

## Kinetic Resolution of Axially Chiral 2-Alkoxy-1-arylnaphthalenes through Hydrogenation with Chiral Ruthenium Catalyst

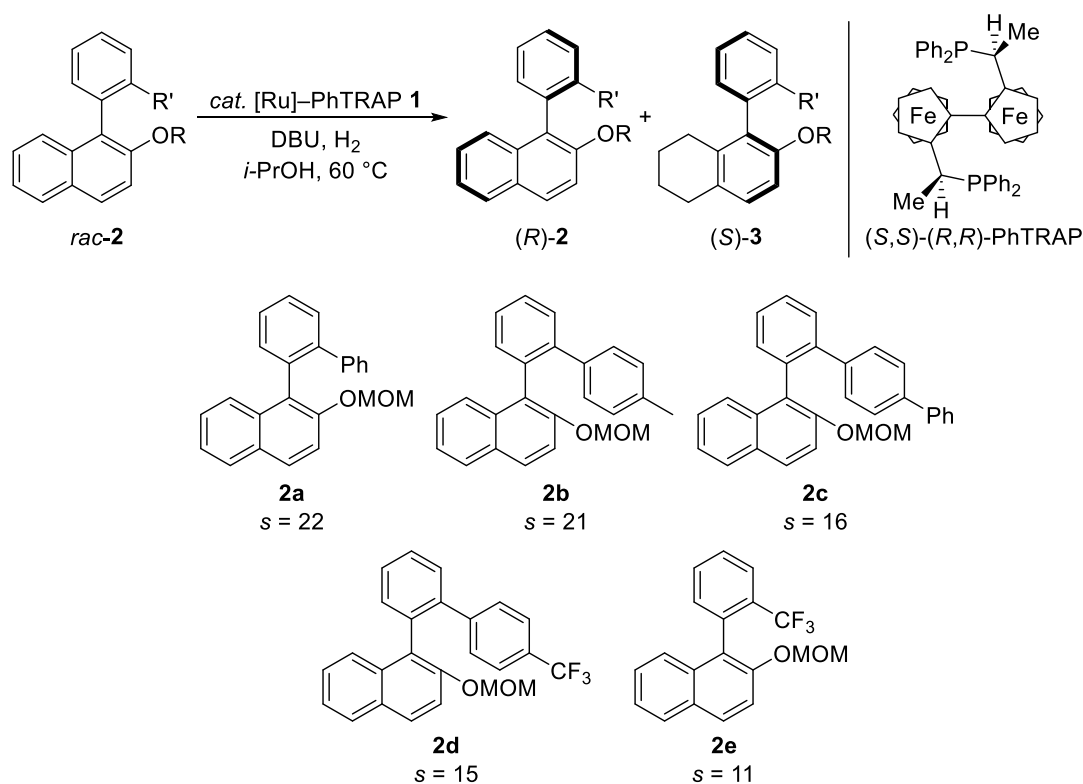
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**Keywords:** Asymmetric Catalysis; Ruthenium; Hydrogenation; Naphthalene; Axially Chiral Biaryl

We had previously reported that  $\{\text{RuCl}(p\text{-cymene})[(S,S)\text{-(}R,R\text{)-PhTRAP}]\}\text{Cl}$  (**1**) worked as a good catalyst for the highly enantioselective hydrogenation of 2-alkoxy naphthalenes (up to 92% ee).<sup>1</sup> In this study, the asymmetric catalysis was applied to the kinetic resolution of axially chiral 1-arylnaphthalenes.

Initially, MOM-protected 1-aryl-2-naphthol **2a** was chosen as a model substrate for the hydrogenative kinetic resolution. The hydrogenation of **2a** was conducted in *i*-PrOH at 60 °C in the presence of catalyst **1** and DBU, giving a mixture of 99.2% ee of remaining **2a** (38%) and 61% ee of hydrogenation product **3a** (62%), which indicates that the selectivity factor  $s$  ( $= k_R/k_S$ ) was 22. The enantioselective hydrogenation is applicable to the kinetic resolution of 1-phenyl-2-alkoxynaphthalenes bearing an electron-withdrawing group at the 2'-position.



1) R. Morioka, M. Kashiwabara, N. Kameyama, R. Kuwano, *Angew. Chem. Int. Ed.* **2012**, *51*, 4136.