ABSTRACT

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Title of Diploma Thesis: Development of capillary electrophoretic method for detection of illegal adulterants in weight loss food supplement

Obesity, which is among others associated with the consumption of weight-reduction dietary supplements becomes a global problem. This is related with increased consumption of these products and unfortunately also with the presence of undeclared adulterants in food supplements. Capillary electrophoretic method with contactless conductivity detection for simultaneous determination of 1,3-dimethylamylamine (DMAA), synephrine and hordenine in slimming products was developed and validated and then applied to the assay of these analytes in the Synephrine - REDUCT product. The analysis was performed on silica capillary 58 cm long with internal diameter 50 μm and the BGE was 15 mM α-CD in 2 M acetic acid. The applied voltage was 30 kV and the temperature during analysis was maintained at 25 °C. The samples were analyzed by injection at the short end of the capillary. The content of of synephrine in Synephrine-REDUKT was determined by the method devised. It was found that the content of synephrine in the analysed product exceeds the declared content by more than 50%. This finding supports necessity of analytical control of such food supplements.

Keywords: capillary electrophoresis, DMAA, synephrine, hordenine, adulterants, food supplements