Ruthenium-Catalyzed Cycloaddition of Benzocyclobutenones with Diols

Selected examples:

Proposed mechanism:

Significance: The authors have reported intermolecular cycloadditions through formal insertion of saturated C–H bonds into C–C σ -bonds. A ruthenium(0)/dppp complex catalyzed the diastereoselective coupling reactions of benzocyclobutenones to adjacent saturated carbon centers in diols.

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Comment: The cycloaddition via ruthenacycles from the benzocyclobutenones and dehydrogenation of the alcohols provides a convergent method for the construction of type II polyketide substructures.

Category

Metal-Catalyzed
Asymmetric
Synthesis and
Stereoselective
Reactions

Key words

ruthenium catalysis

cycloaddition

benzocyclo-
butenones

diols

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