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Synthesis and evaluation of antibacterial potential of 2-[(5-Bromo-4-fluoro-2-hydroxy-phenylamino)-methylene]-5,5-dimethyl-cyclohexane-1,3-dione against Gram positive and Gram negative bacteria

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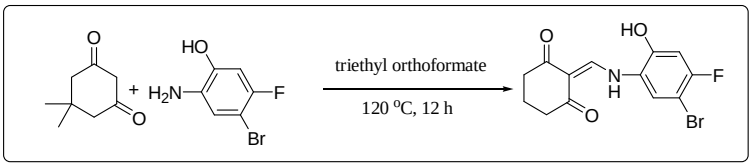
ABSTRACT

In the present study 2-[(5-Bromo-4-fluoro-2-hydroxy-phenylamino)-methylene]-5,5-dimethyl-cyclohexane-1,3-dione was synthesized and evaluated for antibacterial activity. Disc diffusion method revealed that the zone of inhibition of 2-[(5-Bromo-4-fluoro-2-hydroxy-phenylamino)-methylene]-5,5-dimethyl-cyclohexane-1,3-dione against Acetobacter aceti, Staphylococcus aureus, Klebsiella pneumonia and Enterobacter aerogenes bacterial strains was 18.5, 25, 19 and 28 mm, respectively at 5 µM concentration. The compound also exhibited good antibacterial activity against Acetobacter aceti, Klebsiella pneumonia and Entrobacter aerogenes bacterial strains at 2.5 µM concentration. The zone of inhibition of 2-[(5-Bromo-4-fluoro-2-hydroxy-phenylamino)-methylene]-5,5-dimethyl-cyclohexane-1,3-dione against Entrobacter aerogenes, Klebsiella pneumonia and Acetobacter aceti was 17, 19 and 22 mm, respectively. In summary, the present study demonstrates that 2-[(5-Bromo-4-fluoro-2-hydroxy-phenylamino)-methylene]-5,5-dimethyl-cyclohexane-1,3-dione has potential as effective anti-bacterial agent.

Graphical Abstract:



Synthesis of 2-[(5-Bromo-4-fluoro-2-hydroxy-phenylamino)-methylene]-5,5-dimethyl-cyclohexane-1,3-dione.

Keywords: Condensation, Antibacterial activity, Zone of inhibition, Chemotherapy, Disc diffusion method.