

Drug Chemistry Section
Drug Chemistry Procedure Manual
Effective Date: August 3, 1998

Modification of C-11
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Supersedes: September 1, 1996

Name of Procedure:

Thin-Layer Chromatography
Iodoplatinate Visualizing Reagent

Suggested Uses:

A visualizing reagent or detection reagent must be used in Thin-Layer Chromatography if the compound or compounds are not distinguishable by their own color. Opium alkaloids, coca alkaloids and most nitrogen containing compounds can be visualized using the iodoplatinate spray reagent. Refer to page 135, **Clarke's Isolation and Identification of Drugs**, (see **Literature References**) for color formations of various drugs.

Apparatus Needed to Perform Procedure Including Preparation of Reagent:

Fume hood
Graduated cylinder
Eye protection
Balance
Laboratory coat
Gloves
Spray bottle
Air compressor
Funnel
Spatula
Bottles
Tygon or rubber tubing
Platinic chloride (chloroplatinic acid)
Potassium iodide
Water

Formula for Preparing Reagent:

1. Dissolve 1 gram of platinic chloride (chloroplatinic acid) to 10 milliliters of water.
2. Add this solution to 10 grams of potassium iodide dissolved in 250 milliliters of water.

Formula for Preparing Reagent (continued):

3. Dilute the solution from Step 1 to 500 milliliters with water.
4. Place desired amount in spray bottle.
5. The remaining iodoplatinate solution can be stored in a reagent bottle in a cool place.
6. Properly label spray reagent.

Quality Control Check:

A quality control check of this reagent will be performed using a known standard of heroin and following the application procedure listed below.

Expiration Date of Chemical Reagent:

The iodoplatinate reagent can be used until depletion.

Application of Procedure on Evidence:

1. Place well-dried TLC plate in hood.
2. Activate hood.
3. Using the air compressor and spray bottle, apply a fine mist of the visualizing reagent to the TLC plate.
4. Apply the visualizing reagent until the spot corresponding to the known standard appears.
5. Compare the known standard and the compound in question for their size, shape, color and position on the TLC plate.
6. Record the results of your observation.

Safety Concerns:

Always wear eye protection, gloves, and a laboratory coat when preparing this reagent for use.

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Eye protection and a laboratory coat should be worn when visualizing the TLC plate.

Literature References:

Randerath, Kurt, **Thin Layer Chromatography**, New York, Academic Press, 1968.

Moffat, A.C., **Clarke's Isolation and Identification of Drugs**, 2nd Ed., The Pharmaceutical Press, 1986, pp. 135 & 166-177.

Butler, William P., **Methods of Analysis**, IRS Publication #341, December 1966, p. 92.

This procedure has been used in the Drug Chemistry Section since 1971.