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Titrimetric and Spectrophotometric Determinations of Some Phenothiazine Psychotropics Using Chloramine-T

Titrimetric and Spectrophotometric Determinations of Some Phenothiazine Psychotropics Using Chloramine-T

Kanakapura BASAVIAH

and Javarappa MANJUNATHASWAMY

Department of Chemistry, University of Mysore, Manasagangotri

Mysore - 570 006, Karnataka-INDIA

 [Keywords](#)
 [Authors](#)



chem@tubitak.gov.tr

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Abstract: A simple, convenient and accurate indirect titrimetric method and a rapid, sensitive and precise indirect spectrophotometric method for the determination of six phenothiazine drugs using chloramine-T as an oxidant are described. The titrimetric method is based on the oxidation of the drugs in sulphuric acid medium by a known excess of chloramine-T and iodometric determination of the unreacted chloramine-T. In the spectrophotometric method, the unreacted oxidant is made to react with metol in the presence of an aromatic amine to produce a purple-red product with the absorption maximum at 520 nm. The absorbance is found to decrease linearly with increasing concentration of drugs, which is corroborated by the calculated correlation coefficient values in the range -0.9920 to -0.9999. The systems obey Beer's law for 5-150 $\mu\text{g ml}^{-1}$ of drugs. The molar absorptivities are around $2.00 \times 10^3 \text{ l mol}^{-1} \text{ cm}^{-1}$ and relative standard deviations (RSD) are less than 2% ($n = 7$). The proposed methods were successfully applied in the determination of studied phenothiazines in pharmaceutical formulations. The reliability of the assay methods was established by parallel determination by the BP method.

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