Enantioselective Intermolecular Ruthenium-Catalyzed Cycloaddition

Selected examples:

Transformation:

Significance: Metal-catalyzed cycloaddition is one of the most active areas of research. The authors have developed an enantioselective intermolecular cycloaddition of benzocyclobutenones with tetralone-derived ketols through a C–C bond oxidative addition catalyzed by a chiral ruthenium–DM-SEGPHOS complex.

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Comment: This ruthenium-catalyzed intermolecular cycloaddition merging C–C bond activation and transfer hydrogenative coupling proceeds smoothly in moderate to high yield with excellent enantio-, diastereo-, and regioselectivities. The obtained products can be transformed into the corresponding compounds containing dione and amine motifs.