

ASSESSMENT OF GUT MICROBIOTA AND SERUM BIOCHEMISTRY PARAMETERS IN RATS FED COMMERCIAL PELLET DIET CONTAINING DIFFERENT PROTEIN CONTENT

Judita Žymantienė, Vaidas Oberauskas, Jonė Kantautaitė, Vida Babrauskienė, Rasa Želvytė

Department of Anatomy and Physiology, Lithuanian University of Health Sciences Veterinary Academy
Tilžės str. 18, LT-47181, Kaunas, Lithuania; e-mail: judita.zymantiene@lsmuni.lt

Abstract. The aim of this study was to evaluate the effect of different content of protein in diets on gut microbiota and some blood parameters in male *Wistar* rats. The research was carried out on 20 male *Wistar* rats. Ten rats were allocated to the group I and were fed standard commercial pellet diet with 19.91 % crude protein, ten rats were allocated to the group II and were fed with 21.50 % crude protein from one to ten months old. The animals were individually housed in laboratory cages under standardized environmental conditions. Rats were given *ad libitum* access to the diet and drinking water. The samples of faeces and blood were collected at the end of the experiment. There were no statistically significant changes in the composition of gut microbiota of rats, fed diet with different protein content. There were found elevated statistically significant values of total protein, globulin and total bilirubin in blood of rats, fed with 21.50 % of crude protein in diet. However the higher activities of AST and ALT as well as higher value of Crea were found in blood of rats, fed with 19.91 % of crude protein. Our results showed that feeding of rats with diet containing higher content of crude protein from weaning to the ten months age might have strong effect on some biochemical parameters of blood. The difference between crude protein content in diet has no reliable effect on the gut microbiota of adult rats. It is important fact for further experiments when rats used as animal biomodel for veterinary medicine and biomedical research.

Keywords: rat, diet, protein, gut microbiota, blood biochemistry