

**SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL
ACTIVITIES OF BIDENTATE SCHIFF BASE LIGANDS**

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ABSTRACT

SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL ACTIVITIES OF BIDENTATE SCHIFF BASE LIGANDS

Schiff bases have interesting coordination behaviour due to the presence of several coordination donor atoms. In this research, two Schiff base ligands 4-[(4-methylbenzylidene)amino]phenol (BL1) and 4-hydroxybenzylideneaniline (BL2) ligand have been synthesized by condensation reaction between 4-aminophenol with 4-methylbenzaldehyde and 4-hydroxybenzaldehyde with aniline in a 1:1 molar ratio. Both of these Schiff base ligands were obtained as pale yellow crystal solid. The percentage yield of the Schiff base ligand BL1 was 66.45 % while the Schiff base ligand of BL2 was 57.89 %. The melting point of BL1 and BL2 were 156 °C and 152 °C respectively. Those Schiff base ligands were then characterized by using CHNS analyzer, FT-IR, and ¹H NMR. Infrared and proton nuclear magnetic resonance spectroscopic data revealed that the ligands are N, O bidentate ligands. Biological activities of these ligands were tested against Gram-negative bacteria (*Escherichia coli*) and Gram-positive bacteria (*Bacillus subtilis*). It was found that the BL1 was the most effective against the bacteria with zone of inhibition of 25 mm and 17 mm respectively. However, BL2 does not possess any inhibition zone against *E. coli* but can be used against *B. subtilis* with the zone of inhibition of 22 mm.