

PENGARUH TINGKAT DIET PROTEIN TERHADAP HEMATOLOGI DALAM TIKUS WISTAR DEWASA (*Rattus Norvegicus*)

INTISARI

Harsha Sree Ravindran

13/355892/KH/7850

Protein adalah salah satu sumber energi untuk pertumbuhan tubuh. Pentingnya protein dalam tubuh adalah untuk membangun sel-sel baru, mempertahankan sel yang ada, dan mengganti sel-sel yang rusak. Protein tertentu dalam darah dapat meningkat karena tubuh melawan infeksi atau peradangan lainnya. Penelitian ini dilakukan untuk menyelidiki apakah perbedaan kadar protein akan berpengaruh atau tidak pada darah. Penelitian dilakukan dengan 9 ekor tikus jantan, yang berumur 1 bulan dengan berat rata-rata 121-156 gram. Tikus dibiarkan beradaptasi selama 3 hari dan kemudian mereka secara acak dibagi menjadi 3 kelompok (1, 2 dan 3). Kelompok 3 adalah kelompok terkontrol yang diberi makan dengan protein 24%. Kelompok 1 diberi diet protein 4%, sedangkan Kelompok 2 diberikan diet protein 14%. Penelitian ini dilakukan selama 28 hari dan sampel darah mereka dari setiap tikus dikumpulkan setiap minggu. Eritrosit dihitung dengan menggunakan pipet penghitungan khusus dan setiap sel dihitung dalam ruang hitung (haemocytometer). Hemoglobin diukur menggunakan metode Sahli di mana konsentrasi hemoglobin dibaca langsung dari tabung kalibrasi. Leukosit dihitung menggunakan hemositometer dan perbedaan dalam leukosit dihitung dengan metode battlement. Data nilai rata-rata dan standar deviasi eritrosit, hemoglobin, dan jumlah leukosit yang dikumpulkan dianalisis dengan ANOVA. Hasil penelitian menunjukkan bahwa tingkat eritrosit paling signifikan selama minggu ke-2, ke-3 dan ke-4 di mana itu menunjukkan ($p < 0,05$). Hasil untuk hemoglobin menunjukkan bahwa itu paling signifikan selama minggu 3 dan 4. Tingkat leukosit paling signifikan hanya pada minggu terakhir. Disimpulkan bahwa tikus yang diberi protein dalam jumlah tinggi menunjukkan lebih banyak perubahan komposisi darah.

Kata kunci: Darah, eritrosit, hemoglobin, leukosit, protein, tikus.

INFLUENCE OF DIETARY PROTEIN LEVELS ON HEMATOLOGY IN ADULT WISTAR RATS (*Rattus Norvegicus*)

ABSTRACT

Harsha Sree, Ravindran

13/355892/KH/7850

Protein is one of the energy sources for body's growth. The importance of protein in the body is to build new cells, maintain existing cells, and replace damaged cells. Certain proteins in the blood may be elevated as the body fights an infection or some other inflammation. This research was done to investigate whether or not the difference in protein levels will or not give an effect on blood. The research was done with 9 male rats, which are 1 month old with an average weight of 121-156 grams. The rats were left to adapt for 3 days and then they were randomly divided into 3 groups (1, 2 and 3). Group 3 is the controlled group which was fed with 24% protein diet. Group 1 was given 4% of protein diet, while Group 2 was given 14% of protein diet. The research was carried out for 28 days and their blood sample from each rat was collected every week. Erythrocytes were counted using a special calculating pipette and each cell is counted in the count chamber (haemocytometer). Haemoglobin was measured using Sahli method where the haemoglobin concentration is read directly from the calibration tube. Leucocytes were calculated using a haemocytometer and the differential in leucocyte was counted by *battlement* method. The data of the mean and standard deviation value of erythrocytes, haemoglobin and leucocyte amount was collected were analysed with ANOVA. The results showed that erythrocyte levels were at most significant during the 2nd, 3rd and 4th week where it showed that ($p < 0.05$). The results for haemoglobin showed that it was at most significant during weeks 3 and 4. Leucocyte levels were at most significant on only the final week. It was concluded that the rats fed the high amount of protein showed more changes in blood compositions.

Keywords: Blood, erythrocytes, haemoglobin, leucocytes, protein, rats.