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Boryl Radical-Promoted Dehydroxylative Alkylation of 3-Hydroxyoxindole Derivatives

Authors : Tesfaye Tebeka Simur, Tian-Yu Peng, Yi-Feng Wang, Xiu-Wei Wu, Feng-Lian Zhang

Abstract : A boryl radical-promoted dehydroxylative alkylation of 3-hydroxy-oxindole derivatives is achieved. The reaction starts from addition of 4-dimethylaminopyridine (DMAP)-boryl radical to the amide carbonyl oxygen atom, which induces a spin-center shift process to promote the C−O bond cleavage. The elimination of a hydroxide anion from a free hydroxy group is also accomplished. Capture of the generated carbon radical with alkenes furnishes a variety of C-3 alkylated oxindoles. This method features a simple operation and broad substrate scope.

Keywords : boryl radical, C-O, C-F, C=C, C=N bond activation, spin center shift
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