

INTISARI

ANALISIS STRUKTUR DAN HISTOLOGI LIDAH KATAK POHON JAWA (*Rhacophorus margaritifer*) MENGGUNAKAN SCANNING ELECTRON MICROSCOPE (SEM) DAN PEWARNAAN HEMATOKSILIN EOSIN

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Katak pohon jawa (*Rhacophorus margaritifer*) merupakan katak endemik Jawa yang digolongkan ke dalam Ordo Anura, Famili Rhacophoridae, dan Genus *Rhacophorus*. Katak pohon jawa berperan penting sebagai predator maupun mangsa serta memiliki fungsi sebagai bioindikator. Terdapat variasi bentuk dan kompleksitas lidah berbagai Amfibi. Katak menggunakan *adhesive tongues* untuk menangkap mangsa. Lidah katak diketahui memiliki dua tipe papilla yaitu papilla *fungiform* dan papilla *filiform*. Penelitian ini bertujuan untuk mengidentifikasi morfologi dan histologi lidah katak pohon jawa dengan *scanning electron microscope* (SEM) dan pewarnaan hematoksilin eosin (HE). Empat ekor katak pohon jawa yang diperoleh dari kaki Gunung Slamet digunakan dalam penelitian ini. Identifikasi spesies dilakukan di Laboratorium Sistematika Hewan Fakultas Biologi Universitas Gadjah Mada menggunakan satu ekor katak pohon jawa. Tiga sampel lainnya dipreparasi dengan membuka *cavum oris* dan memisahkan bagian lidah kemudian sampel disimpan dalam larutan *paraformaldehyde* 4%. Dua sampel lidah diproses untuk pengamatan menggunakan SEM dan satu sampel diproses menjadi blok parafin, dipotong dengan ketebalan 8 μ m, dan diwarnai dengan pewarna HE. Hasil pewarnaan diamati di bawah mikroskop cahaya dan difoto menggunakan OptiLab Viewer. Papilla *fungiform* dan papilla *cauliflower filiform* ditemukan pada permukaan dorsal lidah katak pohon jawa menggunakan metode pengamatan SEM. Papilla *fungiform* tersusun atas *taste disc* yang terdiri dari sel goblet, sel *wing*, mukus, dan *microridge*. Hasil pengamatan menggunakan HE menunjukkan lidah katak pohon jawa tersusun atas lamina epitelialis mukosa, lamina propria, dan lamina muskularis yang disertai dengan papilla *fungiform* dan papilla *cauliflower fungiform*. Pada lamina epitelialis mukosa ditemukan epitelium kolumnar pseudostratifikasi tidak terkeratinisasi disertai dengan sel goblet, sel *wing*, *cilia*, dan mukus pada *taste disc* yang terletak di papilla *fungiform*. Pada lamina propria mukosa dapat ditemukan jaringan ikat padat. Lamina muskularis terdiri atas otot lurik yang meliputi m. *genioglossus* dan m. *hyoglossus*. Berdasarkan morfologi dan struktur yang ditemukan, lidah katak pohon jawa berperan dalam sistem digesti dan berfungsi sebagai organ *gustatory*.

Kata kunci: *Rhacophorus margaritifer*, Lidah, Histologi, *Scanning Electron Microscope*, Hematoksilin Eosin

ABSTRACT

STRUCTURE AND HISTOLOGY ANALYSIS OF THE TONGUE OF JAVAN TREE FROG (*Rhacophorus margaritifer*) USING SCANNING ELECTRON MICROSCOPE (SEM) AND HEMATOXYLIN EOSIN STAINING

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The Javan tree frog (*Rhacophorus margaritifer*) is a frog endemic to Java which is included in the Order Anura, Family Rhacophoridae, and Genus *Rhacophorus*. The Javan tree frog plays an important role as both predator and prey and has a function as a bioindicator. There are variations in shape and complexity of the tongues of various Amphibians. Frogs use their adhesive tongue to catch prey. The frog tongue is known to have two types of papillae, namely fungiform papillae and filiform papillae. This study aims to identify the morphology and histology of the Javan tree frog tongue using scanning electron microscope (SEM) and hematoxylin eosin (HE) staining. Four Javan tree frogs obtained from the foot of Mount Slamet were used in this study. Species identification was carried out at Laboratorium Sistemika Hewan, Faculty of Biology, Gadjah Mada University using a single Javan tree frog. The other three samples were prepared by opening the oral cavity and separating the tongue parts, then the samples were stored in 4% paraformaldehyde solution. Two tongue samples were processed for observation using SEM and one sample was processed into paraffin blocks, cut into 8 μ m thickness, and stained with HE stain. Staining results were observed under a light microscope and photographed using the OptiLab Viewer. Fungiform papillae and cauliflower filiform papillae were found on the dorsal surface of the Javan tree frog tongue using the SEM method. Fungiform papillae are composed of taste discs consisting of goblet cells, wing cells, mucus and microridges. The results of observations using HE showed that the tongue of the Javan tree frog was composed of lamina epithelial mucosa, lamina propria, and lamina muscularis with fungiform papillae and cauliflower filiform papillae. In the lamina epithelial mucosa, non-keratinized pseudostratified columnar epithelium was found with goblet cells, wing cells, cilia, and mucus on the taste disc which is located in the fungiform papillae. In the lamina propria mucosa can be found dense connective tissue. The lamina muscularis consists of striated muscles which include m. genioglossus and m. hyoglossus. Based on the morphology and structure found, the Javan tree frog tongue plays a role in the digestive system and functions as a gustatory organ.

Keywords: *Rhacophorus margaritifer*, Tongue, Histology, Scanning Electron Microscope, Hematoxylin Eosin