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PHARMACY AND BIO SCIENCES****IMPACT FACTOR 4.018\*\*\*****ICV 6.16\*\*\*****Pharmaceutical Sciences****Review****Article.....!!!****TANNIN AND THEIR APPLICATIONS**

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**KEYWORDS:**

Medicinal uses, plant extract,  
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**ABSTRACT**

The tannins are applied widely, with uses ranging from tanning, known over millennia, through medicinal use in the food industry. In medicine, especially in asian natural healing. The rennin-containing plant extract are used as astringents, against diarrhoea, as diuretics, against a stomach and duodenal tumours, and as inflammatory, antiseptic and haemostatic pharmaceuticals. As tannin can precipitate heavy metal and alkaloid, they can be used in poisonings with these substances. It is also becoming clear that tannins often are the active principles of plant-based medicines.

**INTRODUCTION:**

Tannins are polyphenolic biomolecules, astringent with better taste. These are high molecular weight phenolic compounds. These are complex organic, non-nitrogenous and non-crystalline substances. The tannin compounds are widely distributed in many plant species, commonly found in both gymnosperms and angiosperms. Tannic acid, Gallic acid, Catechins, Chlorogenic acid and phloroglucinol belong to tannins and play an important role in the ripening of the fruit.

Tannins containing drugs precipitate proteins for the protection of inflamed surface of skin and treatment of burns. Ellagitannins and gallitannins are used in dyeing, photography, refining beer and wine as well as an astringent in medicines. Tannins are considered the sources of energy through their oxygen content. They serve as a protective to the plant. In the food industry tannins are used to clarify wine, beer and fruit juices. The antimicrobial property of tannic acid can also be used in food processing to increase the shelf-life of certain foods.

**APPLICATION OF TANNINS:**

- 1. TEA:** The tea plant *Camellia sinensis* is an example of a plant said to have naturally high tannin content. Tea “tannins” are chemically distinct from other types of plant tannins such as tannic acid. Black tea and peppermint tea are inhibitory of iron than herb teas like chamomile, verbena, lime flower and pennyroyal.
- 2. WINE:** Wine tannins come from grape skins, stems, seeds and their extraction is heavily dependent on the particular winemaking process involved. Some tannin also come from barrels, particularly new ones, where these are used to age wine.
- 3. BEER:** High amounts of tannins are in the hops of some beers. The amount of tannins in beer depends on quality of yeast along with other factors. The more bitter, the more tannins, less bitter, the less tannins.
- 4. NUTRITION:** Tannins are phenolic compounds that interfere with iron absorption through a complex formation with iron when it is in the gastro-intestinal lumen which decreases the bioavailability of iron. There is an important difference between the way in which the phenolic compound interact different hydroxylation patterns and the effect of iron absorption.
- 5. CHEMICAL USES:** Precipitation, astringent, reaction with salts, carcinogenicity, antioxidant properties.
- 6. MEDICINAL AND BIOLOGICAL USES:** Tannins containing drug precipitate proteins for the protection of inflamed surfaces of skin and treatment of burns. These act as anti-diarrheals and anti-oxidant effects, anti-viral, anti-bacterial, anti-inflammatory and anti-

parasitic effects. It prevents cancer by preventing cellular damage. It can also be effective in protecting the kidneys, tannins have been used for immediate relief of dysentery, skin ulcers, sore throats, fatigue, hemorrhaging and diarrhea.

- 7. ECONOMIC IMPORTANCE:** It is used in the manufacture of inks. These are used in the laboratory as astringents for the detection of gelation, proteins and alkaloids. Tannins are used in the tanning process of animal hides to convert them into leather. It is used in oils, dyes, fibres, glues, waxes, perfumes, drugs and flavoring agents. Various tannins produce different colours with ferric chloride like black, blue, green. These are used as a tanning agent in dyeing industries and putrefying agents in dyeing industries and putrefying agents in leather industries.

### **CONCLUSION:**

Nature is a unique source of structures of high stereochemical diversity, many of them possessing interesting biological activities and medicinal properties. In the context of the world wide spread of deadly conditions such as AIDS and a variety of cancers, an intensive search for the new lead compound for the development of novel pharmacological therapeutics is extremely important. The fact that the biological activity of tannin-containing plant extracts has been known for ages has led, especially during the last two decades, to the isolation and characterization of many representatives of this class.

The group of unambiguously characterized tannins includes more than 1000 natural products. In extensive biological tests many representatives of the tannins exhibited antiviral and antibacterial properties, but especially prominent was the antitumour activity. Certain tannins, for example, are able to inhibit HIV replication selectively.

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