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(57) Abstract :

The present invention relates to the synthesis and characterization of a novel heterocyclic compound, 4-((4-((4-methyl-2-oxo-2H-chromen-7-yl)oxy)benzylidene)amino)-N-(5-methylisoxazol-3-yl)benzenesulfonamide. The compound integrates three biologically active moieties—coumarin, isoxazole, and sulfonamide—into a single framework to enhance therapeutic potential. It was synthesized via a nucleophilic substitution reaction in anhydrous acetonitrile using potassium carbonate under reflux for 12 hours. The product was isolated, purified, and characterized by IR, ¹H-NMR, melting point, and TLC analysis. Spectral data confirmed the structure with characteristic peaks for NH, C=N, and C–O–C functionalities. The novel compound holds promise for antimicrobial, anti-inflammatory, or anticancer applications and serves as a versatile lead for drug discovery.

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