NEW THIAZOLYL-COUMARIN HYBRIDS: DESIGN, SYNTHESIS, CHARACTERIZATION, X-RAY CRYSTAL STRUCTURE AND ANTIBACTERIAL

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Abstract: A series of thiazole containing coumarin derivatives (2a-o) were efficiently synthesized as pharmacophore hybrids through Hantzsch cyclisation of 3-(2-bromoacetyl)-2H-chrome-2-ones with different N-substituted thiourea/N,N-di-substituted thiourea. All the synthesized compounds were evaluated for their potential as antibacterial and some of the compounds displayed considerable potency against these strains. The presence of 2-bromophenylamino (2h) and 3,4-dichlorophenylamino (2g) group at thiazole moiety resulted the highest antibacterial (MIC 73 µM). The structures of the synthesized compounds were established by extensive spectroscopic studies (FTIR, 1H NMR, 13C NMR, 2DNMR, LC-MS) and elemental analysis. The structure of (E)-6-methoxy-3-(1-(2-(4-p-tolylthiazol-2-yl)hydrazono)ethyl)-2H-chromen-2-one (7d) was unambiguously confirmed by X-ray crystallography analysis.

Keywords: Thiazole, Coumarin, spectroscopic studies, x-ray crystallographic analysis and anti-bacterial activity