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Flow Injection Analysis with Electrochemical Detection for Rapid Identification of Platinum-Based Cytostatics and Platinum Chlorides in Water

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Abstrakt

During the cancer treatment high concentration of platinum cytostatics from the urine of patients ends up in wastewater. This leads to an increase in concentration of the platinum ions (PGEs) in wastewater. In order to facilitate the detection of various types of platinum, we have developed a new, rapid screening flow injection analysis method with electrochemical detection (FIA-ED). The developed method is based on monitoring changes in the electrochemical behavior of analytes in Britton-Robinson buffers of pH 2 and 5. Changes are observed in a comparison of the response of amperometric detector using a glassy carbon



electrode at an applied potential of 1000, 1100 and 1200 mV. Based on the obtained results, we suggest a rapid and inexpensive method with the potential to be miniaturized. The FIA-ED method, based on the comparison of the responses of an amperometric detector using a glassy carbon working electrode, can be used to distinguish the presence of

platinum-based cytostatics from platinum chlorides.

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