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Synthesis and Characterization of Iron(II)-4-aminobenzoic acid complex as Potent Antibacterial agent

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Abstract : Iron(II)-4-aminobenzoic acid complex was synthesized by mixing metal and ligand with a ratio of 1:6 in methanol and continue for drying at room temperature to obtain a dark-brown powder. According to spectrometry and thermogravimetry analysis, the complex formula is $Fe_3(PABA)_6.nH_2O$ with n=2. The conductivity measurement indicates a 2 to 1 ratio of cation to anion charge. The complex formula is estimated as $Fe_2[Fe(PABA)_6].2H_2O$. Infrared spectra and magnetic moment indicate that the complex is paramagnetic with octahedral geometry where PABA carboxyl group is coordinated to the Iron(II) center ion. Antibacterial activity test has been performed for 4-aminobenzoic acid (PABA) and $Fe_2[Fe(PABA)_6].2H_2O$. The results showed that the complex has a synergistic antibacterial activity against *S. aureus*and *E. coli.*

Keywords : 4-aminobenzoic acid, antibacterial activity, iron complex.

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