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Title:	Pd(II)-Catalyzed, Picolinamide-Assisted, Z-Selective γ^3 -Arylation of Allylamines to Construct Z-Cinnamylamines
Authors:	Parella, R. (/jspui/browse?type=author&value=Parella%2C+R.) Babu, S.A. (/jspui/browse?type=author&value=Babu%2C+S.A.)
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Abstract:	Investigations of Pd(II)-catalyzed, picolinamide-assisted, γ -C(sp ²)-H activation and Z-selective arylation of allylamines are reported. The reactions of N-allylpicolinamides with various aryl iodides in the presence of the catalyst Pd(OAc) ₂ and additive AgOAc have led to the selective γ -arylation of allylamines to construct various cinnamylamines with moderate to good yields and good to high E/Z ratios. To obtain good E/Z ratios, the Pd(II)-catalyzed arylation reaction of N-allylpicolinamides was probed using different additives, directing groups, and reaction conditions. The Pd(II)-catalyzed arylation of an allylamine containing both γ -C(sp ²)-H and γ -C(sp ³)-H bonds afforded moderate yields of the γ -C(sp ²)-H and γ -C(sp ³)-H bisarylated cinnamylamines. Although Heck-type γ -arylations of allylamines have generally afforded the E-cinnamylamines, the bidentate directing group picolinamide-directed arylation of allylamines were found to be Z-selective. A plausible mechanism was proposed for the observed regioselectivity and Z-selective arylation of N-allylpicolinamides. Additionally, the Pd(II)-catalyzed arylation of an N-allyl-5-methylisoxazole-3-carboxamide afforded the E-cinnamylamines plausibly via a ligand-free Heck-type reaction mechanism.
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