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Title:	Pd(II)-Catalyzed Bidentate Directing Group-Aided Chemoselective Acetoxylation of Remote ϵ -C(sp ²)-H Bonds in Heteroaryl-Aryl-Based Biaryl Systems
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Keywords:	Acetoxylation Bidentate Substitution Chemoselective
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Publisher:	American Chemical Society
Citation:	Journal of Organic Chemistry, 81(24), pp.12197-12211.
Abstract:	In this Article, we report our successful attempt on the Pd(II)-catalyzed, bidentate directing group-aided, chemoselective acetoxylation/substitution of remote ϵ -C(sp ²)-H bonds using heteroaryl-aryl-based biaryl systems. While the bidentate directing group (BDG)-aided, C-H activation, and functionalization/acetoxylation of the β -, γ -, and δ -C-H bonds of the appropriate carboxamide systems were well documented, there exist only rare reports dealing with the C-H activation and functionalization of remote ϵ -C-H bonds of appropriate substrates. Especially, the BDG-aided chemoselective acetoxylation of the remote ϵ -C(sp ²)-H bond over cyclization has not been explored well. Accordingly, in this work, the treatment of various picolinamides/oxalylamides/pyrazine-2-carboxamides 4/7/9/11, which were derived from the corresponding C-3 arylated furfurylamines or thiophen-2-ylmethanamines with PhI(OAc) ₂ in the presence of the Pd(OAc) ₂ catalyst, successfully afforded the corresponding ϵ -C-H acetoxylation products. The chemoselective acetoxylation of the ϵ -C-H bond was possible and facilitated by the biaryl substrate 4/7/9/11 and not by the biaryl substrate 2a.
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