

ASSAY OF ATROPINE SULPHATE TABLETS AND GRANULATIONS.

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It has been our experience in assaying mixtures of Atropine Sulphate and Milk Sugar that when we used the normal alkaloidal procedure, such as dissolving the tablet or granulation in water, making alkaline with ammonia and shaking out with chloroform; then evaporating the chloroform to dryness, etc., we frequently obtained results distinctly lower than the theoretical yield. Perhaps others have had the same experience and the following method may be of interest since it has given results, consistently close to theory in our hands.

Place an accurately weighed portion of granulation theoretically equivalent to 0.0648 Gm. atropine sulphate U. S. P. or in the case of tablets as many tablets as are theoretically equivalent to one grain (0.0648 Gm.) of atropine sulphate U. S. P. in a separatory funnel, add 15 cc. of distilled water and 10 cc. of *N*/10 Sulphuric Acid. Let the material dissolve. Then add 1 drop of methyl red indicator. Exactly neutralize the solutions with normal sodium hydroxide and then add exactly 0.5 cc. of normal sodium hydroxide V. S. in excess.

Shake out thoroughly but rapidly with three or four portions of chloroform 50 cc. each. Take one or two cc. of the last portion, evaporate to dryness, dissolve the residue in a few drops of dilute acid and test with mercuric potassium iodide T. S. for alkaloid to determine if extraction is complete, if not shake out again.

Wash the combined chloroform portions in a separatory funnel with 10 cc. of distilled water and shake this water out with 10 cc. of chloroform. The chloroform portions are filtered through filter paper into a beaker. The separatory funnel tip—the filter and its funnel tip are washed with sufficient chloroform.

Evaporate the combined chloroform shake-outs and washings using a heat not greater than 60° C. and a current of clean, dry air.

Dissolve the residue in one or two cc. of neutral methyl alcohol. Add 5 cc. of *N*/10 sulphuric acid V. S. and 100 cc. of distilled water. See that the alkaloid is entirely dissolved. Titrate the excess of tenth-normal sulphuric acid with fiftieth normal sodium hydroxide.

The essential points in this method are:

- (1) Ensuring solution by aid of *N*/10 sulphuric acid.
- (2) Control of the alkalinity by the use of a fixed small amount of alkali when making alkaline.
- (3) Avoiding loss due to volatilization or hydrolysis by temperature control in the final evaporation.

As a check on the above we recently made mixtures of known amounts of Atropine Sulphate and Milk Sugar in the proportions found in hypodermic tablets. This we assayed as above with the following results:

Amounts of Atropine Sulphate present: Gm. 0.0648, 0.0648, 0.0544, 0.0648, 0.0648, 0.0648, 0.0648.

Amounts found: Gm. 0.0625, 0.0625, 0.0535, 0.0625, 0.0629, 0.0624, 0.0629.

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