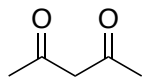


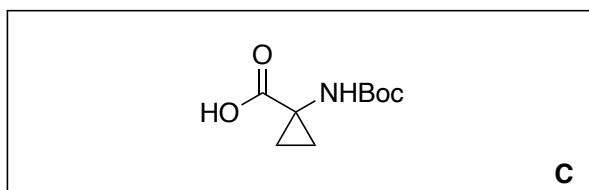
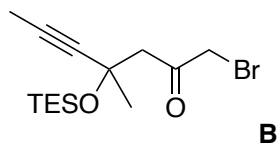
## Synthesis Challenge 106

AG Wegner

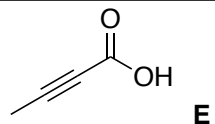
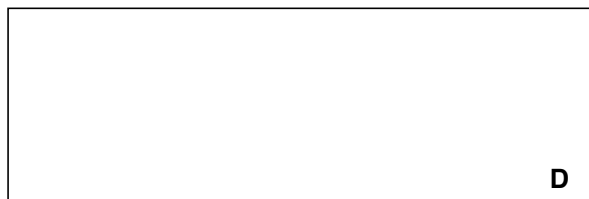
08.02.2024



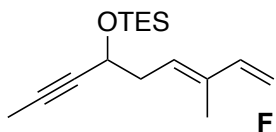
↓ ??? **A**



↓ 1-4



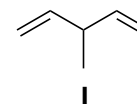
↓ 5-8

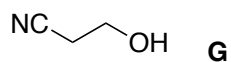


- 1)  $\text{Boc}_2\text{O}$ , pyridine,  $\text{NH}_4\text{OH}$ , MeCN
- 2) Lawesson's reagent, THF
- 3) **B**, EtOH,  $70^\circ\text{C}$
- 4) HCl, 1,4-dioxane

- 5)  $\text{MeNH}(\text{OMe})\cdot\text{HCl}$ , EDCI,  $\text{Et}_3\text{N}$ , DMAP (5 mol%),  $\text{CH}_2\text{Cl}_2$ ,  $0^\circ\text{C}$  to RT
- 6) **I**, *sec*-BuLi, THF,
- 7) Dibal-H,  $\text{CH}_2\text{Cl}_2$
- 8) TESCl, imidazole,  $\text{CH}_2\text{Cl}_2$ ,

Please draft a synthesis of **B**





↓ 9-11



↓ 12-14



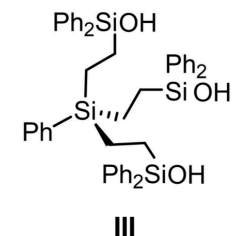
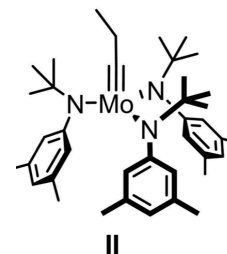
↓ 15-16



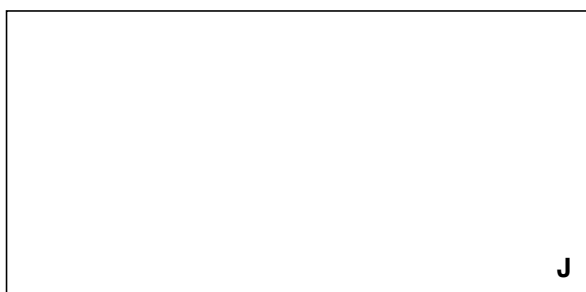
9) TBDPSCI, imidazole, CH<sub>2</sub>Cl<sub>2</sub>  
10) *t*BuOOCCH<sub>2</sub>Br, Zn, THF, 60 °C  
11) Tf<sub>2</sub>O, LiOH, toluene/H<sub>2</sub>O, 0 °C

12) **F**, 9-H-9-BBN, THF; then **H**,  
[(PPh<sub>3</sub>)<sub>2</sub>PdCl<sub>2</sub>] (5 mol %), Cs<sub>2</sub>CO<sub>3</sub>, THF/H<sub>2</sub>O  
13) TMSOTf, 2,6-lutidine, CH<sub>2</sub>Cl<sub>2</sub>, 0 °C,  
14) Amberlyst 15, MeOH

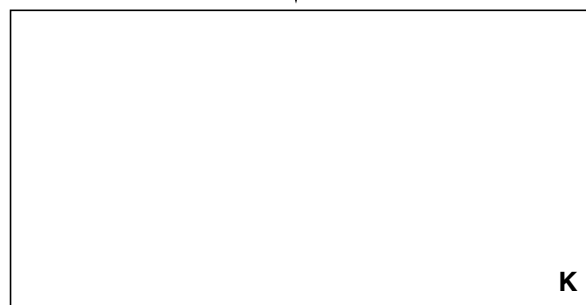
15) **i**, **D**, HATU, *i*Pr<sub>2</sub>NEt, DMF  
16) **II** (40 mol %), **III** (40 mol %), MS 5 Å,  
toluene, reflux  
17) [CpRu-(MeCN)<sub>3</sub>]PF<sub>6</sub> (20 mol %), PCy<sub>3</sub> (20  
mol %), NH<sub>4</sub>PF<sub>6</sub> (20 mol %), THF, reflux



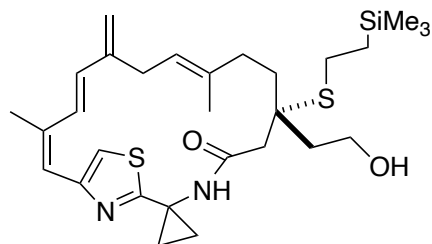
↓18-21



↓22-24



↓25-27



- 18) TMSCH<sub>2</sub>Li, CeCl<sub>3</sub>, THF, -78 °C
- 19) KHMDS, THF, 0 °C
- 20) TMSCl, imidazole, CH<sub>2</sub>Cl<sub>2</sub>, 0 °C
- 21) Boc<sub>2</sub>O, DMAP, THF

- 22) TMSCH<sub>2</sub>CH<sub>2</sub>SH, DBU, THF
- 23) PPTS (5 mol %), CH<sub>2</sub>Cl<sub>2</sub>, MeOH
- 24) methanesulfonyl chloride, Et<sub>3</sub>N

- 25) TMSOTf, 2,6-lutidine, CH<sub>2</sub>Cl<sub>2</sub>
- 26) [MeSSMe<sub>2</sub>]BF<sub>4</sub>, MeSSMe, MeCN, THF, 0 °C
- 27) HF·pyridine, pyridine, MeCN, THF,