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Rhodium-Catalyzed Arylzincation of Terminal Allenes Providing Allylzinc Reagents and Its Application to Versatile Three-Component Coupling Reaction

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Stereoselective Rhodium-Catalyzed Arylzincation of Terminal Allenes

$$\begin{array}{c} \text{Here}(\text{Cool})_{\text{B}}(2.5 \text{ mol}\%) \\ \text{Fibus}(2.5 \text{ mol}\%) \\$$

Significance: A novel efficient rhodium-catalyzed multicomponent reaction using an arylzinc iodide, a monosubstituted allene and an electrophile (E⁺) is reported. With acetonitrile and imines or aldehydes as electrophiles the use of Barbier-type conditions furnished the best yields. The reaction is highly diastereoselective, and thus allowed the synthesis of a stereodefined skipped polyene.

Comment: Multicomponents allow an easy onepot access to molecular complexity. Multicomponent reactions involving allenes have recently attracted increased attention due to their efficiency. The high stereoselectivity of this reaction makes it a very valuable tool for modern synthesis.

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