

Homoleptic and Heteroleptic Pt(II) Complexes with Potential Biological Activity

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Abstract

Metal complexes used as pharmaceuticals have received great attention because of their potential biological activity. The chemistry of platinum(II) complexes has been widely developed since the cytostatic activity of cis-diaminodichloroplatinum(II) (cisplatin) has been discovered [1]. Moreover, transition metal complexes containing planar polycyclic aromatic systems intercalate between the stacked base pairs of DNA. The biological activity of both *cis*- and *trans*-diamine Pt(II) complexes is dramatically enhanced by the presence of aromatic intercalator ligands, due to the influence on both kinetics and thermodynamics of DNA binding [2,3].

The chemistry of Pt(II) complexes is highly versatile, permitting the design and synthesis of a large variety of different structures. By 'smart' molecular engineering, new structures are programmed and obtained continuously, in an attempt to overcome the drawbacks of the cisplatin like tumor resistance, or to lessening unpredictable and severe nephrotoxicity and/or providing oral bioavailability.

Herein, new Pt(II) complexes as DNA intercalators were synthesized and characterized aiming to follow their structure – activity relationships. The synthesis and characterization of the complexes will be presented.

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