

ABSTRACT

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Title: Influence of hydroxycinnamic acids on methylglyoxal-induced protein glycation

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The diploma thesis was aimed at potential antiglycation effect of antioxidants of natural origin (hydroxycinnamic acids) on the modification of bovine serum albumine and aspartate aminotransferase by methylglyoxal as a glycating agent. I monitored the effect of hydroxycinnamic acids on generation of glycation products using fluorescent, absorption, and electrophoretic methods. The influence of hydroxycinnamic acids on the glycation of model proteins was ambiguous. The only derivative with proven antiglycation effect on production of non-specific glycation products and pentosidin measured by fluorescence and spectrophotometry was *p*-coumaric acid in 100 μ M concentration. On the other hand, chlorogenic acid 100 μ M displayed strong proglycation effects in all methods used for detection of glycation products. The effect of all tested substances was concentration dependent. Results show that the more substituents given acid contained in its molecule, the stronger proglycation effect this compound exerted.