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Title:	Synthesis of ortho-arylated/benzylated arylacetamide derivatives: Pd(OAc) ₂ -catalyzed bidentate ligand-aided arylation and benzylation of the γ -Csingle bondH bond of arylacetamides
Authors:	Bisht, Narendra (/jspui/browse?type=author&value=Bisht%2C+Narendra) Babu, S.A. (/jspui/browse?type=author&value=Babu%2C+S.A.)
Keywords:	Arylacetamides Arylacetic acid derivatives γ -C-H activation Palladium sp ² C-H functionalization
Issue Date:	2016
Publisher:	Elsevier Ltd
Citation:	Tetrahedron, 72(39), pp. 5886-5897
Abstract:	In this paper, we report the Pd(OAc) ₂ /AgOAc, bidentate ligand-directed Csingle bondH functionalization of the sp ² γ -Csingle bondH bond of arylacetamides. While, the bidentate ligand-directed site selective functionalization of the β -Csingle bondH bond of aromatic carboxylic acid derivatives is well known, we herein, report our attempts on the Pd(II)-catalyzed, bidentate ligand-directed arylation, benzylation, alkylation, acetoxylation and hydroxylation of the sp ² γ -Csingle bondH bond of the arylacetamide systems. The arylation and benzylation of arylacetamides were successful; however, the alkylation and acetoxylation/hydroxylation of arylacetamides were not successful. Various ligands were screened to substantiate the need for the bidentate ligand in the arylation/benzylation of arylacetamides, and 8-aminoquinoline was found to be the best bidentate ligand. Several substituted aryl-/heteroaryl iodides, 4-nitrobenzyl bromide and arylacetamide substrates were used to examine their reactivity pattern and accomplish the substrate scope/generality. In general, the bidentate ligand 8-aminoquinoline-directed arylation of arylacetamides gave the corresponding ortho-diarylated arylacetamides and benzylation of arylacetamides gave the corresponding ortho-mono benzylated arylacetamides as the predominant compounds. Overall, this method has led to the synthesis of new ortho-substituted arylacetamides in good to high yields.
URI:	https://www.sciencedirect.com/science/article/pii/S0040402016307918 (https://www.sciencedirect.com/science/article/pii/S0040402016307918) http://hdl.handle.net/123456789/2538 (http://hdl.handle.net/123456789/2538)
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