SUPPLEMENTARY MATERIAL

A highly efficient rhodium/monodentate phosphoramidite catalyst and its application in the enantioselective hydrogenation of enamides and α -dehydroamino acid derivatives

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GC and HPLC analysis for the products of enantioselective hydrogenation

Figure S1: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 50m×0.25mm chirasil-L-VAL column. (2) Oven temperature is 150 °C.

99.6% ee

32.530	1900468	PE	.291	0.29202
33.756	328	PU	.022	.00143
33.910	4138	UV	.122	.01805

99.6%

Figure S2: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 50m×0.25mm chirasil-L-VAL column. (2) Oven temperature is 155 °C.

99% ee

Figure S3: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 50m×0.25mm chirasil-L-VAL column. (2) Oven temperature is 175 °C.

28.350	812418	.PB	.201	3.37035
29.303	9969	BP	.199	.04136

98% ee

Figure S4: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 50m×0.25mm chirasil-L-VAL column. (2) Oven temperature is 170 °C.

Figure S5: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 50m×0.25mm chirasil-L-VAL column. (2) Oven temperature is 165 °C.

98% ee

Figure S6: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 50m×0.25mm chirasil-L-VAL column. (2) Oven temperature is 175 °C.

98% ee

29.185	718111	PB	.190	2.45132
30.210	8558	BP	.183	.02921

Figure S7: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 50m×0.25mm chirasil-L-VAL column. (2) Oven temperature is 170 °C.

Figure S8: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 50m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 175 °C

99.8% ee

Figure S9: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 50m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 165 °C

Figure S10: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 165 °C.

Figure S11: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 170 °C.

99.1% ee

Figure S12: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 165°C

99.1%

Figure S13: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 175 °C.

Figure S14: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 165 °C

98.1%

Figure S15: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 155°C.

Figure S16: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 165 °C.

99.4% ee

Figure S17: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 170°C.

Figure S18: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 185 °C

Figure S19: The ee's were determined by chiral HPLC analysis using a Chiralpak AD column (Hexane: Ethyl acetate =90: 1, flow rate: 1.00 mL/min).

99.2% ee

Figure S20: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 180 °C

Figure S21: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 175 °C

99.7% ee

No.	R.Time (min.)	Comp.	Height (uV)	Height%	Area (uV.sec)	Area%	Conc	BC
1	20.96	Unknown	183601	99.70	9952009	99.86	0.000E+00	BB
2	25.58	Unknown	555	0.30	13468	0.14	0.000E+00	BB
Total			184156	100.00	9965477	100.00		

Figure S22: The ee's were determined by chiral HPLC analysis using a Chiralpak AD column (Hexane: Ethyl acetate =90: 1, flow rate: 1.00 mL/min).

Figure S23: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 180 °C

Figure S24: (1) The ee's were determined by chiral GC analysis using a Chrompack chiral fused silical 25m×0.25mm ID Coating CHIRASIL-L-VAL column. (2) Oven temperature is 125 °C