

ABSTRACT

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Title of diploma thesis:	Optimization of a method for iodine determination in urine in a flow system using solid phase extraction

Iodine is an important element for the human body to ensure proper functioning of thyroid gland. This organ produces the hormones thyroxine and triiodothyronine necessary for proper brain development and correct function of other hormones (catecholamines). The human body is unable to produce iodine, so the only income is via food. Incorrect level of this element can cause serious health complications, such as congenital mental retardation.

Body level of iodine is most commonly determined from urine, which requires a reliable and sensitive method. The most widely used method is spectrophotometric analysis based on the Sandell-Kolthoff reaction. For urinary iodine determination, it is advantageous to use flow methods to ensure sufficient measurement sensitivity and automation.

Most methods of iodine monitoring use toxic reagents or generate toxic waste. The aim of this diploma thesis was to optimize the hydrodynamic and chemical parameters of a method for urine iodine analysis using Lab-In-Syringe flow technique and to verify the possibility of application of this method in real urine samples.