

# SYNTHESIS AND CHARACTERIZATION OF NOVEL FUNCTIONALIZED CHALCONES AS POTENT ANTIMICROBIAL AGENTS

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**Abstract:** Two series of novel chalcones (6a-6g and 7a-7g) have been synthesized by solution phase Claisen-Schmidt condensation. All the new final products have been purified by silica gel column chromatography and characterized on the basis of their infrared (IR) and proton nuclear magnetic resonance (<sup>1</sup>H NMR) spectroscopic data, and elemental analysis. All the final compounds (6-7) were exploited for their antimicrobial activity by the cup-plate method. From the antibacterial screening it was observed that the compounds, 6 (a, b, e and f) and 7 (b, c and g) shows good antibacterial activity against *Staphylococcus aureus* (zone of inhibition, 10-16 mm) as compared to standard streptomycin (zone of inhibition, 18 mm) whereas compounds 6 (a, b, d, e and g) and 7 (b, c and g) showed good antibacterial activity against *Escherichia coli* (zone of inhibition, 10-18 mm) as compared to streptomycin (zone of inhibition, 22 mm). Fungicidal screening data also revealed that compounds 6 (a and b) and 7 (d and e) imparted maximum activity against *Aspergillus niger* (zone of inhibition, 10-15 mm) as compared to standard griesofulvin (zone of inhibition, 17 mm), whereas compounds 6 (a, c, e and f) and 7 (e and g) showed good activity against *Candida albicans* (zone of inhibition, 10-16 mm) as compared to griesofulvin (zone of inhibition, 20 mm).

**Keywords:** Chalcones, Claisen-Schmidt Condensation, Antimicrobial activity, IR, <sup>1</sup>H NMR

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