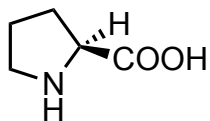
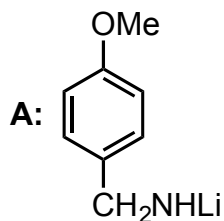


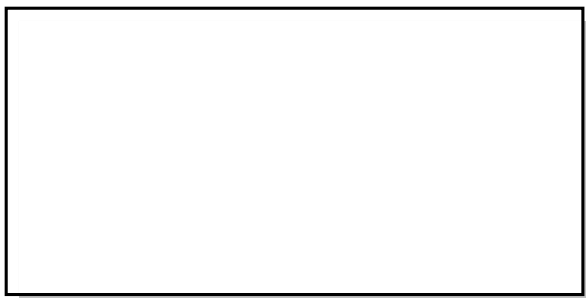
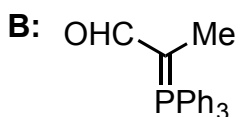
Stereocontrolled total synthesis of (+)-paraherquamide B  
Timothy D. Cushing, Juan F. Sanz-Cervera, and Robert M. Williams  
*J. Am. Chem. Soc.* **1993**, 115, 20, 9323-932.



- 1) pivalaldehyde
- 2) LDA, allyl bromide
- 3) **A**
- 4) BrCH<sub>2</sub>OBr, K<sub>2</sub>CO<sub>3</sub>
- 5) NaOH

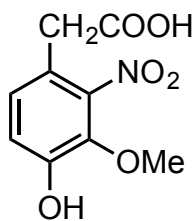


- 6) O<sub>3</sub>, Me<sub>2</sub>S
- 7) **B**
- 8) CAN
- 9) NaBH<sub>4</sub>
- 10) TBDPSCI

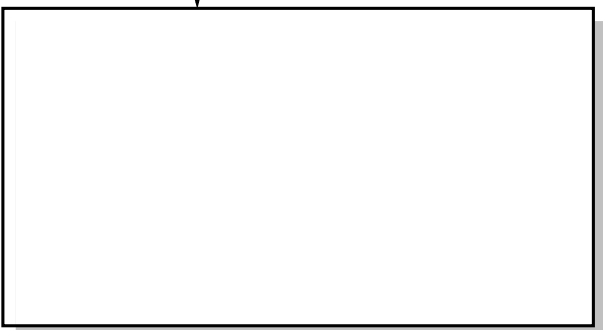


- 11) nBuLi, MeOCOCI
- 12) LHMDs, MeOCOCI

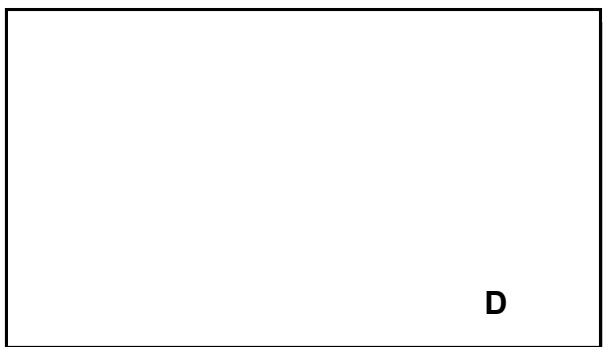




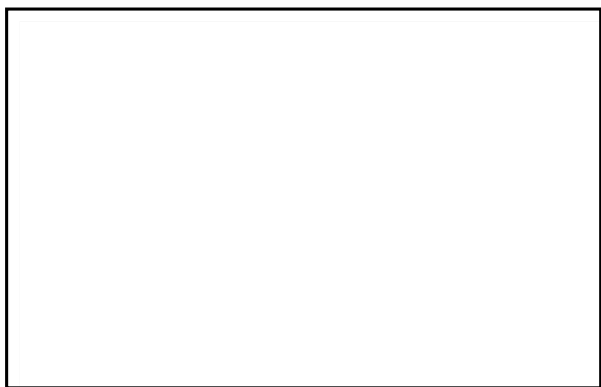
- 13) H<sub>2</sub>, Pd/C, AcOH  
14) BBr<sub>3</sub>  
15) prenylbromide, K<sub>2</sub>CO<sub>3</sub>  
16) m-CPBA



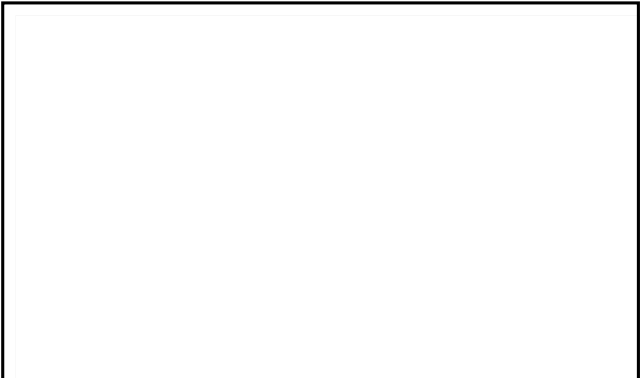
- 17) SnCl<sub>2</sub>  
18) NaBH<sub>4</sub>, BF<sub>3</sub>-OEt<sub>2</sub>  
19) TBDMSCl, imidazole  
20) CH<sub>2</sub>O, HNMe<sub>2</sub>, AcOH



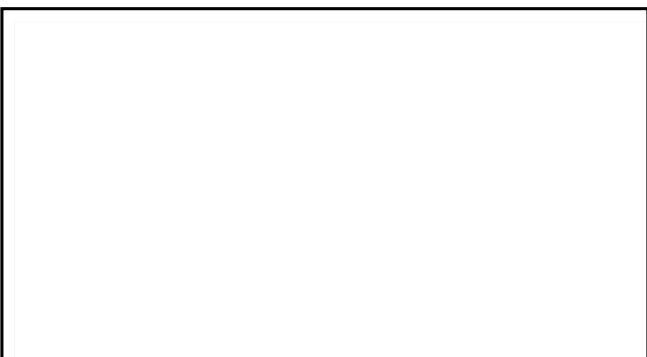
- 21) **C+D**, nBu<sub>3</sub>P  
22) LiCl, HMPA, H<sub>2</sub>O  
23) MeO<sub>3</sub>BF<sub>4</sub>, Na<sub>2</sub>CO<sub>3</sub>  
24) (Boc)<sub>2</sub>O, DMAP, Et<sub>3</sub>N  
25) TBAF



26) NCS, Me<sub>2</sub>S  
27) TBDMSOTf, lutidine  
28) NaH  
29) PdCl<sub>2</sub>, AgBF<sub>4</sub>



30) NaBH<sub>4</sub>  
31) AlH<sub>3</sub>-ME<sub>2</sub>NEt, Et<sub>3</sub>Al, NaCNBH<sub>3</sub>  
32) NaH, MeI  
33) TFA  
34) t-BuOCl, pyridine  
35) THF, H<sub>2</sub>O, TsOH



36) (PhO)<sub>3</sub>PMel, DMPU

