

## Cephalic musculature of the Pacman catfish *Lophiosilurus alexandri* Steindachner, 1876 (Siluriformes, Pseudopimelodidae)

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### ABSTRACT

Among the Pseudopimelodidae, the Pacman catfish *Lophiosilurus alexandri* has the strongest depressed head, larger mouth, and thicker body towards the caudal fin. Based on their external morphology, it is assumed that the form of the muscles may vary from other Pseudopimelodidae. This research aims to describe the head musculature of *L. alexandri* and compare it with other species, providing additional data for understanding Siluriformes' functional anatomy, systematics, and evolution. *Lophiosilurus alexandri* was dissected and bone and cartilage were stained, and the results were compared with *Pimelodus maculatus*, *Pimelodus microstoma*, *Pseudopimelodus mangurus*, *Batrochoglanis labrosus*, and *Lophiosilurus fowleri*. Phylogenetic analysis identified three synapomorphies for the family Pseudopimelodidae, three for the subfamily Batrochoglaninae, three for the *Lophiosilurus*, two autapomorphies for *L. alexandri*, one for *L. fowleri*, one for *B. labrosus* and five for *P. mangurus*. The rounded shape of the *adductor mandibulae* is very conspicuous and distinguishes the Pseudopimelodidae from the Pimelodidae, which have an elongated muscle. Furthermore, the absence of the muscle responsible for the abduction of the maxillary barbels, the *retractor tentaculi*, is a notable synapomorphy for Pseudopimelodidae and Pimelodidae. A synapomorphy of the Pseudopimelodidae is the *levator arcus palatini* origin, which includes the lateral ethmoid, while in *Pimelodus*, the origin starts medially on the frontal bone. This feature plays a crucial role in the lateral expansion of the oral cavity through suspensory abduction. Despite morphologically similar species with similar habits, the musculature of *L. alexandri*, *Lophius piscatorius*, and *Chaca bankanensis*, diverge significantly, evidencing different ways of musculature arrangements to achieve similar functions.

**Key words:** Systematic, Morphology, Evolution, Species, Synapomorphy.

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