Synthesis and biological evaluation of some new coumarin derivatives

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ABSTRACT

A series of new N-(5-substituted phenyl-1,3-thiazole-4-yl-amino) quinoline has been synthesized from the reaction of 2-amino-4-arylthiazoles with coumarin in the presence of pyridine. The starting amines were prepared in the solid phase from the reaction of different substituted acetophenones with thiourea. Aminocoumarins and their related compounds represent an important class of versatile scaffolds in organic synthesis. They have been consistently used as a building block in the synthesis of different heterocyclic compounds. Moreover, 4-aminocoumarins attract more attention because of their wonderful biological applications as antiproliferative, antimycobacterial, antibacterial, antiplatelet, anti-glycant, antioxidant, antitumor, anti-strogen, and enzyme inhibitory. The presence of an amino group and enamine carbon enhances their chemical reactivity. Meanwhile, chemists have developed various synthetic methodologies for the synthesis of such a privileged precursor. The purpose of this current review is to demonstrate different synthetic methodologies for the construction of 4-aminocoumarin derivatives and the investigation of their biological and medicinal applications. All the newly synthesized compounds were screened for their biological activity. The structure of the newly synthesized compounds was suggested in the light of IR, UV, 1H-NMR and C, H, N, S analysis.

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DOI: 10.21467/abstracts.8.6 ISBN: 978-81-998984-0-0 (eBook)