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
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Abstract:	In this paper, we report the Pd(OAc)2/AgOAc, bidentate ligand-directed Csingle bondH functionalization of the sp2 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 sp2 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.
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