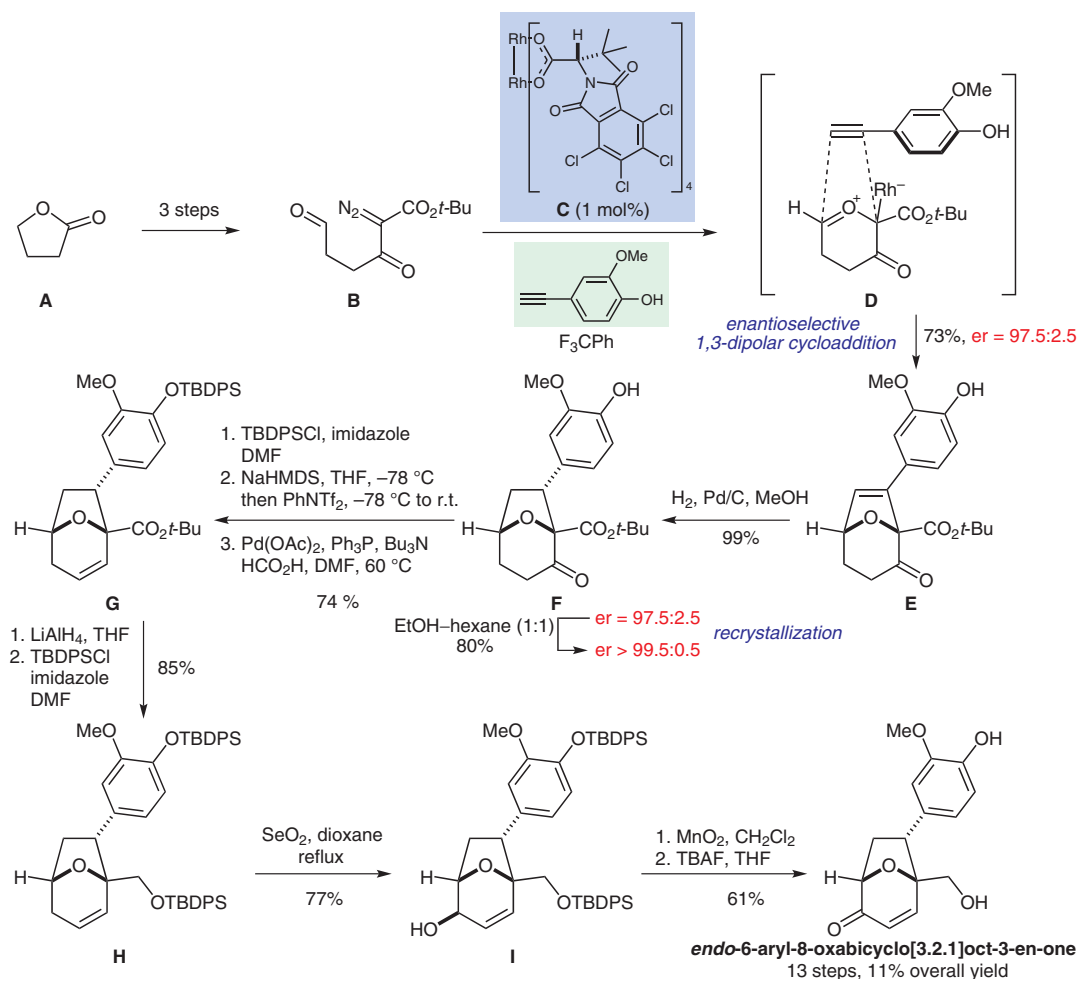


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Catalytic Asymmetric Synthesis of the *endo*-6-Aryl-8-oxabicyclo[3.2.1]oct-3-en-2-one Natural Product from *Ligusticum chuanxing* via 1,3-Dipolar Cycloaddition of a Formyl-Derived Carbonyl Ylide Using $Rh_2(S\text{-TCPTTL})_4$
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Synthesis of *endo*-6-Aryl-8-oxabicyclo[3.2.1]oct-3-en-2-one



Significance: This is the first example of an enantioselective 1,3-dipolar cycloaddition of a cyclic formyl carbonyl ylide. This methodology was successfully applied to the synthesis of *endo*-6-aryl-8-oxabicyclo[3.2.1]oct-3-en-2-one, which was isolated from *Ligusticum chuanxing Hort.*, a traditional Chinese medicine used to promote blood circulation.

Comment: The enantioselective 1,3-dipolar cycloaddition proceeds with impressive er (97.5:2.5) to form **E**. The reduced product **F** could then be recrystallized and the er upgraded to 99.5:0.5. The circular dichroism of the natural product differed from the synthetic sample, leading the authors to speculate that the natural product may be biosynthesized in racemic form.

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