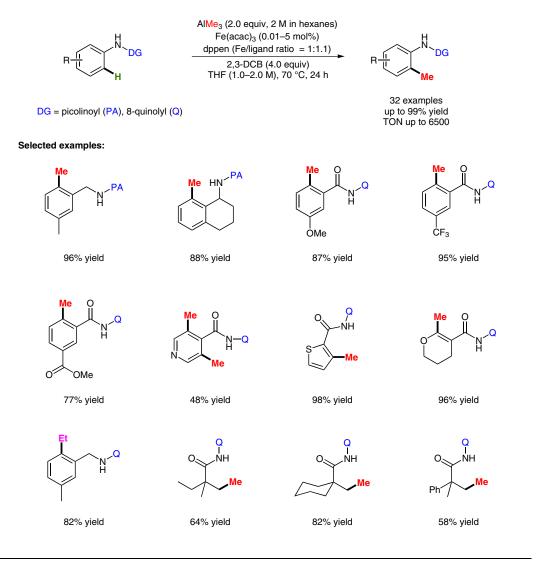
R. SHANG, L. ILIES,* E. NAKAMURA* (THE UNIVERSITY OF TOKYO, JAPAN) Iron-Catalyzed Directed $C(sp^2)$ –H and $C(sp^3)$ –H Functionalization with Trimethylaluminum *J. Am. Chem. Soc.* **2015**, *137*, 7760–7663.

Directed Iron-Catalyzed C-H Methylation



Significance: The iron(III)-catalyzed directed functionalization of $C(sp^2)$ –H and $C(sp^3)$ –H bonds was achieved by Nakamura and co-workers. The methylation of anilides and carboxamides bearing a picolinoyl or 8-aminoquinolyl group with trimethylaluminum is tolerant of electron-withdrawing (CF₃, F, CI, Br, CO₂R) and electron-donating (OMe, NMe₂) groups, as well as heterocyclic amines.

Comment: The authors present an alternative to the use of AIMe₃ by isolating the air-stable diamine intermediate formed by complexation of AIMe₃ with the iron(III) salt and 1,2-bis(diphenyl-phosphino)ethane (dppen). This robust catalyst could be recovered and a turnover number of more than 6500 was reached.

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