ABSTRAK

STUDI MORFOLOGI DAN MORFOMETRI KORTEKS SEREBRUM LOBUS TEMPORALIS PADA *SUGAR GLIDER* (*Petaurus breviceps)* DENGAN PEWARNAAN *CRESYL VIOLET*

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Sugar glider (*Petaurus breviceps*) adalah hewan dari Australia, New Guinea, dan sekitarnya. Lobus temporalis memiliki area prosesing informasi visual dan auditori yang tinggi. Penelitian ini bertujuan untuk mendapatkan data primer struktur histologi lobus temporalis korteks serebrum pada *Petaurus breviceps* dengan mengamati gambaran histologis. Data yang diperoleh berupa perhitungan ketebalan lapisan, jumlah sel terhitung per tipe sel serta morfologi tipe sel.

Sampel diambil dari dua ekor *Petaurus breviceps* jantan dari Surakarta. Materi yang digunakan adalah otak yang telah diproses dengan metode parafin. Blok parafin dipotong dengan ketebalan 5 µm. Jaringan diwarnai dengan metode pewarnaan *cresyl violet* dan diamati menggunakan *OptiLab Viewer.* Hasil pewarnaan dianalisis secara deskriptif dan statistik.

Lapisan granuler interna korteks serebrum lobus temporalis *Petaurus breviceps* menunjukkan ketebalan tertinggi dengan perbedaan paling nyata berupa 344,38 ± 12,60 µm. Korteks serebrum lobus temporalis tersusun atas sel-sel neuron yaitu: sel Cajal-Retzius, sel Martinotti, sel stelat, sel fusiformis, dan sel piramidal. Sel piramidal terbagi menjadi sel Betz dan sel piramidal kecil. Data yang diperoleh menunjukkan bahwa sel Betz berukuran terbesar. Jumlah sel terhitung terbanyak adalah sel Martinotti dengan jumlah 316,22 ± 17,42/mm^2. Sel Martinotti memiliki perbedaan paling nyata bila dibandingkan dengan sel lainnya. Hasil-hasil tersebut dapat dikaitkan bahwa lobus temporalis dari korteks serebrum *Petaurus breviceps* berperan sensoris dalam prosesing informasi visual dan auditori.

Kata kunci: *cresyl violet,* korteks serebrum, lobus temporalis, *Petaurus breviceps*

ABSTRACT

A MORPHOLOGICAL AND MORPHOMETRICAL STUDY OF THE TEMPORAL LOBE CEREBRAL CORTEX IN SUGAR GLIDER (*Petaurus breviceps*) USING *CRESYL VIOLET* STAINING

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Sugar gliders (*Petaurus breviceps*) are marsupials native to Australia and the islands of New Guinea. The temporal lobe contains an area dedicated to the processing of visual and auditory information This research is intended to obtain data in the form of its histological structure. Data obtained are in the form of cell density, thickness of each layer and the morphology of cells.

Samples were taken from two male *Petaurus breviceps* located in Surakarta. Materials that were used were the brain of *Petaurus breviceps* processed using the paraffin method. The tissue blocks were microsectioned with thickness of 5 um. The slides were then stained with *cresyl violet* and were observed using OptiLab Viewer.

The internal granular layer of the *Petaurus breviceps'* temporal lobe cerebral cortex appears to be the thickest with a thickness of 344,38±12,60 µm along with it being the layer with the most significant difference. The temporal cerebral cortex consists of different types of neurons: Cajal-Retzius, Martinotti, stellate, pyramidal and fusiform cells. Pyramidal cells were divided into smaller pyramidal cells and Betz cells. Data shows that cells with the largest diameter are Betz cells. It has been observed that Martinotti cells are cells with the largest amount counted along with it being the most significant difference. These results can be related to the fact that the temporal lobe of the *Petaurus breviceps* is a part of the sensory cerebral cortex that functions in the processing of auditory and visual information.

Key words: *cresyl violet,* cerebral cortex, temporal lobe, *Petaurus breviceps*