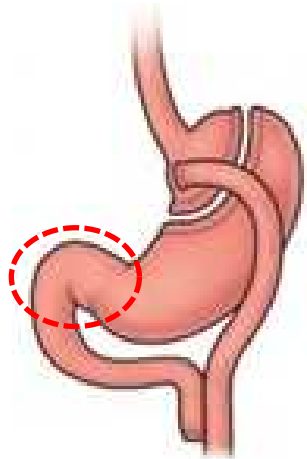
4-1. Kidney disease

4-2. NASH

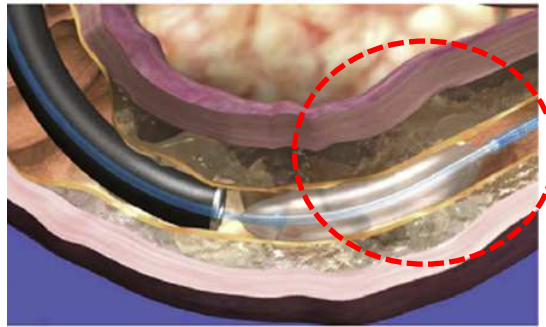
4. Intellectual Property

Three Very Effective Treatments Bypass Duodenum in Human; Undiscovered Role of Duodenum for Metabolic and Body Weight Controls

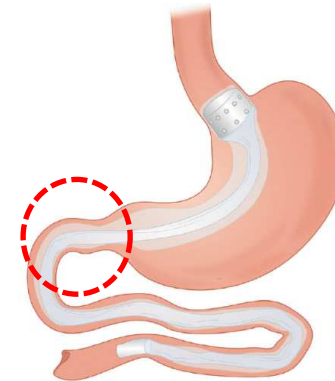
RYGB



Duodenal mucosal resurfacing



Duodenal-Jejunal Bypass Liner



Bypassing duodenum → Treatment effect

**Duodenum is the place where digestive enzymes are mixed with foods.
An inhibitor of protein digestion might show metabolic benefits.**

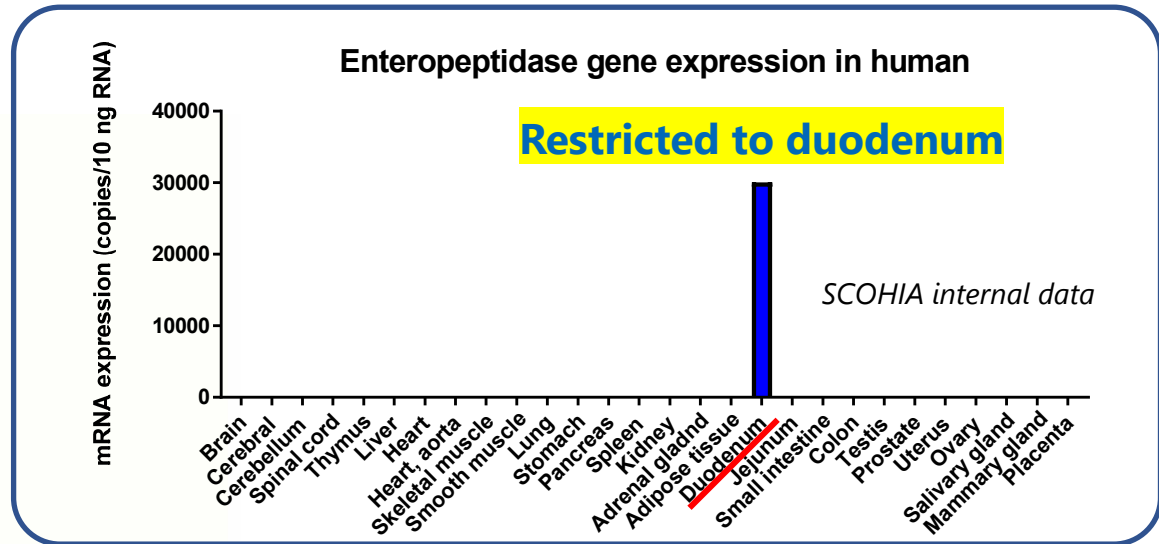
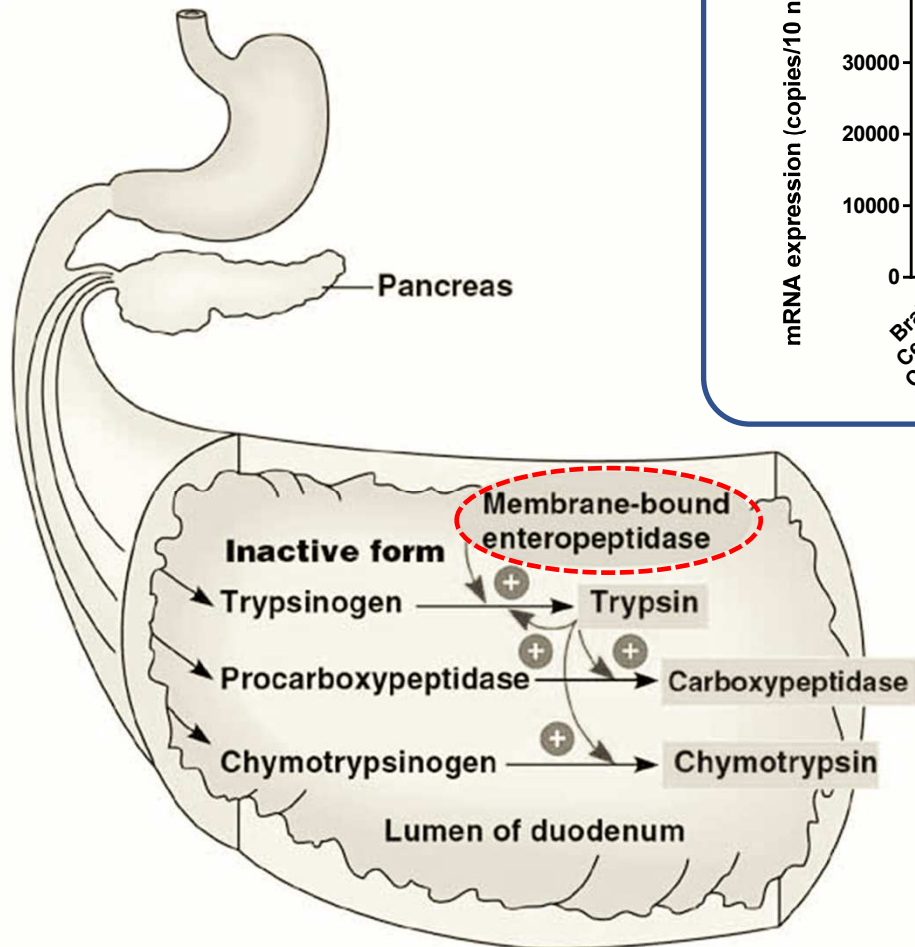
Duodenum is The Place, where Digestive Enzymes are Mixed with Foods



Energy source	Calories per gram	Drugs
Fats	9	Lipase inhibitors
Carbohydrates	4	Alpha glucosidase inhibitors (SGLT1,2 dual inhibitor in clinical trials)
Proteins	4	No drug available

- ◆ Both lipase and glucosidase inhibitors show treatment benefits in a clinical setting
- ◆ Treatment benefits of protease inhibitors on metabolic and body weight controls are largely unknown

Duodenal Enteropeptidase is a Key Molecule Regulating Protein Digestion



⇒ Protein digestion

PLoS One. 2012;7(11):e49612. doi: 10.1371/journal.pone.0049612.

Copyright © Pearson Education, Inc., publishing as Benjamin Cummings.

◆ Congenital enteropeptidase deficiency in human is known to induce lean phenotype

Curr Pharm Biotechnol. 2014;14(13):1093-8.

Profiles of SCO-792

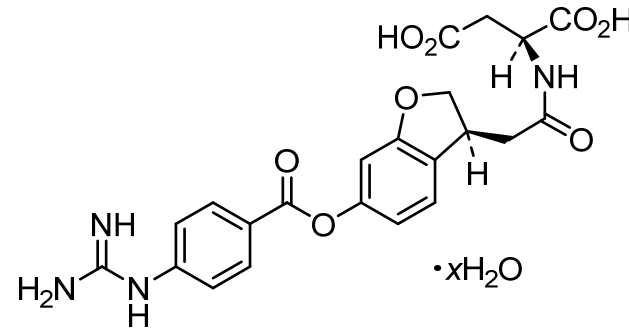


MW: 470.43

Human ENTP IC₅₀: 5.4 nM

MDR1(A to B): < 0.5

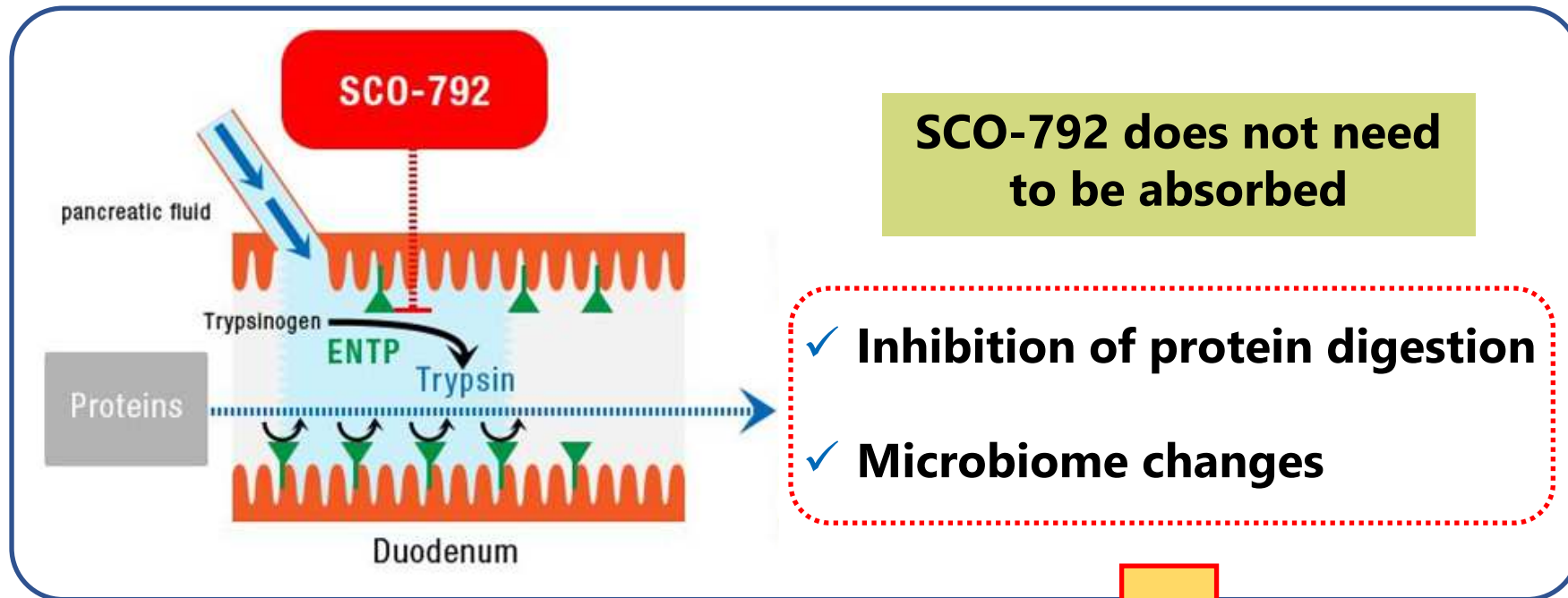
Bioavailability (%):



Monkey	Dog	Rat	Mouse
0.2	0.6	0.4	3.3

- ◆ Low membrane permeability & Low oral absorption
- ◆ Low drug absorption mitigates unfavorable safety concerns
- ◆ Selective to enteropeptidase

SCO-792 Inhibits Duodenum Enteropeptidase, thereby Induces Therapeutic Effects on Obesity, Kidney Diseases and NASH



Metabolic Benefits :

- ◆ Corrects obesity
- ◆ Ameliorative effect for DKD/CKD and NASH

Table of Contents

1. Product Strategy

2. Anti-obese effect

2-1. Clinical

2-2. Pre-clinical

3. Other indication

4-1. Kidney disease

4-2. NASH

4. Intellectual Property

Summary of Ph1 & Ph2a Clinical Trials



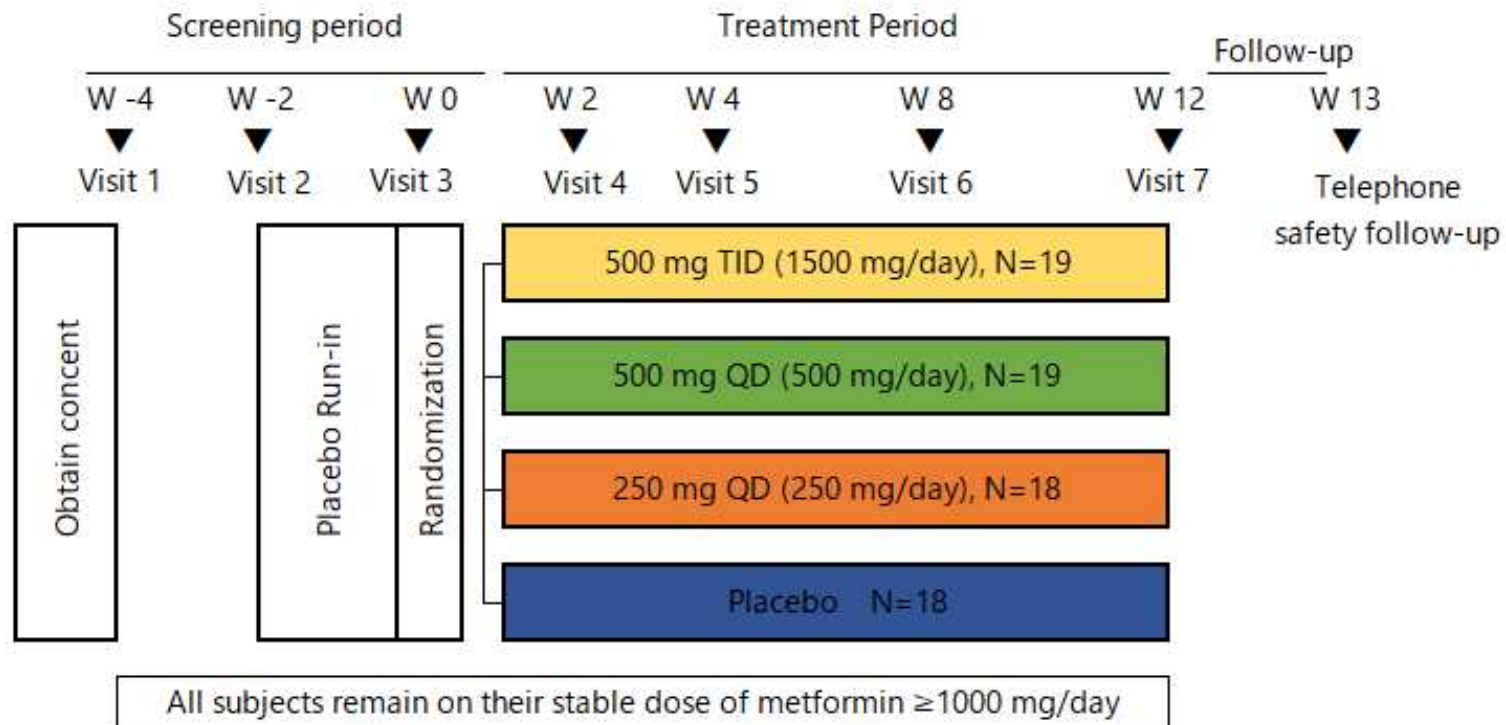
Phase/ Protocol No.	Objectives	Design and Population	Dosage, Regimen, Route, Duration
Phase 1 TAK-792-1001 Completed	Safety and tolerability, PK/PD, Racial difference, Food effects	Design Randomized, single-center, double-blind, placebo-controlled, dose escalation Population Japanese healthy adult males: : 48 subjects Caucasian healthy adult males: : 24 subjects	Dosage SCO-792 30 mg, 100 mg, 250 mg, 500 mg, 750 mg, 1250 mg or placebo Regimen, Route Single oral administration under the fasted conditions Duration 1 day
Phase 1 CT17001 Completed	Safety and tolerability, PK/PD	Design Randomized, single-center, double blind, placebo-controlled, dose escalation Population Japanese healthy adult males: : 36 subjects.	Dosage SCO-792 250 mg, 500 mg, 750 mg or Placebo Regimen, Route oral administration, before meal Duration 7 days
Phase 2a CT19648 Completed	Safety and tolerability, Efficacy for hypoglycemic effect and weight loss effect	Design Randomized, multi-center, double blind, placebo-controlled, parallel-group comparison Population Obese Type 2 Diabetes Mellitus treated with Metformin Monotherapy : 74 subjects.	Dosage SCO-792 250 mg QD, 500 mg QD, 500 mg TID or Placebo Regimen oral administration, before meal Duration 12 weeks
Phase 2a CT19649 On going	Safety and tolerability, Efficacy for renoprotective effect	Design Randomized, multi-center, double blind, placebo-controlled, parallel-group comparison Population Type 2 Diabetes Mellitus and albuminuria treated with RAS inhibitors : 72 subjects.	Dosage SCO-792 250 mg QD, 500 mg QD, 500 mg TID or Placebo Regimen oral administration, before meal Duration 12 weeks

Ph2a DM/Obesity Study _ Title



A Randomized, Multi-center, Double-blind, Placebo-controlled, Parallel-group Comparison, Phase 2a Study to Evaluate the Safety, Tolerability and Efficacy of SCO-792 in Subjects with Obese Type 2 Diabetes Mellitus on Metformin

JapicCTI-194848



Ph2a DM/Obesity Study _ Patients Characteristics



The baseline HbA1c was about 8% for all groups, and the baseline BMI was over 35 kg/m² (obese class 2) for all groups. These were appropriate populations for evaluating the hypoglycemic and body weight loss effect of SCO-792.

Variable (Unit)		Statistic	Placebo	SCO-792 250 mg QD	SCO-792 500 mg QD	SCO-792 500 mg TID	All Subjects
			(N=18)	(N=18)	(N=19)	(N=19)	(N=74)
Age (years)		Mean (SD)	53.7 (10.02)	51.1 (10.01)	50.2 (10.14)	52.7 (12.30)	51.9 (10.54)
Age Group (years)	<50	n (%)	7 (38.9)	7 (38.9)	10 (52.6)	6 (31.6)	30 (40.5)
	>=50	n (%)	11 (61.1)	11 (61.1)	9 (47.4)	13 (68.4)	44 (59.5)
Gender	Male	n (%)	9 (50.0)	8 (44.4)	10 (52.6)	7 (36.8)	34 (45.9)
	Female	n (%)	9 (50.0)	10 (55.6)	9 (47.4)	12 (63.2)	40 (54.1)
HbA1c (%)		Mean (SD)	7.99 (0.843)	8.01 (1.324)	8.23 (1.129)	8.09 (1.182)	8.08 (1.114)
HbA1c Group (%)	<8.0	n (%)	10 (55.6)	12 (66.7)	10 (52.6)	13 (68.4)	45 (60.8)
	>=8.0	n (%)	8 (44.4)	6 (33.3)	9 (47.4)	6 (31.6)	29 (39.2)
Weight (kg)		Mean (SD)	106.400 (18.8301)	102.164 (17.5405)	119.162 (25.2035)	101.211 (17.3784)	107.314 (20.9354)
BMI (kg/m²)		Mean (SD)	38.29 (6.510)	37.57 (8.086)	40.48 (8.354)	37.18 (5.828)	38.39 (7.236)
BMI Group (%)	<35.0	n (%)	5 (27.8)	8 (44.4)	6 (31.6)	9 (47.4)	28 (37.8)
	35.0<=	n (%)	13 (72.2)	10 (55.6)	13 (68.4)	10 (52.6)	46 (62.2)

Source: Listing 16.2.4.1

Ph2a DM/Obesity Study _ Safety



Low risk and high tolerability profile of SCO-792 was observed in 12 weeks administration. No major difference in the number of adverse events between SCO-792 and placebo and no SCO-792 dose dependent risks were observed.

Category		Placebo	SCO-792			All Subjects
			250 mg QD	500 mg QD	500 mg TID	
Safety population		(N=18)	(N=18)	(N=19)	(N=19)	(N=74)
	Preferred Term	Statistic : n (%)				
TEAE	Total :	13 (72.2)	15 (83.3)	11 (57.9)	14 (73.7)	53 (71.6)
	<i>TEAEs reported in at least 2 subjects in any treatment group</i>					
	Diarrhoea	2 (11.1)	4 (22.2)	3 (15.8)	2 (10.5)	11 (14.9)
	Frequent bowel movements	1 (5.6)	1 (5.6)	0	2 (10.5)	4 (5.4)
	Constipation	2 (11.1)	0	0	0	2 (2.7)
	Toothache	0	0	0	2 (10.5)	2 (2.7)
	Upper respiratory tract infection	2 (11.1)	2 (11.1)	1 (5.3)	2 (10.5)	7 (9.5)
	Urinary tract infection	0	2 (11.1)	0	4 (21.1)	6 (8.1)
	γ-glutamyltransferase increased	2 (11.1)	0	0	0	2 (2.7)
	Headache	1 (5.6)	0	2 (10.5)	1 (5.3)	4 (5.4)
	Contusion	0	1 (5.6)	0	2 (10.5)	3 (4.1)
	Cough	0	1 (5.6)	0	2 (10.5)	3 (4.1)
	Nephrolithiasis	0	2 (11.1)	0	0	2 (2.7)
IP-related TEAE		5 (27.8)	6 (33.3)	7 (36.8)	6 (31.6)	24 (32.4)
Severity	Mild	9 (50.0)	11 (61.1)	9 (47.4)	8 (42.1)	37 (50.0)
	Moderate	4 (22.2)	4 (22.2)	1 (5.3)	6 (31.6)	15 (20.3)
	Severe	0	0	1 (5.3)	0	1 (1.4)

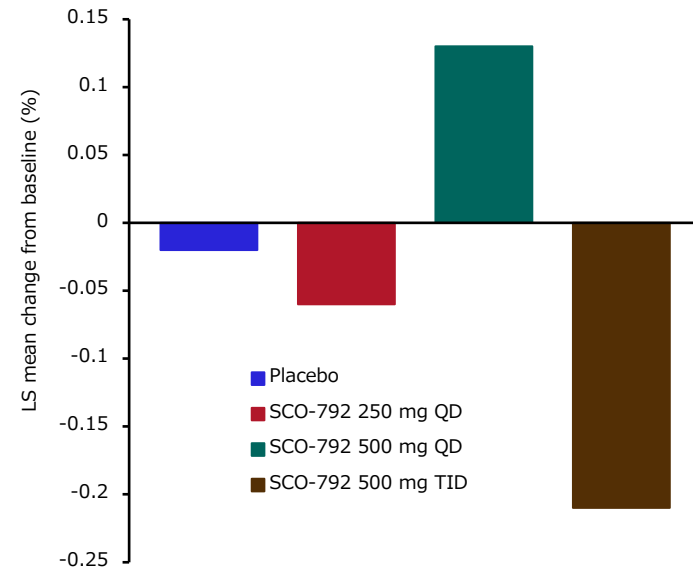
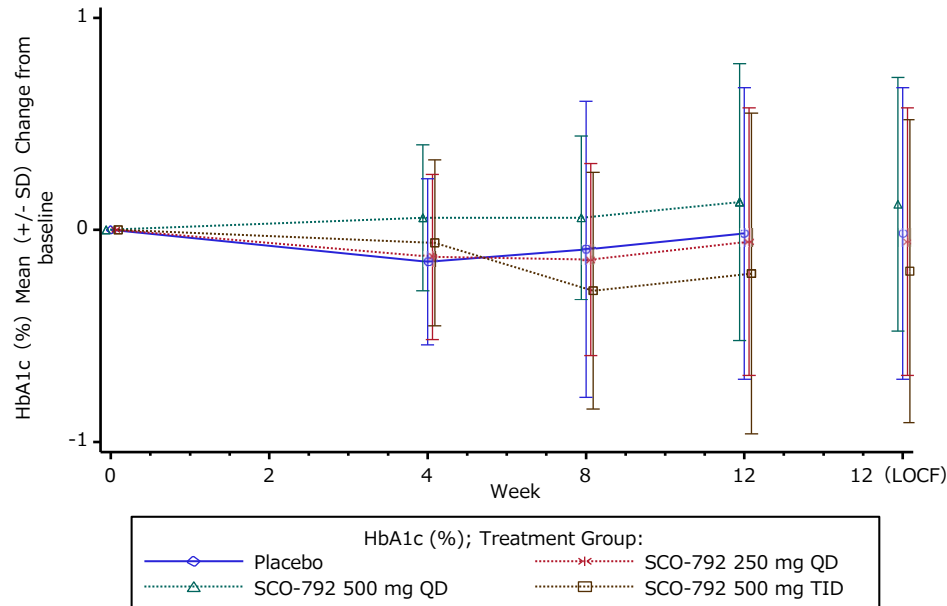
Source: Table 14.3.1.1.1., Table 14.3.1.3.1

AE: adverse event.; IP: investigational product.; TEAE: treatment-emergent AE.; N = Total number of subjects randomized.; n = Number of subjects with at least one TEAE in each category (subjects with multiple events in each category are counted only once in each category).; % = Percentage of subjects in each category calculated relative to the total number of subjects in the relevant population

Ph2a DM/Obesity Study _ Efficacy



No hypoglycemic effect of SCO-792 was observed from the result of the central tendency in HbA1c.



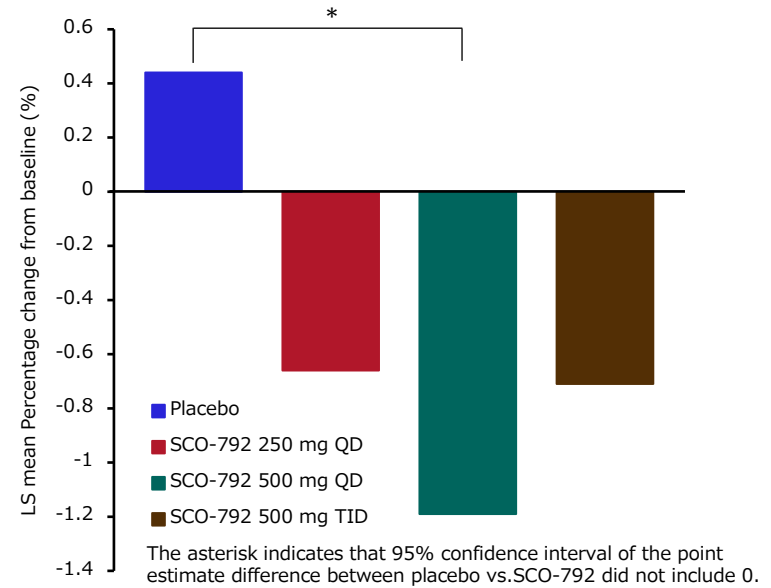
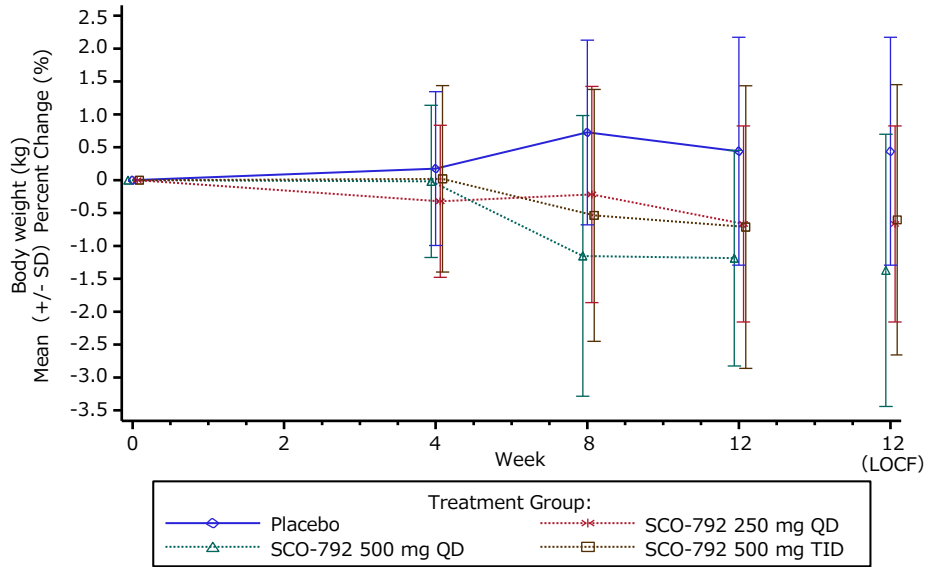
Number of subjects with on assessment available at week 12 0		Placebo (N=18)	SCO-792 250 mg QD (N=18)	SCO-792 500 mg QD (N=19)	SCO-792 500 mg TID (N=19)
Week 0 [Baseline]	n	18	18	19	19
	mean	7.99	8.01	8.23	8.09
	[SD]	0.843	1.324	1.129	1.182
Week 12 [Observed data]	n	18	18	16	17
	mean	7.98	7.96	8.22	7.81
	[SD]	1.183	1.532	1.460	1.252
Change from baseline to Week 12 [observed data]	LS means [SE]	-0.02 [0.16]	-0.06 [0.16]	0.13 [0.17]	-0.21 [0.17]
Difference of LS means between each treatment [SE] (95% CI) vs Placebo		Reference	-0.04 [0.23] (-0.49, 0.42)	0.15 [0.23] (-0.32, 0.62)	-0.19 [0.23] (-0.65, 0.27)

Source: Figure 14.2.1.1.1, Table 14.2.1.1.1, Table 14.2.1.1.3.1
These efficacy analysis using efficacy evaluable population

Ph2a DM/Obesity Study _ Efficacy



Body weight loss effect of SCO-792 was observed from the result of the central tendency in body weight.



Number of subjects with on assessment available at week 12		Placebo (N=18)	SCO-792 250 mg QD (N=18)	SCO-792 500 mg QD (N=19)	SCO-792 500 mg TID (N=19)
Week 0 [Baseline] Unit : kg	n	18	18	19	19
	mean	106.400	102.164	119.162	101.211
	[SD]	18.8301	17.5405	25.2035	17.3784
Week 12 [Observed data] Unit : kg	n	18	18	16	17
	mean	106.836	101.444	117.375	101.094
	[SD]	18.9646	17.1571	24.0362	17.6653
Percentage change from baseline to Week 12 [observed data]	Mean	0.440	-0.665	-1.186	-0.711
	SD	1.7308	1.4899	1.6365	2.1471
	LS means [SE]	0.44 [0.42]	-0.66 [0.42]	-1.19 [0.44]	-0.71 [0.43]
Difference of LS means between each treatment [SE] (95% CI) vs Placebo	Reference		-1.10 [0.59]	-1.63 [0.61]	-1.15 [0.60]
			(-2.28, 0.07)	(-2.84, -0.41)	(-2.34, 0.04)

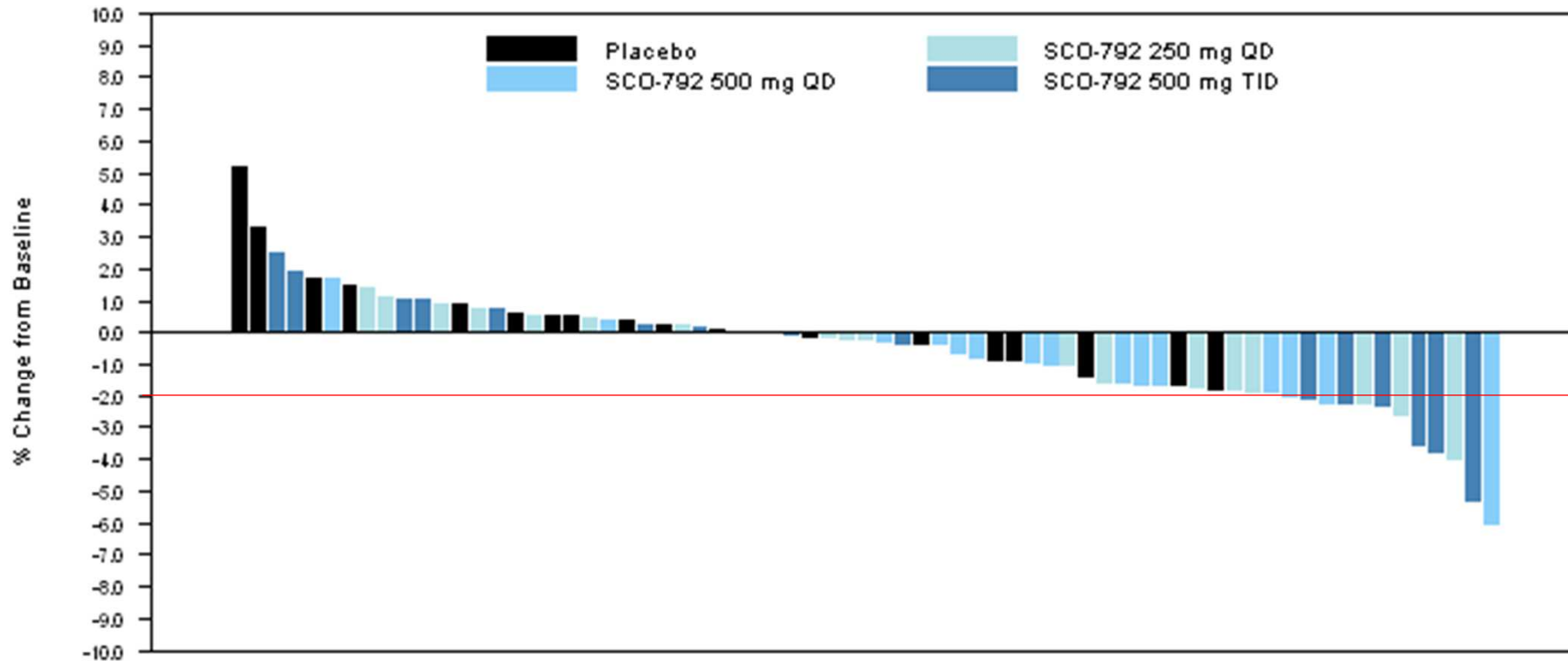
Source: Figure 14.2.4.1.1, Table 14.2.4.1.1, Table 14.2.4.1.3
These efficacy analysis using efficacy evaluable population

Ph2a DM/Obesity Study _ Efficacy



The individual response of body weight showed the body weight loss effect of SCO-792.

Individual % change in Body Weight



Proportion of subjects achieving target reductions in body weight at Week 12

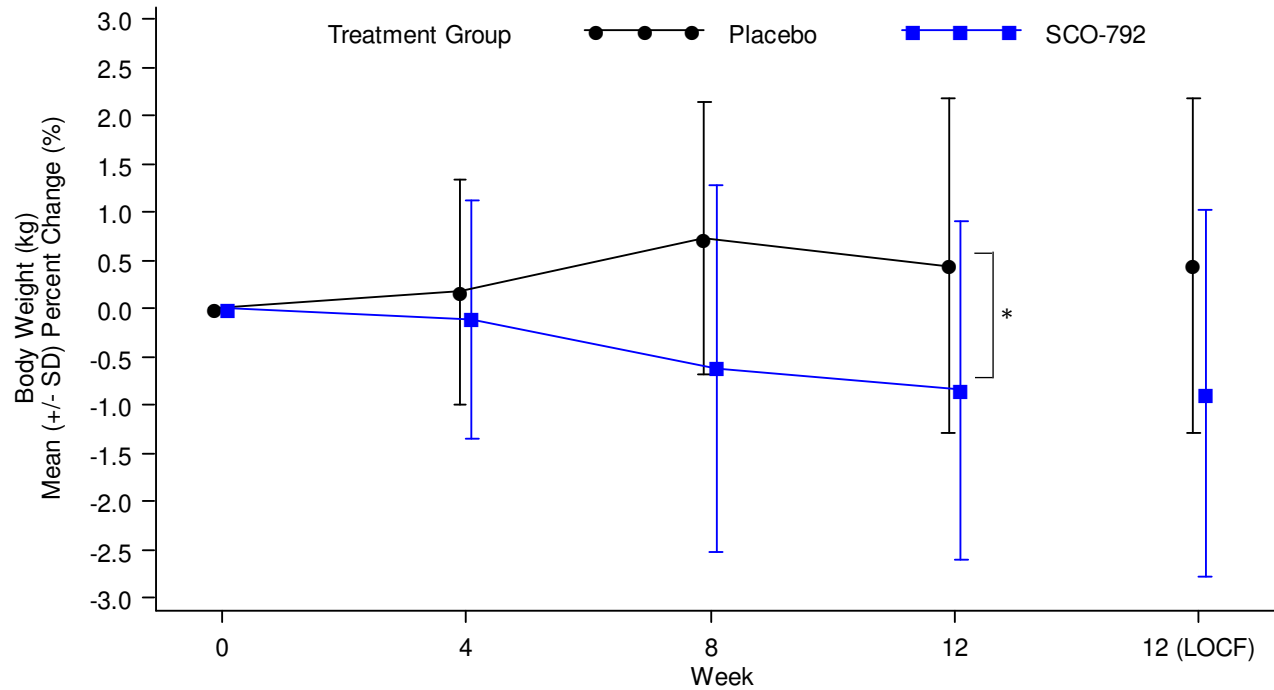
		Placebo (N=18)	SCO-792 250 mg QD (N=18)	SCO-792 500 mg QD (N=19)	SCO-792 500 mg TID (N=19)	All Subjects (N=74)
2% reduction from baseline at Week 12	n (%)	0	3 (16.7)	3 (15.8)	6 (31.6)	12 (16.2)

Source: Add-1, Table 14.2.5.1

Ph2a DM/Obesity Study _ Efficacy



Body weight loss effect of SCO-792 with time dependency was observed, and the effect was significantly reduced compared to placebo.



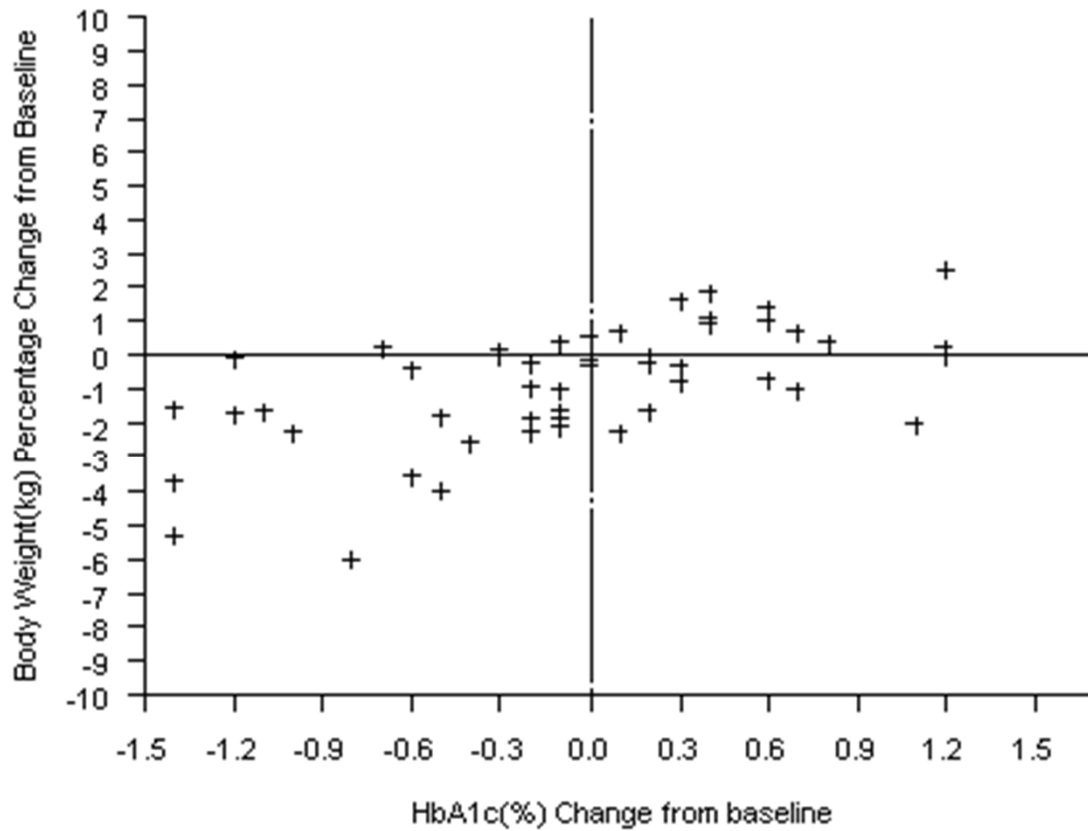
The asterisk indicates that 95% confidence interval of the point estimate difference between placebo vs.SCO-792 did not include 0.

Number of subjects with on assessment available at week 12		Placebo	SCO-792
Week 0 [Baseline] Unit : kg	n	18	56
	mean	106.40	107.61
	[SD]	18.830	21.720
Week 12 [Observed data] Unit : kg	n	18	51
	mean	106.84	106.33
	[SD]	18.965	20.742
Percentage change from baseline to Week 12 [observed data]	mean	0.440	-0.844
	SD	1.7308	1.7574
	LS means [SE]	0.44 [0.41]	-0.84 [0.25]
Difference of LS means between each treatment [SE] (95% CI) vs Placebo		Reference	-1.28 [0.48] (-2.24, -0.33)

Source: Figure Add-4, Table Add-1, Table Add-4_1
These efficacy analysis using efficacy evaluable population

Ph2a DM/Obesity Study _ Efficacy

A correlation was found between body weight loss and hypoglycemic effects in SCO-792.



+ SCO-792

Pearson correlation: coefficient = 0.59

Spearman's correlation: coefficient = 0.60

Ph2a DM/Obesity Study _ Discussion



Summary

- ◆ SCO-792 showed hypoglycemic and weight-loss effects in animal models in the preclinical studies, whose data we expected to observe in humans.
- ◆ However, in the Ph2a exploratory study of a 12-week treatment of SCO-792, no hypoglycemic effect was observed. On the other hand, SCO-792 showed a superior weight-loss effect to the placebo group.
- ◆ Preclinical studies suggest that SCO-792 exerts a gradual weight-loss effect. Therefore, a 12-week administration might have been insufficient to demonstrate the maximum effect.
- ◆ We are evaluating the possibility of further development as an anti-obesity treatment with new target product profiles.

Table of Contents

1. Product Strategy

2. Anti-obese effect

2-1. Clinical

2-2. Pre-clinical

3. Other indication

4-1. Kidney disease

4-2. NASH

4. Intellectual Property

SCO-792 Induced a Decrease in Food Intake Followed by a Sustained Reduction in Body Weight in Diet-induced Obese (DIO) Mice

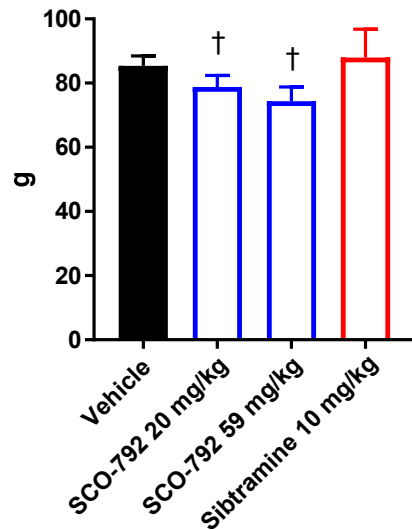


Male DIO-C57BL/6J mice
(46-week-old, BW; 49.3 g)
Western diet
(D12079B, 41 kcal% Fat)

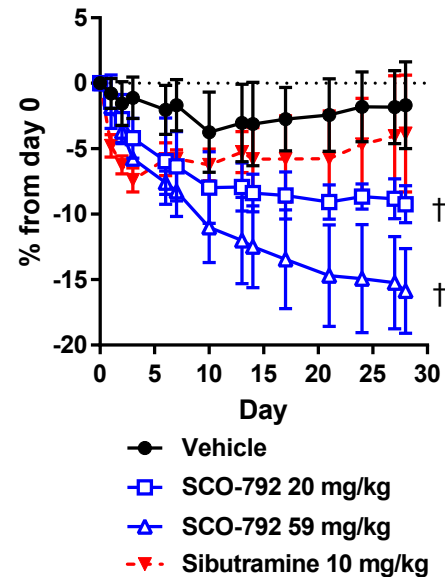
- Vehicle (*p.o.*, QD)
- SCO-792 (20, 59 mg/kg, *p.o.*, QD)
- Sibutramine (10 mg/kg, *p.o.*, QD)



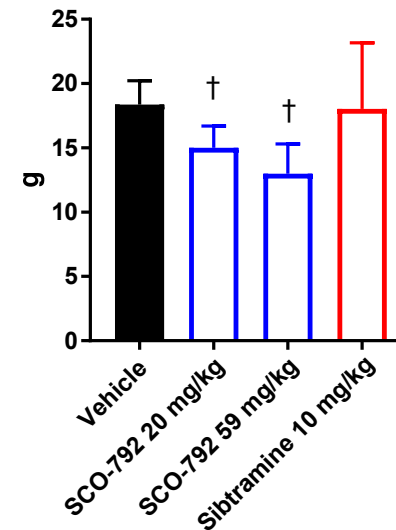
Total food intake (4W)



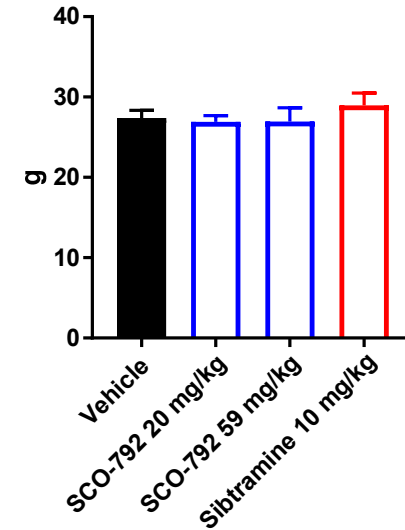
Body weight change



Fat mass (4W)



Lean mass (4W)



Additional data are available
(DOI: [10.1111/dom.13799](https://doi.org/10.1111/dom.13799))

Means + SD (n=4-6), †p < 0.025 vs. vehicle by one-tailed Williams' test.

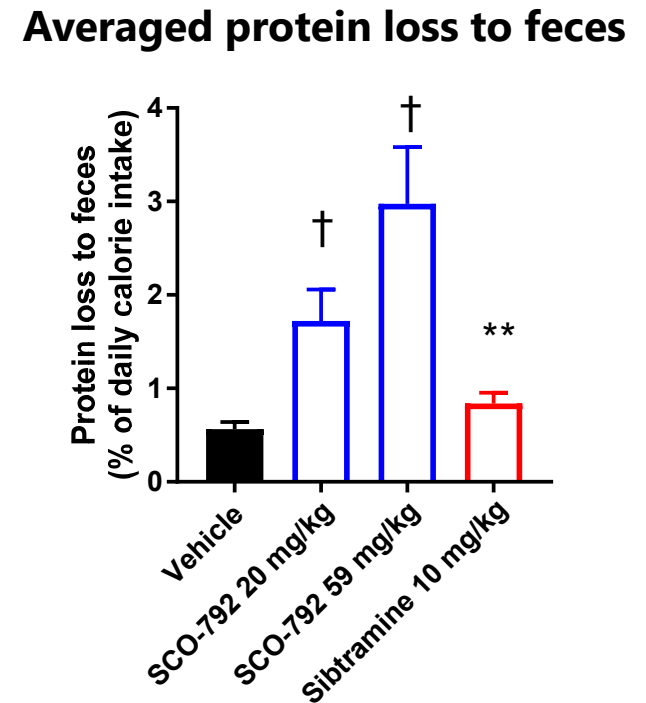
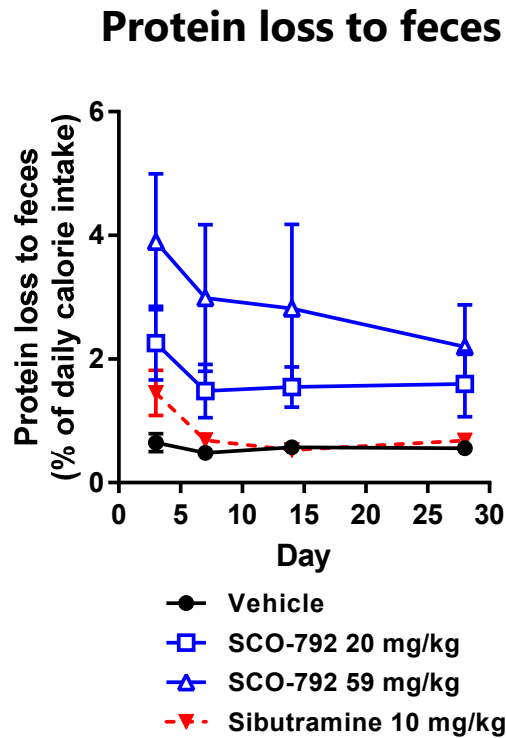
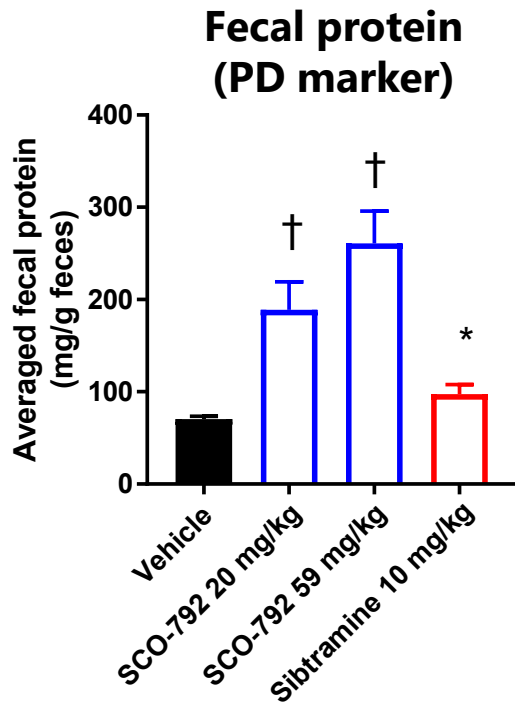
SCO-792 Induced Calorie Loss by the Excretion of Proteins to Feces in DIO Mice



Male DIO-C57BL/6J mice
(46-week-old, BW; 49.3 g)
Western diet
(D12079B, 41 kcal% Fat)

- Vehicle (*p.o.*, QD)
- SCO-792 (20, 59 mg/kg, *p.o.*, QD)
- Sibutramine (10 mg/kg, *p.o.*, QD)

4 weeks



Means + SD (n=4-6), †p < 0.025 vs. vehicle by one-tailed Williams' test, *p < 0.05, **p < 0.01 vs. vehicle by Student's *t*-test.

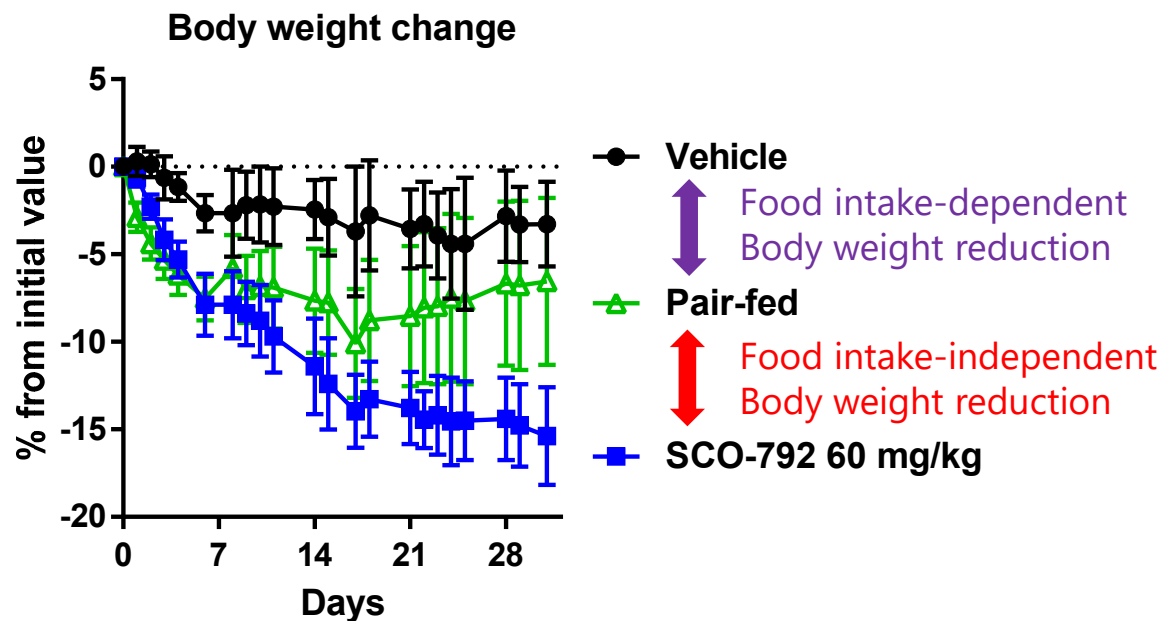
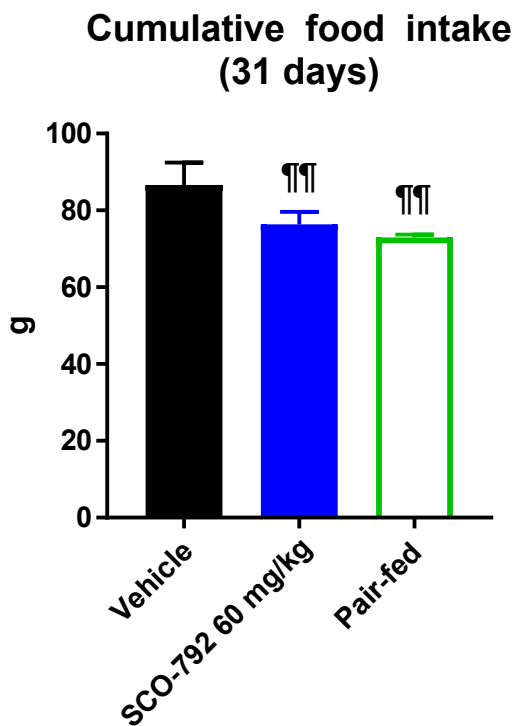
Food Intake Reduction-independent Mechanism is Involved in Body Weight Reduction in DIO Mice

Male DIO-C57BL/6J mice (32-week-old, BW; 46.3 g)
Western diet (D12079B, 41 kcal% Fat)

- Vehicle
- SCO-792 (60 mg/kg)
- Pair-fed*

4 weeks

*Pair-fed group was fed the same amount of the food consumed by SCO-792 group to evaluate contribution of anorectic effect to anti-obese effect by SCO-792

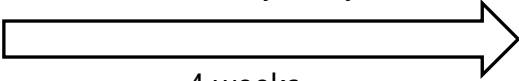


Means + SD (n=8), **p < 0.01 vs. vehicle by Dunnett test.

>90% Loss of Gut Bacteria Attenuates SCO-792-induced Efficacy in DIO Mice

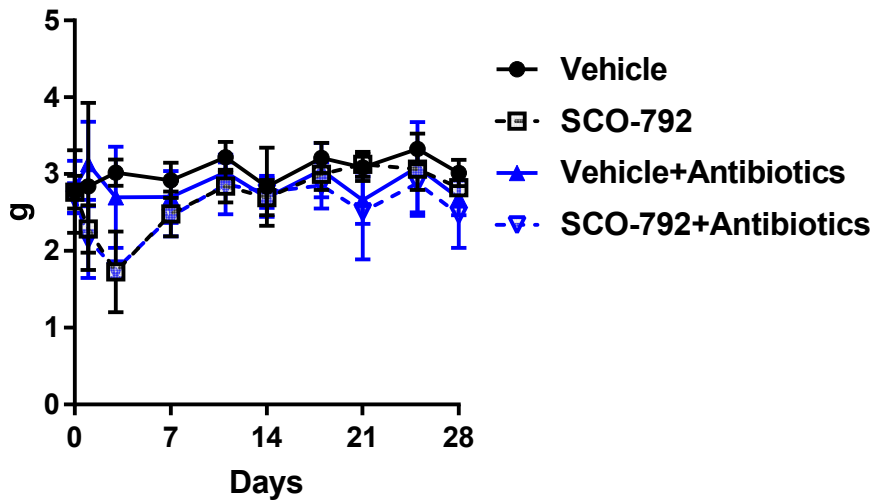
- Vehicle
- SCO-792 (60 mg/kg)
- Antibiotics + Vehicle
- Antibiotics + SCO-792 (60 mg/kg)

Male DIO-C57BL/6J mice (40-week-old, BW; 47.9 g)
Western diet (D12079B, 41 kcal% Fat)

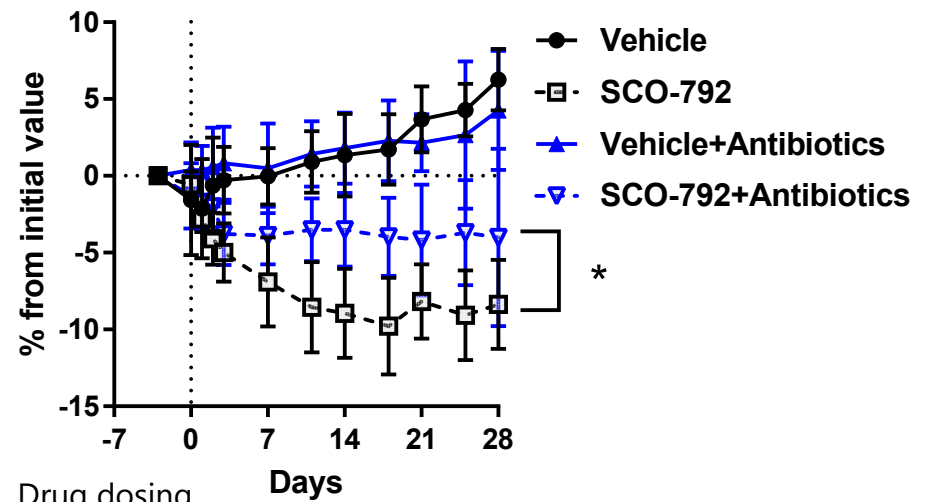

 4 weeks

[Antibiotics, vancomycin hydrochloride + polymyxin B in drinking water]

Daily food intake



Body weight change



Drug dosing
(>90% reduction of intestinal bacteria was confirmed)

◆ Food intake inhibition was unchanged

◆ BW lowering was attenuated

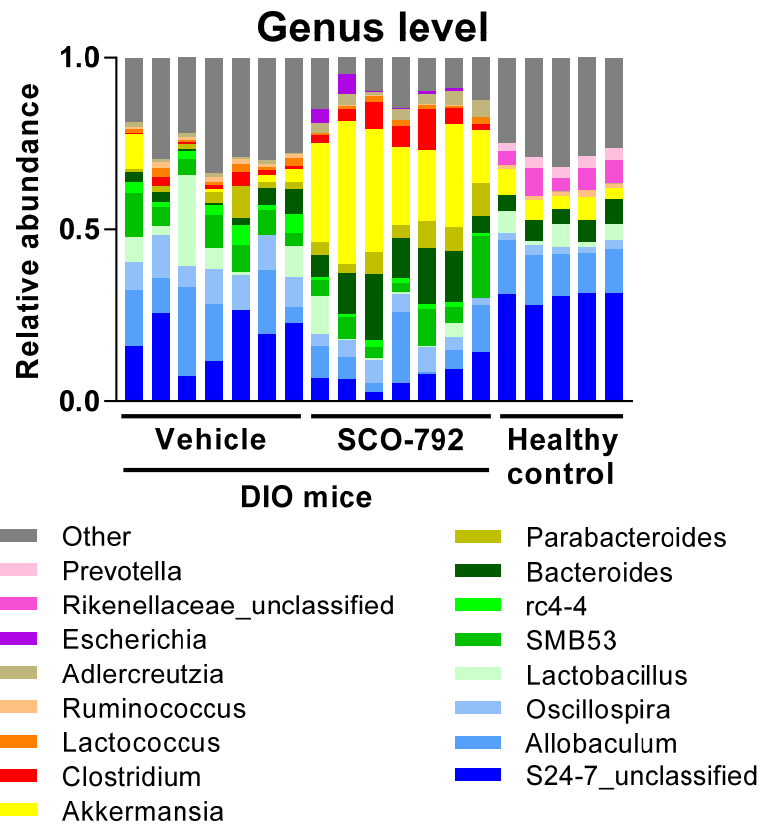
SCO-792 Induced the Specific Changes in the Microbiota Composition in DIO Mice Similar to Those Observed in Bariatric Surgery-operated Human and Rodent



• Male DIO-C57BL/6J mice (41-week-old), D12079B (41 kcal% fat)
 • Male C57BL/6J mice (13-week-old), CE-2 (normal chow)

• Vehicle (n=7)
 • SCO-792 (60 mg/kg) (n=7)
 • Healthy young control (n=5)

8 days → Fecal 16S rRNA sequencing



Name	Taxonomic rank (Upper to Lower)	Changes by SCO-792 (mouse)	Changes after surgery (human and rodent)
Bacteroidetes	Phylum	↑	↑
Firmicutes	Phylum	↓	↓
Proteobacteria	Phylum	↑	↑
Verrucomicrobia	Phylum	↑	↑
Clostridia	Class	↓	↓
Gammaproteobacteria	Class	↑	↑
Clostridiales	Order	↓	↓
Lactobacillales	Order	↓	↑
Erysipelotrichales	Order	↓	↑
Enterobacteriales	Order	↑	↑
Clostridiaceae	Family	↓	↓
Ruminococcaceae	Family	↓	↓
Enterobacteriaceae	Family	↑	↑
Parabacteroides	Genus	↑	↑
Turicibacter	Genus	↓	↓
Clostridium	Genus	↓	↓
Coprococcus	Genus	↓	↓
Dorea	Genus	↑	↓
Ruminococcus	Genus	↑	↓
Escherichia	Genus	↑	↑
Akkermansia	Genus	↑	↑

↑ : increase ↓ : decrease ↑ : consistent ↑ : inconsistent

Additional data are available (DOI: [10.1016/j.phrs.2020.105337](https://doi.org/10.1016/j.phrs.2020.105337))

These enterobacteria were identified from a meta-analysis including 9 human studies and 12 animal experiments (The enterobacteria altered to the same direction in ≥75% of studies) (*Eur J Endocrinol.* (2018) 178:43-56)

Putative Anti-obese Mechanisms of SCO-792

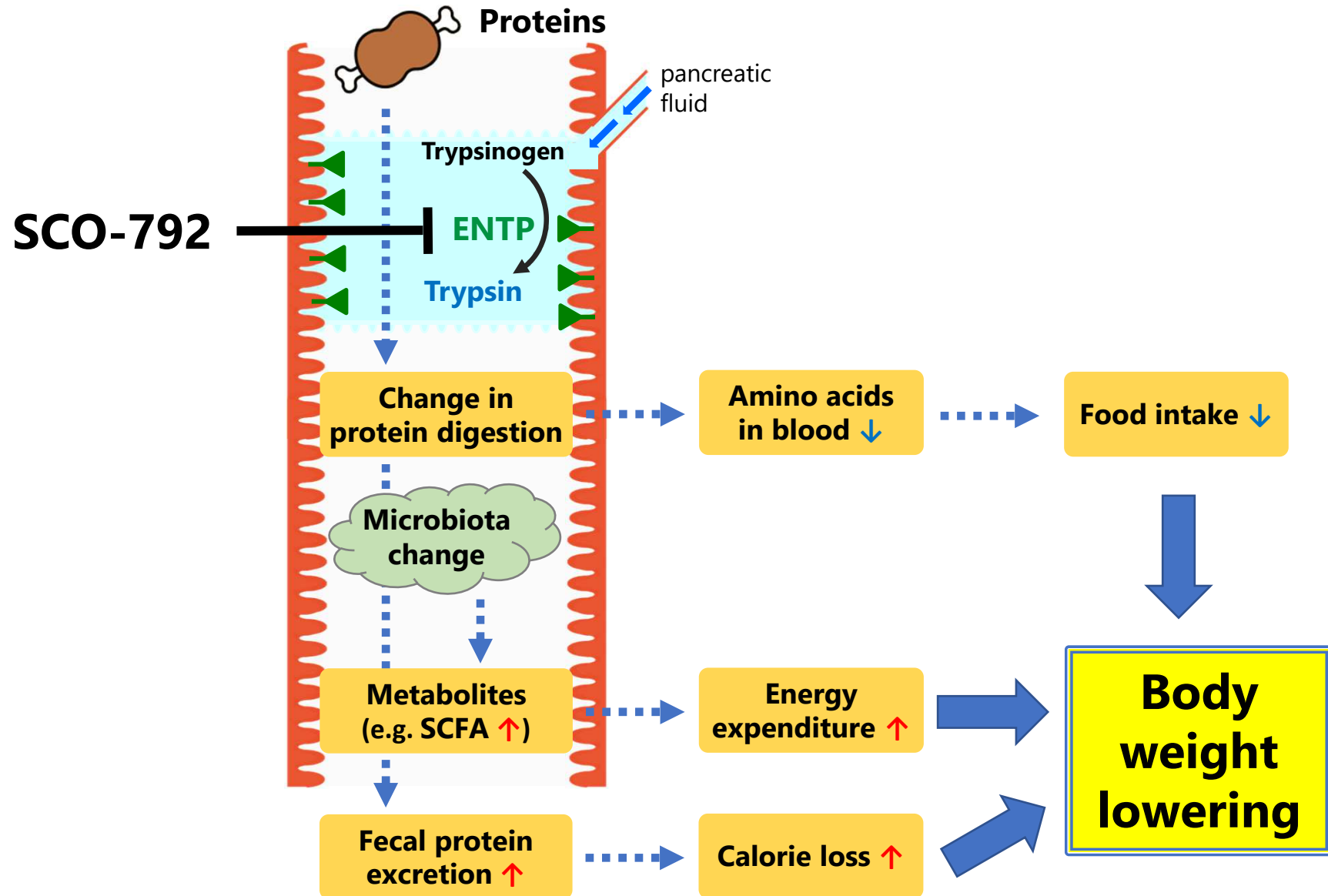


Table of Contents

1. Product Strategy

2. Anti-obese effect

2-1. Clinical

2-2. Pre-clinical

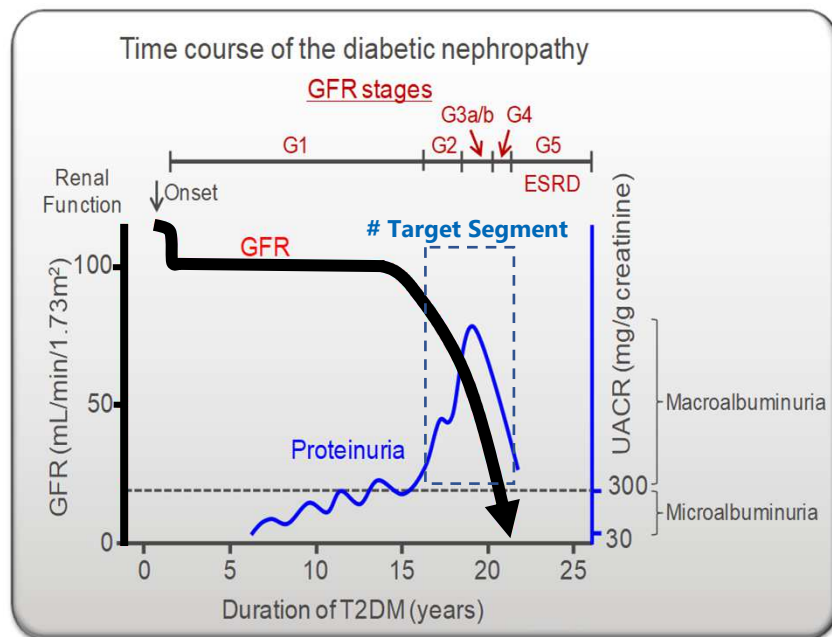
3. Other indication

4-1. Kidney disease

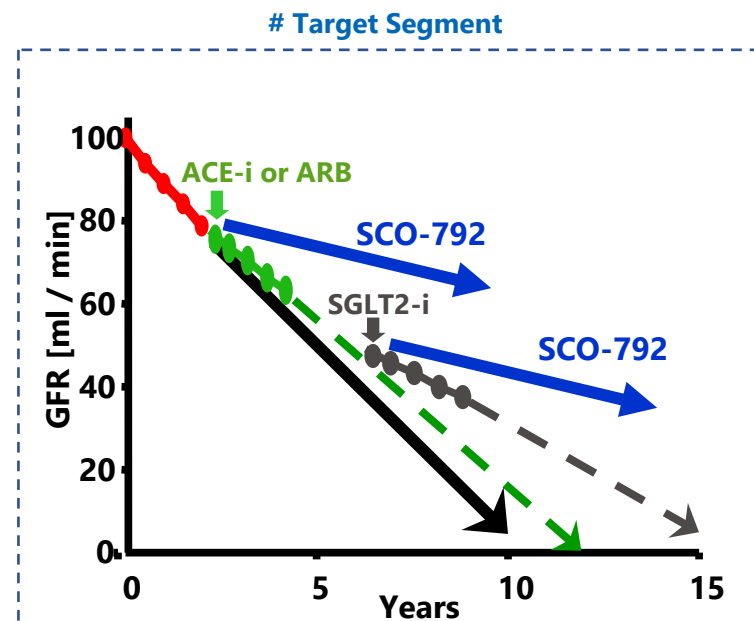
4-2. NASH

4. Intellectual Property

High unmet medical needs exist for Diabetic Kidney Disease



GFR, glomerular filtration rate; UACR, urinary albumin creatinine ratio



- ◆ Natural GFR decline is accelerated by glomerular and tubular injury.
- ◆ ACE-i / ARB and SGLT2-i treatment are not sufficient to delay progression to ESRD resulting from GFR decline.

More efficacious treatment options are required, and SCO-792 in combination with existing therapies could be an ideal solution.

Combining SCO-792 and Angiotensin Receptor Blocker Additively Ameliorated Albuminuria in Wistar Fatty Rats, a Diabetic Kidney Disease Model

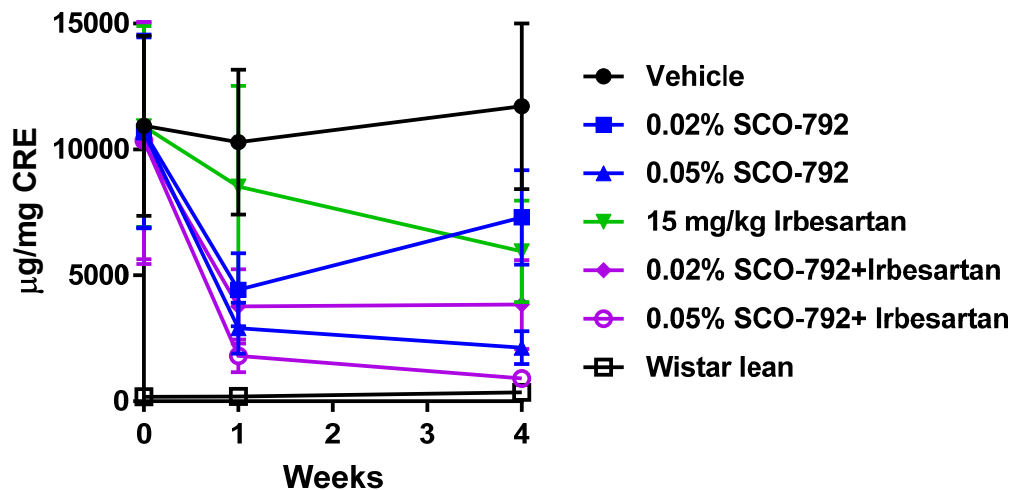


Male Wistar fatty rats, Wistar lean rats (32-week-old)
 CE-2 (normal chow)
 N=7 for fatty, 5 for lean

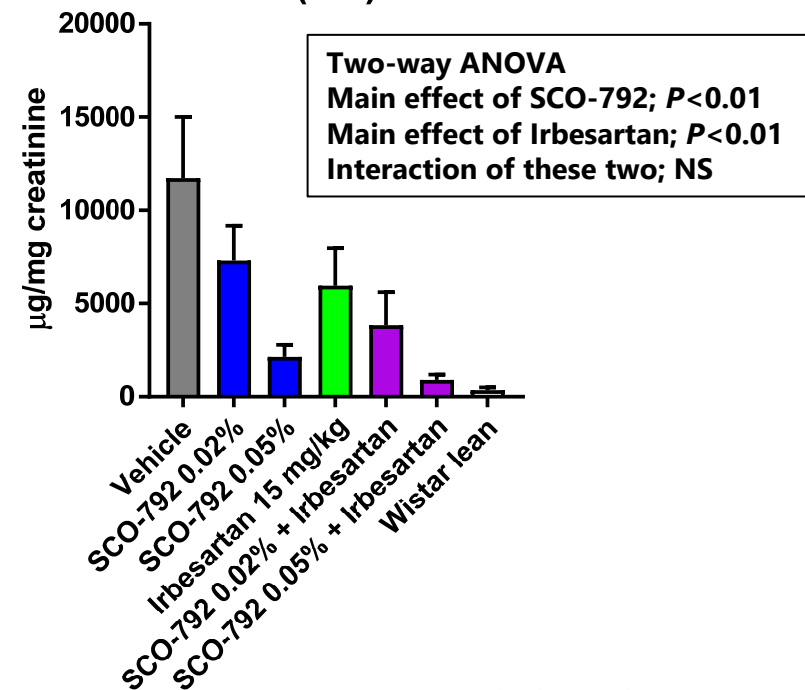
- Vehicle
- SCO-792 (0.02%, 0.05% in the diet)
- Irbesartan (15 mg/kg, *p.o.*)
- Combination

4 weeks

Urine albumin-to-creatinine ratio



Urine albumin-to-creatinine ratio (4w)



Additional data are available
 (DOI: [10.1111/dom.14190](https://doi.org/10.1111/dom.14190))

Means + SD (n=7 for fatty, 5 for lean)

SCO-792 Inhibited GFR Decline and Renal Fibrosis in SHC Rats, a Non-diabetic Chronic Kidney Disease Model



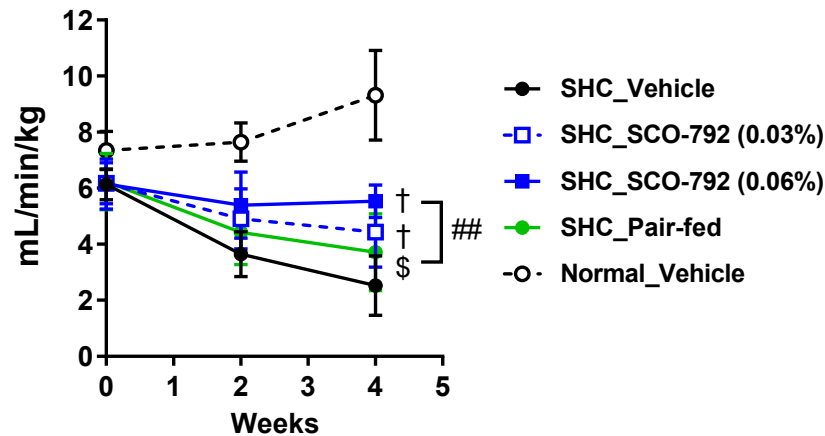
Male SHC rats, SD rat (normal) (20-week-old)
 CE-2 (normal chow)
 N=10 for SHC rats, 6 for SD rats

Compounds were mixed in the diet

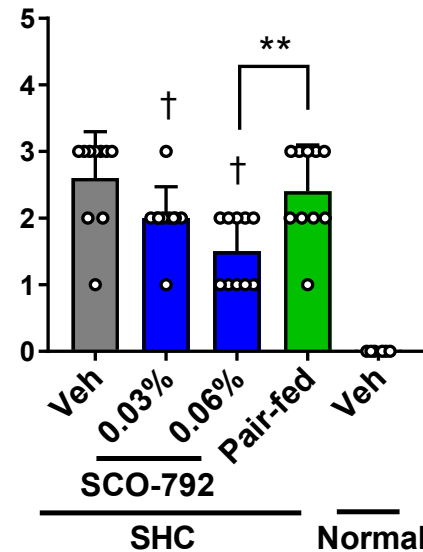
- Vehicle
- 0.03% SCO-792 = 14.9 mg/kg/day
- 0.06% SCO792 = 26.0 mg/kg/day
- Pair-fed (= 0.06% SCO-792)

5 weeks

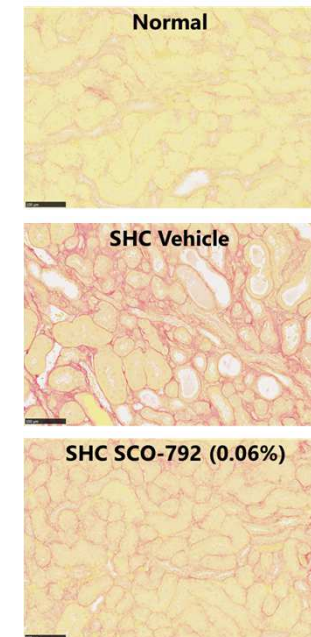
Glomerular filtration rate (GFR)



Fibrosis score



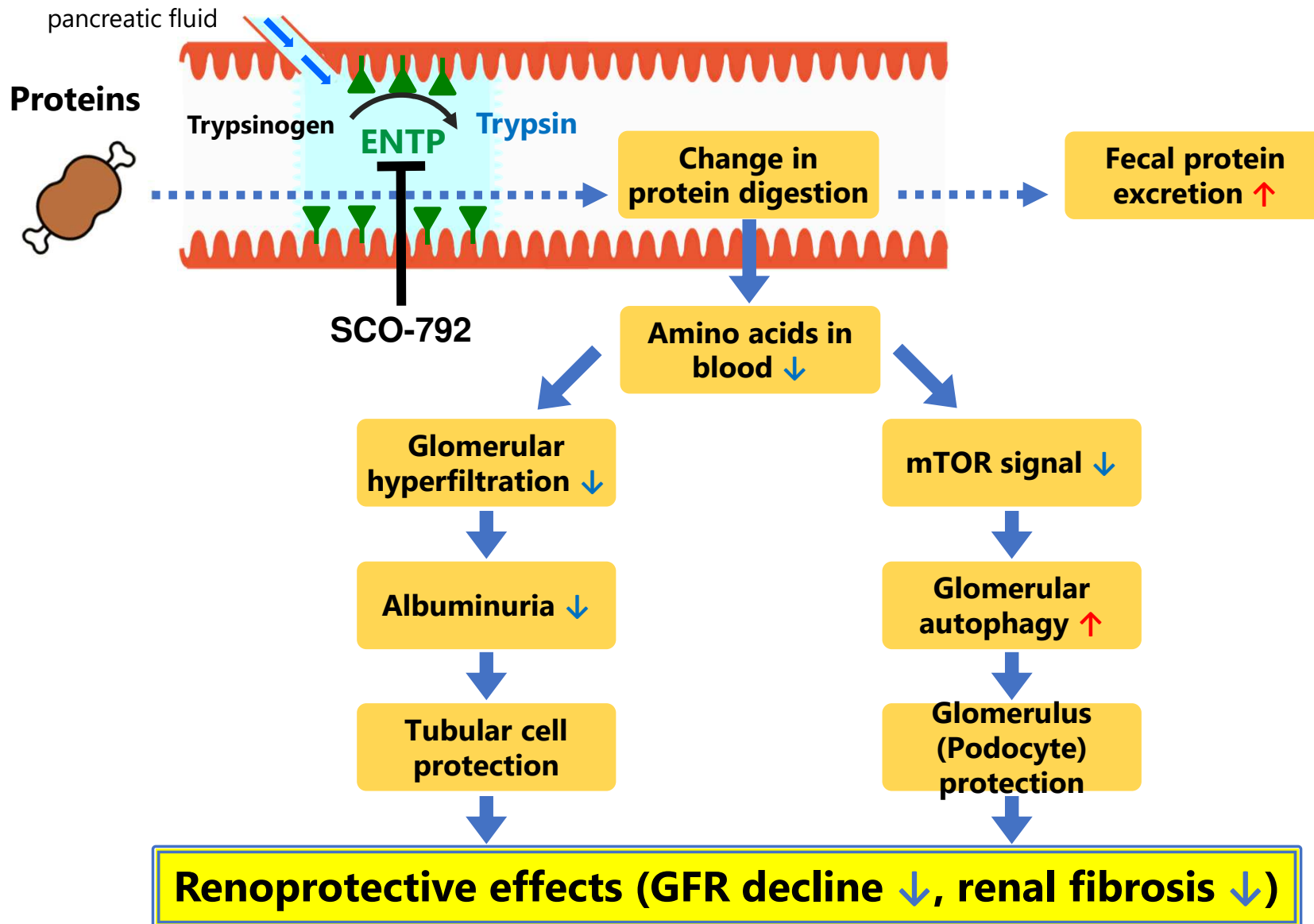
Sirius Red staining



Glomerular filtration rate and renal plasma flow were measured by FITC-inulin and para-aminohippurate, respectively. Means + SD (n=10 for SHC rats, 6 for Normal rats), †p < 0.025 vs. vehicle-treated SHC rats by one-tailed Williams' test, §p < 0.05 vs. vehicle-treated SHC rats by Student's *t*-test, **p < 0.01 vs. SCO-792 0.06% by Student's *t*-test, ##p < 0.01 vs. SCO-792 0.06% by Aspin-Welch test.

Additional data are available (DOI: [10.1093/ndt/gfaa349](https://doi.org/10.1093/ndt/gfaa349))

Putative Renoprotective Mechanisms of SCO-792



Created by referencing following publications

- DOI: [10.1111/dom.14190](https://doi.org/10.1111/dom.14190)
- DOI: [10.1093/ndt/gfaa349](https://doi.org/10.1093/ndt/gfaa349)

Table of Contents

1. Product Strategy

2. Anti-obese effect

2-1. Clinical

2-2. Pre-clinical

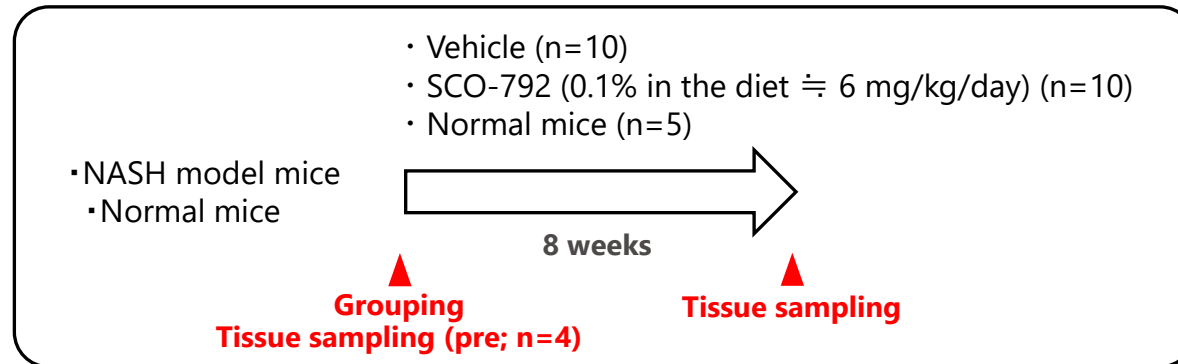
3. Other indication

4-1. Kidney disease

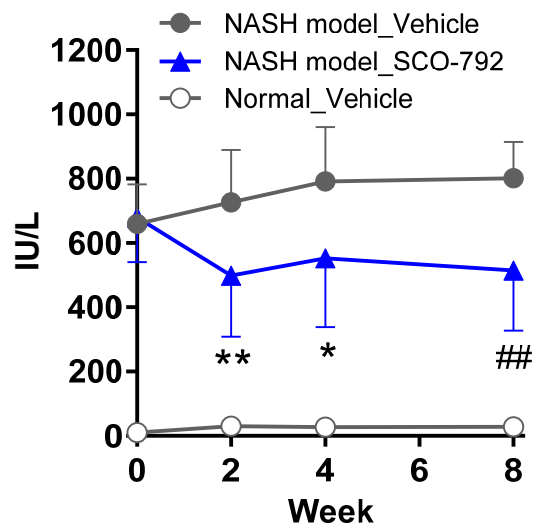
4-2. NASH

4. Intellectual Property

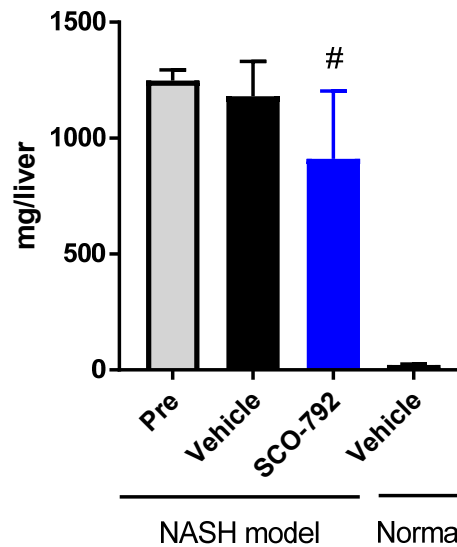
SCO-792 Improved Liver Steatosis and Fibrosis in NASH Model Mice



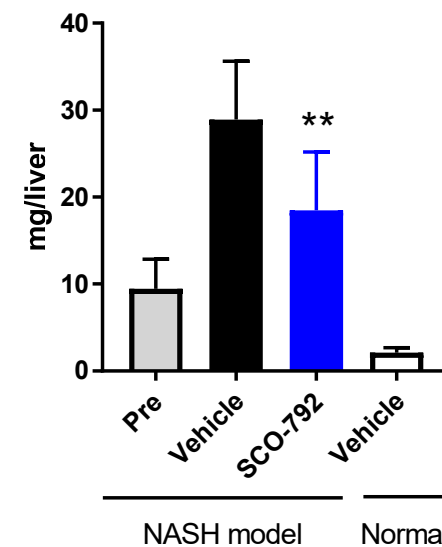
Plasma alanine transaminase



Liver triglyceride



Liver collagen



Means + SD (n=10 for vehicle and SCO-792, 5 for WT mice, 4 for pre)

*p < 0.05, **p < 0.01 vs. vehicle by Student's *t*-test, #p < 0.05, ###p < 0.01 vs. vehicle by Aspin-Welch test.

Table of Contents

1. Product Strategy

2. Anti-obese effect

2-1. Clinical

2-2. Pre-clinical

3. Other indication

4-1. Kidney disease

4-2. NASH

4. Intellectual Property

Intellectual Property Right

- ◆ Patent Protection Term
 - Until 2035 without patent term extension

- ◆ FTO (Freedom to Operate)
 - No serious concerns identified globally

