



## 7. HYSSOPUS OFFICINALIS L. THE SOURCE OF DIOSMIN AS THE THERAPEUTIC AGENT IN DIFFERENT DISEASES

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**Introduction.** The species *Hyssopus officinalis* L. is known over the years as a medicinal plant based on volatile oils. In the last 3 decades, scientific researchers have highlighted different classes of therapeutically valuable chemical compounds, in particular flavonoids, represented by different constituents, and the major interest is represented by diosmin.

**Aim of study.** This review aims to examine the roles of diosmin from flavonoids as an efficient therapeutic agent from *H. officinalis* L. species.

**Methods and materials.** In order to fulfill the purpose of the study, about 65 scientific articles were analyzed in the databases on the Google scholar, Science Direct, PubMed platforms on several criteria: the physico-chemical characteristics of diosmin, the method of obtaining it, the health benefits, the mechanisms of action.

**Results.** Oxidative stress has been reported as a driving factor in the development of various diseases, including myocardial ischemia, neuronal cell damage, hypoxia, diabetes, and cancer. Diosmin has several therapeutic properties due to its antioxidant activity. The hepato-protective potential of diosmin is prominently exerted by its anti-oxidant and anti-inflammatory activity. Many diseases, including arthritis, allergy, asthma, atherosclerosis, diabetes and cancer are the result of inflammation, characterized by inflammatory markers. Diosmin has demonstrated therapeutic effects on diabetes and its complications. It has also been found to improve lipid metabolism abnormalities associated with diabetes. Diosmin has also been noted to alleviate these markers in many studies due to its anti-inflammatory property. Recent studies have shown that diosmin exerts dose-dependent proapoptotic effects on various types of cancer, including breast, prostate, colon, oral bladder, and urinary. More recently, diosmin has demonstrated antimicrobial activity against a broad spectrum of pathogens with high antibiotic resistance. Diosmin (phlebotropic agent) is a veno-active drug administered orally for the treatment of chronic venous insufficiency.

**Conclusion.** In a series of recent scientific works, the therapeutic value of diosmin has been demonstrated, which plays a major critical role in the control of various metabolic processes, which lead to the development of various severe diseases. Thus, diosmin, from hyssop possesses antioxidant, anti-cancer, anti-diabetic and anti-bacterial properties and diosmin treatment looks promising in the treatment of different kinds of cancers, diabetes and diseases associated with oxidative stress and inflammation.