

Beneficial and Pharmacological Properties of Phytochemicals Derived From Traditional Medicinal Plants

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From National Conference on Interdisciplinary Research and Innovations in Biosciences, NATCON -2018.

Post Graduate & Research Department of Biochemistry, Mohamed Sathak College of Arts & Science, Sholinganallur, Chennai-600119, India. 24th & 25th January 2018.

American J of Bio-pharm Biochem and Life Sci 2018 January, Vol. 4 (Suppl 1): PL 03

ABSTRACT

Phytochemicals are ecologically derived secondary metabolites, produced by the plants to protect them against damage due to environmental stress such as UV radiation, high temperature, extreme cold, draught, flood and microbial invasion. Plants are Omni present in the earth's environment and have been used for a large range of purposes including nutrition, medicine, flavouring, beverages, dyeing, repellants, fragrances, cosmetics, charms and various industrial uses. India is one of the twelve mega biodiversity countries of the world having rich vegetation with a wide variety of plants with medicinal and industrial applications. Phytotherapy is a field of medicine which involves the treatment of diseases using medicinal plants. In herbal medicine, the term 'herb' refers not only the seed producing plants but also roots, bark, leaves, flowers, seeds and fruits. Scientific interest in medicinal plants has burgeoned in recent times due to increased efficiency of novel drugs derived from medicinal plants and rising concerns about the undesirable side effects associated with modern allopathic drugs. The phytochemicals are broadly classified into alkaloids, steroids, flavonoids, pectins, lectins, saponins, anthroquinones, glycosides, stilbenes, terpenoids, carotenoids, phenolic compounds and oils. Plants take up carbon-di-oxide and oxygen through their shoot system and water/inorganic salts through the root system and use them as starting material for the synthesis of phytochemicals. Depending upon the climate, nature of soil, method of cultivation and environmental influence, the phytochemical contents may vary in terms of quality and quantity. According to the WHO, about eighty percentage of world's population relies on herbal medicine for the primary health care needs and more than sixty percent of the commercially available modern drugs are originally derived from the traditionally important medicinal plants. Among the various phytoingredients, flavonoids play a pivotal role in alleviating the primary as well as the secondary complications of dreadful diseases such as cancer, diabetes and atherosclerosis. The best examples include Taxol from *Taxus brevifolia* and Vinblastine from *Vinca rosa* for the treatment of cancer and Metformin from *Galega officinalis* and Phytosterols for the treatment of atherosclerosis. Most of the marketed medicines are distillations, combinations, reproductions or