A Chiral Ruthenium-Monophosphine Catalyst for Asymmetric Addition of Arylboronic Acids to Aryl Aldehydes

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¹ H NMR, ³¹ P NMR, and ¹³ C NMR of 3a	S2-3
¹ H NMR, ³¹ P NMR, and ¹³ C NMR of L4	-S4-5
¹ H NMR, ³¹ P NMR, and ¹³ C NMR of 3b	S6-7
¹ H NMR, ³¹ P NMR, and ¹³ C NMR of L5	-S8-9
¹ H NMR, ³¹ P NMR, and ¹³ C NMR of complex 7	-S10-11
¹ H NMR, ¹³ C NMR, chiral HPLC traces of 6a-q	S12-42
¹ H NMR and ¹³ C NMR of compound 8	-S43
¹ H NMR, ¹³ C NMR, chiral HPLC traces of 9	S44-45
ORTEP Drawing of the ruthenium complex 7 at 30% probability	-S46



¹H NMR, ³¹P NMR, and ¹³C NMR of **3a**





^1H NMR, ^{31}P NMR, and ^{13}C NMR of L4



S5







S7



 ^1H NMR, ^{31}P NMR, and ^{13}C NMR of L5





¹ H NMR, ¹³C NMR, and ³¹P NMR of Ru complex **7**





¹H NMR, ¹³C NMR, and chiral HPLC trace of **6a**



¹H NMR, ¹³C NMR, and chiral HPLC trace of **6b**







1 H NMR, 13 C NMR, 19 F NMR, and chiral HPLC trace of **6**c





¹H NMR, ¹³C NMR, and chiral HPLC trace of **6d**







S19











¹H NMR, ¹³C NMR, and chiral HPLC trace of $\mathbf{6g}$





¹H NMR, ¹³C NMR, and chiral HPLC trace of **6h**





¹H NMR, ¹³C NMR, and chiral HPLC trace of **6i**





¹H NMR, ¹³C NMR, and chiral HPLC trace of **6j**





¹H NMR, ¹³C NMR, and chiral HPLC trace of **6k**





¹H NMR, ¹³C NMR, and chiral HPLC trace of **6**l



¹H NMR, ¹³C NMR, and chiral HPLC trace of **6m**







¹H NMR, ¹³C NMR, and chiral HPLC trace of **6n**







¹H NMR, ¹³C NMR, and chiral HPLC trace of **6p**







¹H NMR, ¹³C NMR, and chiral HPLC trace of $\mathbf{6q}$







¹H NMR, ¹³C NMR and chiral HPLC trace of compound **10**



