

## Synthesis and Pharmaco-Potential Evaluation of Quinoline Hybrids

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**Abstract :** The global threat of pathogenic resistance to available therapeutic agents has become a menace to clinical practice, public health and man's existence inconsequential. This has therefore led to an exigency in the development of new molecular scaffolds with profound activity profiles. In this vein, a versatile synthetic tool for accessing new molecules by incorporating two or more pharmacophores into a single entity with the unique ability to be recognized by multiple receptors hence leading to an improved bioactivity, known as molecular hybridization, has been explored with tremendous success. Accordingly, aware of the similarity in pharmacological activity spectrum of quinoline and 1,2,3-triazole pharmacophores such as; anti-Alzheimer, anticancer, anti-HIV, antimalarial and antimicrobial to mention but a few, the present study sets out to synthesize hybrids of quinoline and 1,2,3-triazole. The hybrids were accessed via click chemistry using copper catalysed azide-alkyne 1,3-dipolar cycloaddition reaction. All synthesized compounds were evaluated for their pharmaco-potential in an antimicrobial assay out of which the 3-OH derivative emerged as the most active with MIC value of 4 µg/mL against *Cryptococcus neoformans*; a value superior to standard Fluconazole and comparable to Amphotericin B. Structures of synthesized hybrids were elucidated using appropriate spectroscopic techniques (1H, 13C and 2D NMR, FT-IR and HRMS).

**Keywords :** bioisostere, click chemistry, molecular hybridization, quinoline, 1,2,3-triazole

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