A NEW METHOD FOR ESTIMATION OF POTASSIUM PICRATE IN HOMOEOPATHIC DRUG KALI PICRICUM

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INTRODUCTION

The potassium salt of picric acid is an official drug of *The Homoeopathic Pharmacopoeia of The United States* and is used in Homoeopathy by the name Kali picricum for curbing jaundice and violent eructations. It was first introduced in Homoeotherapy by Wolff and Gouzee.[1-3]

Potassium picrate is generally prepared by the reaction of picric acid with potassium hydroxide or potassium carbonate. It has been found to contain some free picric acid as impurity. Presence of free picric acid is not desirable. Limit fixation for it has been difficult because both these compounds are yellow in colour, have the same solubility and the same absorbance range. Differentiation of one based on colorimetric estimation in presence of the other has not been possible.

OBJECT OF STUDY

Though estimation of picric acid by titration with sodium hydroxide[4-5] ammonium picrate by perchloric acid[6a] and estimation by complex formations of sodium picrate with thiocyanate or cyanide salts,[6b] complex *cis and trans crown ethers* have been used for extraction of alkali-metal picrates[7] but none of them is workable in presence of picric acid. Present attempt has been made to estimate potassium picrate in presence of picric acid.

MATERIALS AND METHOD

Potassium picrate was prepared in laboratory by the reaction of aqueous saturated solution of picric acid and aqueous 5% solution of potassium hydroxide in equimolecular ratio by gradual and slow adddition of the alkali. Analar grade of chemicals were used. It was subsequently cooled in ice. The precipitated salt was filtered and washed with cold water and solvent ether to remove free picric acid.

METHOD OF QUANTITATIVE ESTIMATION

Potassium picrate (200mg) was shaked with 20ml solvent ether and warmed slightly to remove any free picric acid and the ether washing was rejected. The residue was dissolved in 25ml hydrochloric acid, transferred to a separating funnel and shaked for five minutes. It was then extracted with solvent ether four times (20+10+10+10 ml). The ether layers were combined and passed through chemically pure grade of anhydrous sodium sulphate to remove traces of moisture or associated acid with it.

The combined ether layer was evaporated and the residue was dissolved in 20 ml of hot water. It was titrated with 0.05 N sodium hydroxide solution using phenolphthalein as indicator. The process was repeated several times with different concentrations. Each ml of 0.05 N sodium hydroxide is equivalent to 0.01336 g of potassium picrate.

The assay method was found to be workable from very low concentration to high concentration provided initial solubility factor was kept.

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