



البحث الخامس

"A comprehensive synthesis and antimicrobial evaluation of some fused heterocycles based on coumarin moiety"

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Abstract:

Chalcones and coumarins represent significant naturally occurring plant constituents which exhibit a wide array of pharmacological and biological activities. Herein, synthesis of coumarin-chalcone hybrid derivatives was achieved in a good yield *via* Claisen-Schmidt aldolic condensation reaction employing 3-acetylcoumarin as a precursor. The reaction of the new chalcones with malononitrile gave rise to a new substituted pyran ring attached to a coumarin moiety. Subsequently, various *C*-nucleophiles were allowed to react with 3-(4*H*-pyran- 2-yl)coumarin derivative **2a** in order to construct novel fused and attached heterocyclic rings bearing different valuable function groups through simple and straightforward reactions. Finally, the antimicrobial activity of the synthesized compounds was evaluated against both Gram-positive and Gram-negative bacteria using Amoxicillin as a standard drug.