ABSTRACT

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Title of diploma thesis: The effect of cranberry extract on selected biotransformation enzymes in normal and obese mice.

Obesity has reached a nearly pandemic extent in modern population. It can affect or alter the activity and expression of many enzymes, including biotransformation enzymes which metabolise drugs and other xenobiotics.

The aim of this work is to compare the activity and expression of selected biotransformation enzymes on mice suffering and not suffering from obesity and to test the effect of cranberry extract in food on the activity and expression of selected biotransformation enzymes in the selected group of mice.

Spectrophotometric methods were chosen to measure the activity of selected biotransformation enzymes. The amount of particular proteins was assayed using electrophoresis of proteins in polyacrylamide gel (SDS-PAGE) followed by immunoblotting and chemiluminescent detection.

The results show that mice suffering from obesity display a different activity of certain biotransformation enzymes in comparison to non-obese mice. The cranberry extract containing a high level of anthocyanin had inhibitory effect on the activity of some biotransformation enzymes in obese mice. The effect of anthocyanins on weight reduction in obese mice was not unambiguously proven.