

ABSTRAK

PENGARUH DIET PROTEIN TERHADAP DIAMETER NEURON NITRERGIK ILEUM TIKUS (*Rattus Norvegicus*) JANTAN GALUR WISTAR

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Protein merupakan komponen yang membuat otot berkontraksi sehingga dapat terjadi gerakan. Nitrengik berperan sebagai *nonadrenergic noncholinergic* (NANC) relaksasi pada duodenum, jejunum, dan ileum. Penelitian ini bertujuan untuk mengetahui pengaruh diet protein terhadap diameter neuron nitrengik ileum tikus Wistar.

Tikus dibagi menjadi tiga kelompok (K1, K2, dan K3) dengan masing-masing kelompok terdiri dari tiga tikus. Kelompok K1 adalah sebagai kontrol dengan diberikan perlakuan diet protein 24%, kelompok K2 adalah kelompok yang diberi perlakuan diet protein 4%, dan kelompok K3 adalah kelompok yang diberi perlakuan diet protein 14%. Masing-masing tikus diletakkan pada kandang individu dengan diberi air minum RO secara *ad libitum*. Diet protein dilakukan selama 28 hari. Tikus dianestesi kemudian dibedah bagian abdomen dan diambil bagian ileum. Ileum dicuci dengan larutan *phosphate buffer saline* (PBS) dan difiksasi dengan larutan campuran β - *nitroblue tetrazolium* (NBT), dan NADPH-d kristal dalam *buffer* Tris HCl. Preparat yang telah diwarnai kemudian diamati gambaran morfologinya yang terdiri dari bentuk nukleus, badan sel dan tipe neuron. Morfometrik yang diamati yaitu ukuran diameter neuron. Data diameter dianalisis statistik dengan uji anova satu arah.

Hasil penelitian menunjukkan bahwa terdapat perbedaan yang signifikan ($p < 0,05$) jika dibandingkan dengan diet protein 24% (kontrol). Disimpulkan bahwa diet protein 4% dan 14% mempengaruhi diameter neuron nitrengik ileum tikus Wistar. Semakin rendah diet protein yang dilakukan akan terjadi peningkatan jumlah neuron diameter kecil dan penurunan jumlah diameter sedang.

Kata kunci : protein, neuron nitrengik, ileum, tikus, NADPH-d.

ABSTRACT

THE EFFECT OF PROTEIN DIET TO DIAMETER OF NEURON NITRERGIC IN ILEUM OF MALE RATS (*Rattus Norvegicus*) STRAIN WISTAR

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Protein is a component that makes the muscles to contract so that movement can occur. Nitregics acts as a *nonadrenergic noncholinergic* (NANC) relaxation in the duodenum, jejunum, and ileum. This study aims to determine the effect of protein dietary on the diameter of nitrgic neurons of Wistar rat ileum.

The Rats are divided into three groups (K1, K2, and K3), each group consisting of three rats. K1 as a group control, was treated with 24%protein diet. K2 group was treated with 4%protein diet, and K3 group was treated with 14%protein diet. Each rat was placed on an individual cage and given a drink of RO water in ad libitum. The protein diet lasted for 28 days. Afterwards, the rats were anesthetized and the abdomen was removed, and later on, part of the ileum was taken. Ileum was washed with a solution of *phosphate buffer saline* (PBS) and fixed with a mixture of *β-nitroblue tetrazolium* (NBT), and NADPH-d crystals in Tris HCl buffer. Mixed preparations were then observed the morphologic images of the nuclei, the cell body and the neuron type. The observed morphometric is the size of the neuron diameter. The diameter data were analyzed statistically with one way anova test.

The results showed that there is significant difference ($p < 0.05$) when compared with 24% of protein dietary (control). It was concluded that 4% and 14% of protein dietary affects the diameter of nitregic neurons of Wistar rat ileum. The lower the protein diet performed will increase the number of small diameter neurons and the decrease in the number of medium diameter.

Keywords: protein, nitregic neurons, ileum, rats, NADPH-d.