**Total Synthesis of (-)-5-Deoxyenterocin and Attempted Late-Stage Functionalization Reactions**

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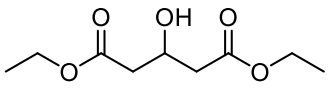
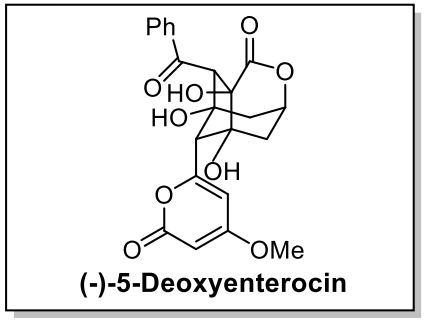


1, 2, 3

1) $LiAlH_4$ (2.54 eq.)
2) (-)-menthone (1.12 eq.), *p*TsOH (5mol%)
3) $(COCl)_2$ (1.11 equiv.), DMSO (2.20 eq.), $NEt_3$ (5.0 eq.)



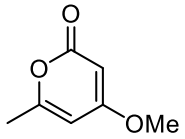
**(-)-5-Deoxyenterocin**

2) Why is the formation of the major isomer favored?
3) Name the Reaction draw a detailed Mechanism.

Just the major isomer of B was used for the following steps

dr 65:26

**B**



4, 5, 6, 7, 8

4) LiHMDS, then **B**
5) HCl (aq.), $SiO_2$
6) TBSCl (9.0 eq.), Im (15.0 eq.), DMAP (30 mol%)
7) PPTS (50 mol%)
8) $(COCl)_2$ (1.13 equiv.), DMSO (2.20 eq.), $NEt_3$ (5.0 eq.)

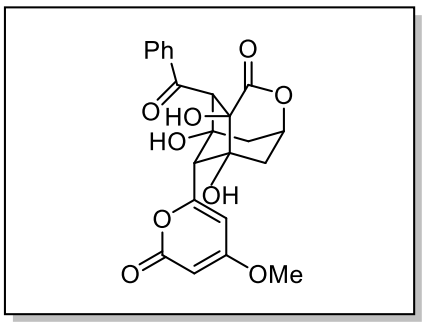
6) Hint all free alcohols are protected

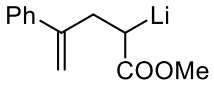
C

9, 10, 11,
12, 13, 14, 15

D

16




9) 

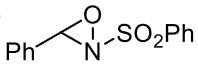

**1.**, 4.0 eq.

10) $OsO_4$ (2 mol%), 2,6-lutidine (2.0 eq.), $NaIO_4$ (4.0 eq.)

11) DMP (2.0 eq.), $NaHCO_3$ (4.0 eq.)

12) HF·pyr (excess)

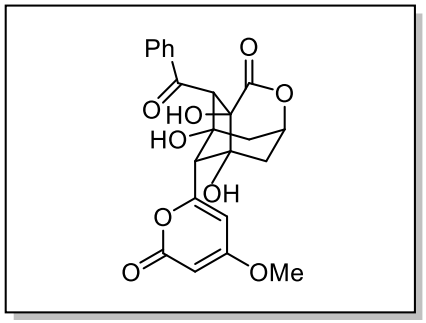
13) NaOH

14) 


**2.**, 2.0 eq.

15) DMP (1.25 eq.), $NaHCO_3$ (2.5 eq.)

16) $K_3PO_4$




Draw the structure of DMP

12) Hint a first undesired 6-membered ring is formed

13) Hint the first 6 memberd ring is opened and transformed into a lactone

14) Draw a Mechanism, Name the reagent **2.**

16) Hint 2 deprotonations occur.