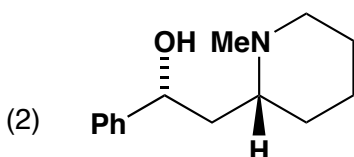
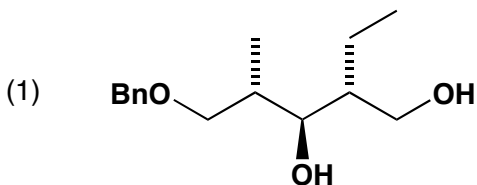


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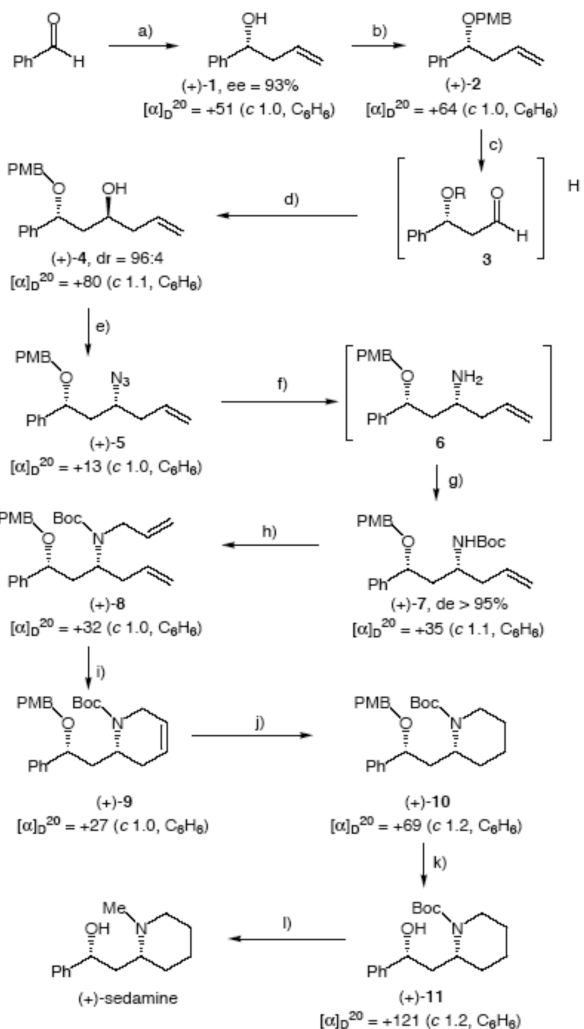
May 15, 2006
Prof. Rick L. Danheiser

Problems for Review Session and Workshop



(+)-sedamine

J. Cossy et al. *Synlett* **2000**, 1461

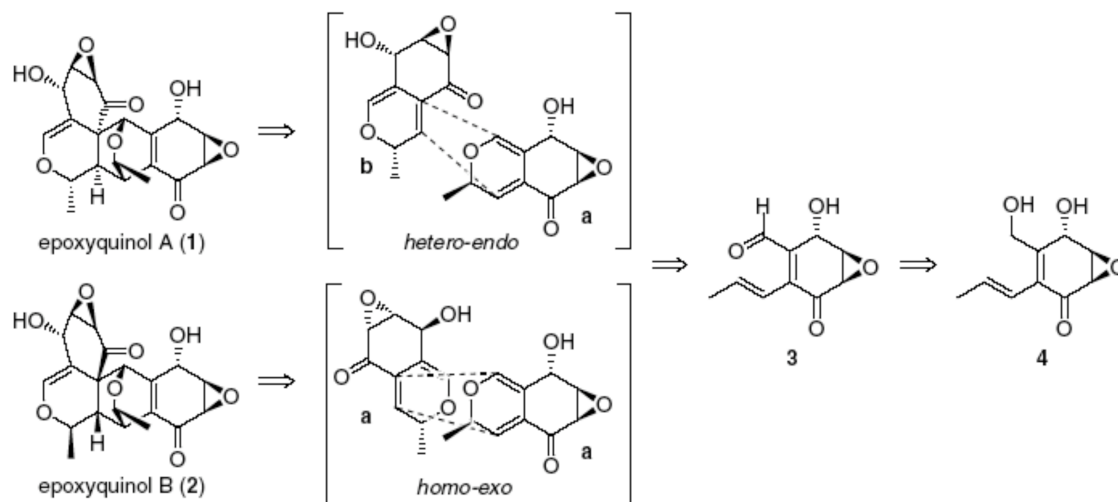


Synthesis of (+)-Sedamine

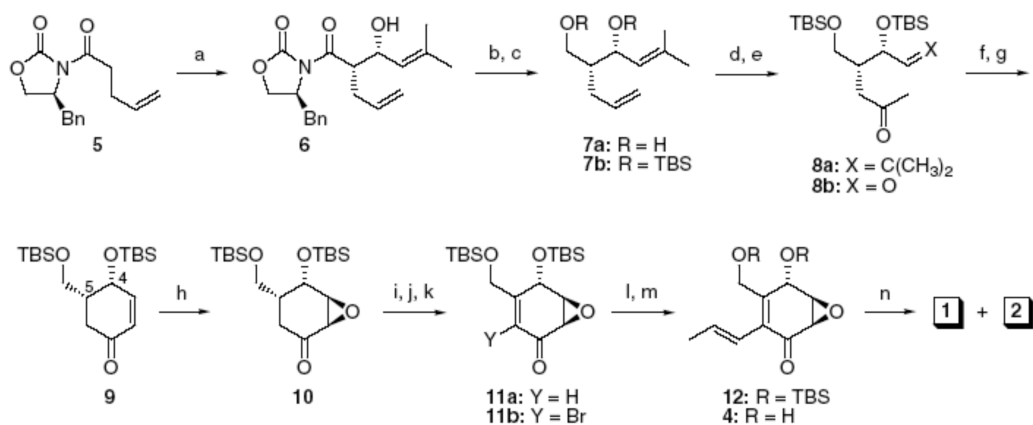
Reagents and conditions: a) *(S,S)*-I, Et₂O, -78 °C, 90%; b) *t*-BuOK, PMB-Br, THF, 96%; c) OsO₄/NaIO₄, THF/H₂O; d) *(R,R)*-I, Et₂O, -78 °C, 75% for the two steps; e) DEAD, PPh₃, DPPA, THF, 0 °C to r.t., 82%; f) LiAlH₄, Et₂O, 94%; g) Boc₂O, dioxane, 85%; h) allylbromide, KHMDS, THF/DMF = 3/1, 91%; i) "Ru", C₆H₆, 94%; j) H₂, PtO₂, AcOEt, 94%; k) DDQ, CH₂Cl₂/H₂O = 18/1, 75%; l) LiAlH₄, THF, reflux, 78%.

(3) Epoxyquinols A and B

Kuwahara, S.; Imada, S. *Tetrahedron Lett.* **2005**, 46, 547



Scheme 1. Structures of epoxyquinols A and B, and their proposed biosynthetic pathway.



Scheme 2. Reagents and conditions: (a) (*n*-Bu)₂BOTf, (*i*-Pr)₂NEt, Me₂C=CHCHO, CH₂Cl₂, -78 °C (87%); (b) LiBH₄, THF-MeOH, 0 °C to rt; (c) TBSCl, imidazole, DMF, 0 °C to rt; (d) PdCl₂, Cu(OAc)₂·H₂O, O₂, rt (93%, three steps); (e) O₃, MeOH-CH₂Cl₂, -78 °C, Me₂S (86%); (f) 6 M NaOH aq, ether, rt (70%); (g) MsCl, Et₃N, CH₂Cl₂, 0 °C to rt (93%); (h) TBHP, DBU, toluene, 0 °C to rt (quant); (i) LDA, PhSeCl, THF, -78 °C; (j) 30% H₂O₂, CH₂Cl₂, rt (63%, two steps); (k) Br₂, Et₃N, CH₂Cl₂, rt (93%); (l) (*E*)-MeCH=CHSn(*n*-Bu)₃, Pd₂(dba)₃, Ph₃As, toluene, reflux (96%); (m) HF·Py, THF, 0 °C to rt (88%); (n) TEMPO, CuCl, O₂, DMF, rt; neat, rt (46% for **1** and 20% for **2**).