# Tannins

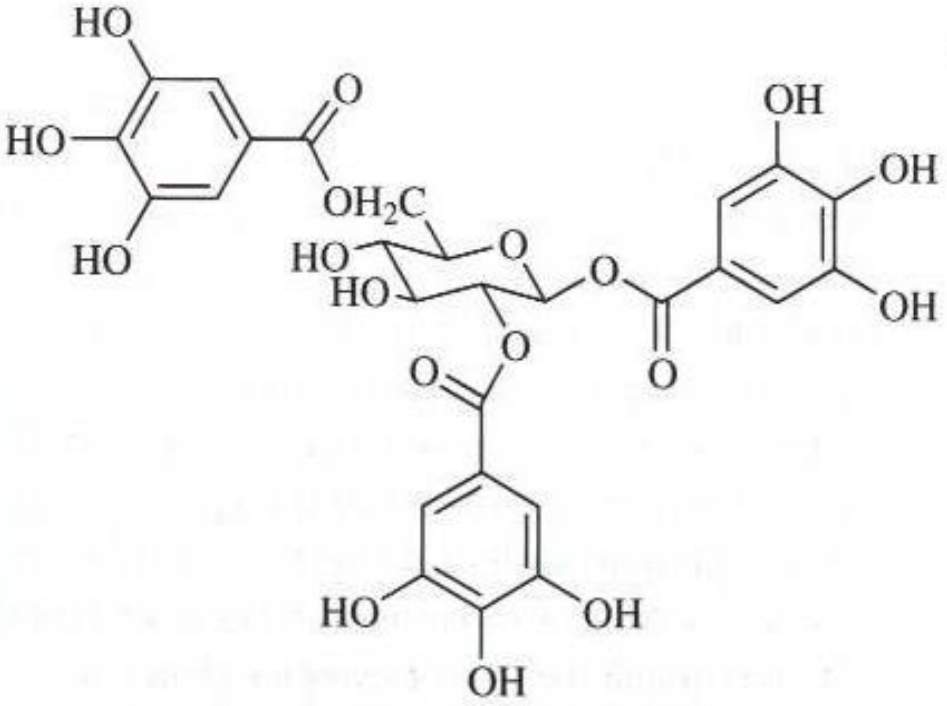
**Tannins** are "phenolic natural products that precipitate proteins from their aqueous solutions".

**Classification:**

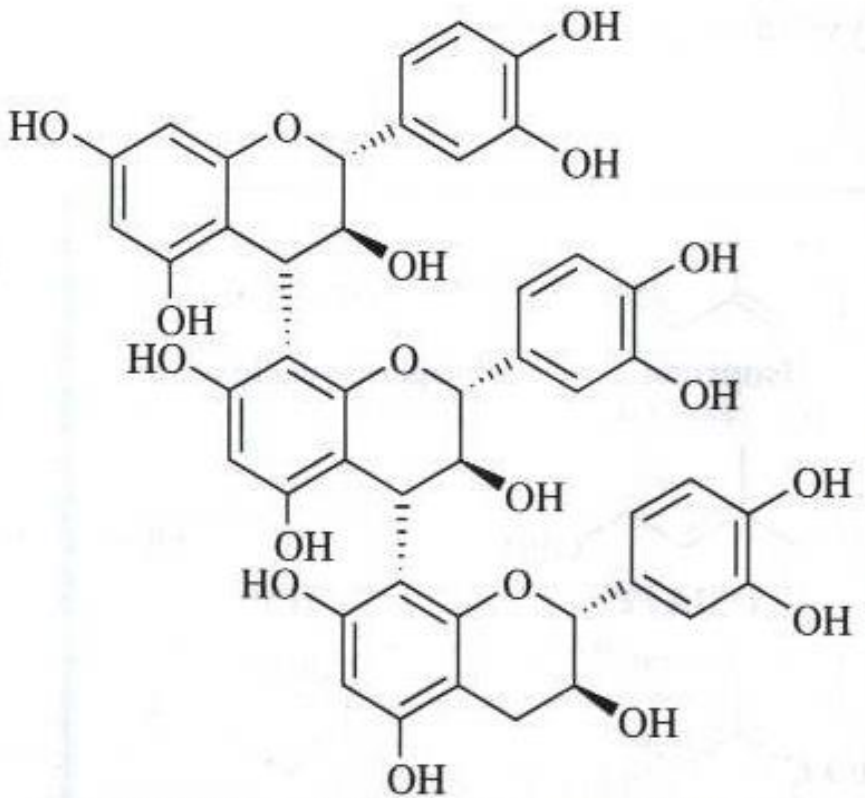
**1- Hydrolysable tannin (pyrogallol tannin):**

**Classified into gallitannin and ellagitannin**

**2- Condensed tannin (catechol tannin).**



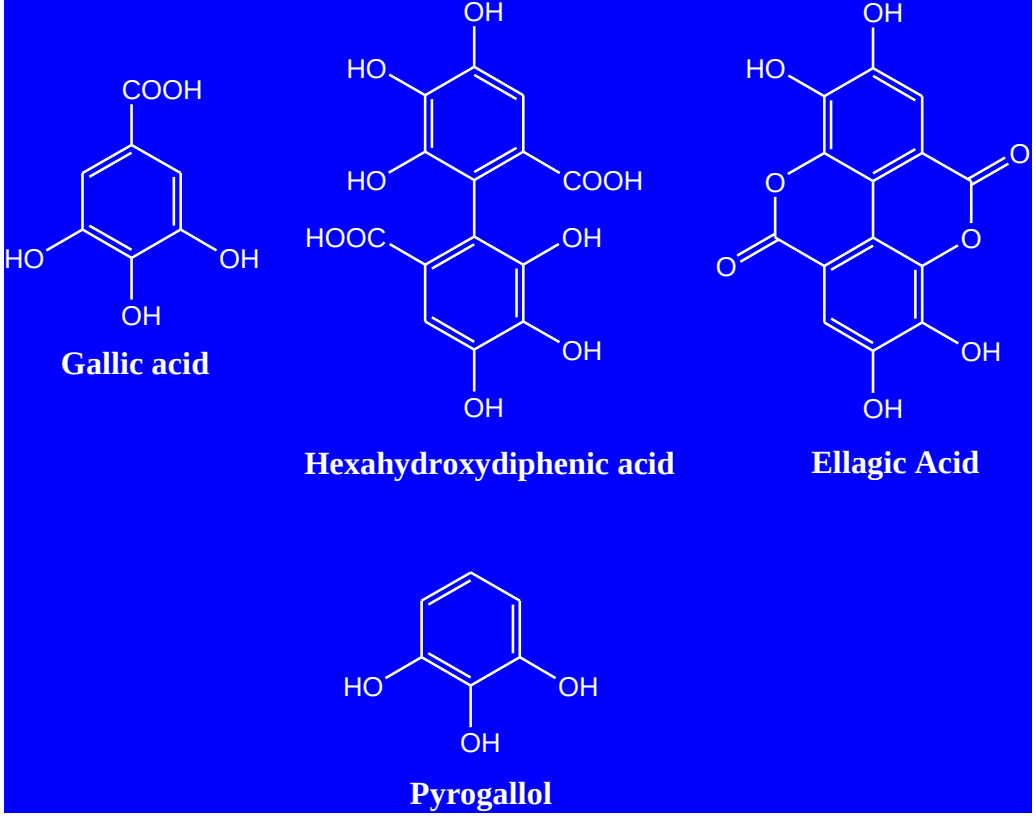

**Hydrolysable tannin (trigalloyl glucose)**




**Non-hydrolysable tannin (flavonoid trimer)**

# 1- Hydrolysable Tannin

**Members of this class consist of several molecules of phenolic acids united by ester linkage to a central glucose residue. Such esters are readily hydrolyzed by acids or enzymes so called hydrolysable tannins.**




**Types of hydrolysable tannin:**

**A- Gallitannin**

**On hydrolysis , it gives gallic acid and glucose.**

**Present in rhubarb, galls, clove, hamamelis.**

**B- Ellagitannin**

**On hydrolysis it gives ellagic acid and glucose**

**Present in pomegranate and eucalyptus.**

# 2- Condensed tannin

**On dry distillation they give catechol.**

**They differ from pyrogallol tannin where their structures are related to flavonoids and they lack sugar in their structures**

**Present in cinnamon, cinchona, tea.**

**.**

# Pseudotannins

- They are compounds of lower molecular weight than true tannins
- Examples of drugs containing Pseudotannins are:

*Gallic acid*: Rhubarb

*Catechins*: Guarana, Cocoa

*Chlorogenic acid*: Mate, Coffee

*Ipecacuanhic acid*: ipecacuanha

# Uses of Tannins

**Industrially; in leather tanning, ink manufacture.**

**Medicinally; astringent, haemostatic, antidiarrheal, antidote in alkaloid and heavy metals toxicity.**

**In labs; reagent for detection of proteins, alkaloids and heavy metals because of their precipitating properties.**