

# Current Issues in PHARMACY

Qamar Uddin Ahmad



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# Current Issues in Pharmacy

Editor

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## CHAPTER 20

### **FLAVONOIDS: FUTURE PHARMACEUTICAL AGENTS**

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Flavonoids have become very popular owing to their many health promoting effects. They are polyphenolic compounds, occur naturally and are widely distributed in plant kingdom performing many core functions including defense from attack by insects and microorganisms. These polyphenolic compounds are plant-derived secondary metabolites with interesting biological properties. Several *in vivo* and *in vitro* experiments have evidently and explicitly shown that they could be potential pharmaceutical agents in the treatment of many human diseases, including cognitive impairments, cardiovascular disease, diabetes, and cancer.

#### **Introduction**

It is anticipated that flavonoids have most likely occurred in the plants for over more than one thousand million years. The omnipresent distribution of these polyphenolic compounds and their low toxicity profiles in comparison to other key plant metabolites make them better and safe natural products. Tea, cocoa, red wine, fruits and vegetables are considered the richest sources of flavonoids where they are present abundantly. About more than four thousand structurally distinctive flavonoids have already been successfully isolated and recognized in different plants by phytochemists around the world. These polyphenolic compounds are secondary metabolites with miraculous range of several important biological properties. Among these, the antioxidant