

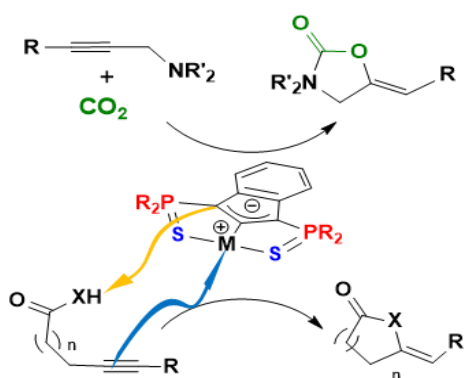
Metal-ligand Cooperative Catalysis with Indene based Pd and Pt Pincer Complexes

B. Martin Vaca

LHFA, Université Paul Sabatier, 118 Route de Narbonne, 31062 Toulouse, FRANCE

bmv@chimie.ups-tlse.fr

Over the past two decades, spectacular progress has been achieved in the field of Metal/Ligand cooperative catalysis using pincer complexes. In particular, Milstein discovered an original aromatization/dearomatization process in pyridine-based pincer complexes that has been applied to a wide range of efficient transformations [1].



We have described original indenediide Pd(II) and Pt(II) pincer complexes combining an electrophilic metal center and an electron-rich ligand backbone [2]. This indenediide pincer ligand shows a non-innocent behavior that has been applied in the catalytic intramolecular addition of carboxylic acids/amides to alkynes in the absence of external base. An important breakthrough was obtained for the formation of 5-, 6- and even 7-membered ring lactones/lactams including

the first efficient preparation of ω -methylene caprolactones/lactams [3]. A remarkable behavior has also been evidenced in the construction of the oxazolidinone motif from propargylamines using CO₂ as C1 building block. The results show that the indenediide Pd(II) pincer complexes perform very efficiently, with a broad scope of substrates in terms of alkyne substitution and class of amine [4]. We are currently seeking to expand the applications of these complexes to other valuable transformations, in particular cyclizations involving C-C bond creation.

References

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