

Abstract

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Title of Diploma Thesis: Development of on-line SPE HPLC method for determination of ochratoxin A in Tokaj wines

This diploma thesis deals with the optimization and validation of chromatographic method for determination of ochratoxin A in Tokaj wine with subsequent application on real samples. A high-performance liquid chromatography method with fluorescence detection using on-line extraction by column switching has been developed. 50 μ l of sample was injected directly in the extraction column, where at 1st minute the analyte was extracted on the Ascentis® Express RP-Amide precolumn in the presence of a mobile phase of 40% MeOH in 0.5% aqueous acetic acid. After the extraction, the valve was switched and the extracted substances were separated on a YMC Triart C18 ExRS analytical column. The separation was carried out under gradient elution with an initial acetonitrile ratio of 45% in the mobile phase, which reached a concentration of 80% in the 5th minute. Fluorimeter detection was optimized for excitation and emission wavelengths λ_{Ex} 335 nm and λ_{Em} 463 nm. In the last part of the work, ochratoxin A was analyzed in real samples and was confirmed in 45 cases.

Keywords: ochratoxin A, Tokaj wine, column switching,