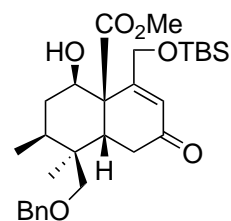
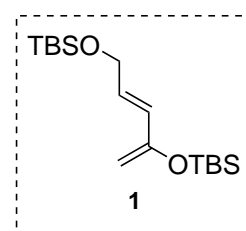
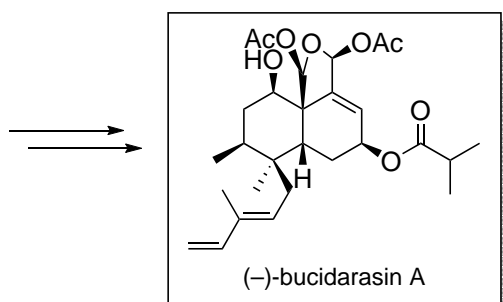


1. $\text{Ph}_3\text{PCH}_2\text{Br}$, *n*-BuLi, THF, -78 to -30 °C, 82%
2. H_2 , Ir(cod)(PCy₃)(Py)PF₆ (cat.), DCE, 80 °C, 92%
3. POCl₃, pyridine, 80 °C, 98%
4. SeO₂, HCO₂H, 1,4-dioxane, 80 °C; NH₄OH, rt, 65%
5. PDC, MS 4 Å, CH₂Cl₂, rt, 86%



6. I₂, DMAP, pyridine, CCl₄, 50 °C, 98%
7. CO, Pd(PPh₃)₄ (cat.), Et₃N, MeOH, THF, 55 °C, 98%
8. **1**, SnCl₄ (cat.), Et₂O, -60 °C (recycling), 93% (dr = 1/9)
9. DIBAL-H (<2 eq.), CH₂Cl₂, -78 °C, 76%
10. DDQ, 2,6-lutidine, CH₃CN, rt, 85%



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