Harmala alkaloids

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Introduction

Peganum harmala **(common name Syrian rue)**

Family: Zygophyllaceae
Genus: Peganum
Species: *Peganum harmala*

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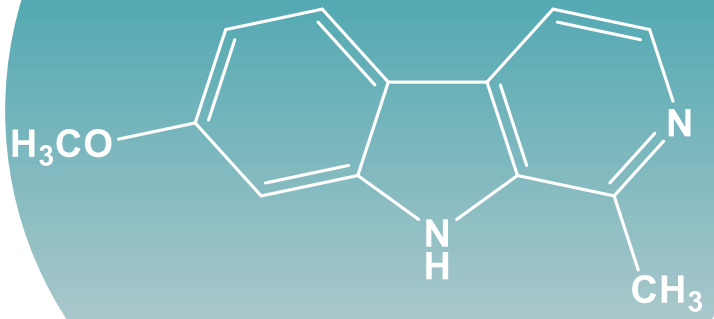
Introduction

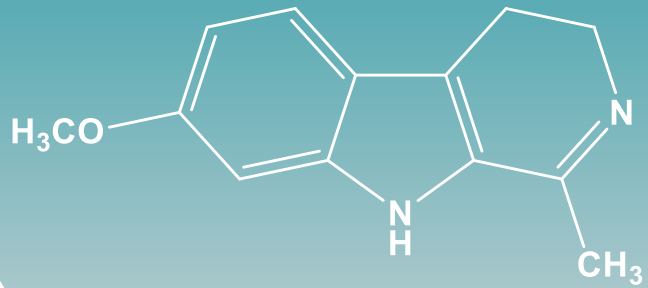
Peganum harmala is known as a major source of alkaloids including β-carbolines(indole) such as harmine, harmaline, harman and harmalol, and quinazoline alkaloids such as vasicine) .

β-carbolines alkaloids

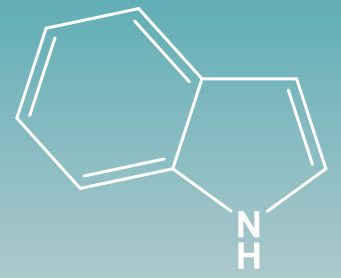
Harmine



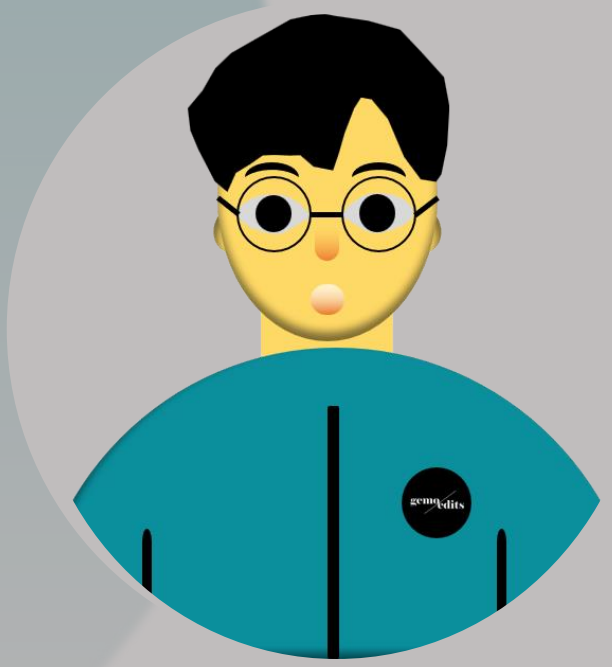
Harmaline



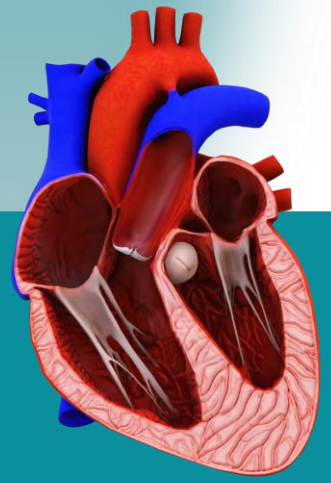
Indole



EFFECTS

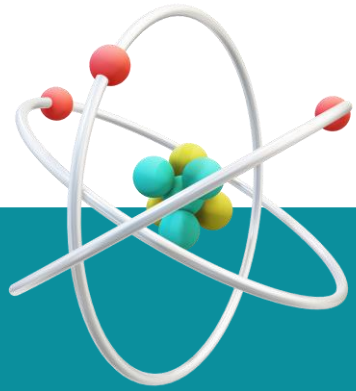


Harmala alkaloids showed a variety of biochemical, psychopharmacological, and behavioral effects on humans.



Treat hypertension and cardiac disease

Parkinson`s disease
Psychiatric conditions
Relieve pain.



immuno-modulatory effects
Antinflammatory
Antineoplasm

Medicinal using for harmine & harmaline

1- Act as MAOI-A (monoamine oxidase inhibitor A) compounds.
2- Anticancer Activity by inhibit DNA topoisomerases and interfere with DNA synthesis.
3- Antileishmanial effect.

Vomiting

Hallucination

Slight elevation of body temperature

Bradycardia and low blood pressure

Side effects

EXTRACTION

HINT!

Harmine &harmaline slightly soluble in water, alcohol & ether but soluble in hot alcohol & dilute acid

EXTRACTION

1. Defatting step
(30 min.)

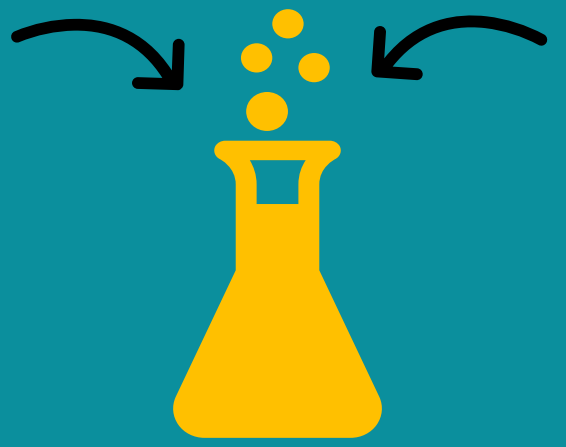
30 gm seeds
powder

65 ml hexan

Filteration
and take the
residue

2. Extraction step
(boiling 30 min./ 50 C)

120 ml of
(5% HCL) and
(60% MeoH)



EXTRACTION

3. Centrifuge the filterate
(5 min.)

filterate

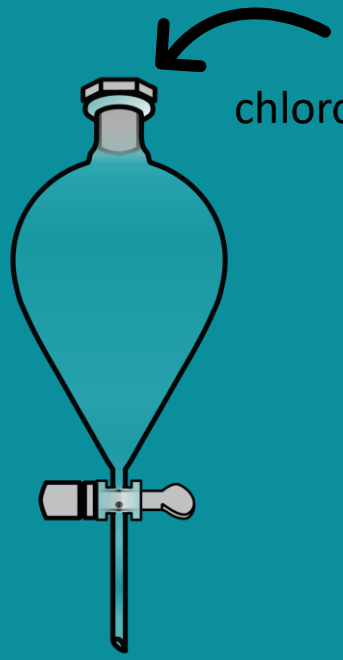
4. methanol evaporation by heating

5.alkalinization

NaoH
(25%)

6. isolation

chloroform



Detection test

Wagner reagent

1 ml of extract + drop by drop of reagent ⟶ Brown ppt

Thank you!