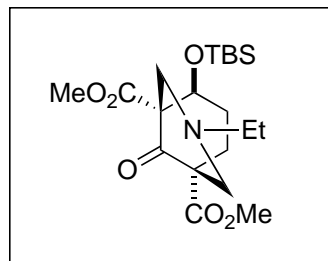
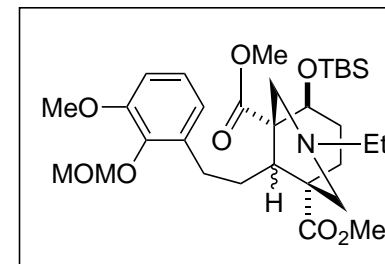


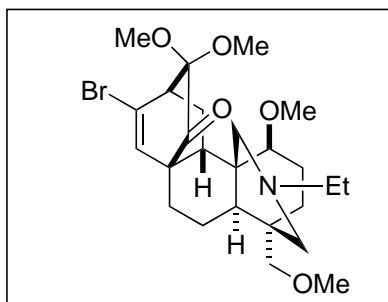
- 1) Me_2PhSiCl , Li, Et_2Zn
 - 2) NaH, KH, $(\text{MeO})_2\text{CO}$
 - 3) $\text{LiN}(i\text{-Pr})_2$, MeOCOCN
 - 4) HCHO, EtNH_2
-
- 5) $\text{HBF}_4 \cdot \text{Et}_2\text{O}$
 - 6) $\text{CF}_3\text{CO}_2\text{H}$, AcOOH
 - 7) TBSOTf



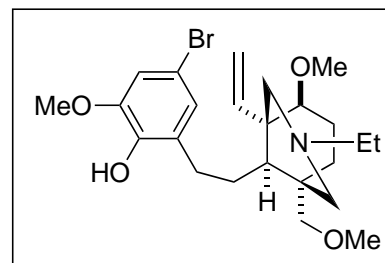
- 8) **1**, EtMgBr
- 9) **2**, NaH
- 10) V-40, $n\text{-Bu}_3\text{SnH}$
- 11) H_2 , Pd/C



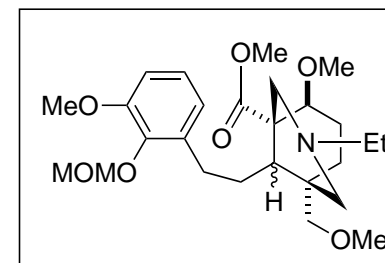
- 12) DIBAL (2 equiv.)
- 13) $\text{NaN}(\text{TMS})_2$, MeI
- 14) $n\text{-Bu}_4\text{NF}$
- 15) NaH, MeI



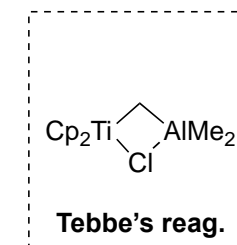
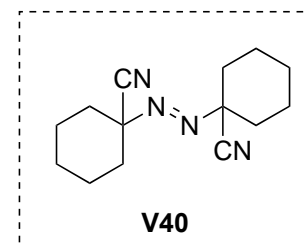
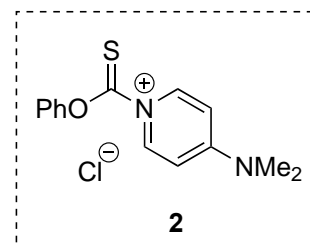
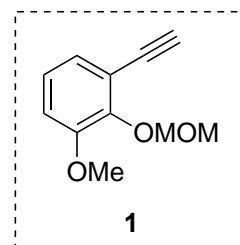
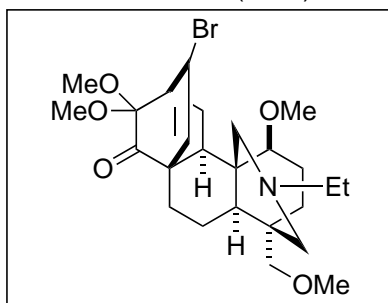
- 21) HCl, $\text{PhI}(\text{OAc})_2$, MeOH
- 22) PhMe, reflux

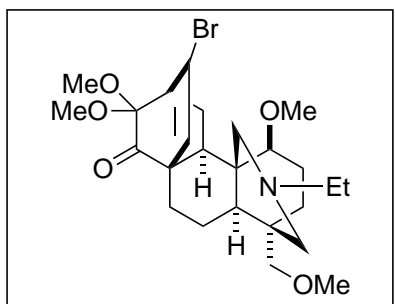


- 16) DIBAL
- 17) DMP
- 18) Tebbe's reagent
- 19) $\text{BF}_3 \cdot \text{Et}_2\text{O}$, Me_2S
- 20) HBr, DMSO then $\text{NaBH}(\text{OAc})_3$

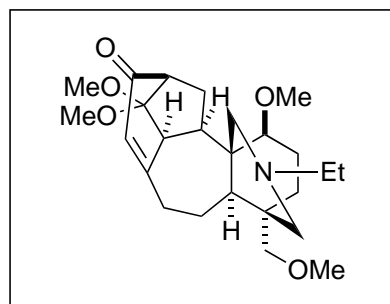


+ (1:2.2)

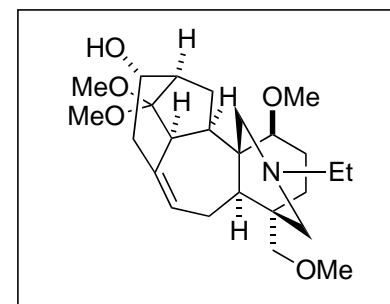




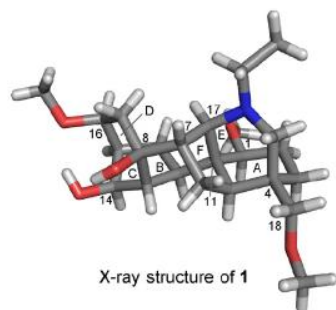
23) Ph_3SnH , AIBN
 24) DIBAL
 25) Tf_2O
 26) DBU, DMSO



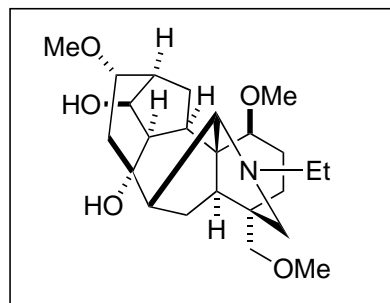
27) TIPSOTf, DMDO
 28) $(\text{COCl})_2$, DMSO
 29) TsNHNH_2 ,
 then NaBH_4 , $\text{CeCl}_3 \cdot 7\text{H}_2\text{O}$
 30) catecholborane,
 $\text{NaOAc} \cdot 3\text{H}_2\text{O}$



31) $\text{NaN}(\text{TMS})_2$, MeI
 32) HCl
 33) NaHCO_3 , NaBH_4



≡



34) $\text{Hg}(\text{OAc})_2$, AcOH
 35) 1,4-dioxane, H_2O , 90°C

