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(57) Abstract :

ABSTARCT The invention relates to quinazolinone-based compounds, a specialized class of heterocyclic organic molecules with azo and oxo-containing nuclei, recognized for diverse biological activities, including antimicrobial, antimalarial, antibacterial, antifungal, and anticancer properties. The compound synthesis begins with 2 aminobenzoic acid reacting with acid acyl chloride in the presence of dry pyridine to produce phenyl-2-benzoxazinone. This intermediate is further treated with substituted acetophenone, followed by cyclization with substituted aryl benzaldehydes, and finally reacts with an aromatic amine to yield the targeted quinazolinone derivative. The resultant compound was characterized using TLC, melting point, and spectroscopic methods, revealing notable antimicrobial efficacy. In antimicrobial assays, the compound demonstrated significant zones of inhibition, achieving maximum inhibition of 12 mm, 14 mm, and 24 mm against Bacillus subtilis, and 20 mm against Escherichia coli and Candida albicans. The enhanced biological properties of this synthesized quinazolinone derivative make it a valuable compound for further development in antimicrobial applications.

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