Indian Journal of Chemistry
Vol. 63, August 2024, pp. 807-811
DOI: 10.56042/ijc.v63i8.10195

Synthesis, characterization and antimicrobial evaluation of triazole substituted pyrimidine derivatives

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Received 4 April 2024; accepted (revised) 2 August 2024

The present investigation has been conducted with the purpose of creating a novel class of 1,2,3-triazole linked pyrimidine hybrids using Cu(I)-catalyzed azide-alkyne cycloaddition (NaAAC) with high yields (80-90%) by utilizing different poly-halogenated synthetic compounds. The structures of the newly synthesized compounds have been determined using ^{1}H and ^{13}C NMR, IR, and ESI-HRMS. Evidence of antimicrobial action by the synthetically produced pharmacologically active molecules have been provided. The efficacy of these synthetic compounds in eradicating bacteria and fungi has been examined and compared with that of established antibiotics such as ciprofloxacin and ketoconazol, respectively. Among all the compounds, **4a** and **4f** exhibit the highest levels of activity. The compounds have been tested for their properties against *Bacillus subtilis*, *Escherichia coli* and *Aspergillus flavus*, *Candida albicans*.

Keywords: Triazoles, Pyrimidine, Click reaction, Anti microbial activity