البحث الاول

"A Convenient Synthesis of Novel Coumarin Derivatives with Anticipated Antimicrobial Activities"

Authors: **Asmaa Kamal Mourad**, Abd El-Naby Ibrahim Essawy, and Hussein Abdel-Azim Younus

Journal Information: *HETEROCYCLES*, 2017, 94 (11), 2039-2053

ISSN: 0385-5414 (print) 1881-0942 (online)

Impact factor: 1.036

Abstract:

Chalcone and coumarin are two substantial classes of natural products possessing significant antimicrobial activities. Hybrid compounds containing both structures have been synthesized in a good yield using Claisen-Schmidt aldolic condensation. The reaction of the new chalcones with active methylene compounds under different reaction conditions led to the construction of pyridine, pyran, pyrazole and pyridinone containing coumarin moiety with different functional groups. Investigating the antimicrobial activity of the new synthesized heterocycles, displays that 3-(2′-amino-3′-cyano-4′-(4-hydroxy-3-methoxyphenyly)pyrid-6′-yl)- coumarin **2a** has the highest antimicrobial activity toward both Gram-positive and Gram-negative bacteria. Consequently, it was utilized as starting material for synthesis of more new fused heterocycles with anticipated high biological activity. All the new compounds are well characterized using, elemental analysis, FT-IR, ^{1}H NMR, ESI-Mass Spectrum and tested for their antimicrobial activity