

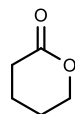
- 1) 2-methoxypropene, TSOH.H₂O (1 mol%), DMF, 0°C to r.t. **82%**
- 2) Tf₂O, pyridine, CH₂Cl₂, -30°C
- 3) 1% HCl, MeOH **66% (over two steps)**



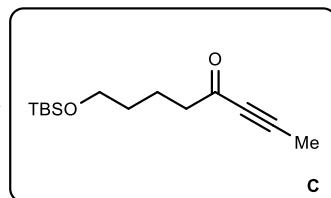
- 4) TBSOTf, 2,6-lutidine, CH₂Cl₂, 0°C to r.t.
- 5) TsOH.H₂O (10 mol%), MeOH, 0°C **97% (over two steps)**
- 6) DMP, NaHCO₃, CH₂Cl₂, 0°C to r.t. **98%**



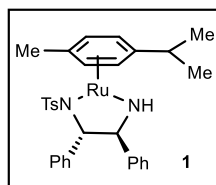
Intermediate after 2 and Mechanism of 3?



- 7) ?
 - 8) ?
- 79% (over two steps)**



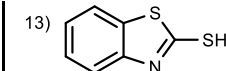
- 10) **1** (1 mol%), iPrOH **99%, 96% ee**



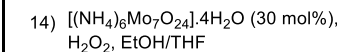
Type of reaction?
Catalyst name?



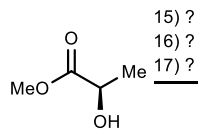
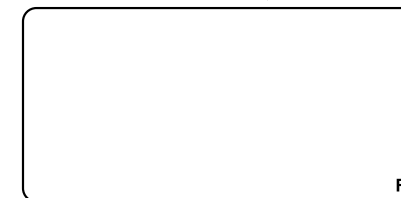
- 11) PMBBBr, KHMDS, Et₃N, THF, -78°C to r.t.
- 12) TBAF, THF, 0°C to r.t. **74% (over two steps)**



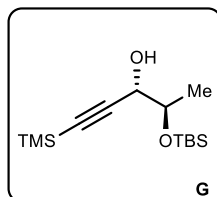
DEAD, PPh₃, THF, 0°C to r.t.



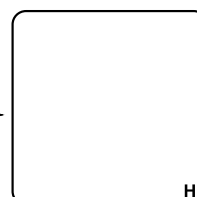
88% (over two steps)



- 15) ?
 - 16) ?
 - 17) ?
- 85% (over three steps)**
dr = 8:1



- 18) TIPSOTf, lutidine, CH₂Cl₂, 0°C to r.t.
- 19) K₂CO₃, MeOH **85% (over two steps)**
- 20) B₂(pin)₂, NaOtBu, THF, CuCl (20 mol%), Xantphos (20 mol%), then MeI, 40°C **81%**



- 21) I₂, NaOH, THF **65%**
- 22) propyne, CuI (20 mol%), (PPh₃)₂PdCl₂ (10 mol%), HNEt₂, THF, -20°C to r.t. **91%**
- 23) TsOH.H₂O cat., MeOH **90%**



