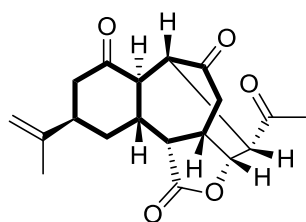


Enantioselective, convergent synthesis of the ineleganolide core by a tandem annulation cascade

Craig II, R. A.; Roizen, J. L.; Smith, R. C.; Jones, A. C.; Virgil, S. C.; Stoltz, B. M. *Chemical Science*, **2016**, ASAP

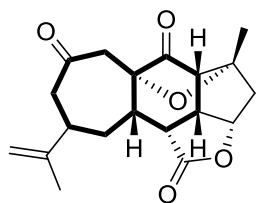
enantioselective and diastereoselective synthetic route to the tetracyclic core of ineleganolide **1** has been disclosed



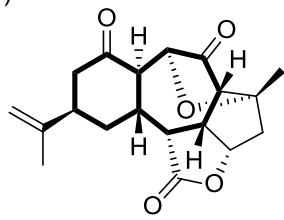
Horiolide (**3**)



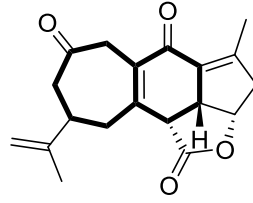
Kavaranolide (**4**)



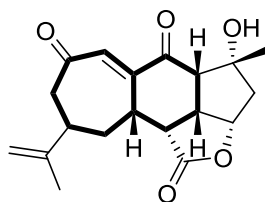
Sinulochmodin C (**2**)



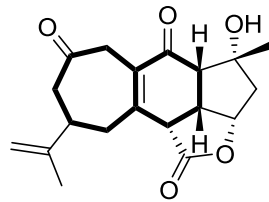
Ineleganolide (**1**)



Yonarolide (**5**)



Scabrolide B (**7**)



Scabrolide A (**6**)

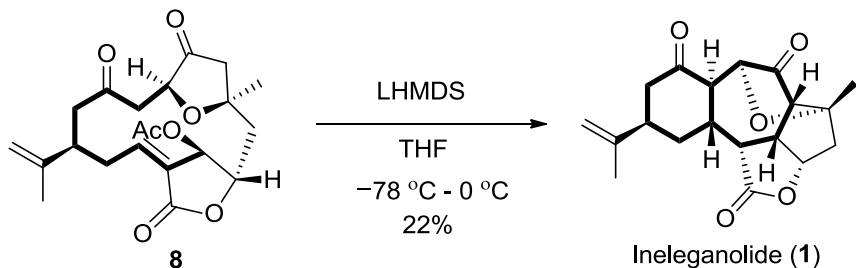
Ineleganolide **1** and sinulochmodin C (**2**) are members of a group of novel polycyclic norcembranoids

found exclusively in Taiwanese coral *Sinularia inelegans*

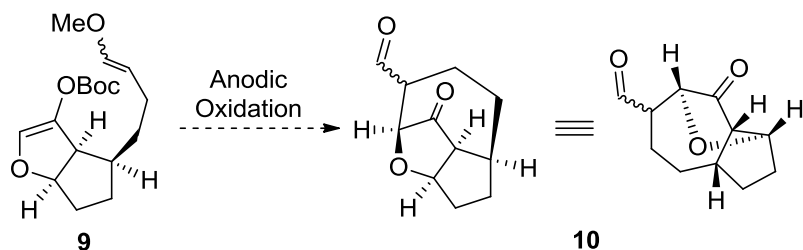
Ineleganolide **1** was first reported in 1999

Exhibit a wide range of biological activities, e.g., antimicrobial, anti-inflammatory and cytotoxicity

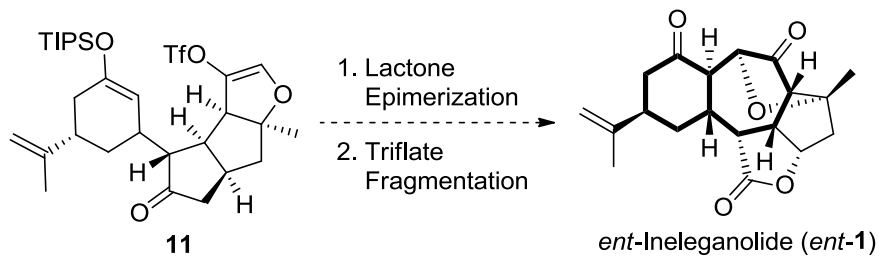
Previous synthetic attempts



Biomimetic Semisynthesis - Pattenden, 2011

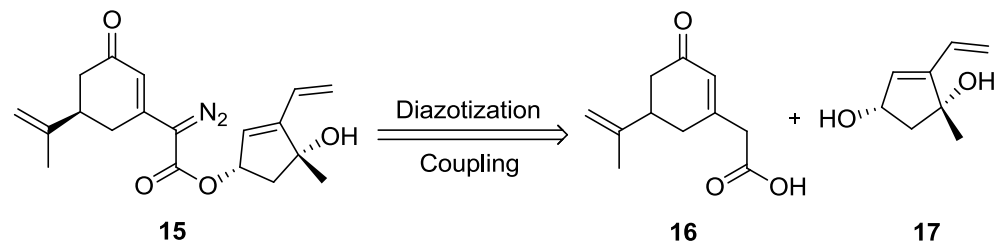
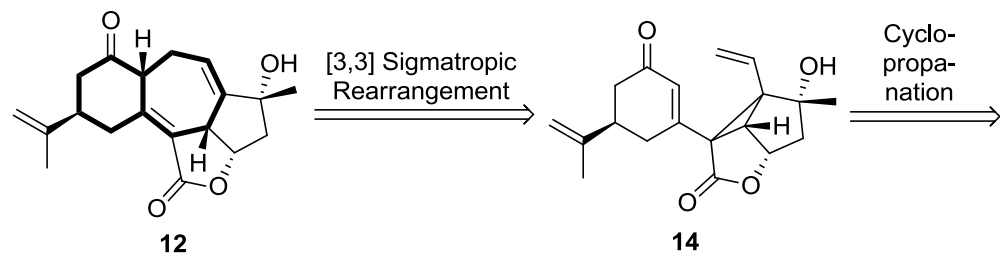
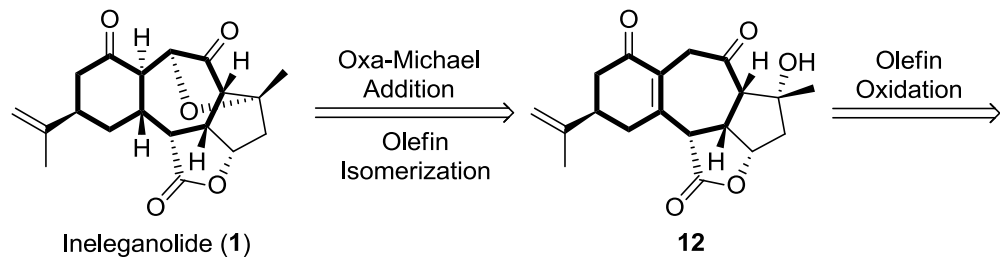


Attempted Total Synthesis - Moeller, 2009

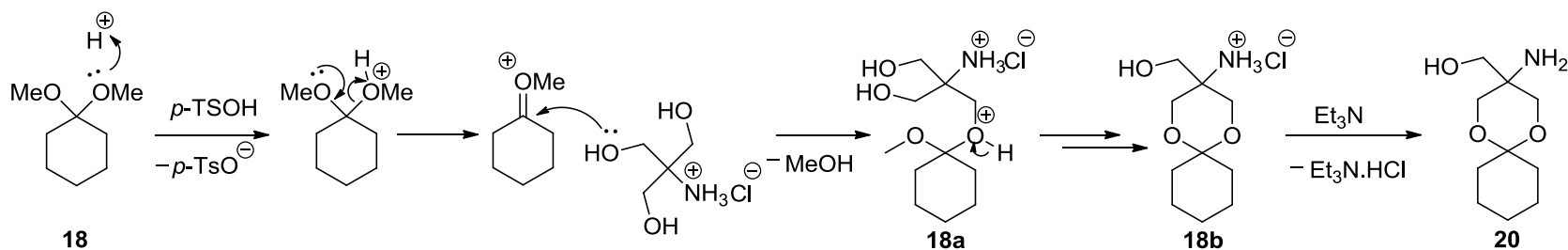
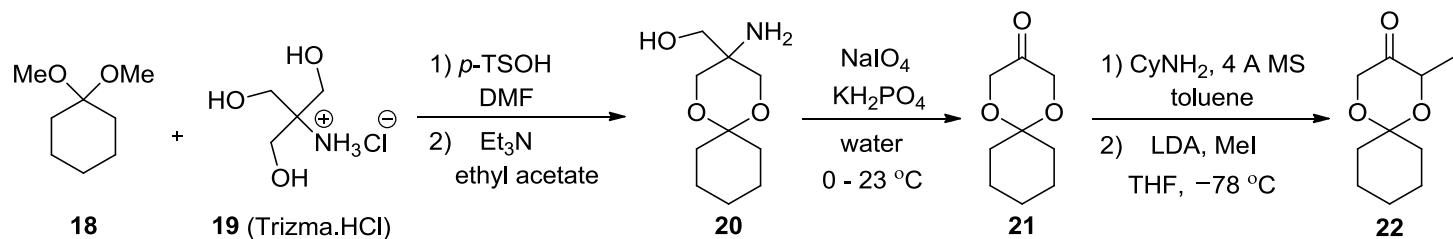


Attempted Total Synthesis - Vanderwal, 2016

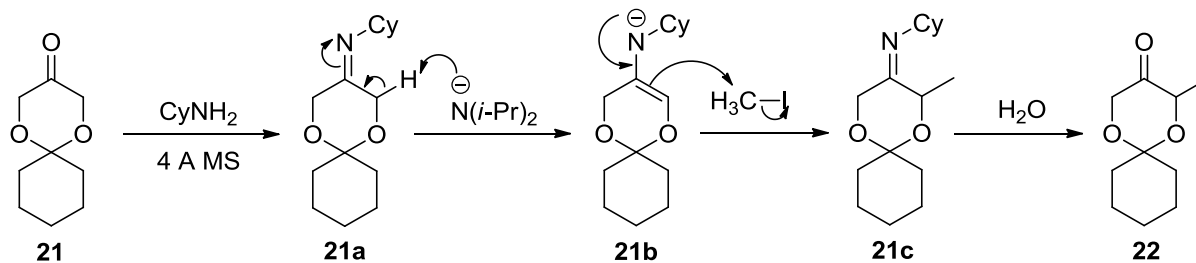
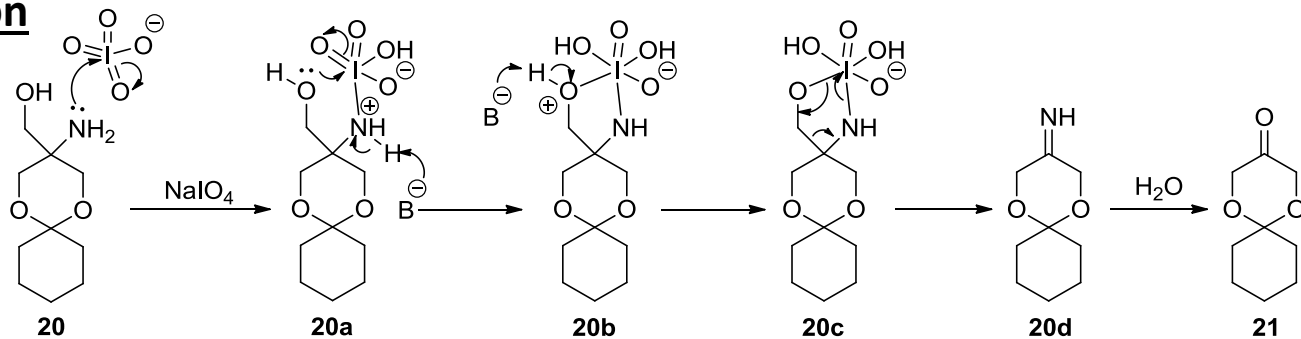
Retrosynthetic analysis



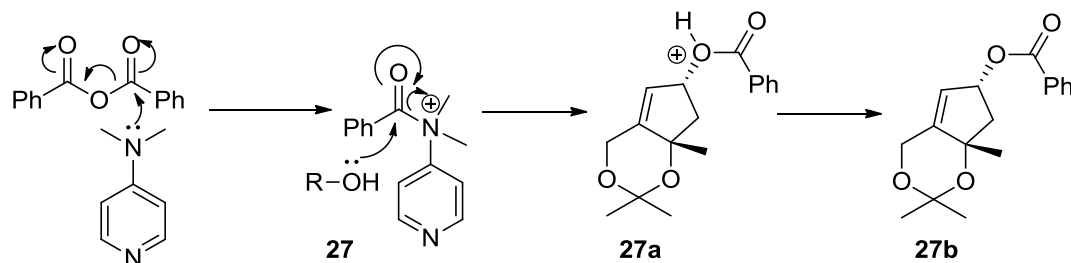
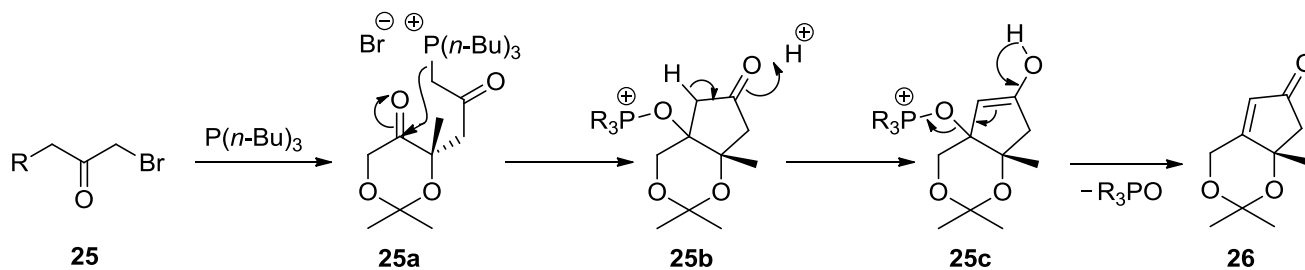
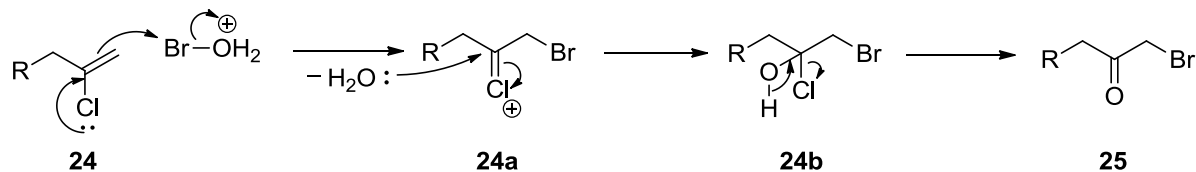
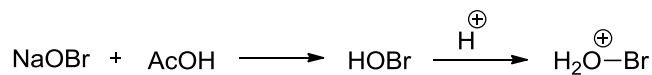
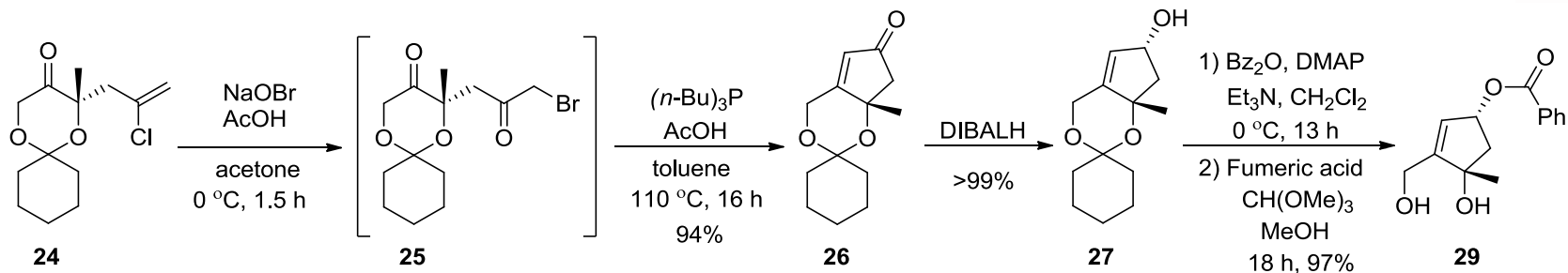
Synthesis of 1,3-Cis-cyclpentenediol **17** (15 Steps)



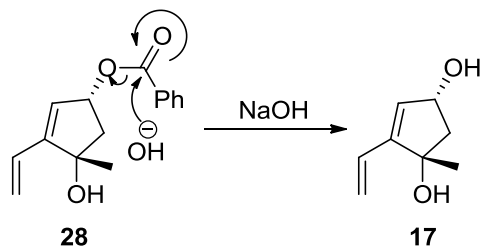
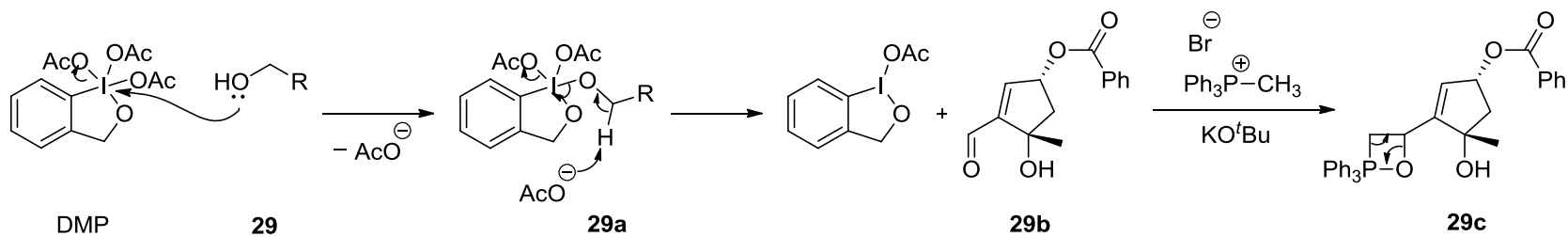
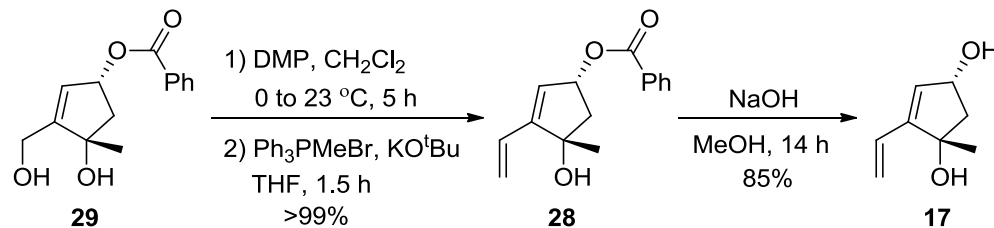
Oxidation



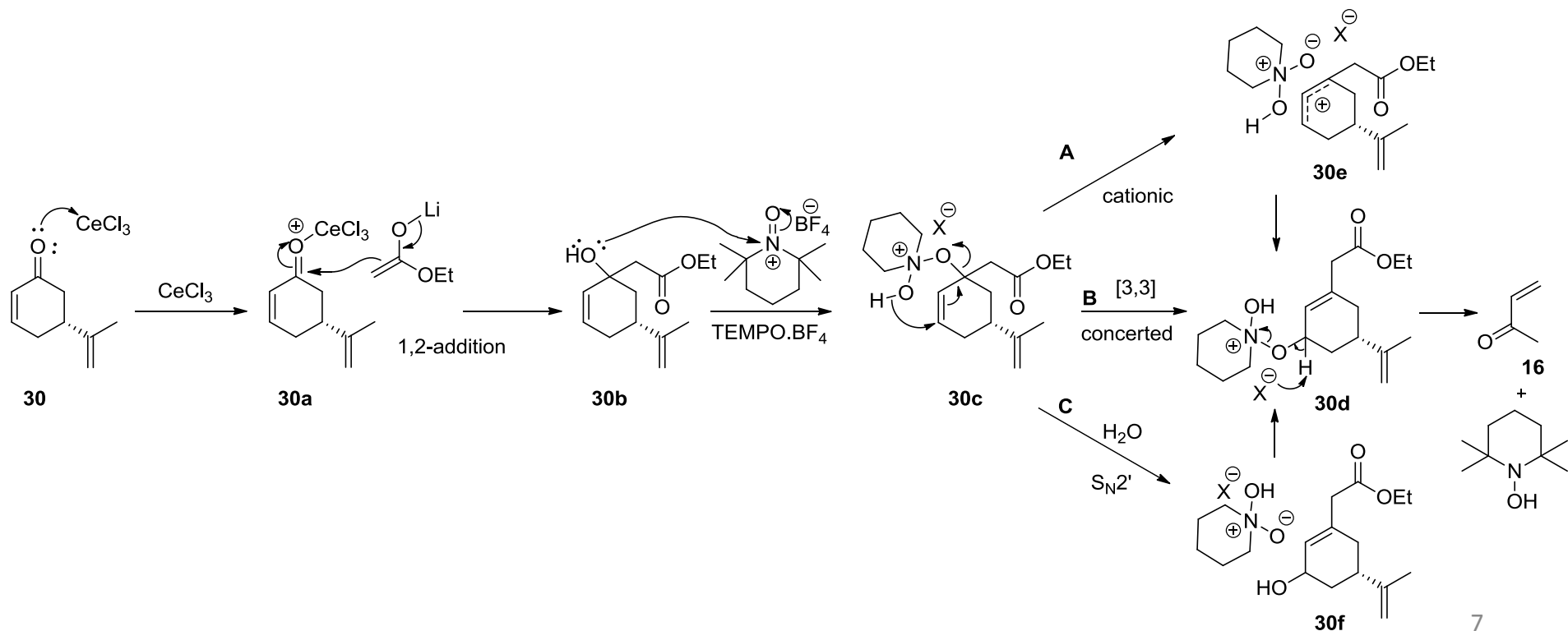
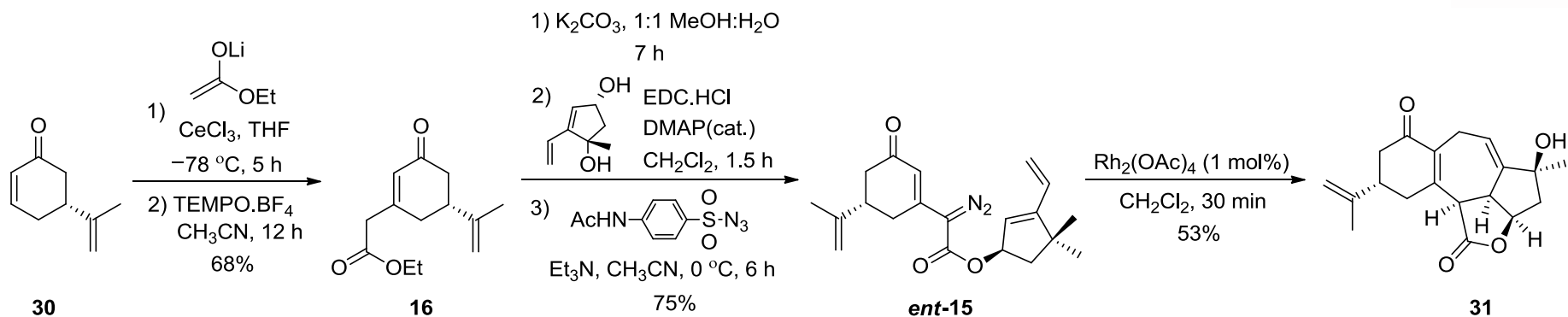
Synthesis of 1,3-Cis-cyclpentenediol **17** (15 Steps)



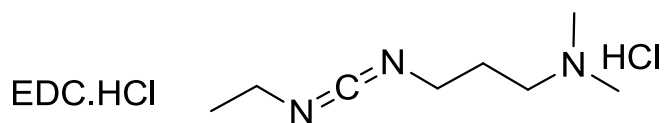
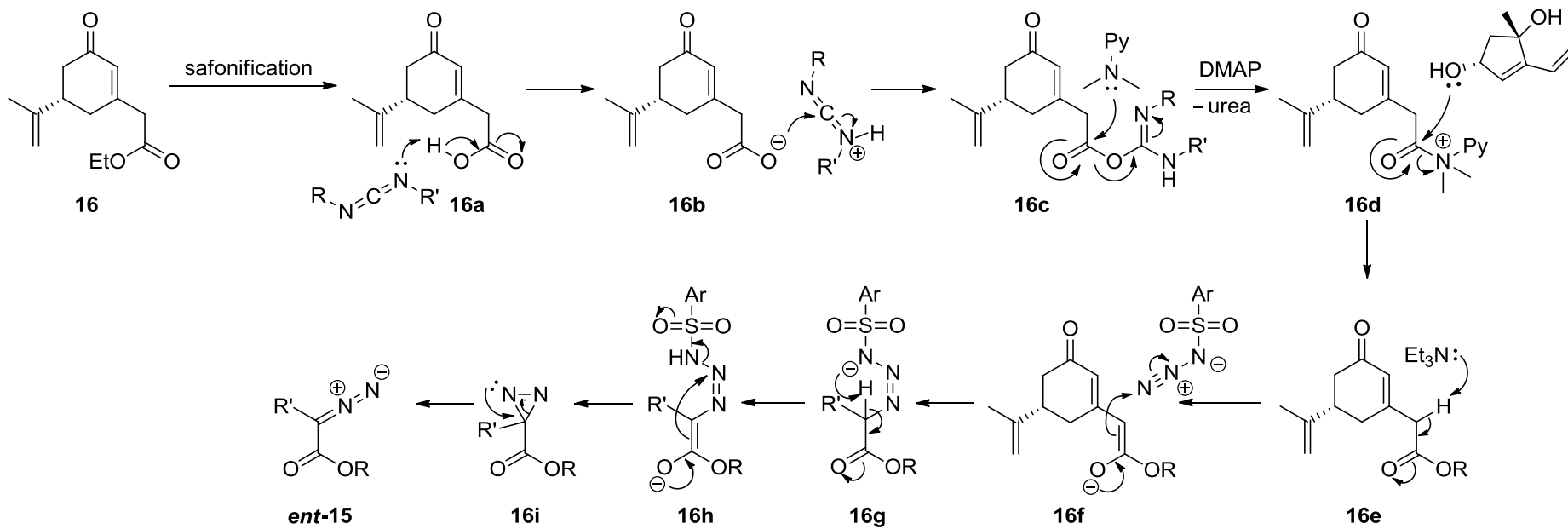
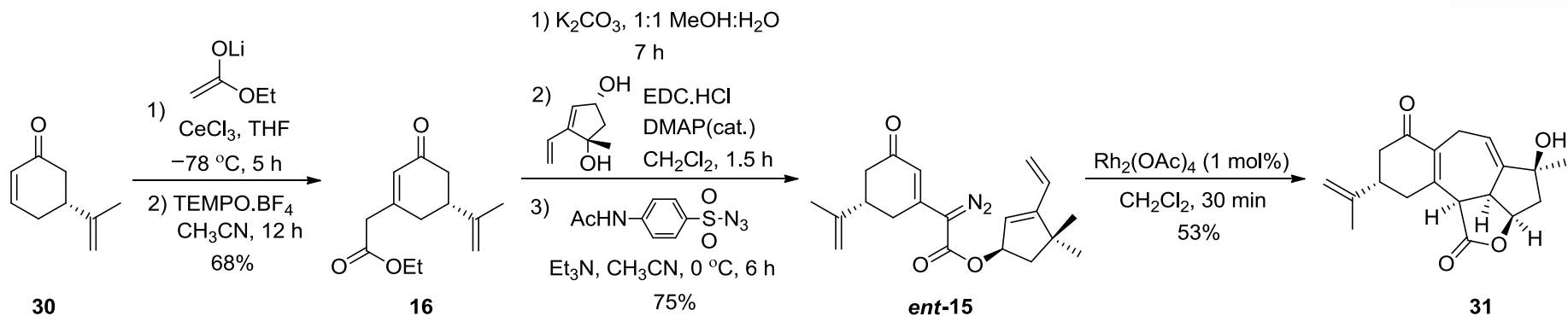
Synthesis of 1,3-Cis-cyclpentenediol **17** (15 Steps)



Tandem Cyclization Cascade to Form Carbocyclic Core **31**



Tandem Cyclization Cascade to Form Carbocyclic Core **31**



Tandem Cyclization Cascade to Form Carbocyclic Core **31**

