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Structure of th skin of a slender catfish, *Silurus microdorsalis* (Siluridae, Pisces)

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Introduction

The korean slender catfish, *Silurus microdorsalis*, inhabits clear water and the rocky or stony bottoms in the upstream of a river. Sometimes, such habitats may become hypoxic because of during the summer dry season, and become low or lacking in oxygen. Nevertheless, the korean slender catfish keep alive capable of adaptation in such oxygen-poor environments. The body of *S. microdorsalis* being covered with lots of sticky mucous substances. Therefore, the purpose of present work is to study the structure and histochemistry of the skin of *S. microdorsalis* and to discuss the relationship between skin and respiration.

Materials and Methods

The specimens for histological examination were fixed in 10% neutral buffered formaldehyde and subsequently took skin fragments from three regions : dorsum, lateral region and abdomen. These fragments were dehydrated through a standard ethanol series to 100%, cleared in xylene and then embedded in wax (Paraplast, Oxford). Seven ㎛ sections were deparaffinized and stained them with Ehrlich hematoxylin, counter-stained with eosin, Masson trichrome for general histology, Alcian blue solution (AB) at pH 1.0 and 2.5, Periodic acid-Schiff (PAS) and metachromatic reactions with toluidine blue and then make an observation. And then, we measured by Carl Zeiss Vision (AxioVision LE Rel. 4.4).

For transmission electron microscopy(TEM), the skin fragments were

excised and prefixed in 25% glutaraldehyde in a 0.2M Cacodylate buffer at pH 7.3. Postfixation was performed in 2% osmium tetroxide in the same buffer. After dehydration in a graded alcohol series, fragments were embedded in Epon 812. Ultrathin sections were stained with uranyl acetate and lead citrate, and observed with a transmission electron microscope.

Results and Summary

Epidermis

The epidermis consists of three layers : the outermost layer, middle layer and stratum germinativum. The epidermis consists of the small mucus cells and large club cells. The mucus cells give a deep red color with the PAS reaction, and γ-metachromasia with toluidine blue, blue with the AB a pH 1.0 and 2.5. The lymphocytes are present epidermis become a pink color with Masson trichrome.

Dermis

The dermis lacks scales and consist of connective tissue of coarse collagenous fibers. A few collagen fiber bundles are observed vertically at intervals. This layer is weakly PAS positive and become a deep green color in Masson trichrome stained preparations for collagen. Numberous blood capillaries are present and the pigment cells are present just beneath the basement membrane or the bottom of the dermis.

References

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