

**FORENSIC TOXICOLOGY LABORATORY
OFFICE OF CHIEF MEDICAL EXAMINER
CITY OF NEW YORK**

**SALICYLATES
(COLOR TEST)**

PRINCIPLE

The test is based on the formation of a violet colored complex between the ferric ion and phenols. The test is not specific for salicylates but false negative results do not occur. The color developing solution contains acid and mercuric ions to precipitate proteins.

SAFETY

The handling of all reagents, samples and equipment is performed within the guidelines which are detailed in the safety manual.

REAGENTS

All reagents should be ACS grade or better.

Trinder's Color Reagent

Dissolve 40g of mercuric chloride in 850 mL of water by heating. Cool the solution and add 120 mL of 1N HCL and 40g of ferric nitrate. When all the ferric nitrate has dissolved, dilute the solution to 1L with water. Stable indefinitely.

PROCEDURE

1. Number test tubes.
2. Pipette approximately 1 mL of unknown urine into a 12 x 75 mL test tube.
3. Remove a positive and a negative control from the freezer, thaw and include in the batch.
4. Add 1 mL Trinder's reagent.
5. Mix by Vortex.
6. Violet color develops immediately if salicylates are present.

INTERPRETATION

Sodium salicylate and aspirin are both easily absorbed, some from the stomach, but more generally from the upper GI tract. Maximum salicylate concentration usually occurs 2 hr after ingestion. The common adult therapeutic dose of 600 mg aspirin yields a serum concentration of about 5 mg/100 ml. Doses of 100 mg sodium salicylate/kg body weight usually produce serum concentrations of 20 to 30 mg/100 mL.

LIMIT OF DETECTION

Limit of detection (LOD) for salicylates 75 mg/L.

ACCEPTANCE CRITERIA

1. Only specimens that have been analyzed with successful controls can be reported.
2. Negative control must not react with Trinder's reagent.
3. Positive control must produce a violet color in the presence of Trinder's reagent.

REPORTING

1. Samples which do not cause a color reaction with Trinder's reagent are reported as "salicylates not detected".
2. Samples which causes a color reaction with Trinder's reagent are reported as "salicylates detected" and are scheduled for confirmation testing by HPLC.

REFERENCE

Sunshine, I. *Methodology for Analytical Toxicology*. CRC Press, Inc.; Boca Raton, FL 1975.