


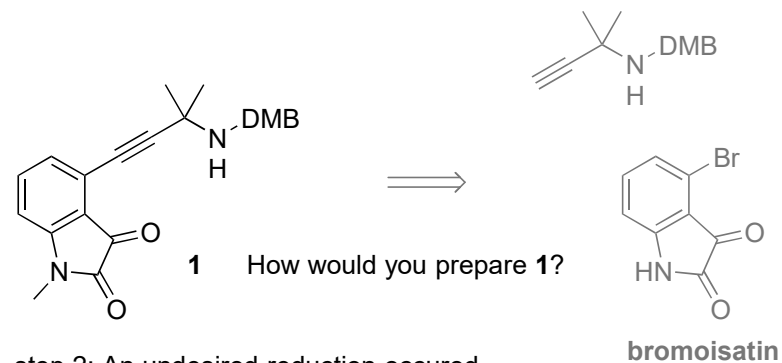
## Total Synthesis of (±)-Aspergilline A

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- 1)  $i\text{-Pr}_2\text{NEt}$  (excess),  $\text{CH}_2\text{Cl}_2$ ,  $-78^\circ\text{C}$ , 1h then **1**
- 2)  $\text{H}_2$  (30 bar), Raney Ni<sup>®</sup>, MeOH
- 3) DMP

- 4) TMSOTf, Et<sub>3</sub>N, CH<sub>2</sub>Cl<sub>2</sub>, 0 ° to 35 °C then TiCl (0.25 equiv),  $-78^\circ\text{C}$  to 23 °C
- 5) DDQ
- 6) MeOTf, CH<sub>2</sub>Cl<sub>2</sub>
- 7) , CH<sub>3</sub>CN, 50 °C.

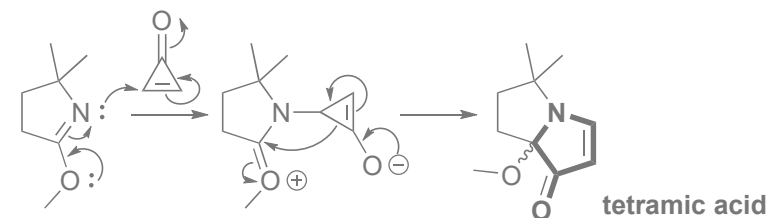


step 2: An undesired reduction occurred.

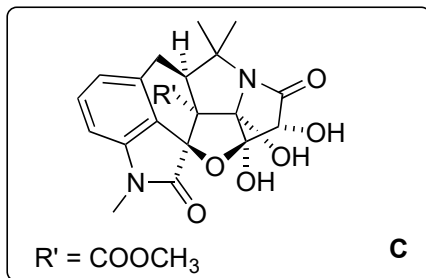
step 4: Name of this transformation? **intramol. Mukaiyama-Aldol**

step 7: Think about a mechanism.

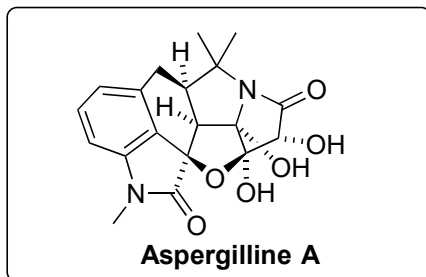
What is the name of the formed motif?



8-10



11-15



- 8) Oxone<sup>®</sup>, CH<sub>3</sub>CN/H<sub>2</sub>O, 0 °C
- 9) PIFA, CH<sub>2</sub>Cl<sub>2</sub>, RT
- 10) TFA/H<sub>2</sub>O (3/1), 55 °C

- 11) NaSePh, 18-C-6. THF, 0 °C
- 12) Mg(ClO<sub>4</sub>)<sub>2</sub>, Ac<sub>2</sub>O (large excess)
- 13) HgO, I<sub>2</sub>, h·ν, CH<sub>2</sub>Cl<sub>2</sub>, 115 °C
- 14) Bu<sub>3</sub>SnH, AIBN, PhMe, 115 °C
- 15) K<sub>2</sub>CO<sub>3</sub>, MeOH

step 8: Mixture of epimers gave onyl one diastereomer.

step 13: Name this transformation.

**Hundsdieker decarbonylative iodination**