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Title: One-pot, solvent-free Pd(II)-catalyzed direct β -C-H arylation of carboxamides involving anhydrides as substrates via in situ installation of directing group

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Abstract: A one-pot, multicomponent-type, solvent-free Pd(II)-catalyzed direct β -C-H activation/arylation of carboxamides involving anhydrides as substrates via in situ installation of directing group (DG) is reported. Typically, the DG-assisted β -C-H activation/arylation of carboxamides is a two-step process comprising the installation of DG and Pd(II)-catalyzed Csingle bondH arylation. We attempted a multicomponent-type reaction comprising an anhydride, a DG (e.g. 8-aminoquinoline), an aryl iodide in the presence of the Pd(II) catalyst and an appropriate additive. Different anhydrides, DGs, aryl iodides, catalysts and additives were screened to reveal the scope of this multicomponent-type Csingle bondH arylation reaction process and various β -C-H arylated carboxamides were obtained in satisfactory to good yields.

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