

## Investigations of mercury interaction with human blood components by means of static high sensitivity ICP (SHIP)

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To investigate the effects of mercury species intoxication and to test the efficiency of different commonly applied antidota, human whole blood was spiked with inorganic mercury ( $\text{Hg}^{2+}$ ) or methylmercury ( $\text{MeHg}^+$ ,  $\text{CH}_3\text{Hg}^+$ ) prior to treatment with the antidota 2,3-dimercaptopropan-1-ol (British Anti Lewisite, BAL), 2,3-dimercaptosuccinic acid (DMSA) and N-acetylcysteine (NAC). Blood was fractionated into its components blood plasma proteins, plasma liquid and red blood cells, and the distribution of mercury between these fractions was determined by inductively coupled plasma optical emission spectrometry (ICP-OES) and the Static High sensitivity ICP (SHIP). While this system is well characterized in combination with ultrasonic nebulizer sample introduction and has also been investigated in view of its analytical performance with wet aerosol introduction (1,2,3), there is only limited experience regarding the application of SHIP towards samples with high matrix content. The accuracy of the method was assessed by using real samples with complex matrix composition and comparison of the results with those obtained by ICP-OES operated with a conventional Fassel-type torch.

### References:

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