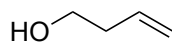


# Total Synthesis of (-)-Allosecurinine

Andrew B. Leduc, Michael A. Kerr

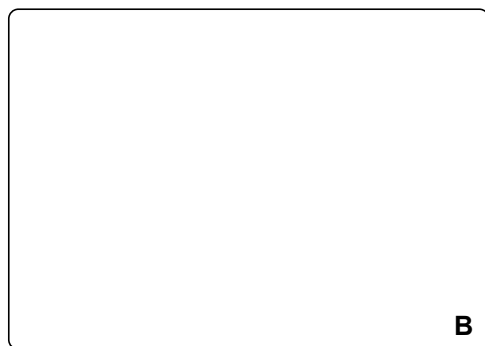
*Angew. Chem. Int. Ed.* **2008**, *47*, 7945–7948.



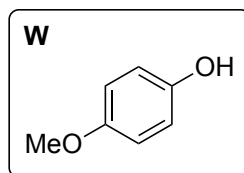
1 – 7



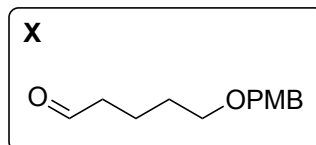
8 – 12



- 1) **W**, PPh<sub>3</sub>, DIAD
- 2) K<sub>3</sub>[Fe(CN)<sub>6</sub>], K<sub>2</sub>CO<sub>3</sub>, (DHQD)<sub>2</sub>PHAL, K<sub>2</sub>OsO<sub>2</sub>(OH)<sub>4</sub>
- 3) MsCl (2.5 equiv.), NEt<sub>3</sub>
- 4) dimethylmalonate, NaH
- 5) CAN
- 6) TsCl, DABCO
- 7) *N*-hydroxyphthalimide, DBU

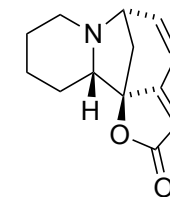


- 8) N<sub>2</sub>H<sub>4</sub>·H<sub>2</sub>O
- 9) Yb(OTf)<sub>3</sub>, then **X**
- 10) Pd(OH)<sub>2</sub>, H<sub>2</sub>, Boc<sub>2</sub>O
- 11) NaCN (5 equiv.), wet DMSO, 140 °C (mixture obtained)
- 12) TMSCHN<sub>2</sub>



2) Name the reaction.

9) Come up with a mechanism.

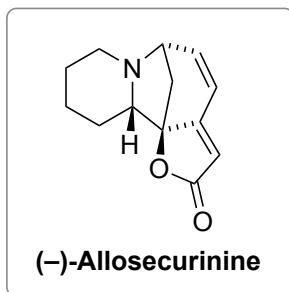


**(-)-Allosecurinine**

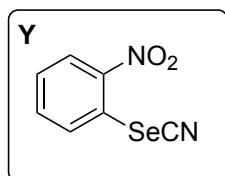
13 – 18



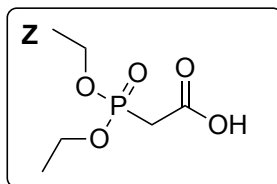
19 – 24



- 13)  $\text{PBU}_3$ , **Y** then  $\text{H}_2\text{O}_2$
- 14)  $\text{KHMDS}$  then Davis oxaziridine
- 15)  $\text{CaCl}_2$ ,  $\text{NaBH}_4$
- 16) IBX, DMSO
- 17) vinylmagnesium bromide
- 18) IBX, DMSO



- 19) DCC, **Z**
- 20)  $\text{LiBr}$ ,  $\text{NEt}_3$
- 21) Hoveyda-Grubbs II
- 22) DDQ
- 23)  $\text{MsCl}$ ,  $\text{NEt}_3$
- 24) TFA then silica gel



13) Name the reaction.

21) Structure of HG II?