Diploma in Pharmacy 1st Year
Pharmacognosy Practical

To perform the physical and chemical tests of Asafoetida

Aim:

To perform the physical and chemical tests of Asafoetida.

Reference :

Dr. Gupta G.D , Dr. Sharma Shailesh , Kaur Navjit , "Practical Manual of Pharmacognosy" Published by Nirali Prakashan , Pg.No 111 - 114

Biological Source :

Asafoetida is the oleo-gum resin obtained by incision from the rhizomes and roots of Ferula foetida.

Materials and Apparatus Required

Test tube, conical flask, beaker, drug sample, weight balance, nitric acid, conc sulphuric acid, water, phloroglucinol, cone hydrochloric acid, conc ammonia, dil ammonia, and alcohol.

Theory

The name asafoetida has been derived from the Latin word foetid which means smelly. Asafoetida is a genus of perennial herbs. It has a very distinct, pungent odour It is a spice used as a digestive and, in food as a condiment, and making pickles. It belongs to family Umbelliferae.

Physical Tests

1) **Colour:** Yellowish-white changing to reddish-brown.
2) **Odour:** Intense, persistent, penetrating, and alliaceous.
3) **Taste:** Bitter, alliaceous, and acidic.
4) **Shape:** Occurs in 2 different forms, ie, tears and masses. Tears are rounded or flattened.
5) **Size:** Tears are 0.5-3cm in diameter.
6) **Extra Features:** Fresh tears are tough, which on drying becomes hard and brittle The inner surface of tears is milky whitish-yellow,translucent, or opaque Mass of asafoetida is agglutinated and mixed with root fragments. foreign materials, and other impurities

Chemical Constituents

Asafoetida contains resin (40-65%), gum (20-25%), and volatile oil (4-20%)The chief resin of asafoetida is asaresinotannol present either in free form or is combined with ferulic acid.

Asafoetida does not contain free umbelliferone. Ferulic acid when treated with hydrochloric acid, converts into umbellic acid, which forms umbelliferone by losing water.

Asafoetida oil is obtained by steam distillation of the oleo-gum resin The oil contains secondary butyl propenyl disulphide as its chief constituent.

However, di- and tri-sulphides, pinene, and other terpenes are also present in the oil. The sulphur compounds of the formulae C_2H, S2, C16H3S2, and CoHS imparts odour to asafoetida.

Uses

1) Sometimes it is used as an antispasmodic, carminative, expectorant,and laxative.
2) It is also a powerful nerving stimulant, used in nervous disorders related to ysteria.
3) It is also used as intestinal flatulence.
4) Its 2% (w/v) suspension is used as a repellant against dogs, cats, deer,rabbits, etc.
5) It is used in veterinary to apply over the bandages of dogs so they do not chew them

Result :

The physical and chemical test of Asafoetida was performed successfully.