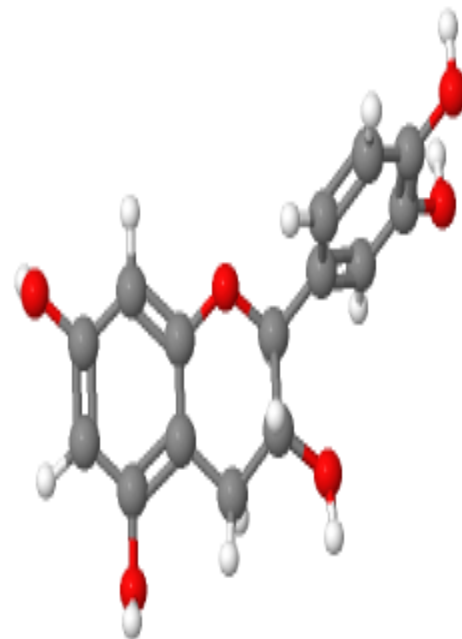


# CATECHIN



# Catechin

- Catechins are a type of phenolic compound found in berries, tea, and cocoa, all of which are foods containing antioxidants thanks to this polyphenol.

# Catechin

All of the polyphenols share a variety of characteristics, in particular, their phenolic rings. These compounds are some of the most significant of all antioxidants that can be consumed as food. This feature led to the new, widespread use of the term 'antioxidant'.

The total polyphenol concentration inside a selected food source is nowadays commonly observed by measuring the activity of said polyphenol, with one of the most common naturally occurring types being catechins.

# Function of catechin in human body

Tea catechins (polyphenols found naturally occurring in tea leaves) undergo a variety of metabolic changes once they are consumed orally, while a considerable percentage of them are excreted in feces.

Previous epidemiological studies have suggested that tea could potentially possess a protective quality against various human cancers, including both colon and rectal cancers. Furthermore, the antimicrobial properties of the catechins in tea leaves play various roles within the digestive tract.

# Function of catechin in human body

- In the human small intestine, catechins inhibit amylase enzyme activity, and a certain amount of catechin is absorbed into the main portal vein. Where catechins are known to have bactericidal properties, they do not have any effect on lactic acid bacteria.
- It has been discovered in previous scientific studies that including tea catechins in a person's diet for several weeks can decrease the volume of putrefactive products in the body, and increases the presence of organic acids *via* lowering of the intestinal pH.

# Function of catechin in human body

Tea catechins have therefore been stated to inhibit the dangerous metastasis of breast cancer cells through the modulation of specific proteolytic enzymes, which consequently suppresses tumor formation and progression.

In conclusion, catechins are a naturally occurring polyphenol commonly found in boiled tea leaves, which can be utilized to not only reduce the risk of many common adult cancers but to also be a possible low-impact treatment for these cancers.

# Types

The four main catechins that occur in green tea are :

- 1) epicatechin (EC)
- 2) epicatechin-3-gallate (ECG)
- 3) epigallocatechin (EGC)
- 4) epigallocatechin-3-gallate (EGCG).

# Health Benefits of Catechins

- Aids Weight Loss
- Cancer Prevention
- Protects Brain Health
- Promote Heart Health
- Regulate Diabetes
- Offer Sun Protection
- Increases Energy



# Catechin in cardiovascular

Catechins are polyphenolic phytochemicals with many important physiological activities that play a multifaceted health care function in the human body, especially in the prevention of cardiovascular disease. In this paper, various experimental and clinical studies have revealed the role of catechins in the prevention and treatment of cardiovascular disorders, and we review the preventive effects of catechins on cardiovascular disease from the following aspects: Regulating lipid metabolism, regulating blood lipid metabolism, vascular endothelial protection, and reducing blood pressure

# Catechin in cardiovascular

Obesity is an antecedent of various diseases. It easily causes myocardial infarction, cerebral thrombosis, coronary heart disease, and other cardiovascular diseases. Obesity can increase the risk to the human body by reducing the total vascular resistance below normal limits and increase the burden on the heart

# Catechin in cardiovascular

Catechins could regulate the RNA and protein expression of fatty acid metabolism enzymes in the liver to affect the activity of metabolic enzymes, which can improve the oxidation of fatty acids and the inhibition of fatty acid synthesis, so as to reduce the lipid levels in the blood and liver, as well as decrease body fat deposition, thus reducing early onset of cardiovascular disease in children.

# Catechin in cardiovascular

Lipid metabolic disorders are the pathologic antecedent of atherosclerosis (AS), which is the main cause of coronary heart disease, cerebral infarction, and peripheral vascular disease. Hyperlipidemia plays a promoting role in the risk of AS, and the increased lipid peroxide (LPO) in serum may lead to platelet aggregation in vivo, with the result that it will cause AS in the damaged body.

# Catechin in cardiovascular

- Epidemiological data and results from many clinical and experimental studies have shown that green tea consumption may have beneficial effects on cardiovascular health. As major polyphenolic compounds in green tea, catechins may be primarily components in green tea that exert vascular protective effects. Catechins have been shown to inhibit oxidation, vascular inflammation, atherogenesis, and thrombogenesis, and favorably modulate plasma lipid profile and vascular reactivity, suggesting a wide spectrum of beneficial effects of catechins on vascular function.

# Catechin in cardiovascular

While some of the protective effects of catechins could be partially due to the secondary action of their antioxidant effect, it appears that catechins can directly act on immune and vascular cells to modulate their functions by targeting multiple cellular pathways and transcriptional factors involved in vascular health, inflammation and diseases.

# Catechin in cardiovascular

The phenolic hydroxyl groups of catechins are primarily responsible for scavenging of free radicals, inhibition of lipid peroxidation, and hydrolysis of fat, whereas the galloyl moiety is involved in chelating metal ions, inhibition of intestinal cholesterol absorption, cholesterol biosynthesis and fatty acid biosynthesis.