Imidazole-Directed Ir(III)-catalyzed Direct Intermolecular α-Amidation of Masked Aliphatic Acids: A Facile Route to α-Amino Acids

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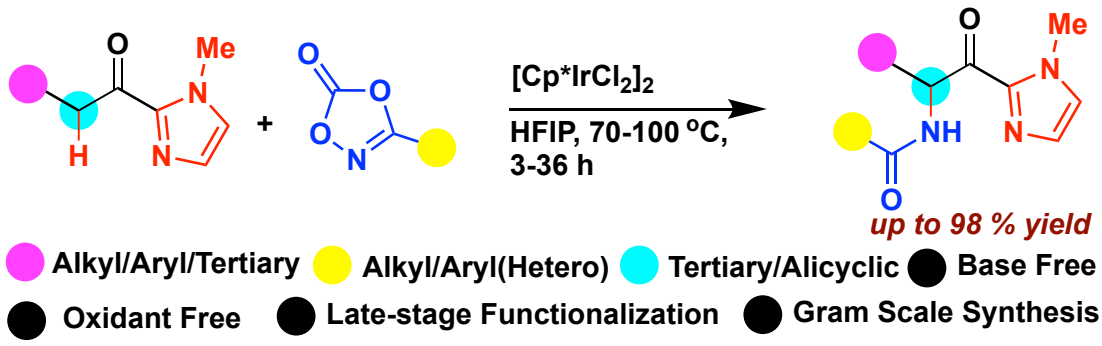
C-N bond forming reaction through nitrene insertion strategies was made attractive for last few decades after the seminal worked by Breslow.[1] α-Amidation of carboxylic acid derivatives would be the best tactics to access α-amino acids although it has remained less explored and has a lack of generality.[2] Here, we report a direct Ir(III)-catalyzed intermolecular α-C(sp^3)-H amidation of imidazole-masked aliphatic acids with dioxazolones. This is a straight forward method to access unnatural α-amino acid derivatives after the removal of an imidazole moiety.[3] A broad substrate scope for various carboxylic acids including tertiary group being highly tolerated. The 'gram' scale synthesis and late-stage functionalization imply the pragmatism of this methodology. The perceptiveness of reaction mechanism has been accomplished by deuterium-labeling experiments, Hammett plots, NMR and/or FAB-MS, and suggested an intermediacy of the iridium-nitrene intermediate.



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