Category

Key words

iridium catalysis hydroalkynylation enantioselectivity

Metals in Synthesis

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Construction of Acyclic Quaternary Carbon Stereocenters by Catalytic Asymmetric Hydroalkynylation of Unactivated Alkenes *J. Am. Chem. Soc.* **2019**, *141*, 9312–9320.

Iridium-Catalyzed Asymmetric Hydroalkynylation of Unactivated Alkenes

Kinetic isoptope effect of alkene:

Bn
$$R^1$$
 R^1 R

Selected examples:

Significance: The authors have developed an enantioselective iridium-catalyzed hydroalkynylation reaction. The reaction transforms trisubstituted β , γ -unsaturated amides with excellent γ -selectivity, forming new alkyne-substituted acyclic quaternary carbon stereocenters.

Comment: The kinetic isotope experiments of the alkenes resulted in an inverse KIE; suggesting that the migratory insertion of the alkene is related to the turnover-limiting step. Notably, the authors propose that the selectivity arises from both a facial preference as well as an alkene isomerization process.

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