C. H. OH,* H. M. PARK, D. I. PARK (HANYANG UNIVERSITY, SEOUL, KOREA)

Highly Functionalized and Stereocontrolled Syntheses of 2-(2-Methylenecycloalkyl)-furan Derivatives by Pd-Catalyzed Cycloreduction

Org. Lett. **2007**, 9, 1191-1193.

Pd-Catalyzed Reductive Double Cyclization of Yne-enynals to Furans

Significance: A palladium-catalyzed reductive double cyclization of conjugated enynals bearing an alkyne tether leading to 2-(2-methylenecycloalkyl)-furans in moderate to excellent yields is reported. Hydropalladation of the internal triple bond with an in situ generated PdOCO_2H species is proposed as a mechanistic rationale. This is followed by carbonyl oxygen attack of the palladium nucleus and release of CO_2 during a hydride transfer reaction.

Comment: Due to their widespread occurrence in nature and their biological activities, the synthesis of furans has received increasing synthetic attention recently (see review below). Attractive transition-metal-catalyzed furan syntheses have been developed using, e.g., copper(I) salts (N. T. Patil, H. Wu, Y. Yamamoto *J. Org. Chem.* **2005**, 70, 4531-4534) and gold(III) catalysis (T. Yao, X. Zhang, R. C. Larock *J. Am. Chem. Soc.* **2004**, 126, 11164-11165). The herein reported method highlights an interesting double C–C bond-forming process which furnishes condensed furan systems, thus offering a reaction from simple precursors to systems of considerable complexity. Further investigation of scope and limitations would be of interest.

Review: M. Maier *Organic Synthesis Highlights II*; H. Waldmann, Ed.; VCH Weinheim: Germany, **1995**, 231-242.

SYNFACTS Contributors: Victor Snieckus, Heiko Scharl
 Synfacts 2007, 6, 0584-0584 Published online: 22.05.2007
 DOI: 10.1055/s-2007-968574; Reg-No.: V05007SF

2007 © THIEME STUTTGART • NEW YORK