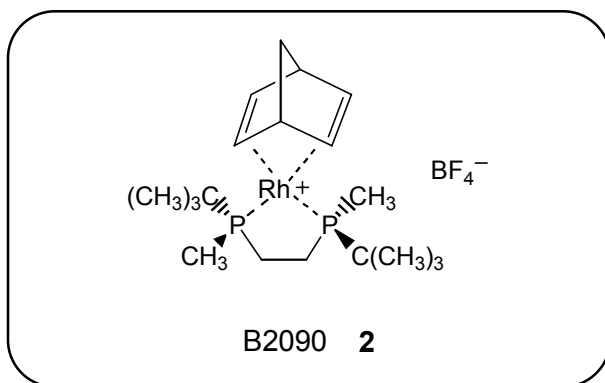
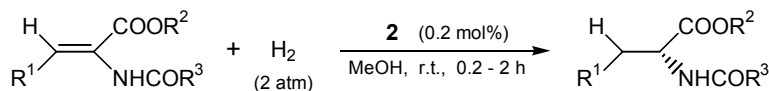
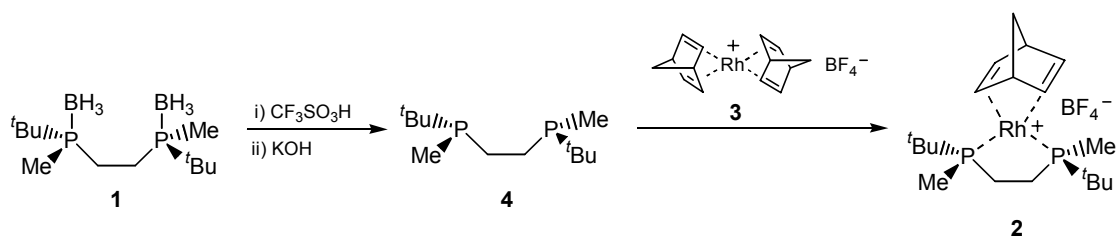


Highly Enantioselective Hydrogenation and Hydrosilylation Reactions



While catalytic asymmetric reactions using optically active phosphine ligands represented by BINAP, have been vigorously investigated, the majority of the phosphine ligands employed in these reactions bear C-chirality or axial asymmetry, and only a limited number of P-chiral phosphines have been reported.¹⁾ Imamoto and co-workers developed a synthetic method for optically pure phosphine-borane **1**, and **1** was treated with strong-acid to yield P-chiral phosphine ligand **4** without racemization. They reported that the Rh Complex **2** prepared from **4** showed high catalytic activity and enantioselectivities for the hydrogenation of dehydroamino acid derivatives.^{2,3)}

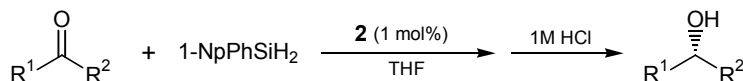
Hereafter, further application of **2** and **4** is anticipated to a wide variety of catalytic asymmetric reactions.^{4,5)}



$R^1 = \text{Ph}, R^2 = \text{Me}, R^3 = \text{Me}$ 99.9% e.e.

$R^1 = \text{Ph}, R^2 = \text{H}, R^3 = \text{Me}$ 98.4% e.e.

$R^1 = 3\text{-MeO-4-AcOC}_6\text{H}_3, R^2 = \text{Me}, R^3 = \text{Me}$ 99.8% e.e.



$R^1 = 2\text{-MeOPh}, R^2 = \text{Me}$ 99% e.e.(R)

$R^1 = 2,4\text{-Cl}_2\text{Ph}, R^2 = \text{CH}_2\text{Cl}$ 99% e.e.(S)

Keywords : enantioselective hydrogenation, hydrosilylation

2007. Apr., R-5079E

Product

B2090 (S,S)-1,2-Bis[(*tert*-butyl)methylphosphino]ethane[η -(2,5-norbornadiene)]-rhodium(I) Tetrafluoroborate (2) 50mg

Related Products

B2089 (S,S)-1,2-Bis[(*tert*-butyl)methylphosphino]ethane Bis(borane) (1) 100mg

B2091 Bis[η -(2,5-norbornadiene)]rhodium(I) Tetrafluoroborate (3) 100mg

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