Naturally occurring naphthalenes: chemistry, biosynthesis,structural elucidation, and biological activities

Sabrin R. M. Ibrahim . Gamal A. Mohamed

Abstract:

Thiophenes are a class of heterocyclic aromatic compounds based on a five-membered ring made up of one sulfur and four carbon atoms. The thiophene nucleus is well established as an interesting moiety, with numerous applications in a variety of different research areas. Naturally occurring thiophenes are characteristic secondary metabolites derived from plants belonging to the family Asteraceae, such as Tagetes, Echinops, Artemisia, Balsamorhiza, Blumea, Pluchea, Porophyllum and Eclipta. Furthermore, naturally occurring thiophenes are generally composed of one to five thiophene rings that are coupled together through their a-carbons, and carry alkyl chains on their free ortho-positions. Thiophene-containing compounds possess a wide range of biological properties, such as antimicrobial, antiviral, HIV-1 protease inhibitor, antileishmanial, nematicidal, insecticidal, phototoxic and anticancer activities. This review focuses on naturally occurring thiophene derivatives; their sources, physical and spectral data, and biological activities.

Keywords:

Thiophenes, Biosynthesis, NMR data, Anti microbial, Cytotoxic

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