E. P. A. TALBOT,* T. DE A. FERNANDES, J. M. MCKENNA,* F. D. TOSTE* (NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH, HORSHAM, UK; UNIVERSITY OF CALIFORNIA, BERKELEY, USA)

Asymmetric Palladium-Catalyzed Directed Intermolecular Fluoroarylation of Styrens *J. Am. Chem. Soc.* **2014**, *136*, 4101–4104.

Enantioselective Fluoroarylation Catalyzed by Palladium

Pd(OAc)₂/ligand (15 mol%) (2-ethylhexylO)₂PO₂H (30 mol%) Selectfluor (2 equiv) tert-butylcatechol CH₂Cl₂-H₂O (5:1), r.t., 15 h Ar ligand

Selected examples:

Possible reaction pathway:

Significance: The authors developed a highly enantioselective palladium-catalyzed fluoroarylation of styrenes bearing an amide-based directing group. The proposed reaction mechanism involves a palladium(IV) intermediate as shown above.

SYNFACTS Contributors: Hisashi Yamamoto, Yasushi Shimoda Synfacts 2014, 10(6), 0617 Published online: 16.05.2014 **DOI:** 10.1055/s-0033-1339002; **Reg-No.:** H05214SF

Comment: In this reaction, N,N-ligands play a crucial role to afford the fluoroarylated products. Without these ligands only Heck products were obtained. Organic phosphate was added as phase-transfer catalyst to increase the chemical yield.

Category

Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions

Key words

fluoroarylation styrenes palladium



617