



Determination of Selenium (IV) in Some Iraqi vegetables Samples

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ABSTRACT

A simple and inexpensive spectrophotometric method for determination of trace amount of selenium (IV) was described. This method is based on oxidation of hydroxylamine hydrochloride with selenite ions to nitrous acid, which in turn diazotizes p-amino benzoic acid and is coupled with p-nitro phenol in alkaline medium to form colored azo dye. This azo compound has a maximum absorption at 401 nm. The method obeys Beer's law in the range of 0.04 to 0.4ppm. With $R^2 = 0.9985$. Its molar absorptivity, Sandell's sensitivity, standard deviation and relative standard deviation were found $54885.09 \text{ L.mol}^{-1} \cdot \text{cm}^{-1}$, 0.0014, 0.001 and $0.6024 \mu\text{g.cm}^{-2}$ respectively. All the reaction parameters have been optimized. Interferences between the azo reaction and non-targeted ions often present in plants samples were investigated. The procedure was applied successfully to the determination of selenium (IV) in some Iraqi vegetables samples get from the local market in Hilla.

Keywords: Diazotization, coupling, azo dye, selenium, P-nitro phenol.
