Abstract

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Title of diploma thesis: Sequential injection analysis BI - LOV - development of technique for sample treatment using solid phase extraction I

Antioxidant activity of polyphenolic compounds can positively affect the therapy and the prevention of diseases associated with oxidative stress, e.g. cardiovascular diseases, atherosclerosis, neurodegenerative diseases (Alzheimer's and Parkinson's diseases), rheumatoid arthritis, virus diseases, neoplasms, benign prostatic hyperplasia (BHP), prostatitis etc.

This diploma thesis deals with the analysis of phenolic acids, namely ferulic acid and also protocatechuic acid and *o*-coumaric acid.

The ferulic acid was analysed within five concentrations (10,000 µg/ml, 5,000 µg/ml, 2,500 µg/ml, 1,250 µg/ml and 0,625 µg/ml), four different strong anion exchangers (TMAHP, QAE - A25, SAX - BOND and SAX - DSC), five different pH (5,0, 6,0, 7,0 a 8,5) of washing buffer and three different pH (1,5, 2,0 a 2,5) of elution buffer. Absorbance of the ferulic acid was measured at wavelengths 325 and 240 nm.

In this thesis was also assessed handling with each sorbent, especially convenient use within LOV (Lab On Valve) format.

After overall assessment of all four sorbents within various conditions of analysis were chosen two suitable sorbents – SAX - BOND and QAE - A25, and were chosen appropriate conditions for the future research - pH of washing buffer 5,0 and pH of elution buffer 1,5.