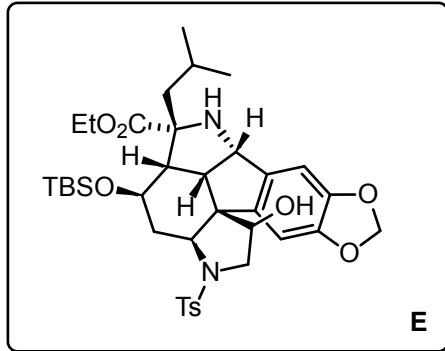
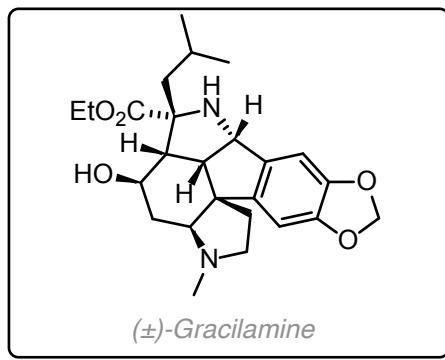


10-12



13-16



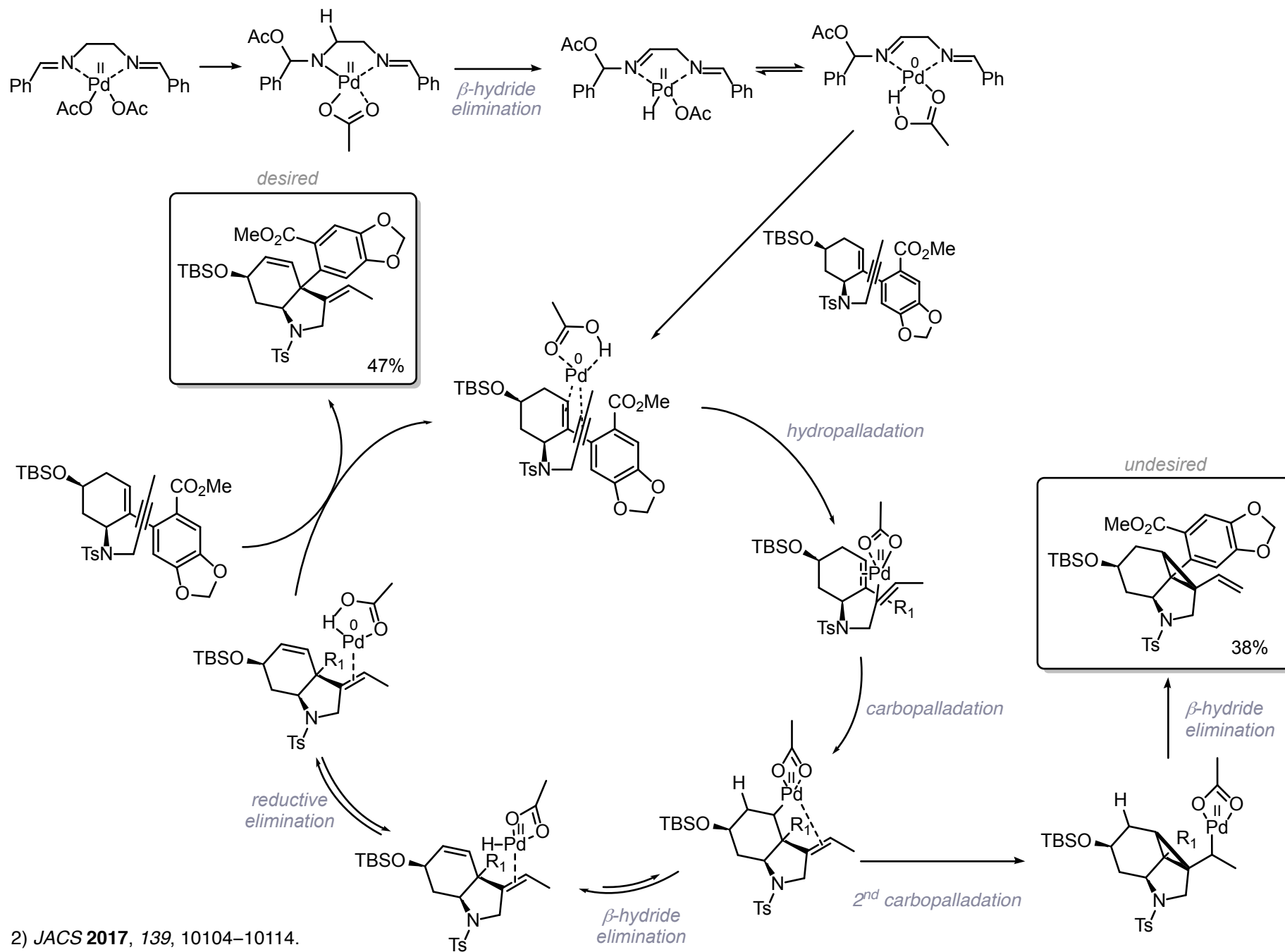
- 10)  $K_2OsO_4 \cdot 2 H_2O$  (10 mol%), NMO (2 eq), citric acid  
 11)  $PhI(OAc)_2$   
 12)  $NaBH_4$

What is the role of citric acid in step 10?  
 - neutralizing the emerging *N*-methyl morpholine in order to maintain the ideal pH<sup>[1]</sup>  
 - ligand for Os(VI), keeping the catalytically active species in solution and stabilizing it from disproportionation<sup>[1]</sup>  
 1) *Adv. Synth. Catal.* **2002**, 344, 421–433.

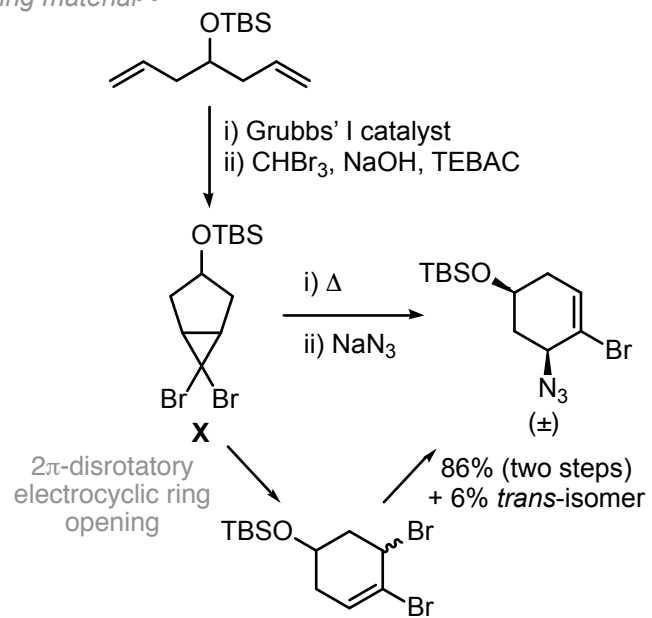
- 13)  $NaH$ ,  $CS_2$ , MeI  
 14)  $n-Bu_3SnH$ , AIBN  
 15)  $Mg$ , MeOH, sonication  
     *then* HCl (aq.)  
 16)  $H_2CO$ ,  $NaCNBH_3$

Please provide a detailed mechanism for the transformation of step 14.

Mechanism of the Pd(II)-catalyzed IMAE<sup>[2]</sup>



Starting material<sup>[3]</sup>



TEBAC = triethylbenzylammonium chloride  
 3) Org. Lett. **2001**, *13*, 5800–5803.

Barton McCombie-deoxygenation

