

# Abstract

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Title of diploma work: Automation of extraction procedure for sensitive determination of propranolol in surface water matrix

This work deals with the development of the method for automation of the extraction process for sensitive determination of propranolol in a matrix of surface water. The analyte was pre-concentrated on the sorbent Oasis - HLB and pure methanol was used as eluent. Detection was performed by UV spectrophotometry at 220 nm. The optimum conditions for automation of determination in sequential injection analysis (SIA) system were found with respect to: way how sorbent was applied in the flow system, sample volume, the volume of the eluting solvent and a flow rate of detection. Calibration curve for propranolol in distilled water was tested with a determination coefficient of 0.9921 in the range of 0.5 ppm - 4 ppm and the calculated limit of detection (LOD = 0.442 ppm) and the limit of quantification (LOQ = 1.473 ppm). Precision was determined for a concentration of 1 ppm with a relative standard deviation of 2.51%. Matrix calibration of propranolol in surface water in the range from 0.5 ppm to 4 ppm was measured. The determination coefficient was 0.9901, the limit of detection (LOD = 0.496) and the limit of quantification (LOQ = 1,653 ppm) were evaluated and pre-concentration coefficient was 8.98. The recovery of the propranolol determination in surface water was 89.81 %.