Pharmacognosy III, 3rd stage, 2nd Semeter

م.د شيرين محمد مكي الحسيني

Lab. 3

Quantitative and Qualitative Analysis of Piperine Alkaloid

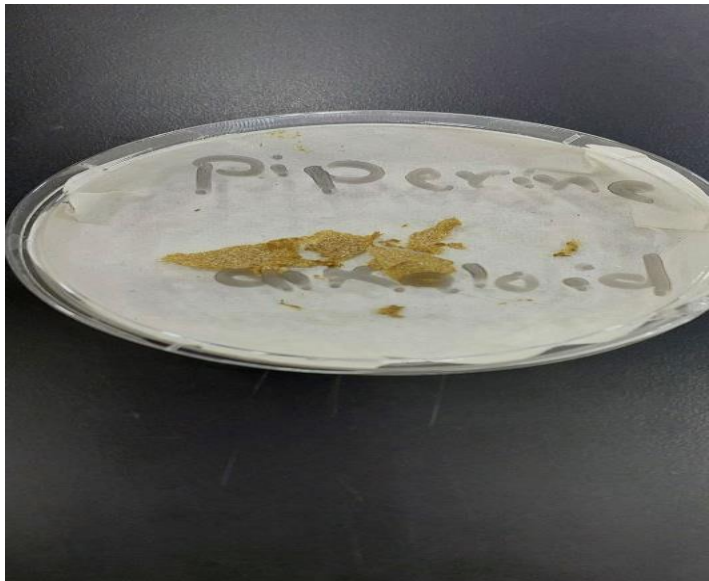
ANALYSIS OF PIPERINE ALKALOID

QUALTITATIVE ANALYSIS

- Chemical Test
  - Specific Test
- Chromatography
  - T.L.C

QUANTITATIVE ANALYSIS

✓By weighting the crystals

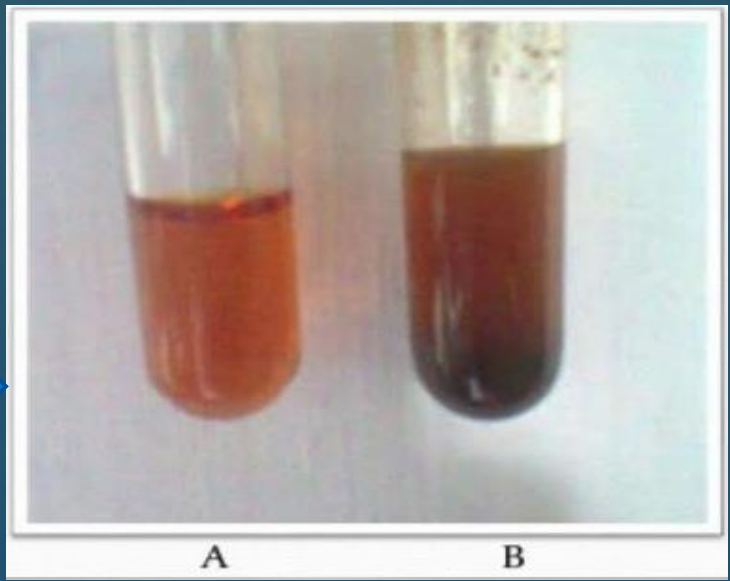


- Wagner 's Test:
- Aim: To indicate in general the alkaloid as other alkaloids.
- Equipments and Reagents:
- Test tube.
- Ethanol.
- HCl.
- **Procedure:**

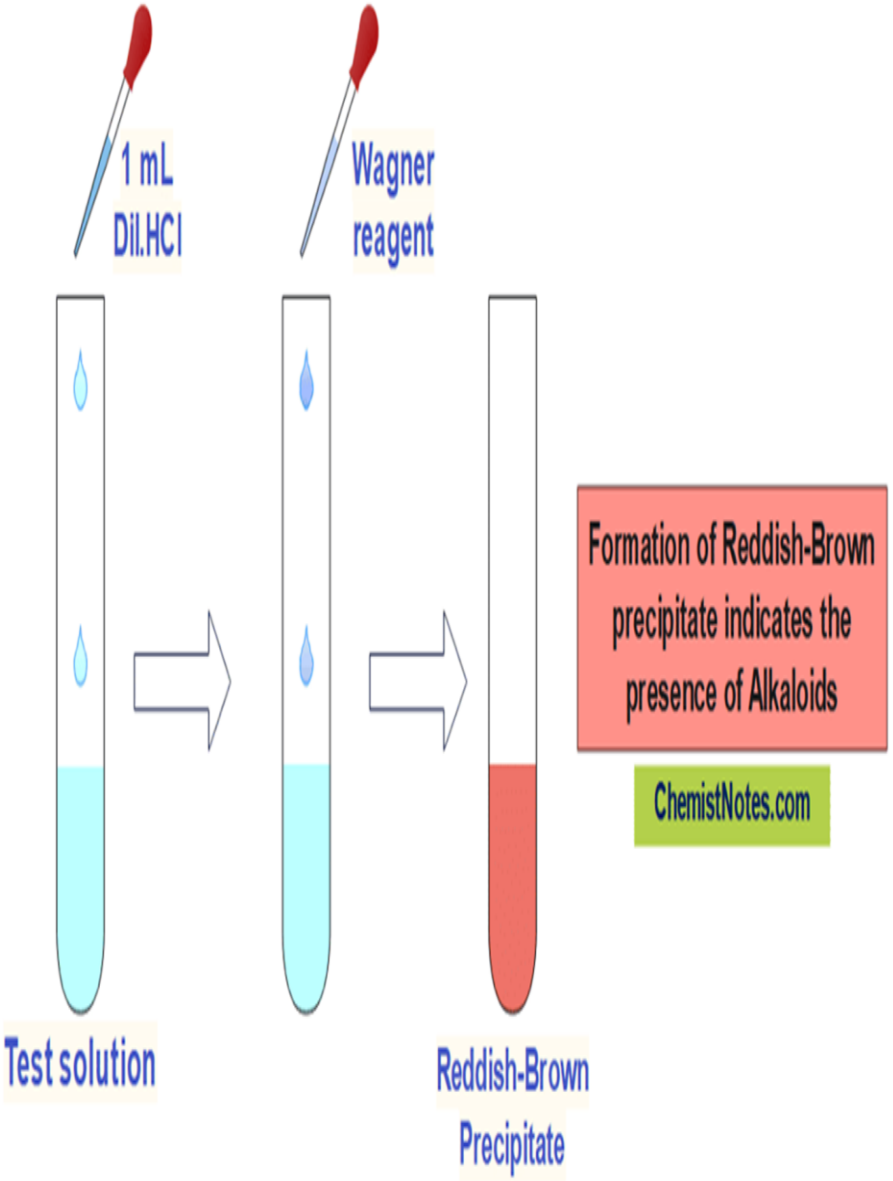
1- Preperation of Wagners reagent: This reagent is prepared by dissolving 1 gm of iodine and 3 gm of potassium iodide in 50 mL of distilled water. This test is utilized to detect alkaloids, yielding a reddish-brown precipitate by reaction.

- 2- Take few crystals of piperine alkaloid and dissolve in few mls of ethanol, in test tube then add 2 drops of HCl. Then add 2 drops of Wagner's reagent.
- **Result:** Brown precipitate will occur.

A: Wagner's reagent.
B. Result.



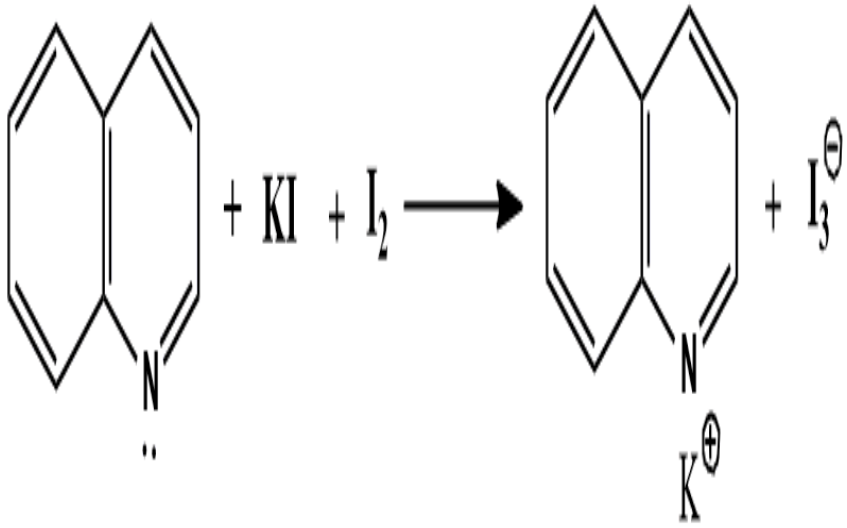
Wagner's Test for Alkaloids



Formation of Reddish-Brown precipitate indicates the presence of Alkaloids

Proposed reaction for Wagner test

$$I_2 + I^{\ominus} \longrightarrow I_3^{\ominus}$$



Reddish-Brown ppt.

The Identification of Piperine Alkaloid By Chromatography (TLC)

- By the use of thin layer chromatography **(T.L.C)**
- The stationary phase = *Silica gel G.*
- The mobile phase =***Toluene: Diethylether: Diaxon (62.5:21.5:16).***
- The spray reagent =***Dragendorff's reagent.***
- Mechanism of separation = *Adsorption.*
- Developing = *Ascending.*

Procedure:

1- Prepare 100ml of mobile phase, and place it in the glass tank.

2- Cover the tank with glass lid and allow standing for 45 minutes before use.

3- Apply the sample spots, and the standard spot on the silica gel plates, on the base line.

4- Put the silica gel plate in the glass tank and allow the mobile phase to rise to about two-third the plate.

5- Remove the plate from the tank, and allow drying, and then detecting the spots by the use of the spray reagent.

Result: Orange spot will appear.


Thank
you