

ABSTRAK

GAMBARAN HISTOLOGI HEMISPHERIUM SEREBRI IKAN BETOK (*Anabas testudineus*) DENGAN PEWARNAAN *CRESYL VIOLET*

Esther Margaret Taniaga

21/481058/KH/10981

Anabas testudineus, yang dikenal sebagai ikan betok, merupakan salah satu spesies ikan air tawar yang tersebar luas di perairan Indonesia, terutama di wilayah Sumatera, Jawa, dan Kalimantan. Ikan betok dengan status pada *International Union for Conservation of Nature's red list* yang termasuk resiko rendah, dapat dibudidaya dengan mudah karena omnivora dan memiliki siklus reproduksi yang cepat sehingga menghasilkan telur yang banyak mendukung potensi ikan betok menjadi hewan model. Penelitian ini bertujuan untuk mempelajari gambaran histologi mengenai hemispherium serebri ikan betok dengan pewarnaan *cresyl violet*. Sampel yang digunakan terdiri dari dua otak ikan betok dengan berat masing-masing 0,06 gram dan 0,08 gram. Proses fiksasi dilakukan menggunakan *Neutral Buffered Formalin* 10%. Selanjutnya, bagian hemispherium serebri dikoleksi dan dipotong secara transversal, kemudian diproses menjadi preparat histologi dalam blok parafin. Potongan jaringan otak dibuat dengan ketebalan 5 μm dan dilakukan pewarnaan *cresyl violet*. Area hemispherium serebri diamati menggunakan mikroskop cahaya, dan hasil pengamatan didokumentasikan dengan bantuan perangkat *Optilab Viewer* dan *Image Raster*. Data yang diperoleh dari hasil penelitian ini akan dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa hemispherium serebri ikan betok (*Anabas testudineus*) terdiri atas dua area utama, yaitu area dorsal (pallium) dan area ventral (subpallium). Area dorsal terbagi menjadi lima zona, meliputi zona medial, dorsal, lateral, posterior, dan sentral. Sementara itu, area ventral juga terdiri atas lima zona, yaitu zona dorsal, ventral, suprakomisural, postkomisural, dan zona sentral. Berdasarkan hasil pengamatan mikroskopis, neuron penyusun hemispherium serebri mencakup berbagai tipe sel, antara lain *multipolar radial neuron*, *pyramid-like cell*, *stellate cell*, *pear-shaped cell*, *spindle-shaped neuron*, horizontal neuron, dan *rounded cell*, dan terdapat sel pendukung (*glial cell*).

Kata kunci: *Anabas testudineus*, *cresyl violet*, hemispherium serebri, ikan betok

ABSTRACT

HISTOLOGICAL IMAGE OF THE HEMISPHERIUM CEREBRI OF THE CLIMBING PERCH (*Anabas testudineus*) USING *CRESYL VIOLET* STAINING

Esther Margaret Taniaga

21/481058/KH/10981

Anabas testudineus, commonly known as the climbing perch, is a freshwater fish species widely distributed in Indonesia, particularly in Sumatra, Java, and Kalimantan. *Anabas testudineus* is listed as least concern on the International Union for Conservation of Nature's red list Red List. This species is easy to cultivate due to its omnivorous diet and rapid reproductive cycle, which results in a high number of eggs. These characteristics support the potential of *Anabas testudineus* to be developed as a model organism. This study aims to explore the potential of *Anabas testudineus* as an alternative model organism by examining the brain anatomy, with a specific focus on the hemispherium cerebri. The objective of this research is to observe the histology of hemispherium cerebri of the climbing perch using *cresyl violet* staining. The samples used in this study consisted of two brains from climbing perch specimens, weighing 0.06 grams and 0.08 grams, respectively. Fixation was performed using 10% Neutral Buffered Formalin. Subsequently, the hemispherium cerebri was collected and sectioned transversely, followed by histological processing into paraffin blocks. Brain tissues were sliced at a thickness of 5 μm and stained using the *cresyl violet* method. Observations of the hemispherium cerebri were conducted under a light microscope, and the results were documented using Optilab Viewer and Image Raster software. The data obtained were analyzed descriptively. The results revealed that the hemispherium cerebri of *Anabas testudineus* consists of two major areas: the dorsal (pallium) and ventral (subpallium) regions. The dorsal area is subdivided into five zones: medial, dorsal, lateral, posterior, and central. Similarly, the ventral area is composed of five zones: dorsal, ventral, supracommissural, postcommissural, and central. Based on microscopic observations, the neuronal morphology in the hemispherium cerebri includes various cell types such as glial cells, multipolar radial neurons, pyramid-like cells, stellate cells, pear-shaped cells, spindle-shaped neurons, horizontal neurons, and rounded cells.

Keywords: *Anabas testudineus*, *cresyl violet*, hemispherium cerebri, climbing perch