

INTISARI

GAMBARAN HISTOLOGI TRAKEA DAN PULMO *Hystrix javanica*

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Hystrix javanica merupakan salah satu spesies landak endemik Indonesia. Populasi *Hystrix javanica* mengalami penurunan akibat kegiatan manusia yang menjadikannya sebagai bahan pangan dan jamu serta diburu karena dianggap sebagai hama pertanian. Untuk mengantisipasi kemungkinan terjadinya kepunahan, perlu dilakukan pendokumentasian data *Hystrix javanica*. Penelitian ini bertujuan untuk mendokumentasikan data struktur histologi dan morfometri trakea dan pulmo *Hystrix javanica*.

Penelitian menggunakan sampel organ trakea dan pulmo dari dua ekor *Hystrix javanica* yang berasal dari Tawangmangu, Jawa Tengah. Pengamatan trakea dan pulmo dilakukan secara makroskopik dan mikroskopik. Trakea dan pulmo diproses menjadi blok parafin dipotong dengan ketebalan 5 μm , kemudian dilakukan pewarnaan menggunakan metode *Hematoxylin Eosin* (HE) dan *Alcian Blue* pH 2,5-*Periodic Acid Schiff* (AB pH 2,5-PAS). Morfometri diameter lumen saluran pernafasan diukur menggunakan jangka sorong dan *opti lab image raster*.

Trakea *Hystrix javanica* memiliki panjang 7,1 cm dengan jumlah kartilago hialin 21 buah berbentuk C. Pulmo *Hystrix javanica* terbagi menjadi tujuh lobus yaitu apikal dexter, medial dexter, assesorius, diafragmatika dexter, apikal sinister, medial sinister dan diafragmatika sinister. Trakea *Hystrix javanica* memiliki rata-rata diameter lumen $5.919,17 \pm 423,09 \mu\text{m}$, bronkus ekstrapulmonaris $3.833,13 \pm 884,87 \mu\text{m}$, bronkus intrapulmonaris $604,61 \pm 72,87 \mu\text{m}$ dan bronkiolus $130,56 \pm 38,70 \mu\text{m}$. Struktur histologi trakea *Hystrix javanica* tersusun dari tunika mukosa, tunika submukosa, *musculo-cartilaginous* dan tunika adventisia. *Musculo-trachealis Hystrix javanica* bagian anterior terletak di sisi luar kartilago sedangkan *musculo-trachealis* bagian posterior terletak di sisi luar kartilago. *Hystrix javanica* tidak memiliki bronkiolus terminalis. Pewarnaan *Alcian Blue* pH 2,5 *Periodic Acid Schiff* (AB pH 2,5-PAS) menunjukkan adanya distribusi mukopolisakarida asam pada sel-sel goblet mukosa trakea, bronkus ekstrapulmonaris dan kartilago hialin. Mukopolisakarida netral dapat ditemukan pada sel-sel epitelium trakea sampai alveolus.

Kata Kunci : *Hystrix javanica*, trakea, pulmo, *Alcian Blue* pH 2,5-*Periodic Acid Schiff*

ABSTRACT

HISTOLOGICAL STRUCTURE OF *Hystrix javanica* TRACHEA AND PULMO

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Hystrix javanica is one of Indonesian endemic porcupine species. *Hystrix javanica* population keep decreasing not only due to human activity such as food and traditional medicine (*jamu*), but also killed as an agricultural pests. In anticipating the probability of extinction, recording on *Hystrix javanica*'s data is needed. This research aim to explore the data of histological structure and morphometry trachea and pulmo of *Hystrix javanica*.

The research used trachea and pulmo of two *Hystrix javanica* from Tawangmangu, Central Java. Trachea and pulmo samples were observed macroscopically and microscopically. The samples were then processed into parafin block and cut 5 μm . Thus, the sections were stained with *Hematoxylin Eosin* (HE) and *Alcian Blue pH 2.5-Periodic Acid Schiff* (AB pH 2,5-PAS). Lumen's diameter of respiratory tract were measured by using the caliper and *opti lab image raster*.

The length of *Hystrix javanica*'s trachea is 7,1 cm with 21 hyaline cartilage and C shaped. The pulmo of *Hystrix javanica* consist of seven lobes, they are apical dexter, medial dexter, accesorius, diaphragmatica dexter, apical sinister, medial sinister and diaphragmatica sinister lobes. Histological structure of *Hystrix javanica* trachea consists of tunica mucosa, tunica submucosa, *musculo-cartilaginous* and tunica adventitia layer. At the anterior parts, *musculo-trachealis* is located outside of the cartilage, while at the posterior parts, the *musculo-trachealis* is located inside of the cartilage. *Hystrix javanica* doesn't have bronchiolus terminalis. Lumen's diameter of *Hystrix javanica* trachea is $5.919,17 \pm 423,09 \mu\text{m}$, bronchus extrapulmonary $3.833,13 \pm 884,87 \mu\text{m}$, bronchus intrapulmonary $604,61 \pm 72,87 \mu\text{m}$ and bronchiolus $130,56 \pm 38,70 \mu\text{m}$. *Alcian Blue Periodic pH 2,5-Periodic Acid Schiff* (AB pH 2,5-PAS) staining showed the distribution of acid mucopolysaccharide in the goblet cell of tracheal mucosa, bronchus extrapulmonary and hyalin cartilage. Neutral mucopolysaccharide can be found along in the tracheal epithelium to the alveolus.

Keywords : *Hystrix javanica*, Trachea, Pulmo, *Alcian Blue pH 2,5-Periodic Acid Schiff*