



**Synthesis, Characterization and Antimicrobial Aspects of Some Mixed Ligand Macrocylic Complexes of Pb(II) Having N<sub>4</sub>S<sub>4</sub> Potential Donors in 22-28 Membered Rings**

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**ABSTRACT**

Alkylene dithiophosphate derivatives of macrocylic complexes of Pb(II), having N<sub>4</sub>S<sub>4</sub> potential donors in 22 to 28 member rings of the general formula,  $[Pb(L)\{S_2 \cdot \begin{array}{c} O \\ | \\ P \\ | \\ G \end{array} \}_2]$ , Where L = macrocylic ligands L<sup>1</sup>, L<sup>2</sup>, L<sup>3</sup>, L<sup>4</sup> and L<sup>5</sup> and G =  $\begin{array}{c} | \\ CH_2-CH-CH-CH_2 \\ | \quad | \\ (CH_3)_2C-C-(CH_3)_2 \\ | \quad | \\ (CH_3)_2C-CH_2-CH(CH_3) \\ | \\ CH_2-C(CH_3)_2-CH_2 \end{array}$  and  $\begin{array}{c} | \\ CH_2-C(CH_3)_2-CH_2 \end{array}$  have been synthesized from the reactions of  $[Pb(L)X_2]$  (where X = Cl<sup>-</sup>, NO<sub>3</sub><sup>-</sup> or CH<sub>3</sub>COO<sup>-</sup>) with ammonium alkylene dithiophosphates in 1:2 molar ratio in THF. These complexes have been characterized by elemental analysis, molar conductance, molecular weight determinations, IR, <sup>1</sup>H, <sup>13</sup>C and <sup>31</sup>P NMR. The anti-microbial activities of these derivatives have been studied by screening them against fungi, like *Aspergillus flavus*, *Fusarium oxysporum*, *Alternaria alternata* and bacteria like *Salmonella typhi* and *Bacillus subtili*. Alkylene dithiophosphate derivatives were found to be more fungitoxic and antibacterial than their corresponding macrocylic complexes.

**Keywords:** Macrocylic complexes, bis-(2-aminophenyl)disulphide, Pb(II).