

Review Article

A Short Review on the Medicinal Properties of Chlorophyll Juice

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ABSTRACT

Plant products are of increasing interest in the search for new nutraceutical ingredients and natural medicines in the treatment of disease; and the discovery of new alternatives to existing antibiotics is an important area of this research due to pathogen resistance. One example of a plant product currently under pharmacological and medicinal investigation is chlorophyll juice. The purpose of this study is to review the nutritional and medicinal values of chlorophyll juice.

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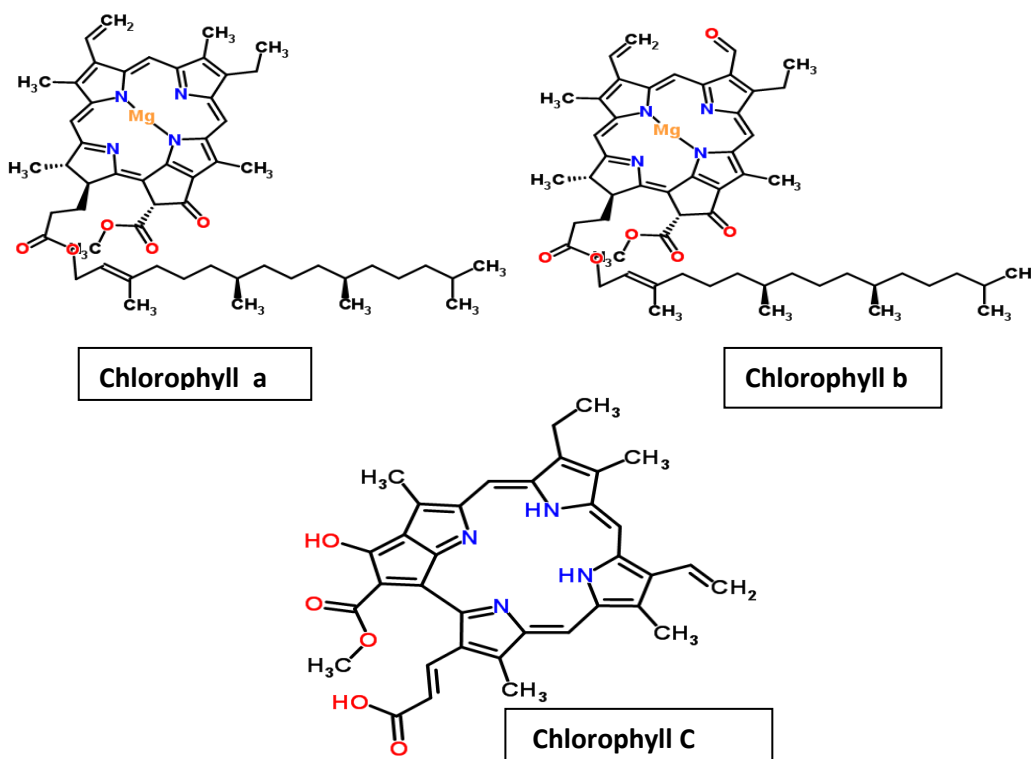
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Introduction

Chlorophyll is a chemical compound that collects light and uses the light to make energy in plants. Additionally, chlorophyll gives plants their green color. You can find large amounts of chlorophyll in leafy vegetables and to a lesser extent in fruits. The liquid form of chlorophyll is a health supplement that some claim will provide you with many of the benefits of eating vegetables and fruits that contain chlorophyll. As with any supplement, you should talk to a medical professional prior to consuming liquid chlorophyll. Chlorophyll (also chlorophyll) is a green pigment found in cyanobacteria and the chloroplasts of algae and plants. Its name is derived from the Greek words. Chlorophyll is an extremely important biomolecule, critical in photosynthesis, which allows plants to absorb energy from light. Chlorophyll absorbs light most strongly in the blue portion of the electromagnetic spectrum, followed by the red portion. Conversely, it is a poor absorber of green and near-green portions of the spectrum, hence the green color of chlorophyll-containing tissues. Chlorophyll was first isolated by Joseph Bienaimé Caventou and Pierre Joseph Pelletier in 1817

Chemical structure

Chlorophyll, which is structurally similar to and produced through the same metabolic pathway as other porphyrin pigments such as haeme. At the center of the ring is a magnesium ion. This was discovered in 1906, and was the first time that magnesium had been detected in living tissue. The ring can have several different side chains, usually including a long phytol chain. There are a few different forms that occur naturally, but the most widely distributed form in terrestrial plants is chlorophyll *a*. After initial work done by German chemist Richard Willstätter spanning from 1905 to 1915, the general structure of chlorophyll *a* was elucidated by Hans Fischer in 1940. The different structures of chlorophylls are mentioned below:



Medicinal values of chlorophyll juice:

Red blood cells:

The structure of chlorophyll and haemoglobin is almost similar. Only difference is in the central atom. In haemoglobin the central atom is iron where as in chlorophyll the central atom is magnesium. This structural resemblance makes chlorophyll able to play a vital role in human body metabolism. Chlorophyll helps in restoring the red blood cells. The enzymes present in chlorophyll aids in purifying blood and enhance the ability to carry more oxygen. This helps in building blood in the body and eliminates the factors responsible for anemia.^[1]

Cancer:

Chlorophyll also acts as a chemo protective agent. The chemo protective action of chlorophyll can be attributed due to the anti mutagenic properties of chlorophyll. Studies have shown that chlorophyll has the ability to prevent the absorption of toxins like aflatoxin in the gastro intestines. Chlorophyll also has the ability to act as a liver protecting agent. Chlorophyll and its derivative chlorophyllin inhibit the metabolism of these procarcinogens which may impair the DNA and also lead to liver cancer and hepatitis. Studies have also shown that chlorophyll cal also acts as a phytochemical compound in the reduction of tumorigenesis.^[2]

Antioxidant power:

The free radical scavenging activity of chlorophyll makes chlorophyll acts a powerful antioxidant for the body. Significant amount of vitamins is also present in chlorophyll. The antioxidant potential of chlorophyll helps body to fight against the various pathogens attacking the body and prevent the body from harmful diseases. It will also prevent the initiation of free radicals and there by eliminates the factors responsible for oxidative stress.^[3]

Anti - Inflammation:

Chlorophyll also possess anti inflammatory properties. Many studies have shown that chlorophyll is effective against people suffering from arthritis. Chlorophyll will and its derivatives will interfere with the growth of bacteria induced inflammation. These properties make chlorophyll a vital phytochemical ingredient in ailment conditions like fibromyalgia and arthritis.^[4]

Detoxification:

The structural resemblance of Chlorophyll and haemoglobin makes chlorophyll a good detoxifier. Its has purifying qualities which helps in detoxification of the body. Chlorophyll enables the body to increase the blood flow and there by helps the body to remove the unwanted materials from the body. Studies have shown that chlorophyll bind with the toxins and thereby eliminating the toxins from the body. Heavy metals, drug deposits all get removed from the body by the purifying action of chlorophyll.^[5]

Anti-aging:

The free radical scavenging activity of chlorophyll makes it a vital ingredient in anti ageing bodies. Chlorophyll will also helps in retaining healthy tissues . It stimulates the anti aging enzymes and encourages healthy and youthful skin. The magnesium and vitamin K present in chlorophyll helps in cleaning and rejuvenating the adrenal glands and improves the adrenal functions in the body.^[6]

Digestive health:

One of the most important medicinal property of Chlorophyll is that it promotes healthy digestion by maintaining intestinal flora and stimulating the bowel movements. It acts as a natural drug to the intestinal tract and helps in the renewal of wounded bowel tissues. STUDIES have shown that chlorophyll facilitates colon cleansing by inhibiting the cytotoxicity induced by dietary haeme and preventing the proliferation of colonocytes. Chlorophyll also helps in preventing constipation and alleviates the discomfort caused by gastritis.^[7]

Anti-microbial properties:

Chlorophyll and its derivatives possess antimicrobial activities. The alkaline chlorophyll juice has shown fight against a medical condition called Candida albicans which is an infection caused by the overgrowth a kind of yeast called candida already present in small amounts in the human body.^[8]

Stronger immunity:

The alkaline pH of chlorophyll juice makes it fight against immunes and there by strengthening the cell walls. Many of the anaerobic bacteria which promote the development of diseases cannot survive in the alkaline environment offered by chlorophyll and its derivatives. Chlorophyll also acts as oxygenator which encourages body's ability to fight diseases and boosts the energy levels and accelerates healing process.^[9]

Deodorizing properties:

Studies have shown that chlorophyll possess deodorizing properties. It is an effective remedy to combat bad breath. One of the major factor responsible for bad breath is poor digestive health.. The dual role of chlorophyll helps in eliminating the stink from mouth and throat and also stimulates digestive health by cleansing the colon and the blood stream. Chlorophyll is administered orally to the patients suffering from colostomies and metabolic disorders such as trimethylaminuria to reduce fecal and urinary odor. These properties make chlorophyll a good ingredient in mouth wash .^[10]

Wound healing:

One of the major medicinal property of chlorophyll is that it can act as a wound healer. Studies have stated that topical usage of chlorophyll solutions is effective in the treatment of exposed wounds and burns. It helps in reducing the responsible factors of local inflammation, strengthens the body tissues, aids in killing germs and improves the resistance of cells against infections. The alkaline nature of chlorophyll prevents the growth of bacteria by disinfecting the environment and making it hostile for bacterial growth and speeds up healing. Studies have also shown that chlorophyll therapy is also quite effective in the treatment of chronic varicose ulcers of the leg.^[11]

Acid-alkali ratio:

Many of the medicinal properties of the chlorophyll can be attributed because of its alkaline nature. Consumption of chlorophyll rich foods helps in balancing the acid-alkali ratio in the body. The central metal atom magnesium present in chlorophyll is a highly alkaline mineral. By maintaining the appropriate alkalinity and oxygen levels of the body, chlorophyll prevents development of thriving environment for the growth of pathogens. Magnesium also helps the body in maintaining a proper cardiovascular health, functioning of kidney, muscles, liver and brain.^[12]

Strong bones and muscles:

The central metal atom present in chlorophyll is magnesium. The central atom of the chlorophyll molecule i.e. magnesium plays an important role in bone health along with other essential nutrients such as calcium and vitamin D. The muscle toning, contraction and relaxation of the body can be attributed due to the presence of magnesium in chlorophyll .^[13]

Blood clotting:

Chlorophyll contains vitamin K which is plays a vital role in normal clotting of blood. It is used in naturopathy for the treatment of nose bleeds and for the females suffering from anemic conditions and heavy menstrual bleeding.^[14]

Kidney stones:

There are many essential vitamins present in chlorophyll. The vitamin K present in chlorophyll form essential compounds in the urine and aids in reducing the growth of calcium oxalate crystals.^[15]

Hormonal balance:

The ability of Chlorophyll in maintaining hormonal balance in both males and females. Can be attributed due to the presence of vitamins. The Vitamin E present in chlorophyll helps in stimulating the production of testosterone in males and estrogen in female and there by maintaining a health hormonal balance in the body.^[16]

Pancreatitis:

Patients suffering from chronic pancreatitis are orally administered with Chlorophyll . According to the research conducted in this regard, chlorophyll helps in relieving the fever and alleviates the abdominal pain and discomfort caused by pancreatitis without causing any side effects.^[17]

Oral health:

Chlorophyll also find application in maintaining a proper oral health. Chlorophyll helps in the treatment of dental problems such as pyorrhea. It is utilized for curing the symptoms of oral infections and calming inflamed and bleeding gums.^[18]

Conclusion:

Chlorophyll is the major component responsible for imparting green colour to the leaves . But chlorophyll also possesses many medicinal values. Many of the medicinal properties of chlorophyll can be attributed due to alkaline nature and antioxidant potential. It is recommended to include chlorophyll as the main ingredient in the regular diet to get the functional benefits.

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