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Determination of Trace Amounts of Iodide by an Inhibition Kinetic Spectrophotometric Method

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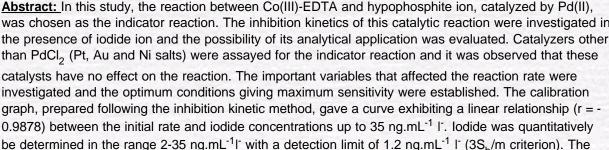
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RSDs of the method (n = 5) for 7 and 14 ng.mL⁻¹ are 1.19 and 0.81%, depending on the iodide concentration, respectively. The reaction was monitored spectrophotometrically by measuring the change in absorbance over time at 540 nm. lodide in trace amounts had a strong inhibitory effect under optimum conditions. The possibility of the estimation of trace amounts of iodide based on its inhibitory effect was investigated. The method was applied to the determination of iodide in water, urine, table salt and some drug samples, and was compared with the modified Sandell-Kolthoff method. The determination of the iodide content of biological fluids is important both in malnutrition conditions and in metabolic and epidemiological studies of thyroid diseases. The main advantage of this proposed method for the determination of iodide in urine samples is that it does not necessitate an additional pretreatment step. The quantitative method developed, based on inhibition kinetics, is practical, fast and economical. For this reason, it is a technique open to research for the development of application fields (chemistry, biochemistry, environmental, pharmaceutical chemistry etc.).

Key Words: Co(III)-EDTA, inhibition kinetic, iodide, initial rate method and spectrophotometry

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