ABSTRAK

STUDI HISTOLOGI KULIT IKAN BETOK (*Anabas testudineus*) DENGAN PEWARNAAN HEMATOKSILIN-EOSIN

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Ikan betok (*Anabas testudineus*) merupakan ikan asli Indonesia yang dapat bertahan hidup di lingkungan dengan kondisi yang terbatas seperti di rawa-rawa atau sungai. Ikan betok memiliki ciri khas adanya garis gelap melintang pada bagian kulit dan termasuk dalam kategori "*Least Concern,*" menurut IUCN yang dapat digunakan untuk penelitian. Tujuan dari penelitian ini adalah mempelajari histologi kulit ikan betok dan diharapkan dapat melengkapi data anatomi ikan betok. Empat ekor ikan betok diperoleh dari Sungai Progo, Kabupaten Kulon Progo, Daerah Istimewa Yogyakarta. Kulit dari badan ikan betok yaitu bagian kranial, medial, dan kaudal dikoleksi sebagai sampel. Sampel dibuat preparat histologi, kemudian diwarnai dengan pewarnaan hematoksilin-eosin (HE), dan hasil pewarnaannya diamati menggunakan mikroskop cahaya dan mikroskop stereo yang dilengkapi *Optilab Viewer* kemudian dianalisis secara deskriptif. Hasil penelitian menunjukkan kulit ikan betok terdiri dari lapisan epidermis dan dermis. Lapisan epidermis teramati lebih tipis dibandingkan dengan lapisan dermis. Ketebalan epidermis dan dermis paling tebal ditemukan pada area kranial ($32,53^{a} \pm 7,87$ µm dan $358,38^{e} \pm 54,42$ µm), diikuti area medial ($26,36^{b} \pm 8,20$ µm dan $279,27^{d} \pm 60,76$ µm), dan paling tipis pada area kaudal ($25,59^{b} \pm 5,44$ µm dan $171,34^{e} \pm 34,25$ µm), dengan perbedaan signifikan pada setiap lapisan ditunjukkan oleh *supercript* berbeda ($P<0,05$). Epidermis merupakan jaringan epitel yang kompleks dengan sel epitel berbentuk skuamus tanpa keratinisasi pada bagian superfisial dan berbentuk kolumner atau kuboid pada bagian basal. Selain itu, ditemukan kelenjar uniseluler berupa sel mukus dan *cell club*, serta sel pigmen. Lapisan dermis terdiri dari *stratum spongiosum* dan *stratum compactum*. *Stratum spongiosum* merupakan jaringan ikat longgar, sedangkan *stratum compactum* merupakan jaringan ikat padat kolagen regular. *Stratum spongiosum* ditemukan sel lemak, sel pigmen, pembuluh darah, fibroblas dan sisik. Lapisan dermis lebih tebal pada kulit bagian kranial dan medial dibandingkan dengan area kaudal. Lapisan bawah dermis terdapat jaringan ikat longgar yaitu hipodermis.

Kata kunci: hematoksilin-eosin, histologi, ikan betok, kulit, mikroskop cahaya

ABSTRACT

HISTOLOGICAL STUDY OF THE SKIN OF CLIMBING PERCH (*Anabas testudineus*) WITH HEMATOXYLIN-EOSIN STAINING

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The climbing perch (*Anabas testudineus*) is an indigenous Indonesian fish capable of surviving in environments with limited conditions, such as swamps or rivers. This species is characterized by distinct dark transverse lines on its skin and is categorized as "Least Concern" according to the IUCN, making it a suitable subject for research. The aim of this study was to investigate the histology of the climbing perch skin, which is expected to complement existing anatomical data on this species. Four specimens were obtained from the Progo River, Kulon Progo Regency, Special Region of Yogyakarta, Indonesia. Skin samples were collected from three body regions: cranial, medial, and caudal. The samples were prepared as histological slides, stained with hematoxylin-eosin (HE), and then observed using a light microscope and a stereo microscope equipped with Optilab Viewer. Observations were analyzed descriptively. The results showed that the skin of climbing perch consists of an epidermis and a dermis layer. The epidermis was observed to be thinner than the dermis. The greatest thickness of the epidermis and dermis was found in the cranial area ($32.53^{a} \pm 7.87$ µm and $358.38^{c} \pm 54.42$ µm), followed by the medial area ($26.36^{b} \pm 8.20$ µm and $279.27^{d} \pm 60.76$ µm), and the thinnest in the caudal area ($25.59^{b} \pm 5.44$ µm and $171.34^{e} \pm 34.25$ µm), with significant differences in each layer as indicated by different superscripts ($P<0.05$). The epidermis was identified as a complex epithelial tissue, with superficial layers composed of non-keratinized squamous epithelial cells and basal layers containing columnar or cuboidal epithelial cells. Additionally, unicellular glands such as mucous cells and club cells were observed, along with pigment cells. The dermis layer consisted of the stratum spongiosum and the stratum compactum. The stratum spongiosum is a loose connective tissue layer, while the stratum compactum is composed of dense regular collagenous connective tissue. Within the stratum spongiosum, adipocytes, pigment cells, blood vessels, fibroblasts, and scales were found. The dermis layer was thicker in the cranial and medial regions of the skin compared to the caudal region. Beneath the dermis, a loose connective tissue layer identified as the hypodermis was present.

Keywords: climbing perch, hematoxylin-eosin, histology, light microscope, skin