XXXVI GEQO CONGRESS ORGANOMETALLIC CHEMISTRY GROUP

Book of Abstracts

Zaragoza, 5-7th September 2018

XXXVI GEQO CONGRESS ORGANOMETALLIC CHEMISTRY GROUP
Zaragoza (Spain) September 5-7, 2018

Preparation and Pharmaceutical Application of Terpyridine-Silver(I) Complexes: Potential Anticancer Drugs

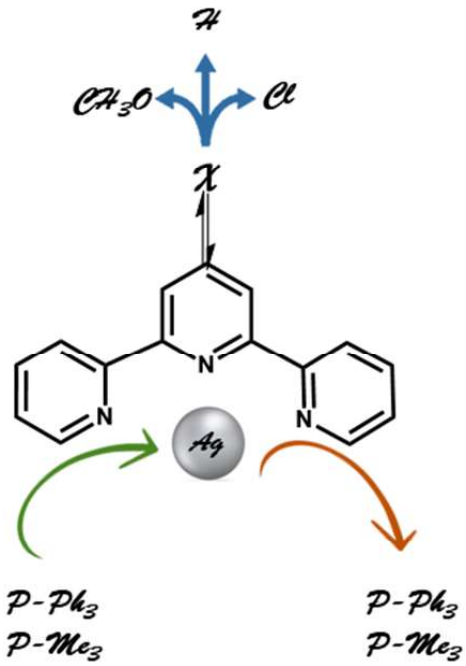
María Gil-Moles,[1] José María López de Luzuriaga,[1] Mª Concepción Gimeno,[2] Miguel Monge,[1]. Mª Elena Olmos,[1] Isabel Marzo[2]

[1]*Universidad de La Rioja/Complejo Científico Tecnológico, C/Madre de Dios 53, 26004-Logroño, España.*
maria.gil@unirioja.es

[2]*Universidad de Zaragoza /Facultad de Ciencias, C/Menéndez Pelayo 24,50009-Zaragoza, España.*

The area of medicinal inorganic chemistry has attracted much attention in recent years. For this reason many research projects have been carried out to design new potential drugs bearing metals like gold, ruthenium, iron, as well as silver[1]. The organic ligands alters physical and chemical properties of the metal ions and contribute, for instance, to inhibit selected metalloenzymes or facilitate metal ion re-distribution, among others[2]. Despite the fact that the some metal complexes with nitrogen donor ligands have been found to be effective in terms of antitumour activity, cell imaging or interaction with DNA, the biological studies that concern complexes with silver(I) and terpyridine are relatively scarce[3]. Therefore, our research project focuses on the study of biological activity of silver (I) complexes bearing phosphines and terpyridine as ligands.

In this study we have synthesized a family of compounds with varying donor-acceptor characteristics of the substituents in the terpyridine ligand. Thus, the presence or absence of phosphine ligands and the number of aromatic rings influence the results. The activity obtained is very promising, since the IC_{50} values show ranges between 3µM and 0,6µM in cell lines such as A-549 and HeLa.



References
[1] I. Ott, R. Gust, Arch. *Pharm. Chem. Life Sci.,* **2007**. 340, 117-126.
[2] Storr, T.; Thompson, K. H.; Orvig, C. *Chem. Soc. Rev.,* **2006**, *35*(6), 534-544.
[3] Fik, M. A.; Gorczynski, A.; Kubicki, M.; Hnatejko, Z.; Fedoruk–Wyszomirska, A.; Wyszko, E.; Giel–Pietraszuk, M.; Patroniak, V. *Eur. J. Med. Chem.* **2014**, *86*, 456–468.