Title:	A Bis (BICAAC) Palladium(II) Complex: Synthesis and Implementation as Catalyst in Heck-Mizoroki and Suzuki-Miyaura Cross Coupling Reactions
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Abstract:	Carbenes are one of the most appealing, well-explored, and exciting ligands in modern chemistry due to their tunable stereoelectronic properties and a wide area of applications. A palladium complex (BICAAC)2PdCl2 with a recently discovered cyclic (alkyl)(amino)carbene having bicyclo[2.2.2] octane skeleton (BICAAC) was synthesized and characterized. The enhanced σ-donating and π-accepting ability of this carbene lend a hand to form a robust Pd-carbene bond, which allowed us to probe its reactivity as a precatalyst in Heck-Mizoroki and Suzuki-Miyaura cross-coupling reactions with low catalyst loading in open-air conditions. The diverse range of substrates was explored for both the cross-coupling reactions. To get a better understanding of the catalytic reactions, several analytical techniques such as field-emission scanning electron microscopy, high-resolution transmission electron microscopy, and powder X-ray diffraction were employed in a conclusive manner.
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