

**Frontiers in Pharmaceutical, Material, and
Environmental Sciences: Innovative Approaches
and Applications**

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Chapter – 4

Coumarin: A Versatile Therapeutic Agent

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Abstract

Coumarins, a class of oxygen heterocyclic compounds belonging to the benzopyrone family, are abundant in various plants, such as tonka beans. These natural and synthetic compounds and their derivatives possess a wide spectrum of biological activities, including anticoagulant, antibacterial, anti-inflammatory, antioxidant, antitumor, antiviral, and enzyme-inhibitory properties. Although higher doses of coumarin may induce hepatotoxicity but they have also been shown significant health benefits by reducing the risk of cancer and other neurological and cardiovascular disorders.

This chapter delves into the therapeutic applications of coumarin compounds. Additionally, the chapter highlights the potential challenges and future directions in coumarin research, aiming to optimize their therapeutic efficacy and minimize adverse effects.

Keywords: Coumarins; anti-inflammatory; anticoagulant; anticancer; Coumarin derivatives

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