

Synthesis, Spectral study and Antimicrobial activity of Chloroarsenic(III)3(2'-hydroxyphenyl)-5-(4-substituted aryl)Pyrazolates

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Abstract

Displacement reactions of arsenic trichloride with Oxygen /Nitrogen donors such as sodium salt of 3(2-hydroxyphenyl)-5-(4-X-substituted phenyl) pyrazoline in 1 : 1 and 1 : 2 molar ratio in refluxing anhydrous benzene yields $\text{AsCl}_2(\text{C}_{15}\text{H}_{12}\text{N}_2\text{OX})$ and $\text{AsCl}(\text{C}_{15}\text{H}_{12}\text{N}_2\text{OX})_2$ [$\text{C}_{15}\text{H}_{12}\text{N}_2\text{OX}$ = 3(2'-hydroxyphenyl)-5-(4-X-substituted phenyl) pyrazoline and X = H (1, 5), CH_3 (2,6) OCH_3 , (3,7) and Cl (4,8) respectively]. Newly synthesized derivatives are yellow solids, soluble in organic solvents like benzene, chloroform, and acetone. The compounds have been characterized by elemental analyses (C, H, N), molecular weight measurements, and spectral (IR, ^1H NMR, ^{13}C NMR) studies. The $\text{C}_{15}\text{H}_{12}\text{N}_2\text{OX}$ is bidentate to arsenic(III), leading to trigonal bipyramidal and distorted octahedral structure. The complexes were screened against different bacteria and fungi showing potential antibacterial and antifungal activities.

Key-words: Arsenic trichloride, pyrazolates, bidentate, antimicrobial activity

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