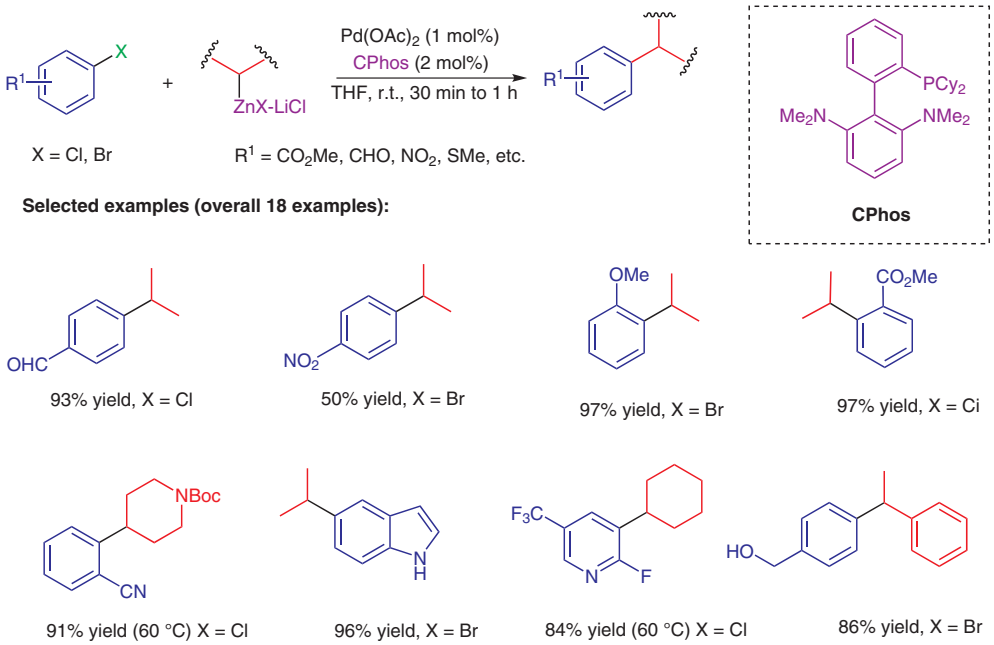
C. HAN, S. L. BUCHWALD* (MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, USA)

Negishi Coupling of Secondary Alkylzinc Halides with Aryl Bromides and Chlorides
J. Am. Chem. Soc. **2009**, *131*, 7532-7533.

Coupling of Secondary Alkylzinc Halides with Aryl Bromides and Chlorides



Significance: Direct cross-coupling of secondary acyclic organometallic species is a rather challenging task. This reaction is often plagued by β-hydride elimination or metal migration. The fine tuning of the ligand for the Negishi coupling allowed the development of a high-yielding, simple procedure for this coupling reaction, suitable for a broad substrate range with excellent functional group tolerance.

Comment: One of the main side products of the sp^2–sp^3 coupling of *i*-PrZnHal and similar species is the *n*-propyl adduct. Mechanistic studies of the authors showed that the ratio of *i*-Pr to *n*-Pr products depends on the rate of reductive elimination from the ligated ArPd(*i*-Pr) species, which competes with the β-hydride elimination–reinsertion process. Interestingly, free alcohols are tolerated in this coupling.

SYNFACTS Contributors: Paul Knochel, Andrei Gavryushin
Synfacts 2009, 9, 1015-1015 Published online: 21.08.2009
DOI: 10.1055/s-0029-1217689; **Reg-No.:** P09209SF