

Self-assembly and multifaceted bioactivity of a silver(I) quinolate coordination polymer.

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Coordination polymers have emerged as a new class of potent biologically active agents due to a variety of important characteristics such as the presence of bioactive metal centers and linkers, low toxicity, stability, tailorable structures, and bioavailability. The research on intermediate metabolites has also been explored with implications toward the development of selective anticancer, antimicrobial, and antiviral therapeutic strategies. In particular, quinolinic acid ($H_2\text{quin}$) is a recognized metabolite in kynurenine pathway and potent neurotoxic molecule, which has been selected in this study as a bioactive building block for assembling a new silver(I) coordination polymer, $[\text{Ag}(\text{Hquin})(\mu\text{-PTA})]_n \cdot \text{H}_2\text{O}$ (**1**). This product has been prepared from silver oxide, $H_2\text{quin}$, and 1,3,5-triaza-7-phosphaadamantane (PTA), and fully characterized by standard methods including single-crystal X-ray diffraction. Compound **1** has revealed distinctive bioactive features, namely (i) a remarkable antiviral activity against herpes simplex virus type 1 (HSV-1) and adenovirus 36 (Ad-36), (ii) a significant antibacterial activity against clinically important bacteria (*Staphylococcus aureus*, *Escherichia coli*, and *Pseudomonas aeruginosa*), and (iii) a selective cytotoxicity against HeLa (human cervix carcinoma) cell line. The present work widens a growing family of bioactive coordination polymers with potent antiviral, antibacterial, and antiproliferative activity.

Słowa kluczowe

Antimicrobial agents, Ligands, Coordination polymers, Bacteria, Toxicity

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