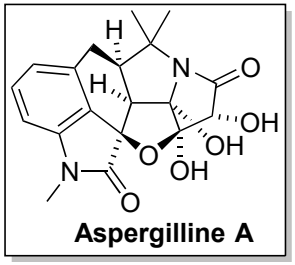

Total Synthesis of (±)-Aspergilline A

Mina C. Nakhla and John L. Wood

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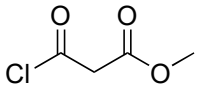


1–3

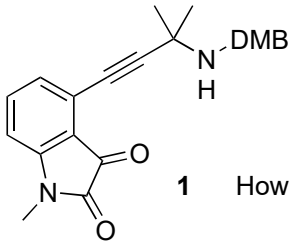
A

4–7

B

1) i-Pr_2NEt (excess),
CH_2Cl_2, –78 °C, 1h *then* **1**
2) H_2 (30 bar), Raney Ni®, MeOH
3) DMP

4) TMSOTf, Et_3N, CH_2Cl_2, 0 ° to 35 °C
then $TiCl_4$ (0.25 equiv), –78 °C to 23 °C
5) DDQ
6) MeOTf, CH_2Cl_2
7) 
, CH_3CN, 50 °C.



1 How would you prepare **1**?

step 2: An undesired reduction occured.

step 4: Name of this transformation?

step 7: Think about a mechanism.
What is the name of the formed motif?

8–10

8) Oxone®, CH_3CN/H_2O, 0 °C
9) PIFA, CH_2Cl_2, RT
10) TFA/H_2O (3/1), 55 °C

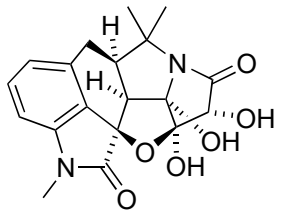
step 8: Mixture of epimers gave onyl one diastereomer.

C

11–15

11) NaSePh, 18-C-6. THF, 0 °C
12) $Mg(ClO_4)_2$, Ac_2O (large excess)
13) HgO, I_2, h·ν, CH_2Cl_2, 115 °C
14) Bu_3SnH, AIBN, PhMe, 115 °C
15) K_2CO_3, MeOH

step 13: Name this transformation.



Aspergilline A