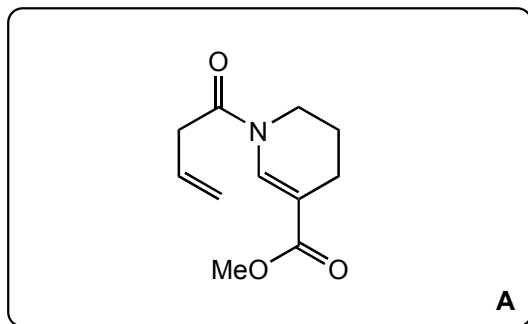


Synthesis of Aspidodispermine via Pericyclic Framework Reconstruction

Reuß, F.; Heretsch, P. *Org. Lett.* **2020**, *22*, 3956–3959.



1–3

- 1) Allyl-OH, CuI, **M711**
- 2) hv, acetone
- 3) TFA



4–7

- 4) NaBH₄, NaOMe
- 5) MsCl, Et₃N (excess)
- 6) Na₂S (1 equiv)
- 7) *m*-CPBA (excess)



Structure of Umicore catalyst **M711**?

(Draw HG-II, change the NHC to SIPr and add a trifluoroacetamide-group *para* to the oxygen bridge)

Step 2: Classify this reaction. Role of acetone?

8-10



- 8) SO_2Cl_2 , pyridine
- 9) $\text{KO}t\text{-Bu}$
- 10) PhH, 110 °C

Step 9: Name the reaction and come up with a mechanism.
Step 10: Classify the reaction.

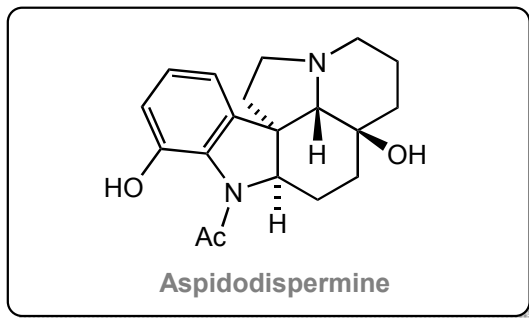
11-14



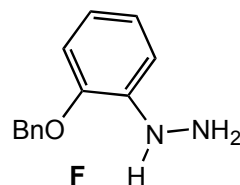
- 11) O_2 , TPP, hv *then* Et_3N
- 12) Ac_2O , Et_3N , DMAP
- 13) Lawesson's reagent
- 14) NaBH_4 , NiCl_2

Step 11: Classify this reaction. What is TPP?
Alternatives for TPP?
Step 13: Structure of Lawesson's reagent? Alternative?

15-19



- 15) Hydrazine **F** *then* AcOH
- 16) NaBH_4
- 17) Ac_2O , pyridine
- 18) DIBAL-H
- 19) H_2 , Pd/C



Step 15: Name this reaction. Come up with two other methods to prepare the product of this step.