

عنوان مقاله:

(Synthesis, Characterization, and Antimicrobial Studies on a New Schiff Base Complex of Vanadium (V

محل انتشار:

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خلاصه مقاله:

A new oxovanadium (V) complex, γ -[(E)-(O-hydroxyphenyl) methylideneamino]- δ -guanidinovalerat (quinoline- λ -olatoN,O) vanadium oxide (V), $[\text{VO}(\text{L})(\text{Hq})]$, ($\text{L}=(\text{Z})$ - γ -(γ -hydroxybenzylideneamino)- δ -guanidinopentanoic acid, $\text{Hq}=\text{quinolin-}\lambda\text{-ol}$), was synthesized from vanadyl acetylacetonate, γ -hydroxybenzaldehyde, L-Arginine, and quinolin- λ -ol in methanol, and characterized by $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, UV-Vis, FT-IR spectroscopy, cyclic voltammetry, and elemental analysis. Analytical data confirmed the coordination of ligand to vanadium in a 1:1 ratio, forming a stable octahedral complex. Antimicrobial activity of $[\text{VO}(\text{L})(\text{Hq})]$ was compared to methoxyoxobis (quinoline- λ -olato- $\kappa^2\text{N,O}$) vanadium(V), $[\text{VO}(\text{Hq})_2(\text{CH}_3\text{O})]$, which has no Schiff base ligand, by testing against Gram-positive, Gram-negative bacteria, and *Candida albicans* fungus. The $[\text{VO}(\text{L})(\text{Hq})]$ exhibited enhanced antibacterial and antifungal properties attributed to the azomethine group of the Schiff base. The Schiff base ligand coordination provides an effective approach for tuning the biological properties of metal complexes. These results highlight $[\text{VO}(\text{L})(\text{Hq})]$ as a potential .new antimicrobial therapeutic agent

کلمات کلیدی:

Oxovanadium Schiff base complex, Hydroxyquinoline, Antimicrobial activity

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