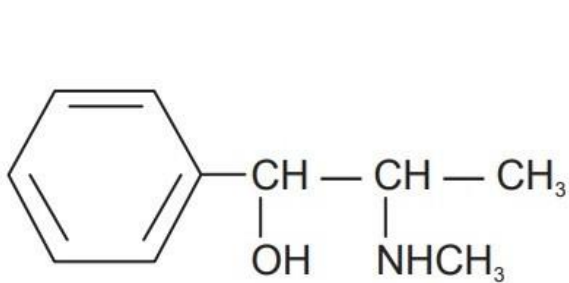
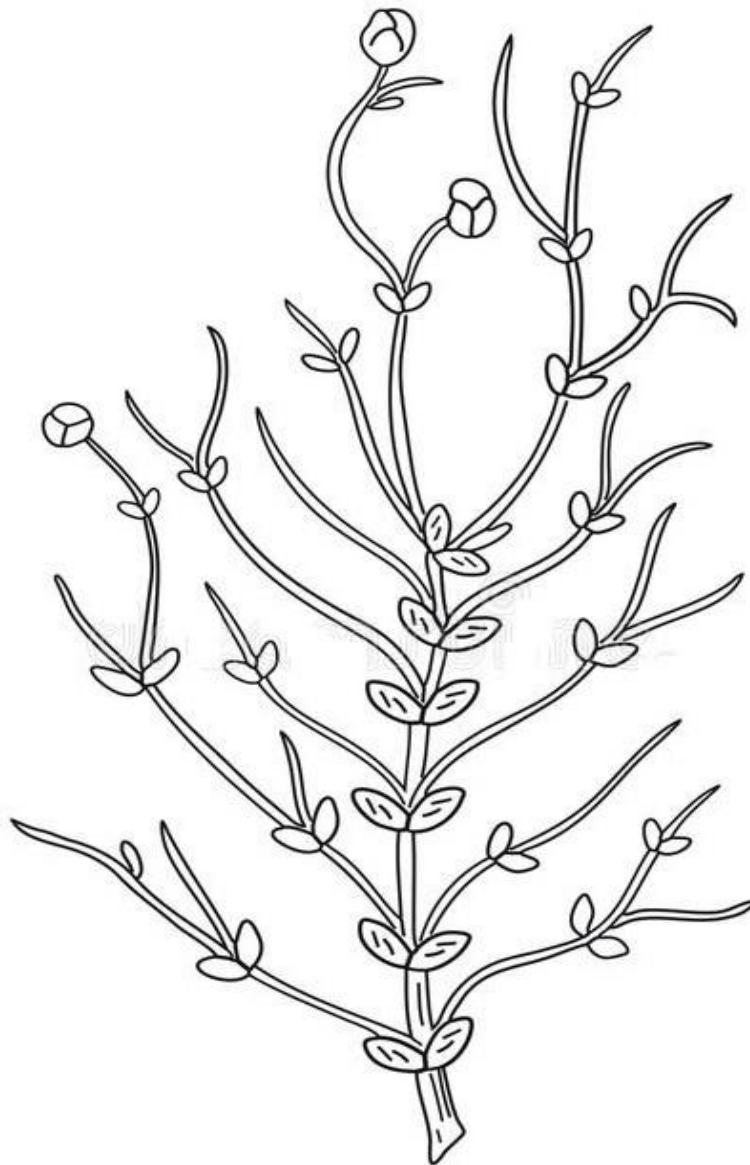
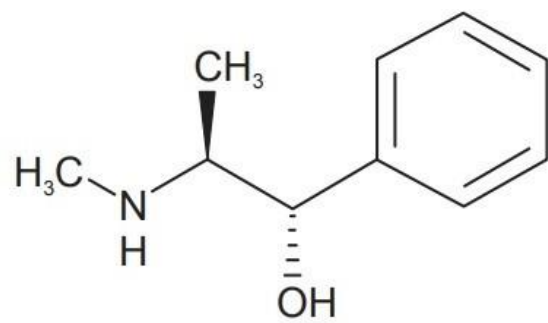


**EPHEDRA**

Ephedrine



(+)-Pseudoephedrine

## Practical - 11

Date: .... / ..... / .....

### MORPHOLOGY OF EPHEDRA STEM

**Aim:** To identify the morphological characteristics of given organised drug.

**Reference:**.....  
.....

**Requirements:**.....

**Biological source:** Obtained from dried young stems of *Ephedra gerardiana* and also of *E. nebrodensis* (Tineo).

**Family:** Ephedraceae.

#### Morphological characteristics (Ephedra Stem):

S. No.	Morphological Character	Observation
1.	Colour	
2.	Odour	
3.	Taste	
4.	Shape	
5.	Size	
6.	Extra features	

#### Chemical constituents:

- Ephedra's contain 0.5 – 2.0 % of alkaloids of the total ephedrine.
- It contains not less than 1.0% of total alkaloids calculated as ephedrine.
- They also have pseudoephedrine.
- Roots consist of macro cyclic alkaloids and feruloyl-histamine.
- It consists of N- methyl ephedrine, herbacetin and cathine as a chemical compound.
- Tannins are also found in most of the ephedra species.
- They have flavonoids and polysaccharides

#### Uses:

- Ephedra possesses properties of anti- inflammatory, anticancer, antibacterial, antioxidant.
- They show activities of hepatoprotective, anti-obesity and antiviral.

- They also have diuretic activity.
- It is used to treat asthma and hay fever.
- It has more prolonged action than adrenalin and has an advantage to be administered by mouth.

**Report:** The given unknown organised drug was identified as.....

### Questions Bank

1. What is the height of ephedra shrub?
2. Which chemical show the diuretic action of Ephedra?
3. What is the leaves shape of ephedra shrubs?
4. What is the anti- inflammatory activity?
5. Ephedra belongs to which family?
6. Write the chemical constituent of ephedra.
7. How the Ephedra cure hay fever?
8. What is the use of ephedrine.
9. Draw the structure of pseudoephedrine.
10. Ephedra show adulteration with.....