



***Research Doctorate (Ph.D.) in Chemical Sciences***

***34<sup>rd</sup> Cycle – Academic Year 2018/2019***

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***Project Information***

**1 - Title**

Glycosylation as Trojan Horse in Platinum-Based Antitumor Drugs: Design of New Complexes with Increased Selectivity and Performance

**2 - Key words**

Platinum, carbohydrates, antitumor activity, protein binding, DNA binding

**3 - Abstract**

An important application of coordination chemistry consists in the design of metal complexes having anti-tumor activity. The advantage of this methodology lies in the control of the properties of the compounds, through the wide choice of metals, their oxidation states, the number of coordination and the respective geometries. This application is part of the field, and proposes the design of new platinum(II) and platinum(IV) complexes containing carbohydrate-derived ligands, to exploit the ability of selective recognition by tumor cells (Warburg effect). Sugars can be modulated through the targeted introduction of substituents. This choice will make it possible to prepare wide and versatile libraries of complexes, to check and compare their structural properties, aggregation capacity in complex systems suitable to convey them, and biological activity.