

Propolis



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Introduction :

Propolis is a glue-like resinous material that collected and processed by the bees (honeybees) from various sources of flowers, leaves, and other plants. It is a heterogeneous mixture consist of many compounds which is taken and converted then utilized by bees in sealing their honeycombs holes, smoothing the internal parts of the combs, and providing protection to their residence against invaders.

Recent studies which have been conducted on the propolis, showed that the propolis is a mixture of phenolic compounds (phenolic acid), polyphenols , flavonoids , Esters and various types of fatty acids, amino acids, alcohol, steroids, Caffeic acid, CAPE, quercitin , carbohydrates and many other substances that forms the propolis. Its composition may differ due to the difference of the source which is collected from.

The differences in their chemical composition may affect the biological activities and may also cause some diversity although the properties are almost similar in all of it. Propolis has an interest according to its properties which make it unique. It might be used in therapeutic aspects such as anti-oxidant, anti-cancer, antiviral and antibacterial activities and also radioprotective properties. Propolis has anti-cancer or anti-tumor factors.

It has been reported by many studies which noticed that propolis inhibits cancer cells growth and metastasis by stimulating the apoptosis and the immune system. Apoptosis is the mechanism of destroying and eliminating the Abnormal cells that includes cancer cells. This attribute may prevent the side effects caused by chemotherapy and radiotherapy.

Chemotherapy and radiotherapy are used in the treating cancer but in the same time they damage other organs and may cause other diseases or undesired effects. The only disadvantage of natural anti-cancer is the rate of activity which is faster in chemo and radiotherapy . Also, it has Anti-oxidant activity due to the presence of flavonoids which inhibits the lipid peroxidation and the oxidation of LDL (low-density lipoprotein) and quercetin which is the most potent radical scavenger.

Free radical scavengers may prevent the free radicals reactive species from being formed, or remove them before they can harmfully affect the components of the cell. In addition to these properties, it also has antibacterial, anti-allergic, anti-inflammatory, anti-aggregatory, anti-viral, anti-fungal and anti-bacterial effects that make propolis the focus of attention of many scientists.

Cancer (malignant tumor) is an abnormal growth of cells due to either presence of mutation in DNA or inhibiting in the tumor suppressors (one of the checkpoints on the cell cycle) which leads to fast growth of cancer cells, invading the organs, and destroying the adjacent cells to get the nutrition.

Cancer may occur in any part of the lungs and causes damage to the lung and may lead to death . Lung cancer may be hereditary or acquired by many factors, for example, smokingcigarettes, asbestos and breathing carcinogens chemicals. However, the main causes of other types of cancers are still unknown yet.