



Synthesis, Antibacterial and Antioxidant Activity of 1, 4-Disubstituted Naphthyloxymethyl-N-Alkyl Naphthimido and Coumarine-1, 2, 3-Triazoles

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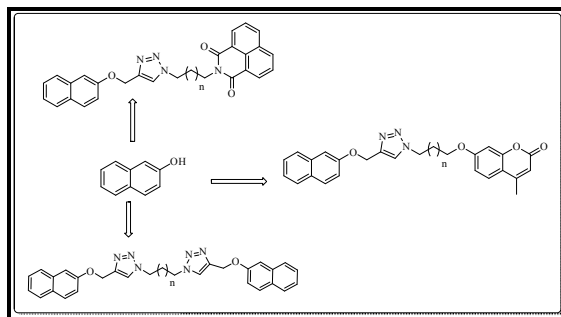
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ABSTRACT

A new series of 1,4-disubstituted naphthyloxymethyl-N-alkylnaphthimido and coumarine-1,2,3-triazoles were synthesized in moderate to excellent yields using 2-(prop-2-ynyloxy) naphthalene (10) and various alkyl azides (**3a-d, 6a-c, 8a-d**) under the 1,3-dipolar cycloaddition reaction conditions in presence of Cu(I) catalyst. All the synthesized compounds (**11a-d, 12a-c, 13a-d**) were tested in vitro for their antibacterial and antioxidant activity and found that most of the compounds (**11a-d, 12a-c, 13a-d**) were active against five different bacterial strains *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Streptococcus pyogenes*, *Staphylococcus aureus* and *Escherichia coli*. Among them, 4-Methyl-7-(5-(4-((naphthalen-2-yloxy)-methyl)-1H-1,2,3-triazol-1-yl) propoxy)-2H chromen-2-one (**12b**) was found to be potential towards two Gram positive and two Gram negative bacteria than the control ciprofloxacin. The antioxidant activity of these triazoles was investigated by four different standard methods employing absorption spectroscopy technique. It was observed that among all the compounds probed for anti-oxidant assay, 2-(naphthalen-2-yloxy)-methyl)-benzo[ω]isoquinoline-1,3-dione-1,4-substituted-1,2,3-triazoles (**11a-d**) and 4-methyl-coumarine-2-naphthalen-yloxy)-methyl)-1,4-substituted-1,2,3-triazoles (**12a-c**) displayed similar or greater activity than the control vitamin-C. Compound 2-(4-(4-((naphthalen-1-yloxy)-methyl)-1H-1,2,3-triazol-1-yl)butyl)-1H benzo [ω] isoquinoline-1,3(2H)-dione (**11b**) exhibited excellent antioxidant activity.

Graphical Abstract



Keywords: 2-Naphthol, 1,2,3-Triazole, 1,3-dipolar cycloaddition, Antibacterial activity, Antioxidant activity.