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Synthesis, Spectral Characterization, and Antimicrobial Activity of Arsenic(III) and Bismuth(III) tri[3(2´-hydroxyphenyl)-5-(4-subsituted phenyl)pyrazolinates]

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Abstract: Arsenic(III) tripyrazolinates and bismuth(III) tripyrazolinates of the type $M(C_{15}H_{12}N_2OX)_3$ [where $C_{15}H_{12}N_2OX$ = 3(2'-hydroxyphenyl)-5-(4-substituted phenyl)pyrazoline] have been synthesized by the reaction of MCl_3 and sodium salt of pyrazolines in 1:3 molar ratio in anhydrous benzene at elevated temperature. These newly synthesized derivatives have been characterized by elemental analysis (C, H, N, As, and Bi), molecular weight measurement, spectral [IR and multinuclear NMR (^1H & ^{13}C)] and x-ray diffraction studies. The bonding mode of pyrazolines and coordination no. of arsenic(III) and bismuth(III) in these derivatives have been discussed. Antibacterial and antifungal potential of free pyrazoline and some arsenic(III) tripyrazolinates and bismuth(III) tripyrazolinates have also been discussed.

Key Words: Arsenic , Bismuth , Pyrazolinates, Antimicrobial activity

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