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Design, Green Synthesis, Characterization and Antimicrobial Studies of Novel Chalcone Derivatives of Piperazine Substituted Quinolines

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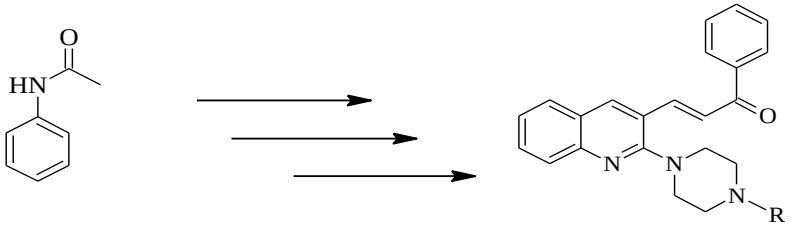
ABSTRACT

*Acetanilide underwent Vilsmeier Haack reaction to afford quinoline-2-carbaldehyde **1**, compound **1** was subjected to Buchwald coupling reaction by treating it with different substituted piperazine derivatives to form new C-N bond in the presence of base to give corresponding substituted piperazine derivatives of quinoline **2a, 2b.** Compound **2a, 2b** on treatment with different substituted aromatic aldehydes in presence of base and minimum amount of acetonitrile solvent under grinding condition gives corresponding α, β-unsaturated carbonyl compounds of quinoline derivatives **3a-f** by crossed aldol condensation. The structures of all the newly synthesized compounds were established by FT-IR, ^{1}HNMR and LC-MS spectral methods. All the synthesized compounds were subjected to in-vitro antibacterial studies. Among all the tested compounds, compounds **2a**, **3a** were found to be moderately active in comparison with standard drug Ciprofloxacin.*

Graphical Abstract: The structures of all the newly synthesized compounds were established by their spectral studies.



Keywords: Quinoline, Piperazine, Chalcone, Solvent free, antimicrobial activity.