

ABSTRAK

STUDI DISTRIBUSI GLIKOKONJUGAT *ALPHA-D-MANNOPYRANOSE* DAN *ALPHA-D-GLUCOPYRANOSE* PADA LAMBUNG *SUGAR GLIDER* (*Petaurus breviceps*) DENGAN PEWARNAAN HISTOKIMIA LEKTIN *CONCAVALIN A* (Con A)

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Sugar glider (*Petaurus breviceps*) atau dikenal dengan nama lokal oposum layang adalah marsupialia yang berasal dari Indonesia Timur (Papua Barat), Papua Nugini, dan Australia. *Sugar glider* termasuk omnivora yang memakan getah tumbuhan, nektar, serbuk sari, serta eksudat dari serangga dan arthropoda. Penelitian ini dilakukan untuk mengetahui persebaran residu gula glikokonjugat *alpha-D-mannopyranose* dan *alpha-D-glucopyranose* pada lambung *sugar glider* menggunakan pewarnaan histokimia lektin *Concanavalin A* (Con A). Sampel penelitian yang digunakan adalah lambung dari dua ekor *Petaurus breviceps* betina dewasa. Sampel difiksasi menggunakan *Phosphate Buffer Saline* formalin 10%. Jaringan diproses dengan metode parafin. Blok sampel dipotong setebal 8µm kemudian dilanjutkan dengan proses pewarnaan dengan Hematoksilin Eosin (HE) dan lektin Con A. Pengamatan dilakukan dengan mikroskop cahaya. Hasil pengamatan didokumentasikan menggunakan *OptiLab Viewer*. Data yang diperoleh dianalisis secara deskriptif kualitatif berdasarkan intensitas warna cokelat yang menunjukkan reaksi antara lektin dengan reseptor gula spesifik. Hasil penelitian kelenjar lambung *Petaurus breviceps* menunjukkan bahwa sel mukus permukaan menunjukkan hasil negatif pada regio kardia serta positif kuat pada regio fundus dan pilorus. Sel kelenjar kardiaka menunjukkan hasil positif sedang hingga kuat. Sel *gastric pit* pada regio fundus menunjukkan hasil positif sedang hingga kuat, sel mukus leher menunjukkan hasil positif sedang, sel parietal menunjukkan hasil positif lemah hingga positif kuat, sedangkan sel *chief* menunjukkan hasil negatif. Sel kelenjar pilorika menunjukkan hasil positif lemah hingga kuat. Berdasarkan hasil tersebut disimpulkan bahwa terdapat variasi distribusi glikokonjugat *alpha-D-mannopyranose* dan *alpha-D-glucopyranose* pada kelenjar lambung *Petaurus breviceps* dengan regio yang berbeda.

Kata kunci: *concanavalin A*, glikokonjugat, lambung, lektin, *Petaurus breviceps*.

ABSTRACT

ALPHA-D-MANNOPYRANOSE AND ALPHA-D-GLUCOPYRANOSE GLYCOCONJUGATES DISTRIBUTION STUDY IN THE STOMACH OF SUGAR GLIDER (*Petaurus breviceps*) USING CONCANAVALIN A (Con A) LECTIN HISTOCHEMISTRY STAINING

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Sugar glider (*Petaurus breviceps*), also known as flying possums are marsupials native to eastern Indonesia (West Papua), Papua New Guinea, and Australia. They consume plant sap, nectar, pollen, as well as insect and arthropod exudates. The plant sap consumed by these mammals is a major source of polysaccharides. This research was conducted to investigate the distribution of glycoconjugate sugar residues, specifically alpha-D-mannopyranose and alpha-D-glucopyranose in the stomach of sugar gliders using Concanavalin A (Con A) lectin histochemistry staining. The research samples used were the stomach of two adult female *Petaurus breviceps*. The samples were fixed in 10% formalin Phosphate Buffer Saline and processed using paraffin method. The sample blocks were cut into 8µm sections and stained with Hematoxylin Eosin (HE) and Con A. The observations were done using a light microscope and the results were documented using OptiLab Viewer. The data obtained were analyzed qualitatively and descriptively based on the brown color intensity which indicates the reaction between the lectin and the specific sugar receptor. Result of this study on the gastric glands of *Petaurus breviceps* shows that the surface mucous cells exhibit negative intensity in the cardiac region, but strongly positive in the fundic and pyloric region. The cardiac gland cells show moderate to strongly positive intensity. The gastric pit cells in the fundic region demonstrate moderate to strongly positive intensity, whereas the mucous neck cells show moderately positive intensity. The parietal cells display weak to strongly positive intensity, whilst the chief cells stained negatively. The pyloric gland cells show weak to strongly positive intensity. Based on these findings, it can be concluded that there is variation in the distribution of alpha-D-mannopyranose and alpha-D-glucopyranose glycoconjugates in the stomach glands of *Petaurus breviceps* across different regions.

Keywords: concanavalin A, glycoconjugates, lectin, stomach, *Petaurus breviceps*.