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[\[PDF \(605K\)\]](#) [\[References\]](#)**Kinetic Spectrophotometric Determination of *N*-Acetyl-L-cysteine Based on a Coupled Redox-Complexation Reaction**[Lea KUKOC-MODUN^{1\)}](#) and [Njegomir RADIC^{1\)}](#)*1) Department of Analytical Chemistry, Faculty of Chemistry and Technology, University of Split***(Received February 2, 2010)****(Accepted February 12, 2010)**

A novel simple kinetic spectrophotometric method for the determination of *N*-acetyl-L-cysteine (NAC) has been developed and validated. The proposed method is based on a coupled redox-complexation reaction, the first step of which is the reduction of Fe³⁺ by NAC; the second one includes the complexation of Fe²⁺, resulting from the preceding redox reaction, with 2,4,6-tripyridyl-*s*-triazine (TPTZ). The stable Fe(TPTZ)₂²⁺ complex exhibits an absorption maximum at $\lambda = 593$ nm.

The initial rate and fixed-time (at 5 min) methods were utilized for constructing calibration graphs. The graphs were linear in concentration ranges from 4.0×10^{-6} to 1.0×10^{-4} mol L⁻¹ for the initial rate method and 1.0×10^{-6} to 1.0×10^{-4} mol L⁻¹ for the fixed-time method, with detection limits of 1.0×10^{-6} and 1.7×10^{-7} mol L⁻¹, respectively. The proposed methods were successfully applied for the determination of NAC in its commercial pharmaceutical formulations.

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