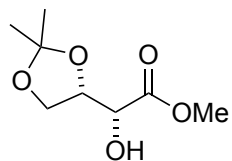
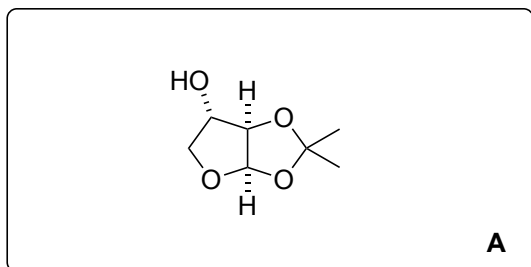


## Total synthesis of natural (-)-echinosporin. Determination of the absolute configuration

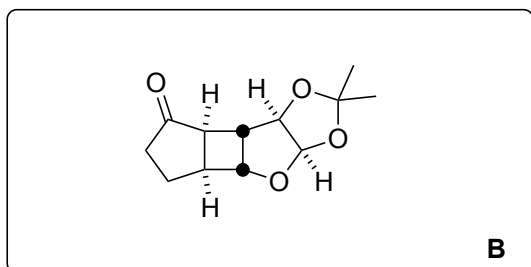
A. B. Smith III, G. A. Sulikowski, K. Fujimoto *J. Am. Chem. Soc.*, **1989**, *111* (20), 8039–8041



1-4

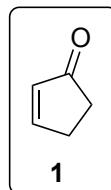


5-8

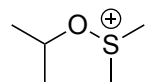


- 1) DHP, PPTS
- 2) DIBAL (1 equiv.)
- 3) PPTS, MeOH
- 4) H<sub>2</sub>SO<sub>4</sub>, acetone

- 5) (COCl)<sub>2</sub>, DMSO, Et<sub>3</sub>N
- 6) TsNHNH<sub>2</sub>
- 7) Na, ethylene glycol, 135 °C
- 8) **1**, *hν*

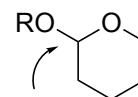


- 5) Swern Oxidation
- Corey Kim Oxidation: NCS, DMS
- Pfitzner-Moffatt-Oxidation: DCC, DMSO
- Parikh-Doering Oxidation: SO<sub>3</sub> • py, DMSO
- Albright-Goldman-Oxidation: Ac<sub>2</sub>O, DMSO
- Albright-Onodera Oxidation: P<sub>2</sub>O<sub>5</sub>, DMSO
- Omura-Sharma-Swern Oxidation: TFAA, DMSO



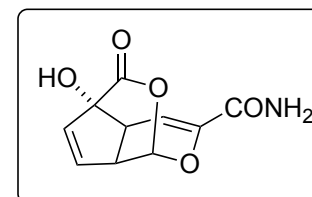
same intermediate  
activated DMSO

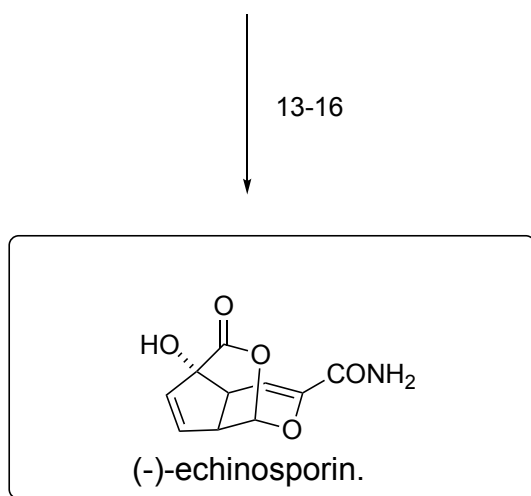
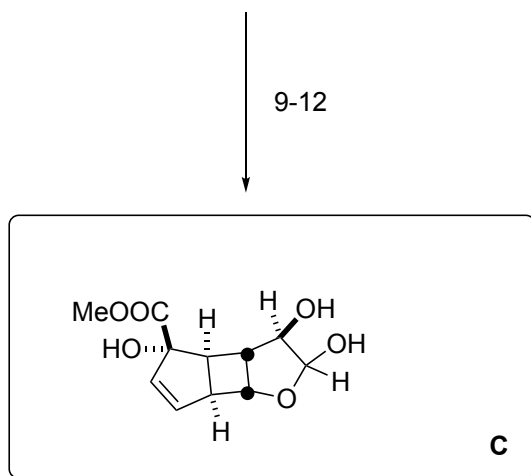
- 1) Name the disadvantage of DHP



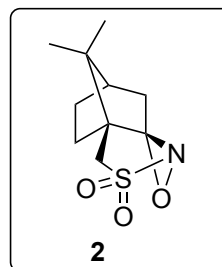
new stereocenter  
diastereomers

- 5) Name the reaction in 5, Name 3 alternative name reactions, which include the same reactive intermediate
- 6/7) Name the reactionsequence 6 and 7
- Bamford Stevens reaction





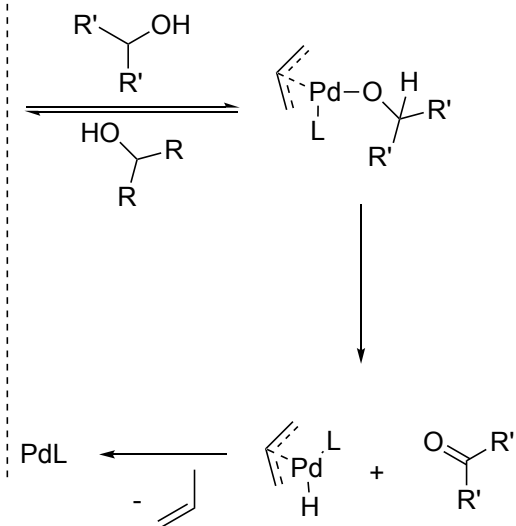
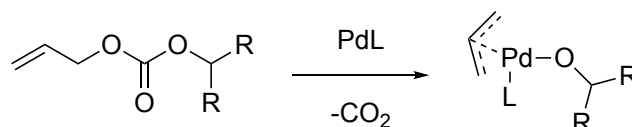
- 9) LDA, Tf<sub>2</sub>NH  
 10) Pd(OAc)<sub>2</sub>, PPh<sub>3</sub>, Et<sub>3</sub>N, CO, MeOH  
 11) KHMDS, HMPA, **2**  
 12) H<sup>+</sup> resin, 50% aq. MeCN

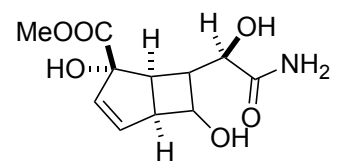


- 13) Pd<sub>2</sub>(dba)<sub>3</sub>, (Allyl-O)<sub>2</sub>CO  
 14) NH<sub>4</sub>OH  
 15) Parikh-Doering Oxidation  
 16) 3.6 N HCl, 2 days  
 17) Bu<sub>3</sub>P, DEAD

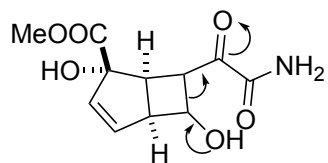
13) provide a Mechanism for step 13

15) Name the conditions for Parikh-Doering Oxidation  
 Hint: step 15 include a further reaction  
 SO<sub>3</sub> • py, DMSO

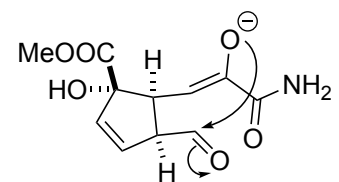




Parik-Doering Oxidation



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