Molybdenum Complex Catalyzed Z-Selective Cross-Metathesis

Category

Metal-Catalyzed
Asymmetric
Synthesis and
Stereoselective
Reactions

Key words

molybdenum
catalysis

cross-metathesis

stereoselectivity

haloalkenes

Synfact
of the month

Significance: Cross-metathesis with alkenyl halides is a highly challenging problem. The authors have developed a molybdenum alkylidene species that reacts with alkenyl halides to afford various bromo-, chloro-, or fluoroalkenes with high Z-selectivities. The synthesis of biologically active compounds is also demonstrated.

SYNFACTS Contributors: Hisashi Yamamoto, Yasushi Shimoda
Synfacts 2016, 12(06), 0603 Published online: 17.05.2016
DOI: 10.1055/s-0035-1562173; Reg-No.: H04616SF

Comment: Commercially available (Z)-1-bromo-2-fluoroethene can be used as a fluoride source, instead of vinyl fluoride or (Z)-1,2-difluoroethene, which are difficult to handle. The authors suggest that, for steric and electronic reasons, the reaction with (Z)-1-bromo-2-fluoroethene proceeds through intermediate I.