

## INTISARI

### **STUDI HISTOLOGI DAN MORFOMETRI INTESTINUM TENUE *SUGAR GLIDER* (*Petaurus breviceps*) DENGAN PEWARNAAN HEMATOKSILIN-EOSIN**

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*Sugar glider* (*Petaurus breviceps*) merupakan mamalia dari famili Petauridae yang hidup di berbagai pulau Indonesia, Australia dan Papua New Guinea. *Sugar glider* adalah hewan omnivora dan termasuk hewan *marsupial nocturnal*. Dalam *International Union for Conservation of Nature and Natural Resources* (IUCN) *sugar glider* tergolong kategori *least concern*. Penelitian ini bertujuan untuk mengetahui histologi dan morfometri intestinum tenue *sugar glider*.

Penelitian ini menggunakan tiga ekor *sugar glider* betina berumur 14 bulan. *Sugar glider* dieuthanasi dengan metode anestesi klorofom. Sampel diambil dari duodenum, jejunum, ileum bagian awal, tengah dan akhir, selanjutnya diidentifikasi struktur makroanatomi. Jaringan diproses dengan metode parafin, kemudian dipotong dengan ketebalan 8µm. Preparat kemudian diwarnai menggunakan pewarnaan hematoksin-eosin. Preparat yang telah diwarnai diamati menggunakan mikroskop cahaya, kemudian difoto menggunakan *Optilab Image Viewer*, selanjutnya perhitungan ketebalan lapisan dinding intestinum tenue *sugar glider* dilakukan dengan software *Optilab image raster* dan *Microsoft Excel 2007*.

Hasil penelitian histologi intestinum tenue *sugar glider*, menunjukkan lamina epitelialis mukosae dibatasi oleh epitelium kolumnar simpleks dengan sel piala. Sel piala ini lebih dominan pada intestinum tenue bagian posterior. Lamina muskularis mukosae hanya satu lapis. Kelenjar Brunner's hanya ditemukan pada tunika submukosa duodenum awal. Nodus limfatikus (lempeng peyer) ditemukan pada tunika submukosa ileum akhir. Tunika muskularis mukosae tersusun sirkuler di dalam dan longitudinal. Tunika serosa terlihat sangat tipis. Duodenum *sugar glider* memiliki dinding yang paling tebal, sedangkan yang memiliki dinding paling tipis adalah ileum. Penyusun dinding intestinum tenue yang paling tebal adalah tunika mukosa, sedangkan yang paling tipis adalah tunika muskularis-serosa.

Kata kunci : Histologi, HE, morfometri, *sugar glider*, intestinum tenue.

## ABSTRACT

### **HISTOLOGY AND MORPHOMETRY STUDY OF THE INTESTINUM TENUE OF SUGAR GLIDER (*Petaurus breviceps*) USING HEMATOXYLIN-EOSIN STAINING**

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Sugar glider (*Petaurus breviceps*) is a mammal from the family Petauridae distributed in Indonesia, Australia, and Papua New Guinea. Sugar glider is an omnivore, nocturnal marsupials. According to the International Union for Conservation of Nature and Natural Resources (IUCN), sugar glider belongs to the category of least concern. This study aims to determine the histology and the morphometry of intestinum tenue of sugar glider.

This study used three female sugar glider of the age 14 months. Sugar gliders were euthanized with chloroform anesthesia method. Samples were taken from the beginning, the middle, and the end parts of duodenum, jejunum, ileum, then the macroanatomy structure were further identified. The tissues were processed using paraffin method, then the tissues were cut into 8  $\mu$ m of thickness. The slides then stained using hematoxylin-eosin staining. Slides which have been stained were observed using light microscope, and then photographed using *Optilab Image Viewer*, then the thickness of the intestinum tenue walls lining of sugar gliders were measured using *Optilab image raster* and *Microsoft Excel 2007* software.

The results of the histological study of the intestinum tenue of sugar glider show that the lamina epithelialis mucosae is lined by the simple columnar epithelium with Goblet cells. Goblet cells are more dominant in the posterior part of the intestinum tenue. Lamina muscularis mucosae only consists of one layer. Brunner's glands are only found in the beginning of tunica submucosa of the duodenum. Lymph nodules (Peyer's patches) are found in the end part of the tunica submucosa of ileum. Tunica muscularis mucosae is composed circular on the inside and longitudinal. The tunica serosa appears very thin. The duodenum of sugar glider has the thickest walls, while the one with the thinnest wall is ileum.. The thickest part of the intestinum tenue wall is tunica mucosa, while the tunica muscularis-serosa is the thinnest.

**Keywords:** Histology, HE, morphometry, sugar glider, intestinum tenue.