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CARBOHYDRATE RELATED DRUGS

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ABSTRACT

Carbohydrate plays important role in our life. In recent year, there has been a great effort devoted to investigaion of diffrent carbohydrae related drug. This review summarizes the Biological source, Family, Distribution, Plant Description, Chemical tests and uses of drug. Which are helpful for further whole information bout gum and plant.

KEYWARDS: Carbohydrate drug, Acasia, Tragacanth.

INTRODUCTION

Carbohydrate areorganic compound found in he major parts of fruit, vegitable, legumen and cereal grains. They carry out many functions in all living organism. One of the their primary function of carbohydrate is to provide energy to our body. Some of carbohydrate also give the therapeutic effect such as Acacia which inhibit the growth of periodontic bacteria. Some carbohydrate also use in pharmaceutical preparations for thicking and emulsifying agents.

This preview mainy focus on carbohydrate related drug include Acacia and Tragacanth. Their physical, chemical properties, Biological source, Distriburion, Chemical test, various Uses in pharmaceutical preparation and in daily life.

1. ACACIA

Fig. No. 1: Acacia gum.

Biological source

It is dried gummy exhudation from stem and branches of Acaciaarobica, A.senegal.

Family

Fabaceae (alt. Leguminosae)

Distribution

The Acacia plant species abudant throught Australia, Asia, Africa, Europe, Asia and tha America. In India it is collected from Western Ghat, Punjab, Rajastan and Gujrat.[1]

Fig. No. 2: Acacia plant.

Plant discription

It is medium size evergreen tree with a short trunk, found in whole dried part of plant. It is normally attain hight of 15m and having girth of 1.2m. Although tree reach to a hight of 10 to 60feet. It produces golden yellow flowers with fragrance. The flowers are small with five small petals. The branches are purplish to gray with very small glands. The leaves are compound pinnate, but in some species the leaflets are supressed, vertically flattened. Bark is a riugh dark brownish to nearly black in colour with longitudinally and deeply crcked fissured. Pods are flat shaped 7.5-15.0 cm. Leaves are from 2.5- 5cm long.[4]

Description of gum

The gum is white in colour. Sometime it form brown or cream colour. The outer surface of gum is smooth and dull. The dried gum is brittle in nature. Tje test of gum is mucilaginous like and it is odourless. The gum is soluble in water and it form acid. It cantain 5% ash.

Chemical test

1. Lead acetate test

Aqueous solution of gum + lead acetate = Heavy white precipitate.

2. Iodine test

Aqueous solution of gum + iodine solution = No blue colour.

3. Reducing sugar test

Hydrolysis of an aqueous solution of acasia with dil. HCL yeilds reducing sugar further boliling it with Felhlings solution to give bricks red precipitate of cuprous oxide.

4. Borax test

Aqueous solution of gum + Borax = stiff translucent mass.

Uses

1. Acacia gum is use as a demulcent in pharmaceutical preparations.
2. It shiw woumd healing effect.
3. It inhibit growth of periodontic bacteria.
4. It is use as emulsifier and a thickning agent in icing, fillings, chewing gum and other confectory item.
5. Acacia gum use in Dietary fibre and food aditives.
6. It is used for Enhancement of vegetable shelf life.
7. It also reduce cholestrol level.
8. It show protective effect against Dental erosion.[8]

Storage

It should be store in coo, clean and dry place. It does not deterioat due to long storage under favourable conditions.

2. TRAGACANTH

Fig. No. 3: Tragacanth Gum.

Biological source

Astragalus gummifer or other species of Astragalus.

Family

Leguminoseae.

Distriburion

The torny shrub of tragacanth normally grow at an altitude of 1000-3000 meter and the primary source is desert highland of nortern and western part of Iran. Apart from Iran it is naturally found in various countries, viz, Iraq, Armenia, Syria, Greece and Turkey. Very few species of Astragalous are located in India, viz, Kumaon, Garhwal and Punjab.

Discription

This species is shrubby, with small branches and short woody gray stem surrounded by thorns. The compound leaves are stipulate with elliptical leaflets (pinnae) borne in opposite pairs. The rachis of the leaf is extended into a sharp thorn.

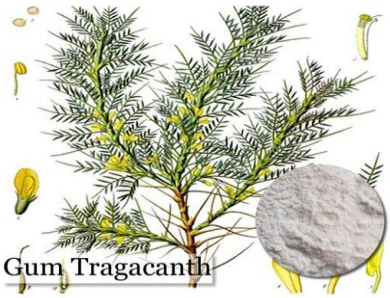

Fig. No. 4: Tragacanth tree.

Chemical test

1. Aqueous solution of Tragacanth + Conc. Hydrochloric acid = Boil = No Red colour form.
2. Sample of Tragacanth + Ruthenium red solution = No Pink colour form.
3. Aqueous solution of tragacanth + Lead acetate = Heavy white precipitate form.
4. Sample solotion + Drops of Ferric chloride = Deel yellow precipitate forms.

Uses

1. Tragacanth is use as emulsifying, binding and demulcent.
2. Orally, tragacanth is used both for diarrhoea and as a laxative.

3. Topically tragacat is an ingredient in toothpaste, hand lotions, and vaginal creams and medicinal jelly like sprmicidal jelly.
4. Itt use as a binding agent for preparation of tablet and pills.

Storage

It should be store in coo, clean and dry place. It does not deterioat due to long storage under favourable conditions.

CONCLUSIONS

The above information gives the detail aboutAcacia and Tragacanth gum and plant. It also give information about Discription, Distribution, Chemical test and uses. This information also used in pharmaceutical industry for preparation of medicinal products.

REFERENCES

1. Yang zhang and Fengshan Wang. Drug discovery and therapeutics, 2015; 9(2): 79-87.
1. Dr. Kuntal da,a textbook of pharmacology and phytochemistry-1, Nirali prakashan, January 2019.
2. Saurabh Rajvaidya, B. P Nagori, G. K. Sing, B. K. Dube, Prashant Desai, S. Alok and Sanjay jain, IJPSR, 2012; 1995-05.
3. Kefualew Gebeyew, Kibru Beriso,Abdo Mohamed, G/medhnie G/ silassle, Solomon Melaku and Aniteneh Worku. Review on the nutritive value of some selected Acasia species for livestock production in Dryland areas, jun 2018; 2-3.
4. Rashid Mohammad, Shamsi sharuq, zamanroohi and Itrat malik review paper on Bark of Acacia Arebica - A Nature's Gift: An overview, May 2014; 2(5): 20-24.
5. Mariyam roqaiya, Wajeeha Begum, Rumaiza jaufer. Acacia arabica- A review on Ethanobotanical and unani traditional uses as well as phytochemical and pharmacological properties, 2015: 4(6): 315-321.
6. Ashutosh kar, pharmacognocy and pharmacobiotechnology, 2nd edition.
7. Seema patel and Arun Goyal, Review on Applications of Natural polymar gum Acacia, International journal of food properties, 2015.
8. Zeinab Rahmani, Razieh Sahraei, Mousa Ghaemy Preparation of spherical porous hydrogel beads based on ion-crosslinked gum tragacanth and graphene oxide: Study of drug delivery behavior Carbohydrate Polymers, 2018; 194: 34-42.

9. Ehsan Nazarzadeh Zare, Pooyan Makvandi, Franklin R. Tay Recent progress in the industrial and biomedical applications of tragacanth gum: A review Carbohydrate Polymers, May 2019; 21215: 450-467.