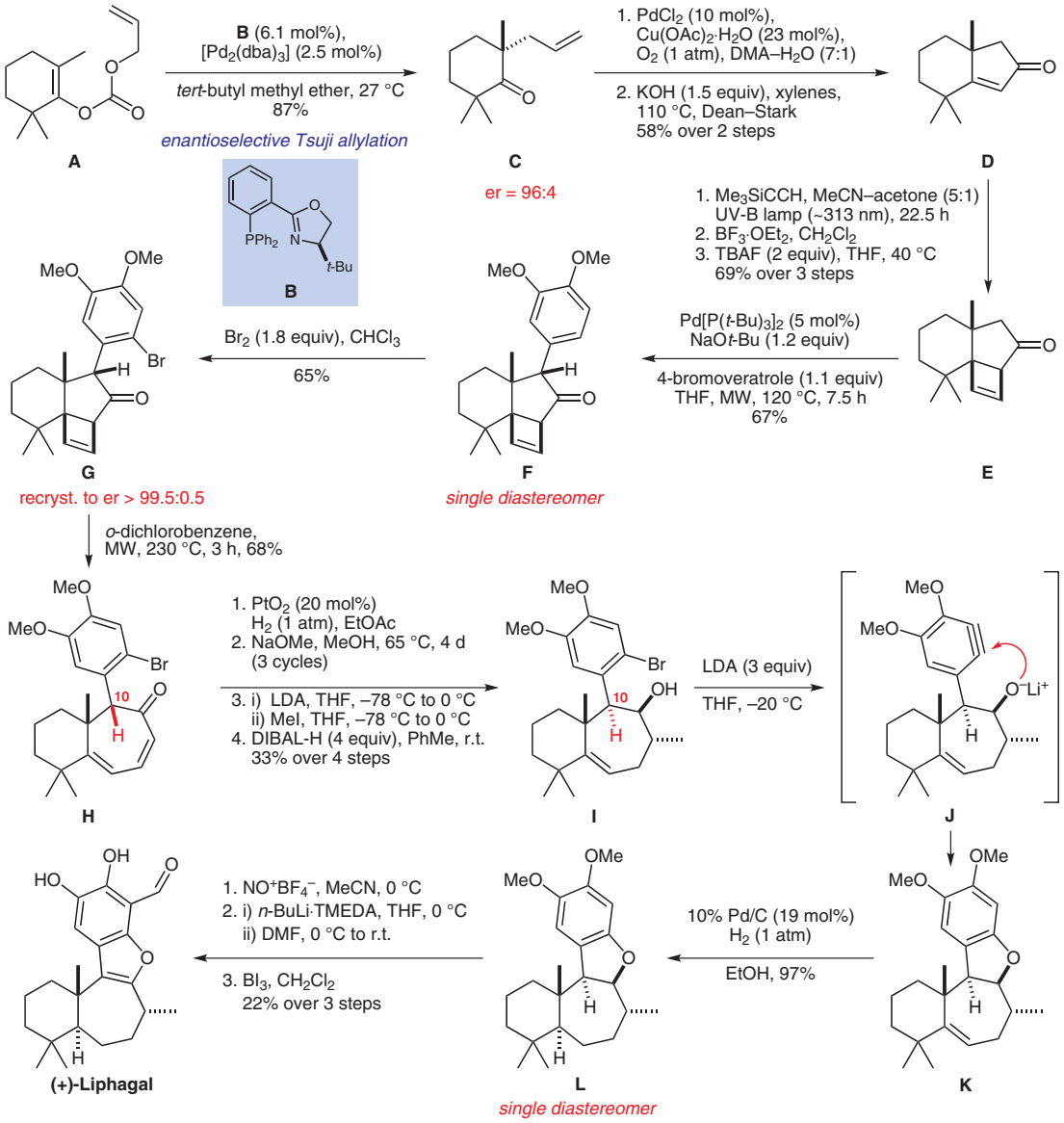
J. J. DAY, R. M. MCFADDEN, S. C. VIRGIL, H. KOLDING, J. L. ALLEVA, B. M. STOLTZ*
(CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA, USA)
The Catalytic Enantioselective Total Synthesis of (+)-Liphagal
Angew. Chem. Int. Ed. **2011**, *50*, 6814-6818.

Synthesis of (+)-Liphagal



Significance: (+)-Liphagal was isolated in 2006 from the Caribbean sponge *Aka coralliphaga* and belongs to a family of phosphatidylinositol 3-kinase (PI3K) inhibitors. Structurally, (+)-liphagal consists of an unprecedented [6-7-5-6] tetracyclic motif. Herein, the first catalytic enantioselective approach is reported.

Comment: This synthesis utilizes an enantioselective Tsuji-type allylation developed within the Stoltz group and a two-step oxidation–cyclization procedure to yield previously reported enone **D** with good enantioselectivity. Epimerization at C10 followed by cyclization enables hydrogenation of the trisubstituted olefin, yielding the *trans*-fused ring as the only product.

SYNFACTS Contributors: Steven V. Ley, Sean Newton
Synfacts 2011, 10, 1039-1039 Published online: 20.09.2011
DOI: 10.1055/s-0030-1261144; **Reg-No.:** N05411SF

2011 © THIEME STUTTGART • NEW YORK

Category
Synthesis of Natural Products and Potential Drugs

Key words
enantioselective Tsuji allylation
photocycloaddition
ring expansion
olefin reduction

SYNFACT of the month

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.