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Flavones: An important scaffold for anticancer activity

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Flavonoids are a vast group of heterogeneous polyphenols with various health benefits, derived from secondary metabolism of plants. They are ubiquitously found in fruits, vegetables, tea, and wine. Flavonoids can be classified into various classes i.e. Flavonols (Quercetin, Kaempferol, Myricetin, Fisetin), Flavones (Luteolin, Apigenin), Flavanones (Hesperetin, Naringenin), Flavonoid Glycosides (Astragalin, Rutin), Flavonolignans (silibinin), Flavans (Catechin, Epicatechin), Isoflavones (Genistein, Daidzein), Anthocyanidins (Cyanidin, Delphinidin), Aurones (Leptosidin, Aureusidin), Leucoanthocyanidins (Teracacidin), Neoflavonoids (Coutareagenin, Dalbergin), Chalcones. Low molecular weight polyphenolic phytochemicals Flavonoids play important role in various biological processes at nontoxic concentrations in organisms. Therefore, flavonoids are important components of the human diet. Some of the flavones of natural origin like Naringenin, Ginkgo Flavone glycosides, and synthetic origin like Flavopiridol are presently available in the market. The role of dietary flavonoids in cancer prevention is widely discussed. Compelling data from laboratory studies, epidemiological investigations, and human clinical trials indicate that flavonoids have important effects on cancer chemoprevention and chemotherapy. Many mechanisms of action have been identified, including carcinogen inactivation, anti-proliferation, cell cycle arrest, induction of apoptosis and differentiation, inhibition of angiogenesis, antioxidation and reversal of multidrug resistance or a combination of these mechanisms. In order to explore diverse roles of flavones, investigating various methods for their synthesis and structural modification of flavone ring have now become important goals of several research groups. Thus, naturally obtained flavone moiety having a variety of biological activities can be taken as lead compound for the synthesis of synthetic flavone derivatives with different functional groups at different positions of flavone skeleton.

Biography

Oya Bozdag Dunder has completed her PhD from Ankara University. She has been lecturing to BSc, MSc and PhD students in Ankara University, Faculty of Pharmacy, Department of Pharmaceutical Chemistry. She is interested with drug design and synthesis of heterocyclic compounds having antidiabetic, aldose-reductase enzyme inhibitory, antioxidant, histone deacetylase enzyme inhibition, anticancer activities.

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