

Hepatoprotective Potential of Malaysian Medicinal Plants: A Review on Phytochemicals, Oxidative Stress, and Antioxidant Mechanisms

ABSTRACT

Hepatotoxicity is a major global public health concern. Despite advances in modern medicine, the demerits of chemically prepared drugs outweigh their merits. In addition, the treatment of liver diseases based on modern medical principles has been found to produce several undesired side effects. Therefore, the exploration of medicinal plants has gained worldwide attention for treating various diseases, including liver diseases, owing to their potential efficacy and cost effectiveness. Several plants, including *Andrographis paniculata*, *Bauhinia purpurea*, *Commelina nudiflora*, *Dillenia suffruticosa*, *Elaeis guineensis*, *Lygodium microphyllum*, and *Nephrolepis biserrata*, have been reported with hepatoprotection. Moreover, these plants have been shown to play a vital role in ameliorating cellular damage because they contain several phytochemicals, including alkaloids, saponins, flavonoids, tannins, terpenoids, steroids, polyphenols, and diterpenoid lactones. The following antioxidant, anti-inflammatory, immunomodulatory, and hepatoprotective compounds have been found in these plants: andrographolide, rosmarinic acid, phenol, eugenol, 9,12-octadecadienoic, n-hexadecanoic acid, dihydroxy dimethoxy flavone, sitosterol, demethoxycurcumin, quercetin, linoleic acid, stigmasterol, kojic acid, indole-2-one, α -terpinol, linalool, kaempferol, catechin, ellagic acid, and oleanolic acid. This paper aimed to provide an in-depth review of in vivo studies on Malaysian medicinal plants possessing hepatoprotective properties, phytochemical ingredients, and antioxidant mechanisms, with an emphasis on the species proven particularly useful for treating hepatic disorders.