

عنوان مقاله:

Nano structured Mercury(II) Schiff Base Complexes of a N3-Tridentate Ligand as New Biological Active Agents

محل انتشار:

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خلاصه مقاله:

In this study, a new N3-Schiff base ligand (L) was obtained from via condensation reaction of diethylenetriamine and (Z)-3-(4-(dimethylamino)phenyl)acrylaldehyde (1:2 ratio). Then some its new five coordinated Hg₂LX₂ complexes inwhich X is halide/pseudohalide were synthesized. The ligand and its complexes were characterized by various analysis tools such as FT-IR, ¹H and ¹³C NMR, UV-visible, thermal analyses and molar conductivity measurements. Based on the spectral data and conductivity measurements, all the newly prepared compounds were found to be non-electrolyte. Moreover some mercury complexes were prepared in nano-structured size by sonochemical method and confirmed by X-ray powder diffraction method (XRD) and scanning electron microscopy (SEM) analyses. The Schiff base and its mercury complexes have been screened for their in-vitro antibacterial activities (Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa and Bacillus subtilis) and antifungal activities (Candida albicans and Aspergillus oryzae) using well diffusion method. Furthermore, thermal behaviors of ligand and its mercury complexes were evaluated in the range of room temperature to 1000°C under nitrogen atmosphere. The Schiff base .ligand and complexes were decomposed completely via 2 to 5 thermal steps

کلمات کلیدی:

Schiff base, nano-structured, Mercury, antibacterial, Antifungal, XRD, SEM

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