Review on natural coumarin lead compounds for their pharmacological activity

K. N. Venugopala, V. Rashmi, and B. Odhav

Department of Biotechnology and Food Technology, Durban University of Technology, Durban 4001, South Africa
Department of Public Health Medicine, University of KwaZulu-Natal, Howard College Campus, Durban 4001, South Africa

Received 7 October 2012; Accepted 4 February 2013

Copyright © 2013 K. N. Venugopala et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Coumarin (2H-1-benzopyran-2-one) is a plant-derived natural product known for its pharmacological properties such as anti-inflammatory, anticoagulant, antibacterial, antifungal, antiviral, anticancer, antihypertensive, antitubercular, anticonvulsant, antiadipogenic, antihyperglycemic, antioxidant, and neuroprotective properties. Dietary exposure to benzopyrones is significant as these compounds are found in vegetables, fruits, seeds, nuts, coffee, tea, and wine. In view of the established low toxicity, relative cheapness, presence in the diet, and occurrence in various herbal remedies of coumarins, it appears prudent to evaluate their properties and applications further.
Classification of Coumarins

Natural coumarins are mainly classified into six types based on the chemical structure of the compounds (Table 1).

- Marmelosin [29]
- Dihydrofurano coumarins
- O
- O
- 4
- Anthogenol [31]
- Felamidin [6]
- Marmesin.