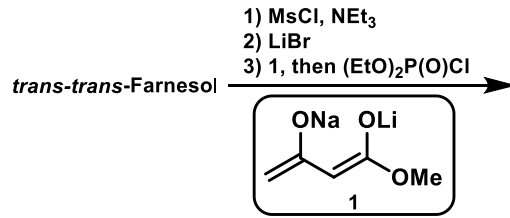
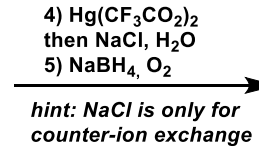


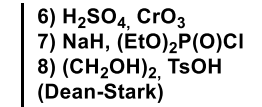
Total Synthesis of Azadiradione



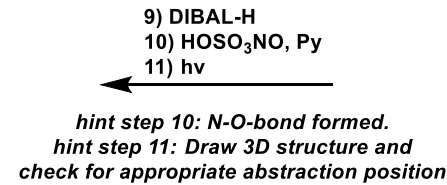
A



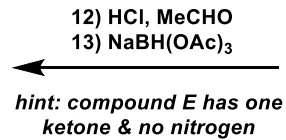
B



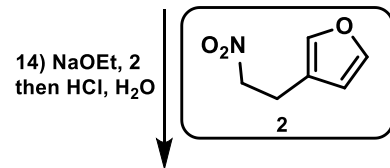
C



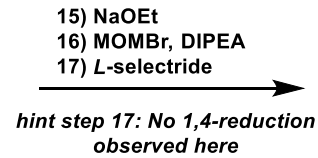
D



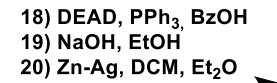
E



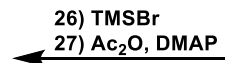
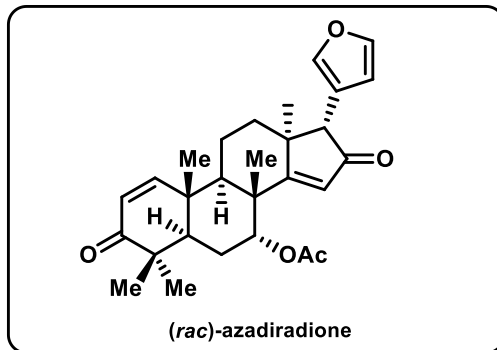
F



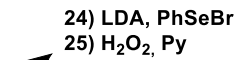
G



H

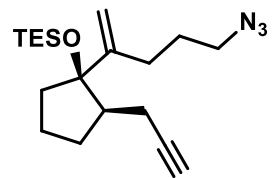


J



I

In 2014, Rhee and co-workers published an elegant one pot approach to the core structure in a formal synthesis of stemonamine.
Please solve the product structure and give a reasonable mechanism.

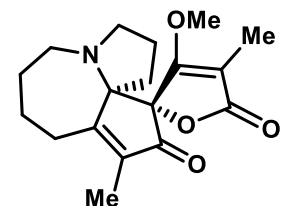


$\text{AuCl}[\text{P}(\text{tBu})_2(\text{o-biphenyl})]$ (10 mol%)
 AgSbF_6 (5 mol%), iPrOH (1.1 eq.)
70 °C, 12 h, MeNO_2

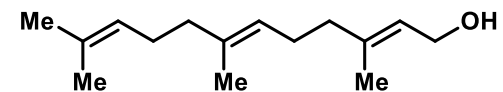
then SnCl_4 (2.0 eq.)

tricycle without
spiro ring

*hint after first step:
product is a 6/5 ring system
containing an exo methylene*



stemonamine



trans-trans-farnesol