Stereoselective Rhodium-Catalyzed Arylzincation of Terminal Allenes

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

Selected examples:

- **H₂C₇O Ph** 90% yield E⁺ = MeCN  
- **H₂C₇O Ph CO₂Et** 79% yield E⁺ = 3-pentanone  
- **H₂C₇O Ph CO₂Et** 62% yield E⁺ = MeCN  
- **H₂C₇O Ph CO₂Et** 81% yield E⁺ = MeCN

- **H₂C₇O Ph** 83% yield (dr > 99:1) E⁺ = 4-MeOC₆H₄=NPh
- **H₂C₇O Ph** 81% yield (dr > 99:1) E⁺ = 2-MeC₆H₄CHO

- **H₂C₇O Ph** 81% yield E⁺ = MeCN
- **H₂C₇O Ph** 62% yield E⁺ = MeCN
- **H₂C₇O Ph** 81% yield E⁺ = MeCN

- **H₂C₇O Ph** 76% yield E⁺ = MeCN
- **H₂C₇O Ph** 78% yield E⁺ = MeCN
- **H₂C₇O Ph** 78% yield E⁺ = MeCN

- **H₂C₇O Ph** 76% yield E⁺ = MeCN
- **H₂C₇O Ph** 78% yield E⁺ = MeCN
- **H₂C₇O Ph** 78% yield E⁺ = MeCN

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