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Bio-inspired domino reduction of nitroarenes by acrolein-amine conjugates in one-pot operation

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Abstract

© 2017 The Chemical Society of Japan. Biologically relevant amines react with acrolein to provide 3-formyl-3,4-dehydropiperidine (FDP) as the oxidative stress product, which has reduction potential via hydrogen transfer. This biogenic process was applied to the domino reduction of electron-deficient nitroarenes in one-pot operation, by simply mixing primary amine, acrolein, nitroarene, and calcium chloride. The reaction can be performed in a gram-scale without the use of hazardous metals.

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Keywords

Bio-inspired domino reduction, FDP, Nitroarene

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