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## Problem-001

OEt 
$$R^1$$
  $R^3$   $R^2$   $R^3$   $R^2$   $R^3$   $R^2$   $R^3$   $R^3$   $R^4$   $R^4$ 

- $(1) \ [\text{Cp*RhCl}_2]_2 \ (2 \ \text{mol\%}), \ AgNTf_2 \ (4 \ \text{mol\%}), \ NaOAc \ (10\% \ \text{mol\%}), \ Cu(OAc)_2 \cdot H_2O \ (30 \ \text{mol\%}), \ O_2 \ (1 \ \text{atm}), \ DCE, 120 \ ^{\circ}C$
- (2)  $[Cp*RhCl_2]_2$  (2 mol%), AgNTf<sub>2</sub> (5 mol%), NaOPiv (30% mol%), O<sub>2</sub> (1 atm), 1,4-Doxane/DCE,70 °C
- $(3) \ [Cp*RhCl_2]_2 \ (2 \ mol\%), \ AgNTf_2 \ (5 \ mol\%), \ NaOAc \ (30\% \ mol\%), \ Cu(OAc)_2 \cdot H_2O \ (30 \ mol\%), \ O_2 \ (1 \ atm), \ DCE/HOAc = 1:4,120 \ ^{\circ}C \ (1 \ mol\%), \ O_2 \ (1 \ atm), \ DCE/HOAc = 1:4,120 \ ^{\circ}C \ (1 \ mol\%), \ O_2 \ (1 \ mol\%), \ O$

## Problem-002