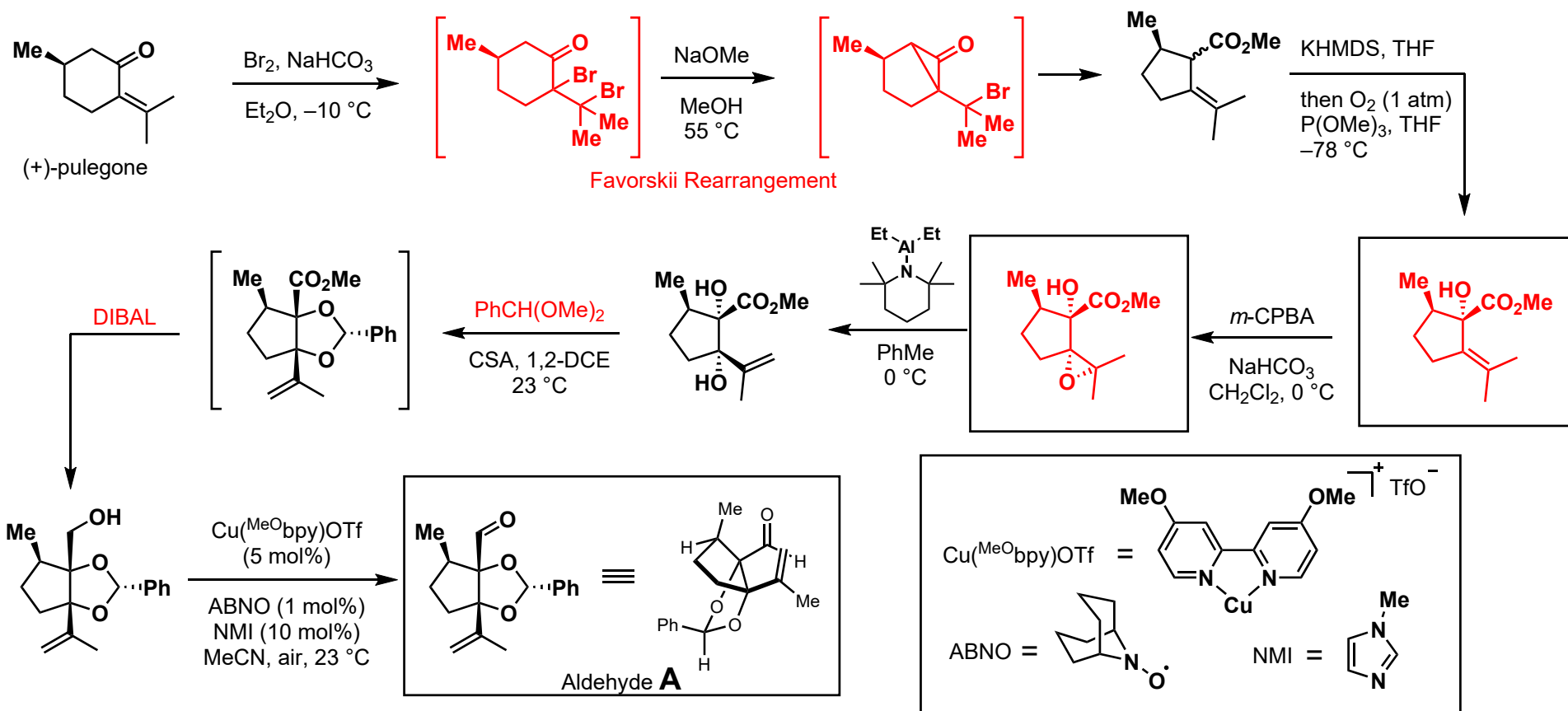
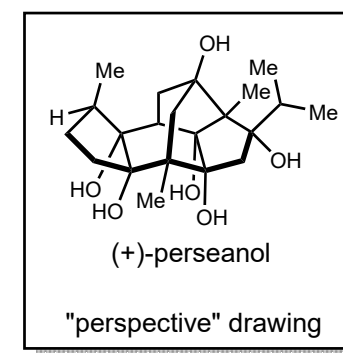


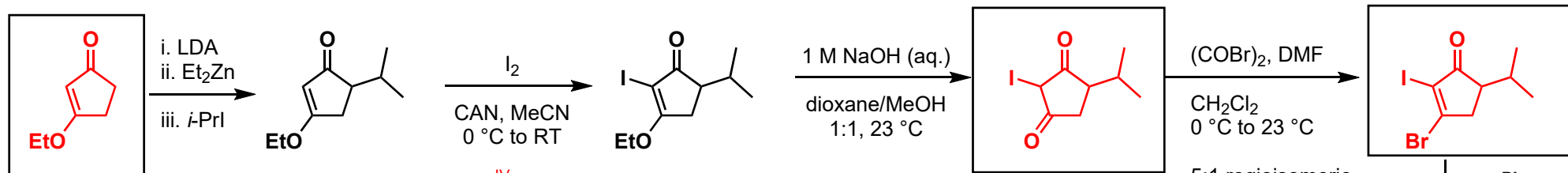
## A 16-step synthesis of the isorynanodane diterpene (+)-perseanol

Han, A.; Tao, Y.; Resiman, S. E.

*Nature*, **2019**, *573*, 563–568.

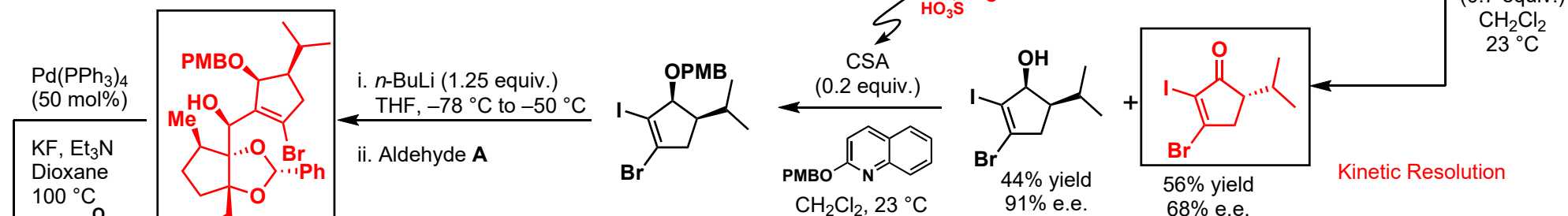
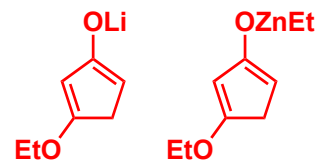


This is an alcohol to aldehyde oxidation where  $\text{O}_2$  is the terminal oxidant. All reaction components are catalytic.



CAN =  $\text{Ce}^{\text{IV}}(\text{NO}_2)_6(\text{NH}_4)_2$

$\text{I}_2$  / pyridine



NaH, PMBCl, (NaI or  $(n\text{-Bu})_4\text{I}$ )

or

PMBOC(NH)CCl<sub>3</sub>, acid or Lewis acid

