

# Diploma in Pharmacy 1<sup>st</sup> Year

## Pharmacognosy Practical

### To perform the physical and chemical tests of Gelatine

#### **Aim:**

To perform the physical and chemical tests of Gelatine.

#### **Reference :**

Dr. Gupta G.D , Dr. Sharma Shailesh , Kaur Navjit , “Practical Manual of Pharmacognosy” Published by Nirali Prakashan , Pg.No 153 - 157

#### **Biological Source :**

Gentian is the dried and partially fermented rhizome and root of yellow gentian, ie., *Gentiana lutea*. It belongs to family *Gentianaceae*.

#### **Materials and Apparatus Required**

Test tube, conical flask, beaker, burner, water bath, copper sulphate, concentrated nitric acid, Millon's reagent, alcoholic solution of ninhydrin, soda lime, ammonia tannic acid, and picric acid.

#### **Theory**

Gelatin is derived from collagen obtained from various animal body parts. It is commonly used as a gelling agent in food, pharmaceutical drugs, vitamin capsules, photography, and cosmetic manufacturing.

## Physical Tests

- 1) It is colourless or slightly yellow coloured.
- 2) It is transparent, brittle, and available in the form of sheets (figure 39), flakes, or coarse granular powder.
- 3) It is practically odourless and tasteless.
- 4) When kept in water, it swells and absorbs 5-10 times its weight of water and forms a gel in solutions below 35-40°C.
- 5) It is soluble in hot water, glycerol, and acetic acid; and insoluble in cold water and organic solvents.
- 6) It is amphoteric in nature.
- 7) It remains stable under dry conditions, but is attacked by bacteria when moist or in solution.
- 8) Its gelatinising property is reduced if boiled for a long time.
- 9) Its quality is determined on the basis of its jelly strength (or bloom strength) using a bloom gelometer.
- 10) Commercially gelatin is available in two types, i.e., gelatin A and B
- 11) The isoelectric point for type A lies between pH 7 and 9.
- 12) Type A is incompatible with anionic compounds (acacia, agar, and tragacanth).
- 13) The isoelectric point for type B lies between pH 4.7 and 5.
- 14) Type B is used with anionic mixtures.

## Chemical Constituents

Gentian contains bitter glycosides, i.e., gentiopicrin (or gentiopicroside). It is a water-soluble, crystalline compound whose bitter value is 12,000. When fermented and dried, it gives gentiogenin and glucose. The drug also has amarogentin, amaroswerin, gentioside, and gentinin (a mixture of gentiopicrin and gentisin).

## **Uses:**

- 1) It is used in the preparation of pastilles, pastes, suppositories, capsules, pill-coatings, and gelatin sponge
- 2) It is used as a suspending agent, tablet binder, coating agent, stabiliser, thickener, and texturiser in food.
- 3) It inhibits crystallisation in bacteriology for preparing cultures.
- 4) It is used as a substitute for blood plasma.
- 5) It is also used for microencapsulating drugs in which the drug is sealed within a micro-sized capsule or beadlet, which may then be handled as a powder.
- 6) Glycerinated gelatin (gelatin treated with glycerine) is used as a vehicle and for manufacturing suppositories.
- 7) Zinc gelatin (gelatin treated with zinc) is used as a topical protectant.

## **Result :**

The physical and chemical test of Gelatine was performed successfully.