What phylum does lancelet belong to me

Branchiostoma Branchiostoma lanceolatum gene from Belgium Scientific classification Kingdom: Animalia Phylum: Chordata Class: Leptocardii Order: Amphioxiformes Family: Branchiostomidae Genus: BranchiostomaCosta, 1834 Branchiostoma lanceolatum type (Pallas, 1774) Variety About 11 species 1836 Limax Pallas 1774 non von Linne 1758 non Furussak 1819 non Martin 1784 Dolikhorkinkus Willey 1901 non Mulc and Eyrajpuri 1974 non-Hedge and Keith Tan 1987 Branchiotom is one of the non-living ancestry (order Amphioformess). This is a kind of kind of Branchiostomidae. Anatomical chart B. lanceolatum (click to describe) These little vague eel- or snake-like animals are close relatives of vertebrates. The scientific name means gill mouth, referring to their anatomy - unlike vertebrates, they do not have a true head (with a capsule of the skull, eyes, nose, well-developed brain, etc.), but simply the mouth adjacent to the gill slits, with a slightly enlarged anterior end of the spinal cord above and before them. He doesn't like light. Like all lans, they filter the feeders who hide in the sediments most of the time. The genus lives in coastal waters around the world. Species Branchiostoma Africae Hubbs 1927 Branchiostoma Arabiae Webb 1957 Branchiostoma Bazautense Gilchrist 1923 Branchiostoma belcheri Gray 1847 (Lancelet Belcher) Brunchiotoma Bennett Boschung and Gunther 1966 (Dirty lancelet) Branchiotoma Bermuda Hubbs 1922 Branchiostoma californiense Andrews 1893 (California Lancelet) Brunchiotoma Capense Gilchrist 1902 Branch Caribae Sundevall 1853 (Caribbean Lancelet) Brunchiostoma clonazaa Brunchiostom elongated Sundevall 1852 Brunswick Florida Hubbs 1922 (Florida Lancelet) Brunchiostom Gambines Webb 1958 Branchiostoma indica Willie 1901 Branchiostoma japonica Willie 1896 (Pacific Lancelet) Brunchiostom Lanceolatum Pallas 1774 (European Lancelet) Brunchiostom Residents Webb 1956 Branchiostoma longirostra Boschung 1983 (Shellhash lancelet) Branchchiotoma Malyan Webb 1956 Branchtoma moretonense Kelly 1966; Nomen dubium (Nomen dubium) 1955 Branchiostoma platae Hubbs 1922 Branchiostoma senegalense Webb 1955 Branchiostoma tattersalli Hubbs 1922 Branchiostoma senegalense Webb 19 55 Branchiostoma tattersalli Hubbs1922 Branchiostoma virginiae Hubbs 1922 (Virginia Lancelet) References : Report of the United States Commissioner for Fisheries for fiscal Year 1928 with annexes - Part II (PDF). 1928. Received on 18 August 2017. Marine Organisms Registry (URMO) - Branchiotoma Mortons Kelly, 1966. WoRMS - World Marine Species Register - Branchiostoma Mortonense Kelly, 1966. External media links related to Branchiostoma in the Commons Branchiostoma This article related to the chord is a stub. You can help Wikipedia by expanding it.vte sourced from Not to be confused with The Lancet or Lancelot. Order of the Chords Lancelet Branchiostoma lanceolatum Scientific classification Kingdom: Animalia Phylum: Chordata Subphylum: Cephalochordata Class: Leptocardii Muller, 1845 Order: AmphioxiformesObscure, 1886 Family Asymmetronidae Branchiostomidae Synonyms Branchiostomiformes (/ˈlænslɪts/or/ˈlɑːnslɪts/), also known as amphioxi (only: amphi8us /æmfiˈɒksəs/), consist of approximately 30 to 35 species of fish-like benthic feeding filter. These are modern representatives of the subfilum of Cephalohordat. The Lancelets are very similar and are believed to be linked to the 530-million-year-old Pikalya, whose fossils are known from the Burgess shale. The zoologists are interested in them because they give an evolutionary insight into the origin of vertebrates. The Lanslets contain many organ and organ systems that are closely related to modern fish, but in a more primitive form. Therefore, they give a number of examples of possible evolutionary exappation. For example, gill slits of lans are used only for feeding, not for breathing. The blood system carries food throughout the body, but does not have red blood cells or haemoglobin to transport oxygen. Lancelet genomes have clues about the early evolution of vertebrates: by comparing genes from lans with the same genes in vertebrates can be found changes in gene expression, function and number of vertebrates. The genome of several species of the Genusiostoma genus was sequenced: B. floridae, B. belcheri, and B. lanceolatum. In Asia, lancets are harvested commercially as food for humans and pets. In Japan, B. belcheri was included in the register of endangered animals of Japanese marine and freshwater organisms. Habitat Lancelet's ecology is distributed in shallow subtical sand flats in temperate (as far north as Norway), subtropical and tropical seas around the world. The only exception is the asymmetrical output, a species known from the surroundings of the whale falling to a depth of about 225 m (738 feet). Although they are able to swim, adult amphioxia is mostly benthic. They live in sandy bottoms, the granulometry of which depends on the species and place, and they are usually half buried in the sand. When disturbed, they quickly leave their burrow, swim a short distance, and then quickly burrow again, the rear end first, into the sand. Adults (B. floridae) can tolerate salinity up to 6 degrees Celsius and temperatures from 3 to 37 degrees Celsius. Florida Brunciostoma capturing particles from microbial to small amounts of phytoplankton, while B. lanceolatum is predominantly traps of large particles (Reproduction and spawning of Lanceleths are gonochoric animals, i.e. having two sexes, and reproduce through external fertilization. They breed only during spawning, which varies slightly between species - usually corresponding to spring and summer months. All types of lancets appear shortly after sunset, either in sync (e.g. Branchiostoma floridae, approximately once every 2 weeks during the spawning season) or asynchronous (Branchiostoma lanceolatum, gradual spawning during the season). Nicholas and Linda Holland were the first researchers to describe the method of obtaining amphioxus embryos by induction of spawning in captivity and in vitro fertilization. Spawning can be artificially induced in the laboratory by electric or heat current. The history of taxonomies History The first representative organism group to be described was Branchiostoma lanceolatum. It was described by Peter Simon Pallas in 1774 as a clam bullet from the Limax genus. It was not until 1834 that Gabriel Costa brought the phylogenetic position of the group closer to the agnathhan

vertebrates (hagfish and lamprey), including him in the new genus Branchiostoma (from Greek, branchio and gills, stoma and mouth). In 1836, Jarrell renamed the genus Amphioxus (greek: indicated on both sides), which is now considered an outdated synonym for the Branchiostoma genus. Today, the term amphioxus is still used as a generic name for Amphioxiformes, along with lancelet, especially in English. The order of Amphioxiformes was apparently named in 1886 in Jahresbericht und Abhandlungen des Naturwissenschaftlichen Vereins in Magdeburg. The anatomy of the observation of the anatomy of the amphioxus began in the mid-19th century. First, the adult, then the embryonic anatomy were described. Alexander Kovalevsky for the first time described the key anatomical features of adult amphioxus (hollow dorsal nerve tube, endostil, segmented body, foot tail). De Cuatrefages first fully described the nervous system of the amphioxus. Heinrich Rathke and John Godsir made other important contributions to the anatomy of adult amphioxus. Kovalevsky also released the first full description of the amphioxus embryos, while Schulze and Leikart were the first to describe the larvae. Other important contributions to the emfioxus of embryonic anatomy were given to Hachek, Conklin, and then Tung (experimental embryology). Anatomy of Lancelet Anatomy Depending on the exact species, the maximum length of lancets is usually between 2.5 and 8 cm (1.0-3.1 inches). The B. lanceolatum and B. lanceolatum are among the largest. With the exception of size, the views are very similar in general differs mainly by the number of myotomas and the pigmentation of their larvae. They have a translucent, somewhat fish-like body, but without paired fins or other limbs. A relatively poorly developed tail fin is present, so they are not particularly good swimmers. Although they possess some cartilage-like material of hardening of the gill slits, mouth and tail, they do not have a true skeleton. Nervous system and notochord Like vertebrates, lans have a hollow nerve cord running along the back, pharyngal slits and a tail that passes by the anus. Just like vertebrates, muscles are located in blocks called names. Unlike vertebrates, the dorsal nerve cord is protected not by the bone, but by a simpler notochord composed of cylinder cells that are closely packed to form a hardened rod. Lancelet notochord, unlike vertebrate spine, spreads to the head. This gives the subfile its name (κεφαλή, mullet means head). The thin structure of notochord and the cellular basis of its adult growth are best known for the Lactzelet Bahamas, Asymmetron lucayanum (31) The nerve cord is only slightly larger in the head area than in the rest of the body, so lancelets do not seem to possess a true brain. However, the expression of developmental genes and the electron microscopy of transmission indicate the presence of diencephalic gobrein, possible middle brain and posterior brain, but recent studies involving comparisons with vertebrates show that vertebrate thalamus, pretectums and areas of the middle brain jointly correspond to one area of the amphioxus, which was declared Disencephalic original (DiMes) : Joseph cells, hessen organs, the unsparable front eye and lamelal body, all of which are used by the All these organs and structures are located in the neural tube, with the front eye front, and then the lamellyard of the body, the cells of Joseph, and the organs of Hessen. Joseph's cells and Gessen's organs are naked photoreceptors surrounded by a microville strip. These cells carry opsin melanopsine. Hessen's organs (also known as dorsal ocelli) consist of a photoreceptor cell surrounded by a strip of microville and bearing melanopsin, but half-shrouded pigment cells in cup shape. The peak sensitivity of both cells is 470 nm (blue). Both Joseph's cells and Hessen's organs are in the neural tube, Joseph's cells form the spinal column, the organs of Hessen in the abdominal part along the length of the tube. Joseph's cells extend from the tail end of the anterior vesicles (or brain vesicles) to the boundary between the names 3 and 4, where Hessen's organs begin and continue almost to the tail. The frontal eye of the front eye consists of a pigment cup, a group cells (the term Line 1), three rows of neurons (rows 2-4) and glial cells. The frontal eye, which expresses the PAX6 gene, has been proposed as a homologous of vertebrate paired eyes, a cup pigment like the omologist RPE (retinal epithelial pigment), mniative photoreceptors like omolog vertebrate rods and cones, and a number of two neurons like homologians of retinal ganglion cells. The cup of pigment is oriented concave dorsally. Its cells contain melanin pigment. The U.S. photoreceptor cells, Row 1, are arranged in two diagonal rows, one on either side of the pigmented cup, symmetrically positioned relative to the abdominal middle line. Cells have the shape of a flask, with long, thin ciliary processes (one cilius per cell). The main bodies of the cells lie outside the pigment cup, while the cilia are spread into the pigment cup before turning and exiting. The cells carry opsin c-opsin 1, except for a few that carry c-opsin 3. Row 2 cells are serotonergic neurons that are in direct contact with Row 1 cells. Range 3 and 4 cells are also neurons. Cells in all four rows have axons that are projected into the left and right ventricular nerves. For neurons in line 2, axon projections have been traced to the tagmental neuropylae. Temental neuropil was compared to the locomotive control areas of the hypothalamus of vertebrates, where paracribnal release modulates locomotive patterns such as feeding and swimming. Fluorescent proteins Green fluorescence in the Lancet. (a. Branchiostoma floridae GFP near the eye patch and in oral tentacles.) (b. Asymmetrical onion green fluorescence in gonads.) Lancelet naturally express green fluorescent proteins (GFP) inside their oral tentacles and near the eye patch. Depending on the species, it can also be expressed in the tail and gonads, although this is reported only in the genus Asymmetron. Several fluorescent protein genes have been reported in lancet species around the world. Only Branchiostoma floridae has 16 GFP coding genes. However, GFP produced lancelets more like GFP-made copepods than jellyfish (Aequorea Victoria). There are suspicion GFP plays several roles with lancelets, such as bringing plankton to their mouth. Given lancelets filter feeders, natural current will attract nearby plankton into the digestive tract. GFP is also expressed in larvae, which means that it can be used for photo protection by converting higher energy blue light into a less harmful green light. B. floridae under a fluorescent microscope. Fluorescent proteins from lancets have been adapted for use in molecular biology and microscopy. In a yellow fluorescent protein from brunchiostoma, the lancetolam demonstrates an unusually high quantum yield (0.95 euros). It was developed into a monomeric fluorescent protein, known as mNeonGreen, which the brightest known monomeric green or yellow fluorescent protein. Feeding and digestive system Lancelets are inactive filter feeders, and most of the time they spend half-buried in the sand, and only their frontal part favors. They eat a wide range of small plankton organisms such as bacteria, fungi, diatoms, dinoflagellates and zooplankton, and they will also take detritus. Little is known about the diet of lancelet larvae in the wild, but larvae of several species in captivity can be maintained on a diet of phytoplankton, although this is probably not optimal for asymmetrical onion. Lancelets have oral cirri, thin tentacles like strands that hang in front of the mouth and act as sensory devices and as a filter for water entering the body. Water passes from mouth to large throat, which is lined with numerous gill slits. The ventral surface of the throat contains a groove called endosthil, which, connected to a structure known as the Hachek pit, produces a mucus film. Ciliary action pushes the mucus into the film over the surface of the gill slits, trapping suspended food particles as it does so. Mucus is collected in the second, dorsal groove, known as the epifaring groove, and is transferred back to the rest of the digestive tract. After passing through the gill slits, the water enters the atrium surrounding the throat, and then leaves the body through the atriopor. Both adults and larvae have a cough reflex to clear their mouths or throats of debris or objects too large to swallow. In larvae, the action is mediated by pharyngal muscles, while in an adult animal it is achieved by reducing the atrial. The rest of the digestive system consists of a simple tube that runs from the throat to the anus. Hepatic caecum, one blind end caecum, branches from the lower intestine, with the lining in a state of phagocytizing food particles, the function is not found in vertebrates. Although it performs many liver functions, it is not considered a true liver, but a vertebrate liver homologator. Other Lancelets systems do not have a respiratory system that breathes exclusively through the skin, which consists of a simple epithelium. Despite the name, little if any breathing occurs in gill slits that are exclusively for feeding. The circulatory system does resemble primitive fish in its overall layout, but much simpler and does not include the heart. There are no blood cells, no haemoglobin. The excretion system consists of segmented kidneys containing protonefridi instead of nephrons, and completely unlike vertebrates. Also, unlike vertebrates, there are numerous, segmented gonadas. The Lancelets model became famous in the 1860s when Ernst Hackel (German Darwin) began promoting them as for the ancestor of all vertebrates. By 1900 became an exemplary organism. By the mid-20th century, they were in non-domestication for a variety of reasons, including a decline in comparative anatomy and embryology, and the belief that lancies were more derivative than they appeared, such as deep asymmetry in the larval stage. With the advent of molecular genetics, lans are once again seen as a model of vertebrate ancestors, and are again used as an exemplary organism. As a result of their use in science, methods of storing and breeding lancets in captivity have been developed for several species, originally European branchiostoma lanceolatum, but later also the West Pacific branch belcheri and Branchiostoma japonicum, the Gulf of Mexico and the West Atlantic Brunchiotomy of Florida and neartropical (however, genetic evidence suggests that the Pacific and Pacific populations should be recognized as a separate Atlantic and Pacific population. They can reach the age of 7-8 years. Phylogeny and Lancelet taxonome is a small, translucent, fish-like animal that is one of the closest living relatives of vertebrate invertebrates. Cephalohordata has traditionally been regarded as the birthplace of vertebrates; in turn, these two groups together (sometimes called Notochordata) were considered a fraternal group in Tunicata (also called Urochordata and including sea syringes). According to this point of view, at least 10 morphological features are separated by lans and vertebrates, but not tunicates. New research shows that this model of evolutionary relationality is wrong. Extensive molecular phylogenetic analysis has convincingly shown that cephalohordata is the most basal subphylaxis of chordats, with tunicates being a fraternal group of vertebrates. This revised chordat phylogeny suggests that tunicates have lost some morphological symbols that were previously considered synapomorphics (common. derivative symbols) of vertebrates and lancets. Among the three already inhabiting (living) genera, Asymmetry is basal and placed in its own family. Genetic studies have come to separate conclusions about their divergence, with some suggesting that asymmetry differed from other lancets more than 100 million years ago, and others (with higher statistical support) that this occurred about 42 million years ago. The two remaining genes, Brunchiostom and Epigonichta, separated from each other about 36 million years ago. Despite this deep separation, hybrids between Asymmetron lucayanum and Branchiostoma floridae are viable (among the deepest separated species known to be capable of producing such hybrids). Below is a view recognized by ITIS. Other sources recognize about thirty species. It is likely that unrecognized mysterious species remain. Branchiostomiformes Family Asymmetronidae Genus Asymmetrine Andrews 1893 Amphioxides Gill 1895 Asymmetrical Withdrawal Nishikawa 2004 Asymmetrical Onion Andrews 1893 (Sharptail the family of Epigonictiyd Peters 1876 Genus Epigonichthys Peters 1876 (Amppiplerichth ahgis Wheatley 1932; Batyamfiox Wheatley 1932; Heteropluron Kirkcaldy 1895; Merscalpellus Wheatley 1932; Notasimmetron Wheatley 1932; Parampyoxus Hekel 1893; zeamfioxus Wheatley 1932 Epigonictis Australis (Raff 1912) Epigonictis bassanus (Gunter 1884) Epigonictis cingalensis (Kirkaldy 1894); Nomen dubium (Epigonichthys cultellus Peters 1877 Epigonichthys hectori) (Benham 1901) (копье Гектора) Epigonichthys maldivensis (Фостер Купер 1903) Семья Branchiostomidae Бонапарт 1841 Genus Branchiostoma Коста 1834 не Ньюпорт 1845 не банки 1905 (Amphioxus Yarrell 1836; Лимакс Паллас 1774 non Linnaeus 1758 non Ферусак 1819 non Martyn 1784; Доличорхинчус Уилли 1901 не Малк и Джайраджпури 1974 Бранчиостома Африка Хаббс 1927 Бранчиотома Арабия Уэбб 1957 Бранчиотома Базарутенсе Гилкрист 1923 Бранчиотома Белчери Грей 1847 (Белчер's lancelet) Бранчиотома Беннетти Бошунг и Гюнтер 1966 (Грязный ланселет) Бранчиотома Бермудские хаббы 1922 Бранчиотома калифорниенсе Эндрюс 1893 (Калифорнийский ланселет) Бранчиостома Капенсе Гилкрист 1902 Бранчиотома Карибаеа Сундевалл 1853 (Карибский ланселет) Branchiostoma клоназема Branchiostoma удлиненный Sundevall 1852 Branchiostoma Floridae Хаббс 1922 (Флорида ланселет) Бранчиостома Гамбиенсе Уэбб 1958 Branchiostoma Indica Уилли 1901 Branchiostoma japonica Уилли 1896 (Тихоокеанский ланселет) Бранчиостома ланселата Паллас 1774 (Европейский ланселет) Бранчиостома леоненсе Уэбб 1956 Бранчиостома лонгирострa Бошунг 1983 (Шеллхаш Ланслет) Бранчиостома Малайана Уэбб 1956 Branchiostoma moretonense Kelly 1966; nomen dubium (Nomen dubium) 1955 Branchiostoma nigeriense Webb 1955 Branchiostoma Platae Hubbs 1922 Branchiostoma senegalense Webb 1955 Branchiostoma tattersalli Hubbs 1922 Branchiostoma virginiae Hubbs 1922 (Virginian lancelet) Links . 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