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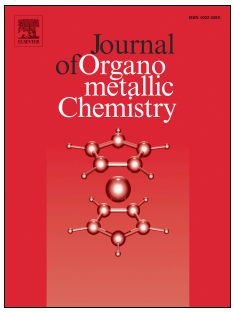

An iridium *N*-heterocyclic carbene complex [IrCl(CO)$_2$(NHC)] as a *carbon monoxide-releasing molecule* (CORM)

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An iridium *N*-heterocyclic carbene complex [IrCl(CO)$_2$(NHC)] as a *carbon monoxide-releasing molecule* (CORM)

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Abstract

Four NHC complexes of rhodium and iridium of the general structure [RhI(COD)(NHC)], [IrCl(COD)(NHC)], [IrCl(CO)$_2$(NHC)], and [Ir(N$_3$)(COD)(NHC)] (NHC = *N*-heterocyclic carbene) were synthesised and characterised, including X-ray structure determination for all three iridium compounds. Release of carbon monoxide from [IrCl(CO)$_2$(NHC)] occurred *via* a rapid bolus of CO on a very short timescale, independent of whether the experiment was performed in the dark or with UV-light illumination, thus establishing the compound as a novel ligand-exchange triggered *CO-releasing molecule* (CORM). The azide complex represents the first iridium-NHC complex containing an azide ligand.

Keywords: Bioorganometallic chemistry; *N*-Heterocyclic carbene complexes; Rhodium; Iridium; CORM; DFT

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