

C–C and C–N Couplings in Reactions of the Benzylidyne-Bridged Complex [Mo₂Cp₂(μ-CPh)(μ-PCy₂)(CO)₂] with Small Unsaturated Organics

The ability of the title compound to promote C–C coupling processes has been analyzed by examining its reactions with diazoalkanes, alkynes, and other unsaturated organic molecules. The title compound reacted with N₂CPh₂ at room temperature to give a mixture of ketenyl complex [Mo₂Cp₂{μ-κ¹:η²-C(Ph)CO}(μ-PCy₂)(CO)(κ¹-N₂CPh₂)] and carbyne complex [Mo₂Cp₂(μ-CPh)(μ-PCy₂)(CO)(κ¹-N₂CPh₂)], products which can be converted into each other by addition/removal of CO, respectively. In contrast, denitrogenation took place rapidly in analogous reactions with diazomethane and benzylazide at room temperature, to yield, respectively, the corresponding alkenyl [Mo₂Cp₂{μ-κ¹:η²-C(Ph)CH₂}(μ-PCy₂)(CO)₂] and iminoacyl [Mo₂Cp₂{μ-C(Ph)NCH₂Ph}(μ-PCy₂)(CO)₂] derivatives, following from selective C–C and C–N couplings. The title compound reacted at 333 K with methyl propiolate to give the corresponding propenylylidene derivative [Mo₂Cp₂{μ-κ²:η³-CPhCHC(CO₂Me)}(μ-PCy₂)(CO)₂], as a result of selective coupling of the carbyne ligand to the terminal carbon of the alkyne. A related complex could be obtained when using the internal alkyne dimethyl acetylenedicarboxylate.

Fuente de la publicación:

- Esther García, Daniel García-Vivó, Sonia Menéndez, and Miguel A. Ruiz. C–C and C–N Couplings in Reactions of the Benzylidyne-Bridged Complex [Mo₂Cp₂(μ-CPh)(μ-PCy₂)(CO)₂] with Small Unsaturated Organics. *Organometallics* 2016 35 (20), 3498-3506 DOI: [10.1021/acs.organomet.6b00552](https://doi.org/10.1021/acs.organomet.6b00552) [1]

Proyectos relacionado:

- [Activación molecular mediante complejos organometálicos con enlaces múltiples heterometálicos](#) [2].

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[1] <http://pubs.acs.org/doi/abs/10.1021/acs.organomet.6b00552>

[2] <http://www.cenits.es/proyectos/activacion-molecular-mediante-complejos-organometalicos-con-enlaces-multiples>