

Axillary glands in the armoured catfish *Corydoras aeneus* (Callichthyidae, Siluriformes)

Axillardrüsen beim Panzerwels *Corydoras aeneus* (Callichthyidae, Siluriformes)

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Summary: In the armoured catfish *Corydoras aeneus* paired axillary glands are described employing conventional histology and ultrathin sections. The tubular gland opens near the first pectoral ray. A strong longitudinal muscle is attached to the connective tissue covering the inner side of each gland. Gland cells are almost completely filled with a rather homogeneous secretory product of varying electron density. The cytoplasm is limited to an area around the nucleus and a small rim close to the lateral plasmalemma. These parts are crowded with a considerable amount of dictyosomes and profiles of the rough endoplasmic reticulum. Smaller, electron-lucent cells situated basally between the gland cells are largely undifferentiated; some of them show giant mitochondria with only few cristae.

Key words: Callichthyidae, axillary glands, proteinaceous secretion

Zusammenfassung: Anhand von histologischen Schnitten und Ultradünnschnitten werden beim Panzerwels *Corydoras aeneus* paarige Axillardrüsen beschrieben, die neben dem ersten Brustflossenstachel ausmünden. Die Drüsen sind tubulär; ihre Zellen sind nahezu vollständig mit einem relativ homogenen Sekretprodukt unterschiedlicher Elektronendichte gefüllt. Das Cytoplasma an der Peripherie der Zellen und um den Kern herum enthält zahlreiche Dictyosomen und Zisternen des rauen endoplasmatischen Reticulums. Kleinere, meist basal zwischen den Drüsenzellen gelegene Zellen sind undifferenziert; manche besitzen extrem große Mitochondrien mit nur wenigen Cristae.

Schlüsselwörter: Callichthyidae, Axillardrüsen, proteinhaltige Sekrete

1. Introduction

Toxic skin secretions are wide spread among catfishes (Siluriformes). Currently, species at least of nine of the 21 siluriform families are known to have such secretions that are discharged by epidermal cells (crinotoxins) and/or by venom apparatuses (acanthotoxins) (for review see Perriére and Goudey-Perriére 2003). The latter consist of

spines of the dorsal and/or pectoral fins, which may be distally flanked by aggregations of single gland cells that rupture during spinous puncture, and/or "axillary" glands that open with a large pore near the base of the pectoral fin, but their secretion does not seem to coat the pectoral spine. The discharged substances are diverse; they may have neurotoxic and hemotoxic properties and symptoms include pain, tissue