

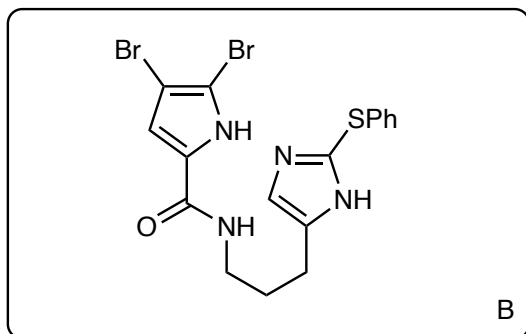
Total Syntheses of Dibromophakellstatin and Dibromoagelaspongin

Feldman, K.S.; Skoumbourdis, A. P.; *Org. Lett.* **2005**, *7*, 929–931.

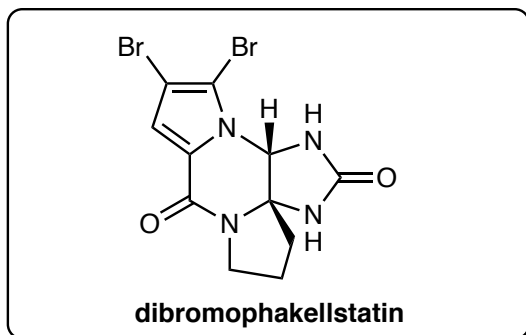
Feldman, K. S.; Fodor, M. D.; *J. Am. Chem. Soc.* **2008**, *130*, 14964–14965.

imidazole

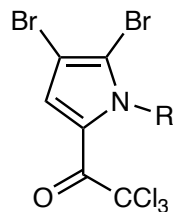
1–6



7–8



- 1) $\text{Me}_2\text{NSO}_2\text{Cl}$
- 2) *n*-BuLi then PhSPh
- 3) *n*-BuLi then 3-chloro-1-iodopropane
- 4) potassium phthalimide
- 5) HBr
- 6) **1**, Na_2CO_3



- 7) $\text{PhI}(\text{CN})\text{OTf}$, $\text{EtN}(\textit{i}\text{-Pr})_2$
- 8) CAN, H_2O

hint for Step 5: Global deprotection

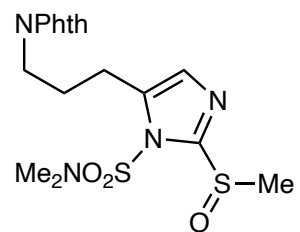
Step 7: Name the reagent and propose a mechanism?

Stang reagent, mechanism see below

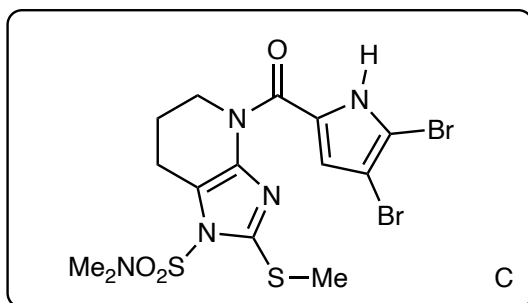
J. Am. Chem. Soc. **1991**, *113*, 5870.

Classify the type of stereoselectivity you would expect to observe? How do the products relate to one another?

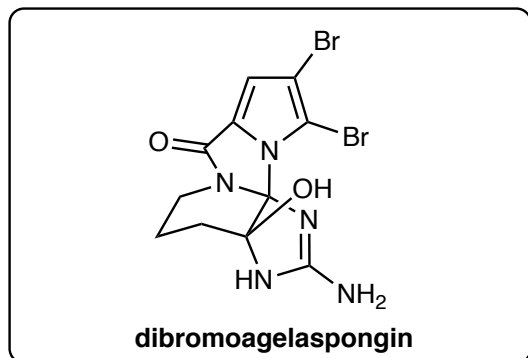
diastereoselective, racemates



9–12



13–18

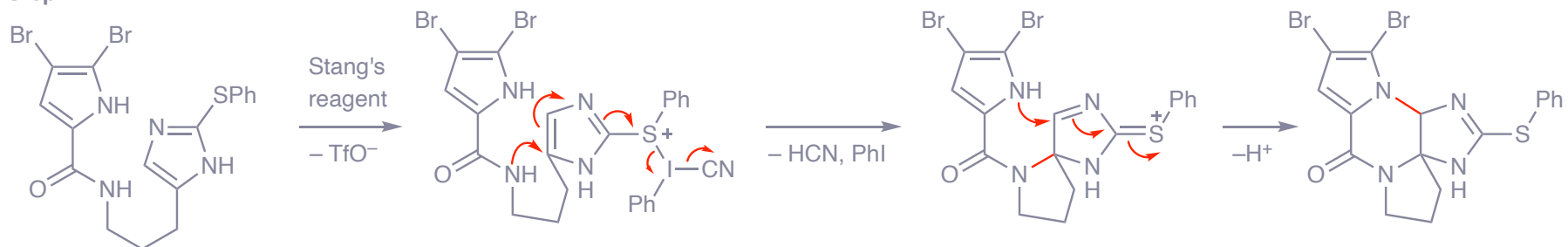
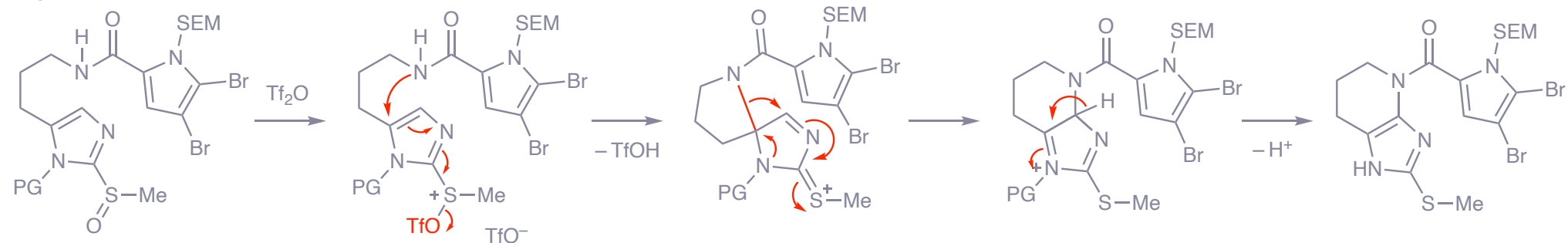
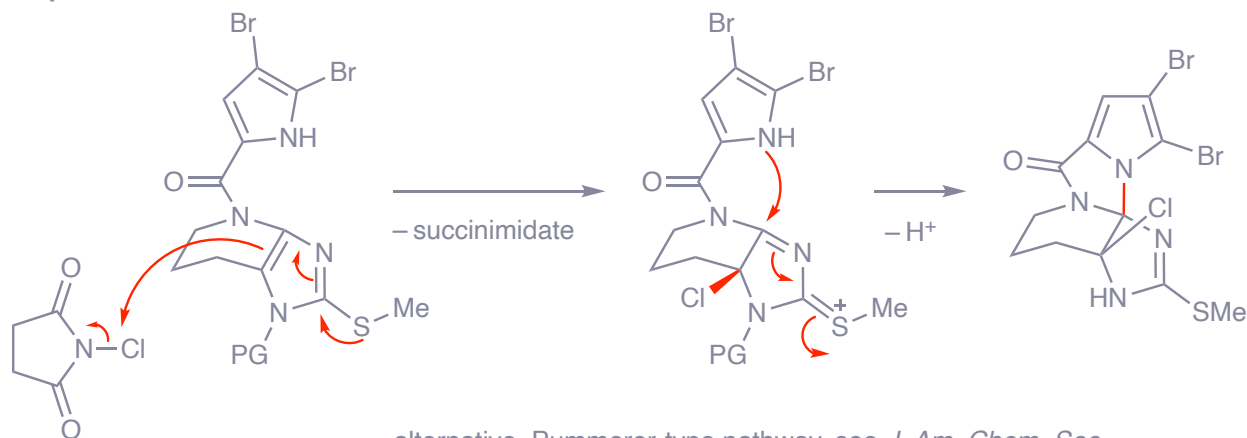


- 9) $\text{H}_2\text{N-NH}_2$
- 10) **2**, Na_2CO_3
- 11) Tf_2O , 2,6-lutidine
- 12) TBAF

- 13) NCS
- 14) HCl , MeOH , $80\text{ }^\circ\text{C}$
- 15) *m*-CPBA (1 equiv)
- 16) TMSN_3 , ZnI_2
- 17) H_2 , Pd/C then TFA
- 18) H_2O , $90\text{ }^\circ\text{C}$

Step 11: Propose a mechanism
(see below)

Step 13: Propose a mechanism
for the cyclization (see below)
hint for Step 14: Two transformations occur

Step 7:**Step 11:****Step 13:**

alternative, Pummerer-type pathway, see *J. Am. Chem. Soc.*