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## Multielemental speciation analysis of five toxic species: As(III), As(V), Cr(VI), Sb (III) and Sb(V) in drinking water samples by advanced hyphenated technique HPLC/ICP-DRC-MS

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Multielemental determination of five toxic species: As(III), As(V), Cr(VI), Sb (III) and Sb(V) in drinking water samples using high performance liquid chromatography hyphenated to inductively coupled plasma mass spectrometry (HPLC/ICP-DRC-MS) technique was developed. Optimization of the detection and separation conditions was conducted. Dynamic reaction cell (DRC) with oxygen as reaction gas was involved in the experiments. Obtained analytical signals for species were symmetrical, as studied by anion-exchange chromatography. Applied mobile phase consisted of 3 mM of EDTANa<sub>2</sub> and 36 mM of ammonium nitrate. Full separation of species was achieved in 15 min with use of gradient elution program. Detailed validation of analytical procedure proved the reliability of analytical measurement. Obtained recoveries confirmed the lack of interferences' influence on analytical signals as their values were in the range of 91%-110%. The applicability of the proposed procedure was tested on drinking water samples characterized by mineralization up to 7390 mg L<sup>-1</sup>.

### Biography

Danuta Barałkiewicz teaches analytical chemistry at the Adam Mickiewicz University in Poznań and is the Head of the Department for Trace Elements Analysis by Spectroscopic Methods. She is an elected member of the Committee of Analytical Chemistry of the Polish Academy of Science. In her research, she applies advanced analytical techniques such as ICP-MS, HPLC/ICP-MS and LA-ICP-MS. She cooperates with representatives of various disciplines who are interested in environment, food, biology and medicine. She has been active in introducing metrology and chemometrics in analytical chemistry.

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