H. WANG, H. JUNG, F. SONG, S. ZHU, Z. BAI, D. CHEN, G. HE, S. CHANG*, G. CHEN*
(NANKAI UNIVERSITY, TIANJIN, P. R. OF CHINA; KOREA ADVANCED INSTITUTE OF
SCIENCE AND TECHNOLOGY (KAIST) AND INSTITUTE FOR BASIC SCIENCE (IBS),
DAEJEON, REPUBLIC OF KOREA)

Nitrene-Mediated Intermolecular N–N Coupling for Efficient Synthesis of Hydrazides

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Synthesis of Hydrazides by N–N Coupling

Proposed mechanism:

Selected examples:

Significance: Chang, Chen, and co-workers report a synthesis of hydrazides from arylalkylamines and dioxazolones, which serve as nitrene precursors. Iridium complexes as well as simple iron halides were found to efficiently catalyze the transformation.

Comment: The reaction proceeds under mild conditions with excellent functional group tolerance, including pseudopeptides. Mechanistic studies indicate that the attack of the electrophilic iridium-nitrenoid intermediate by the amine is assisted by $\text{Cl}\cdots\text{HN}$ bonding.

SYNFACTS Contributors: Mark Lautens, Joachim Loup
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