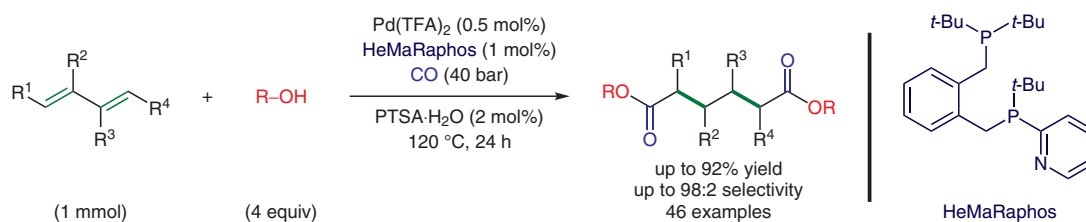


J. YANG, J. LIU, H. NEUMANN, R. FRANKE, R. JACKSTELL, M. BELLER* (UNIVERSITY OF ROSTOCK, GERMANY)

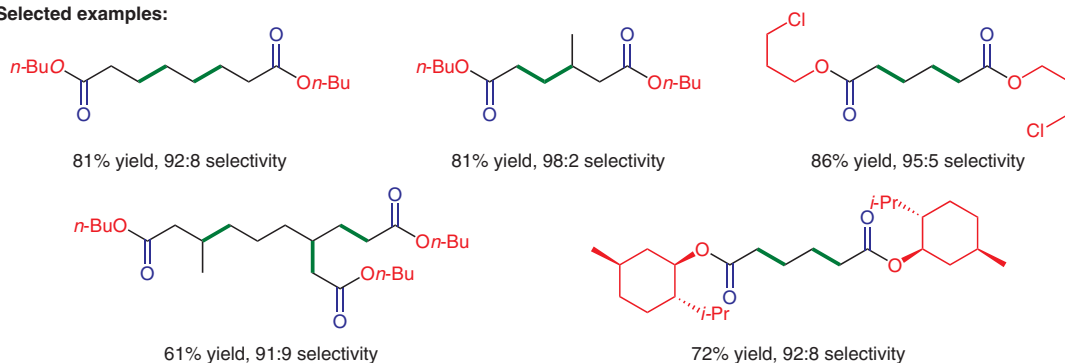
Direct Synthesis of Adipic Acid Esters via Palladium-Catalyzed Carbonylation of 1,3-Dienes

Science 2019, 366, 1514–1517.

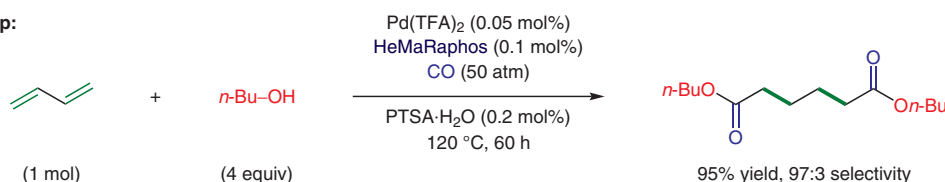
Palladium-Catalyzed Dicarboxylation of 1,3-Dienes for the Synthesis of Adipic Acid Esters



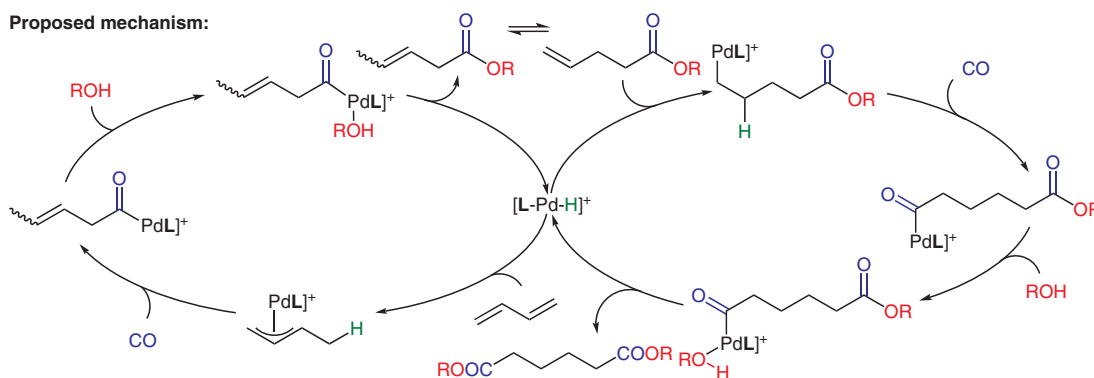
Selected examples:



Scale up:



Proposed mechanism:



Significance: The authors describe a palladium-catalyzed dicarbonylation of 1,3-dienes using carbon monoxide. Various adipate diesters were produced in good to excellent yield with high selectivity.

Comment: The authors used kinetic experiments to support the proposed mechanism. Scaling up the reaction to over 200 g with a lower catalyst loading gave the product in excellent yield and selectivity.

SYNFACTS Contributors: Mark Lautens, Rachel Ross
Synfacts 2020, 16(03), 0289 Published online: 18.02.2020
DOI: 10.1055/s-0039-1690348; Reg-No.: L00320SF

© 2020, Thieme. All rights reserved.
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

Category

Metals in Synthesis

Key words

palladium catalysis

dienes

carbonylation

Synfact
of the
Month