

IN VITRO CYTOTOXIC ACTIVITY OF PHENANTHROLINE-BRIDGED DINUCLEAR PLATINUM(II) COMPLEXES

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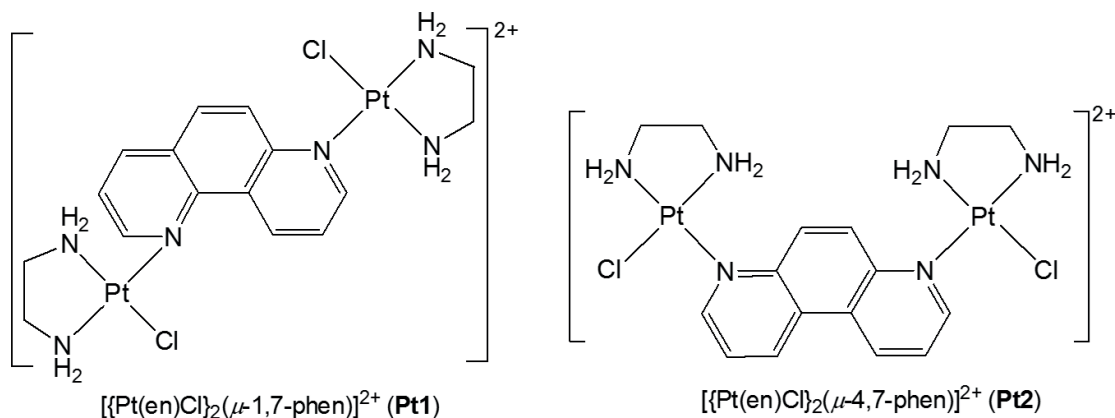
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Platinum-based drugs is considered as the fundamental component of standard chemotherapy. Polynuclear Pt(II) complexes with aromatic nitrogen-containing heterocyclic bridging ligands represent a novel class of promising antitumor agents.¹ In the present study, two dinuclear Pt(II) complexes, [$\{\text{Pt}(\text{en})\text{Cl}\}_2(\mu\text{-}1,7\text{-phen})\}(\text{ClO}_4)_2 \cdot \text{H}_2\text{O}$ (**Pt1**) and [$\{\text{Pt}(\text{en})\text{Cl}\}_2(\mu\text{-}4,7\text{-phen})\}(\text{ClO}_4)_2 \cdot \text{H}_2\text{O}$ (**Pt2**), have been synthesized and structurally characterized by elemental microanalyses, ¹H NMR, IR and UV-Vis spectroscopy.



In vitro cytotoxic activity of **Pt1** and **Pt2** complexes was evaluated against two tumor cell lines, the metastatic breast cancer (MDA-MB-231) and murine mammary carcinoma (4T1), and one normal human lung fibroblast cell (MRC-5). The results of the MTT assay indicate that complex **Pt1** has a much lower IC₅₀ value for activity on both cells compared with cisplatin. In comparison with cisplatin, these complexes showed lower cytotoxicity toward normal MRC-5 cell.

References

1. Senerović L., Živković M.D., Veselinović A., Pavić A., Djuran M.I., Rajković S., Nikodinovic-Runic J. J. Med. Chem. 2015, 58, 1442.

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