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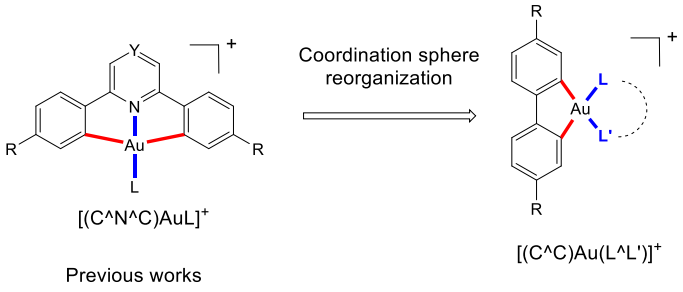
Biphenyl-gold(III) scaffold: a new field of investigations for anticancer drug candidates

To circumvent platinum-based drugs limitations such as a narrow spectrum action, appearance of resistances to the treatments and heavy side effects, the investigation of complexes based on other transition metals appeared crucial. Within this context, the isoelectronic and isostructural Au(III) ion has been envisaged as a potential replacement for Pt(II) complexes. However, while Pt(II) is stable in physiological medium, Au(III) gats easily reduced in those conditions. The development of ligands stabilizing the +III oxidation state was the first aim to achieve which could be efficiently done by using cyclometallated ligands and especielly (C^N^C) pincers.[1] As such, the quest of stability was achieved at the cost of the derivatization possibilities by blocking three out of the four coordination sites. We decided to reorganize the coordination of the complexes by using a (C^C) biphenyl chelate which will ensure the redox stability of the Au(III) cation while leaving two coordination sites functionnalizable in soft conditions opening the way to a much broader variety of structures. We will present here our recent work on biphenyl-based Au(III) complexes with (N^N),[2] (P^P) ligands and their application as anticancer agents.



References

[1] B. Bertrand, M. R. M. Williams, M. Bochmann, *Chem. – Eur. J.* **2018**, *24*, 11840–11851.
[2] S. Khodjoyan, E. Remadna, H. Dossmann, D. Lesage, G. Gontard, J. Forté, H. Hoffmeister, U. Basu, I. Ott, P. Spence, Z. A. E. Waller, M. Salmain, B. Bertrand, *Chem. Eur. J.*, **2021**, *27*, 15773-15785.