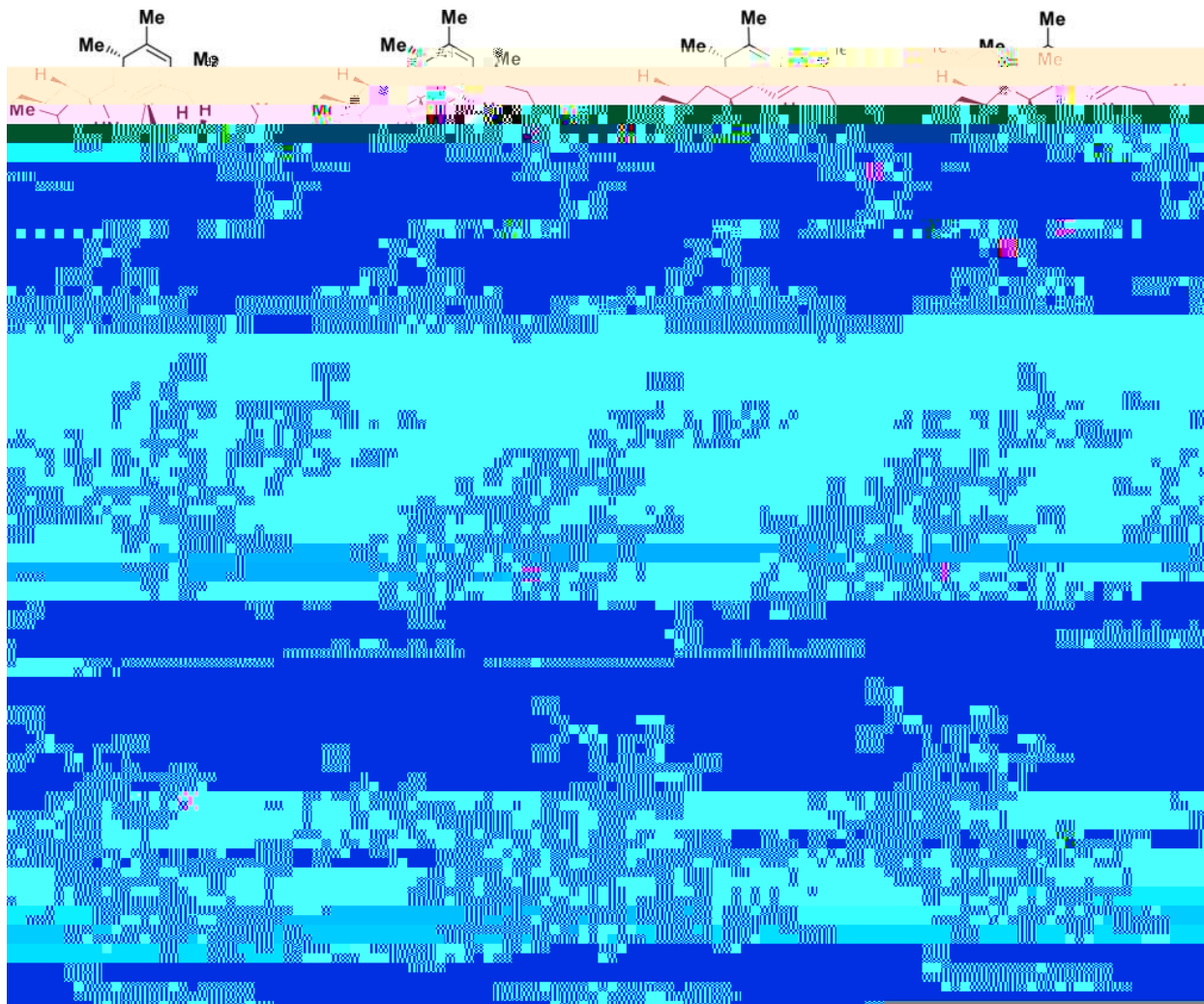


Total Syntheses of Asperchalasines A-E

Bao R. etc. *Angew. Chem. Int. Ed.* , 57, 14216



Asperchalasines is a collection of merocytochalasans from fermentation broth of *Aspergillus flavipes*

They are series of fungal secondary metabolites consisting of two types of subunits :

and

Some of



Synthetic strategy mainly built on biosynthetic origin:

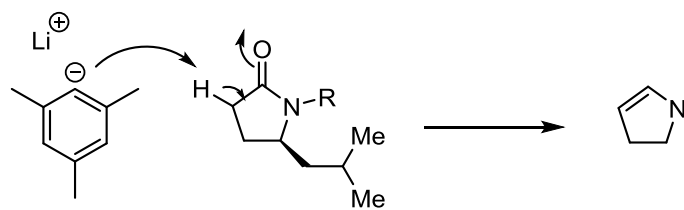
Two common precursors, aspochalasinB () and epicoccine()

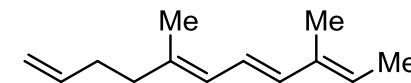
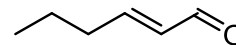
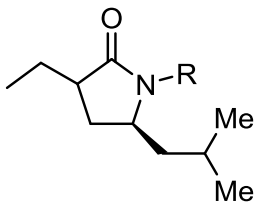
Due to underlying endo/exo selectivity and regioselectivity, the Diels-



|

Sequential selenylation and oxidative elimination

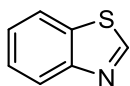


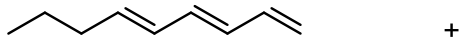


Sequential selenylation and oxidative elimination

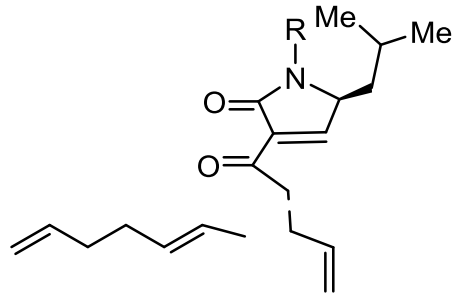


Julia Olefination

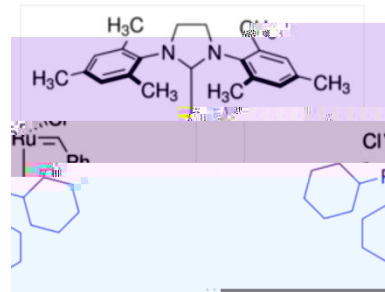
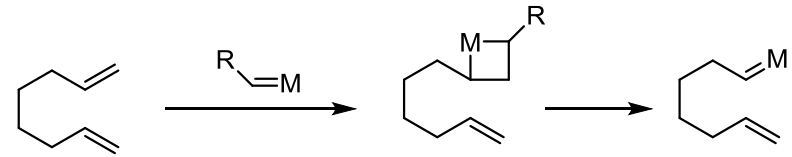


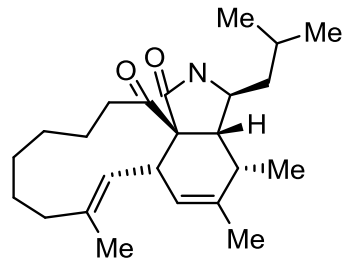


Lewis acid-promoted Diels-Alder reaction:

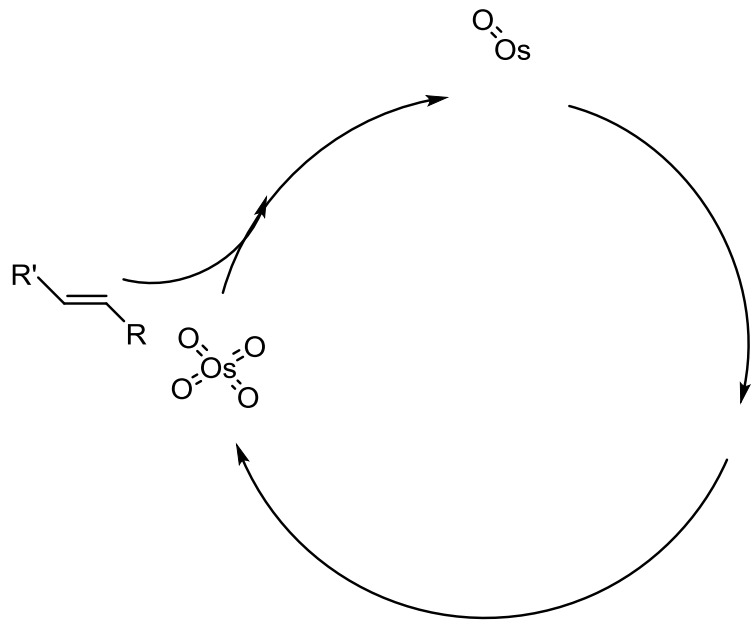


Grubb's second generation Catalyst catalyzed Ring Closing metathesis:

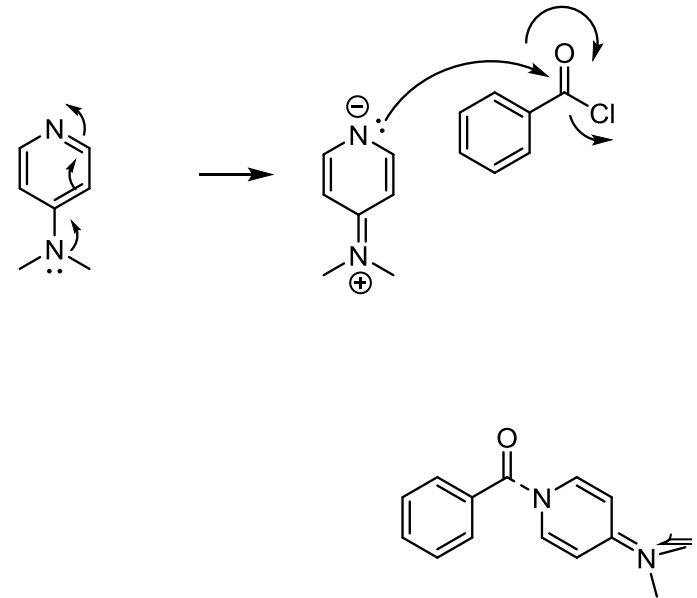


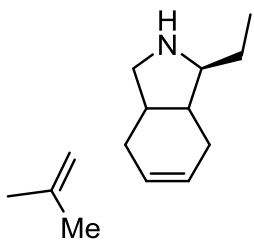


Upjohn dihydroxylation

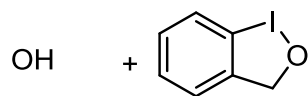


Selective 17-OH protection

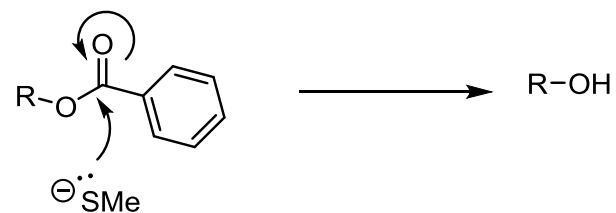




Dess-Martin Oxidation



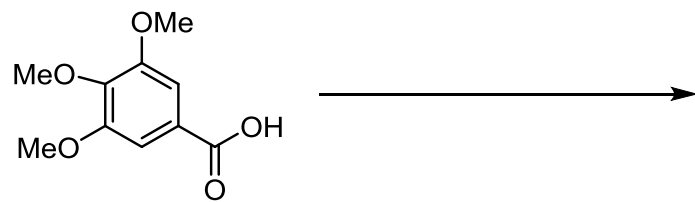
Benzoyl group deprotection



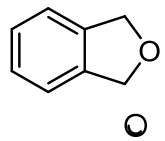
Another sequential selenylation and oxidative elimination:

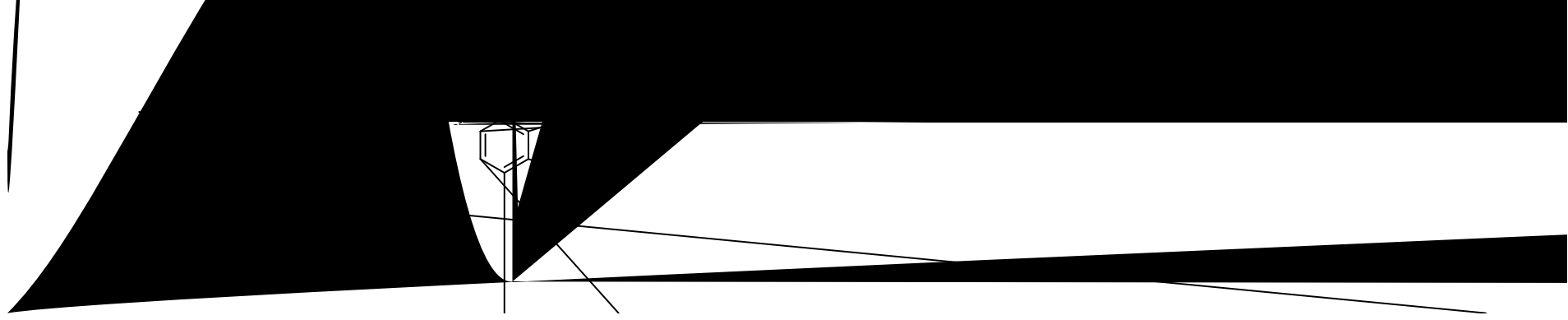
Forming unsaturated carbonyl (mechanism see before)

Syntheses of epicoccine part

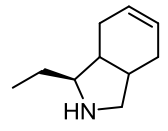


Blanc Chloromethylation and dechlorination





Finishing syntheses
Of asperchalasine A



Back-up mechanism of last page:

Diels-Alder reaction forming :



Hydrogenolysis of benzyl group:

