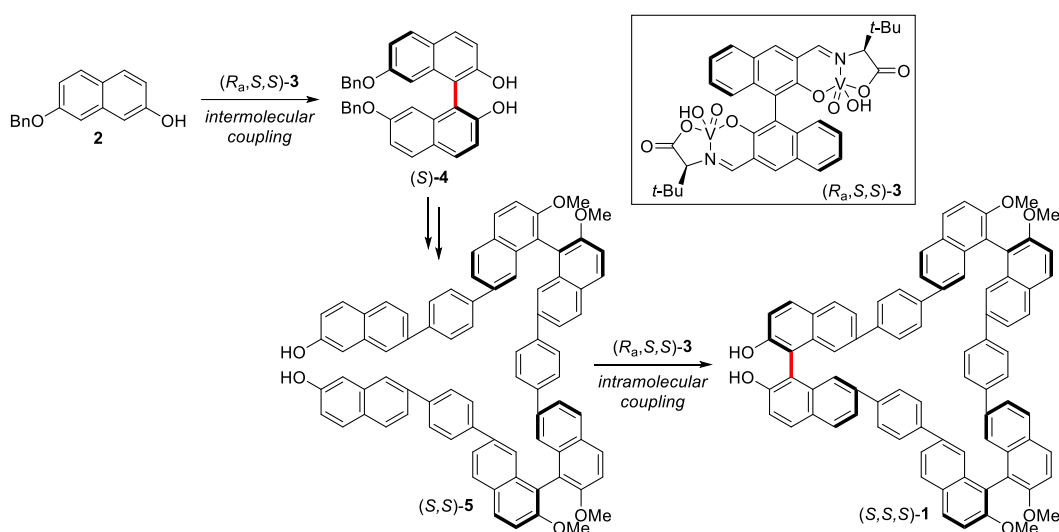


Selective Synthesis of Optically Active Cyclic Binol Trimers

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Keywords: Chiral Vanadium Catalyst; Oxidative Coupling; π -Conjugated Molecule; Chiroptical Property; Möbius Conjugated Molecules

Symmetrical cyclic conjugated compounds with chiral π -electron units, especially Möbius-shaped trimers bearing binol skeletons, are known to exhibit unique chiroptical property. However, there is no report on enantioselective synthesis of the Möbius-shaped trimers due to their synthetic difficulty. Herein, we report the facile catalytic and asymmetric synthesis of cyclic binol trimers (*S,S,S*)-**1**. Our chiral dinuclear vanadium complex^{1,2} (*R_a,S,S*)-**3** distinctively prompts the oxidative coupling^{3,4} of 2-naphthol derivatives with high enantiocontrol, each coupling events would proceed through a known dual-activation mechanism.⁵ When the (*R_a,S,S*)-**3** was utilized as a chiral catalyst for the intermolecular oxidative coupling of **2** and intramolecular manner of (*S,S*)-**5**, finally resulting in the optically pure (*S,S,S*)-**1** in 17% overall yield in 7 steps from commercially available 2-naphthol derivative **2**. In this presentation, chiroptical property of (*S,S,S*)-**1** and its molecular transformation will also be discussed.



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