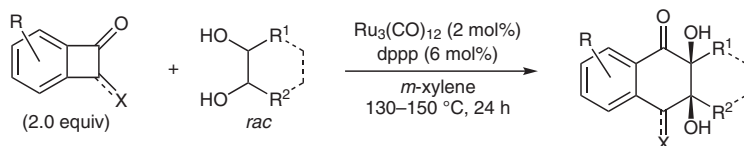
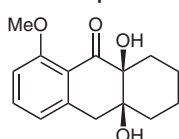


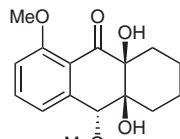
Ruthenium-Catalyzed Cycloaddition of Benzocyclobutenones with Diols



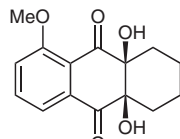
Selected examples:



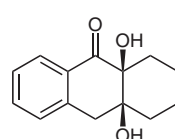
88% yield, dr > 20:1



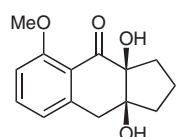
82% yield, dr > 20:1



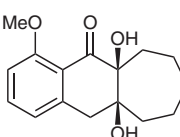
89% yield, dr > 20:1



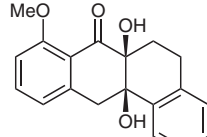
95% yield, dr > 20:1



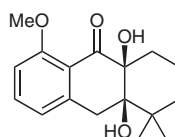
64% yield, dr > 20:1



82% yield, dr > 20:1

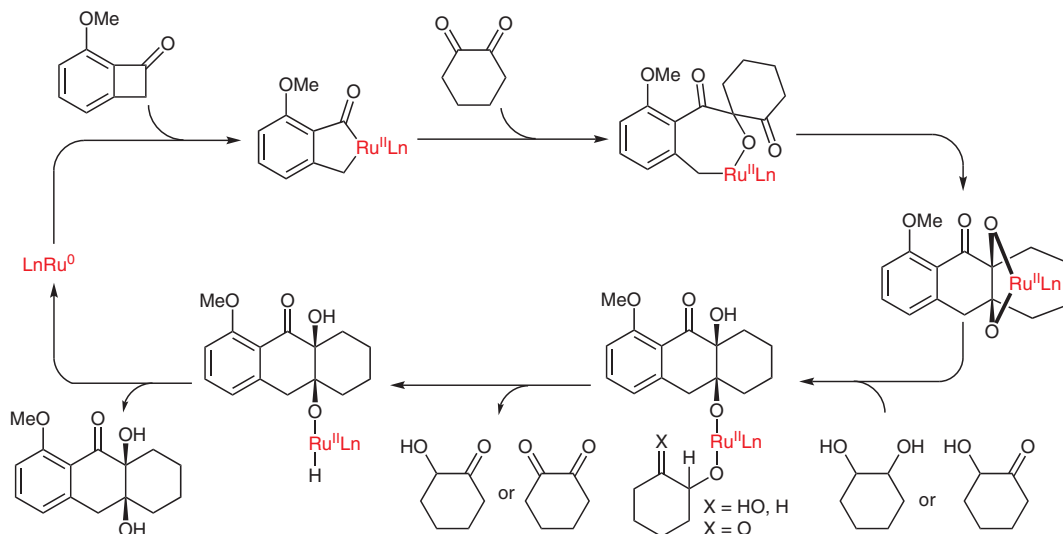


86% yield, dr > 20:1
single regioisomer



61% yield, dr > 20:1
single regioisomer

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.