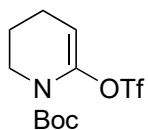
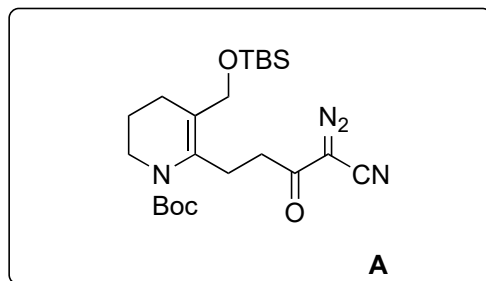


## Total Synthesis of Lyconesidine B

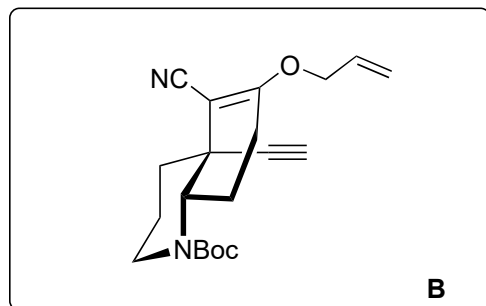
T. Kurose, C. Tsukano, T. Nanjo, Y. Takemoto, *Org. Lett.* **2021**, *23*, 676–681.



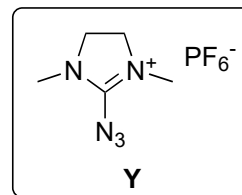
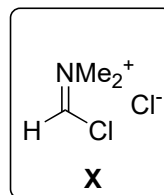
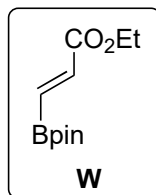
1-7



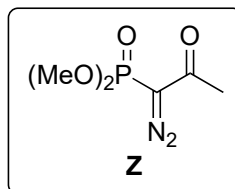
8-12



- 1) **W**, Pd(OAc)<sub>2</sub>, KF, JohnPhos
- 2) Cu(OAc)<sub>2</sub>·2H<sub>2</sub>O, PMHS, dppbe
- 3) **X**, then aq. NaOAc
- 4) NaBH<sub>4</sub>
- 5) TBSCl, imH
- 6) LDA, MeCN
- 7) 4-Me-Morpholine, **Y**



- 8) Rh<sub>2</sub>(NHCOt-Bu)<sub>4</sub>, then NaBH(O<sub>2</sub>CCF<sub>3</sub>)<sub>3</sub>
- 9) allyl bromide, Cs<sub>2</sub>CO<sub>3</sub>
- 10) TBAF
- 11) TPAP, NMO
- 12) **Z**, K<sub>2</sub>CO<sub>3</sub>, MeOH

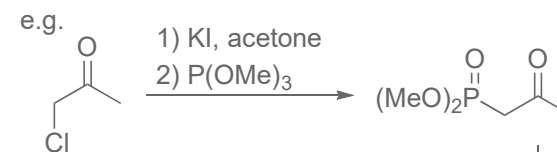


Name of **X**?

Vilsmeier reagent

Name of step 7? Mechanism?

Regitz-Diazo-transfer mechanism see below

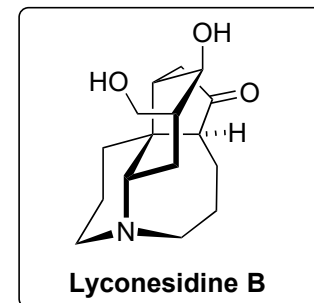


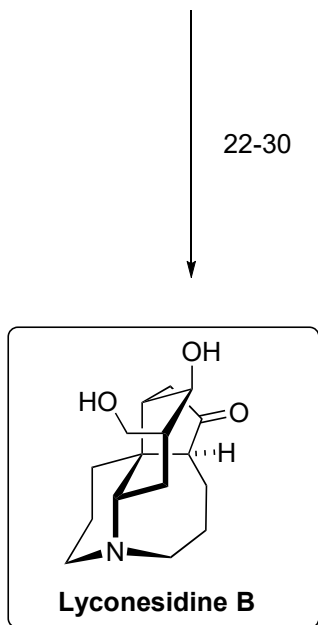
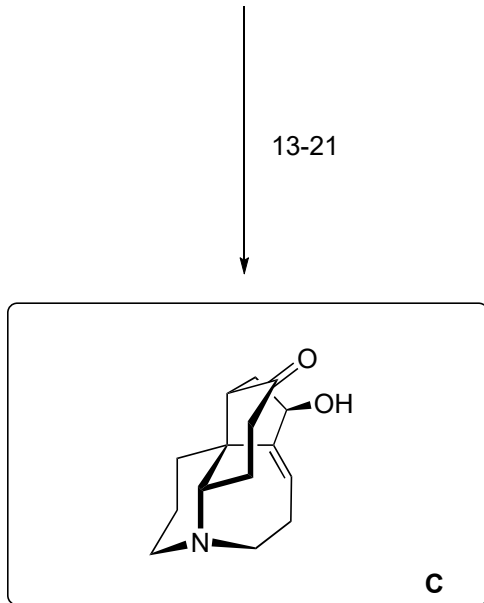
Name of **Z**? How is it prepared?

Ohira-Bestmann reagent

base,  
*p*-ABSA

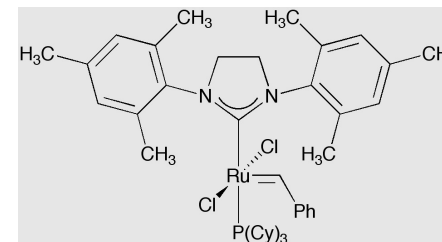
**Z**





- 13) heat, toluene
- 14) Li naphthalenide
- 15) TFA
- 16) crotyl bromide,  $K_2CO_3$
- 17) crotyl bromide, 60 °C
- 18) Grubbs II
- 19)  $Na_2S \cdot 9H_2O$
- 20)  $H_2O_2$ ,  $Cl_3CCN$
- 21)  $H_2$ , Pd/C

- 22) TESOTf, 2,6-lutidine
- 23)  $H_2$ , Pd/C
- 24) TMSOTf, 2,6-lutidine
- 25)  $(CHO)_n$ ,  $Sc(OTf)_3$
- 26)  $TsOH \cdot H_2O$
- 27) TESOTf, 2,6-lutidine
- 28)  $NaBH(OAc)_3$ , AcOH
- 29) AZADOL, CuCl, bpy, DMAP
- 30)  $TsOH \cdot H_2O$



Structure of Grubbs II?

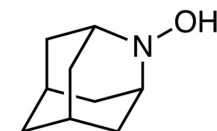
Name of step 20?

Payne-epoxidation

Name of step 25?

Mukaiyama-aldol

Structure of AZADOL?



step 7:

