In vitro antidiabetic activity of mushroom *Coprinus comatus* water extract

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<u>INTRODUCTION</u>: It is proven that mushroom *Coprinus comatus* has many pharmacological activities, including antidiabetic. One of the mechanisms of antidiabetic activity may be the inhibition of enzymes responsible for carbohydrates metabolism, such as α-amylase and α-glucosidase and dipeptidyl peptidase-4. Therefore, in this study the activity of these enzymes after their inhibition with *C. comatus* extract was examined.

<u>AIM OF WORK</u>: The aim of this study was to examine *in vitro* activity of aqueous extract of mushroom *C. comatus* on previously mentioned enzymes.

<u>METHODS</u>: As a sample it was used The sample of the commercial preparation of mushroom was used for making of an aqueous extract, which is then lyophilised. Inhibitory activity for α-amylase and α-glucosidase and dipeptidyl peptidase-4 was measured in triplicate by spectrophotometric methods.

<u>RESULTS</u>: Examined water extract of *C. comatus* mushroom showed dose-dependent inhibition of all tested enzymes. Compared to positive controls (acarbose and sitagliptin) the extract was used in much higher concentrations in order to achieve 50% inhibition of enzymes α-amylase, α-glucosidase and dipeptidyl peptidase-4.

CONCLUSION: Based on the results of study it can be concluded that although it was achieved 50% inhibition of enzyme activity with use of *C. comatus* mushroom extract, it is not sufficient to explain its antidiabetic activity. Therefore, it is necessary to examine additional mechanisms, or to make other extract formulations in order to confirm *in vivo* mushroom activity.

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