

Synthesis of Pleuromutilin

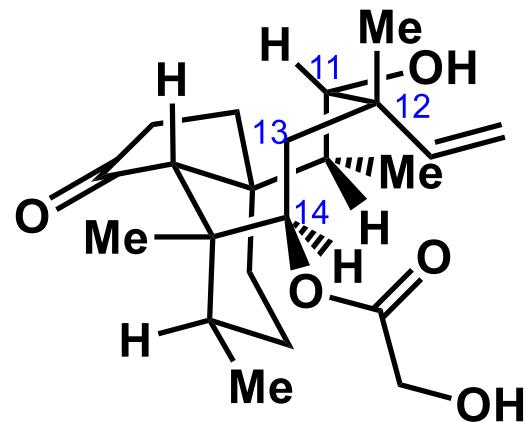
Nicholas J. Foy and Sergey V. Pronin*



Cite This: <https://doi.org/10.1021/jacs.2c04708>

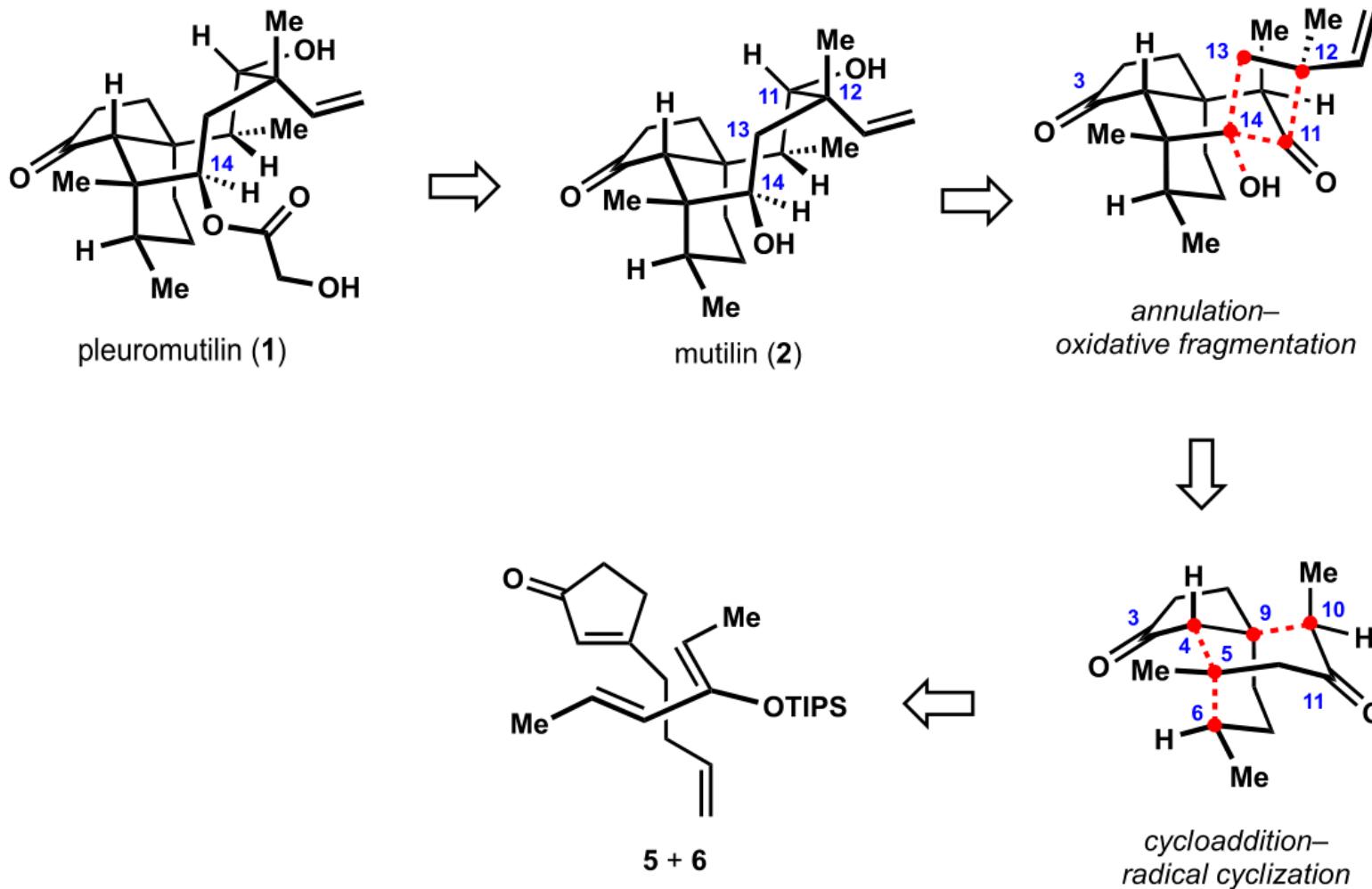


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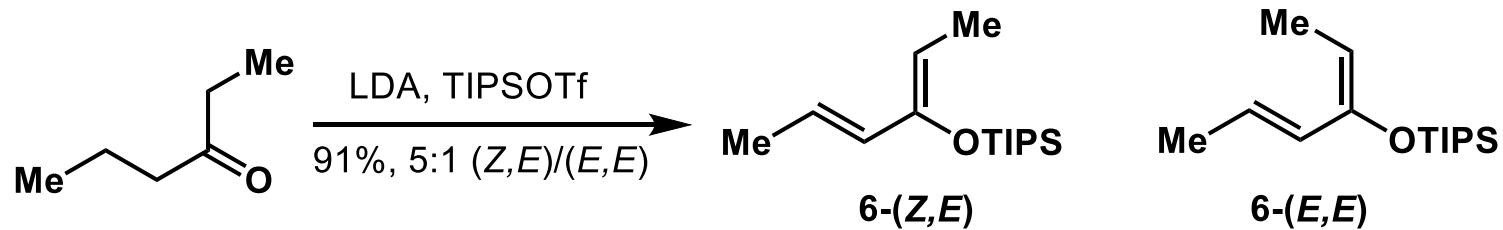
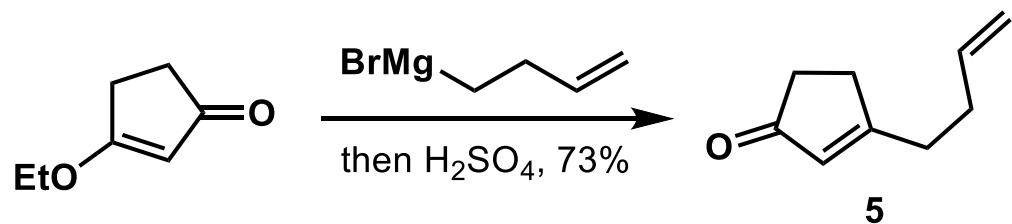


pleuromutilin (**1**)

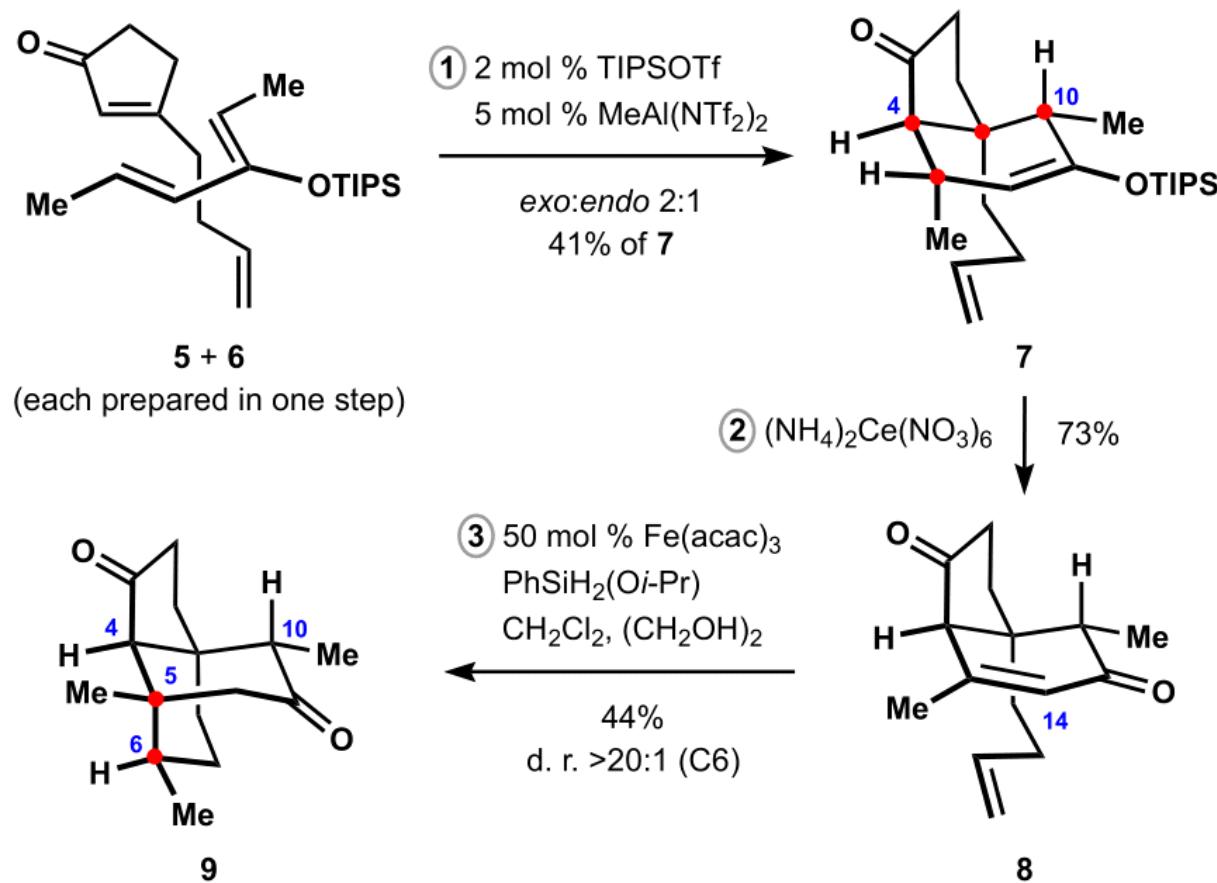
Retrosynthetic Analysis of pleuromutilin (**1**)



Synthesis of compound **5** and **6**

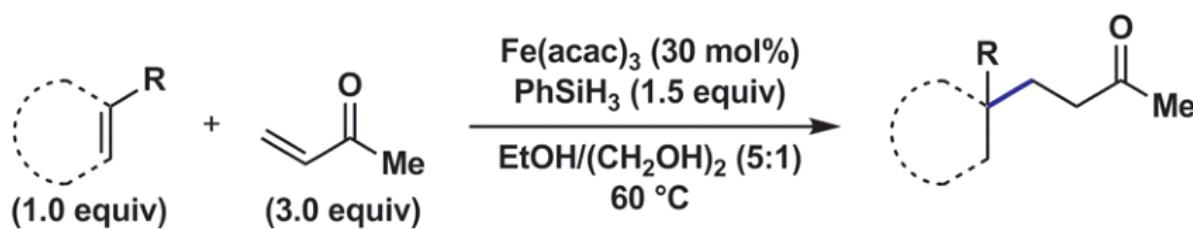


Scheme 1. Synthesis of Tricyclic Diketone 9



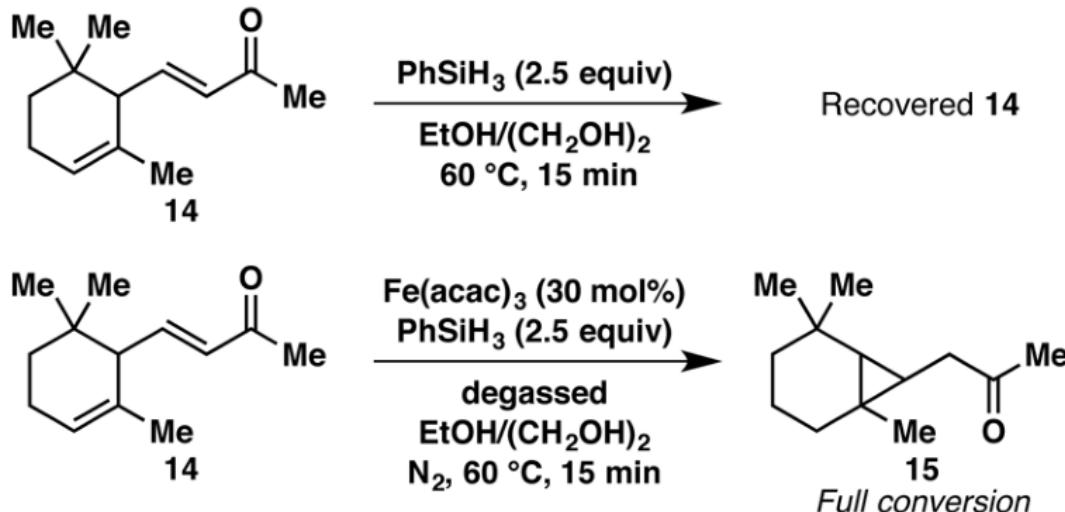
A Practical and Catalytic Reductive Olefin Coupling

Julian C. Lo, Yuki Yabe, and Phil S. Baran*

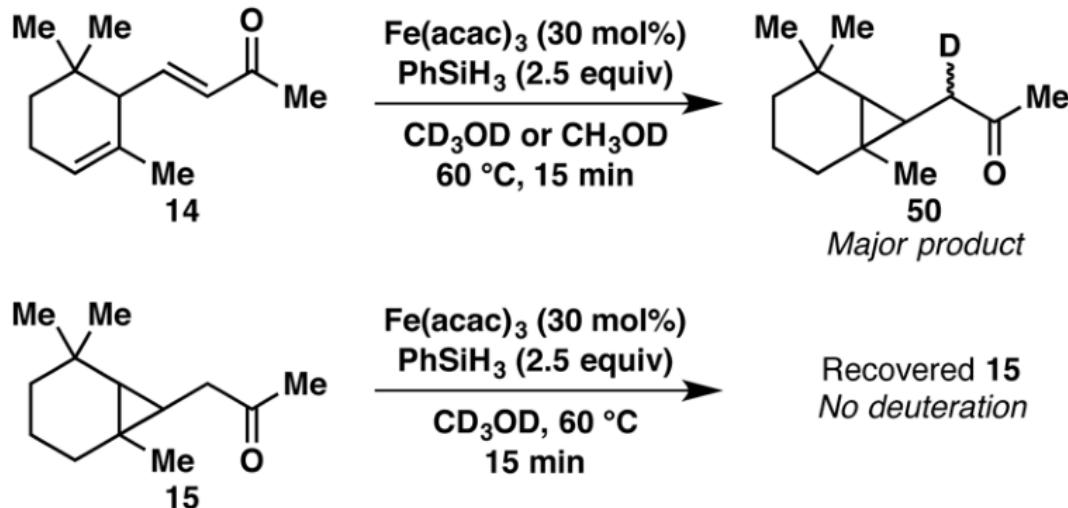


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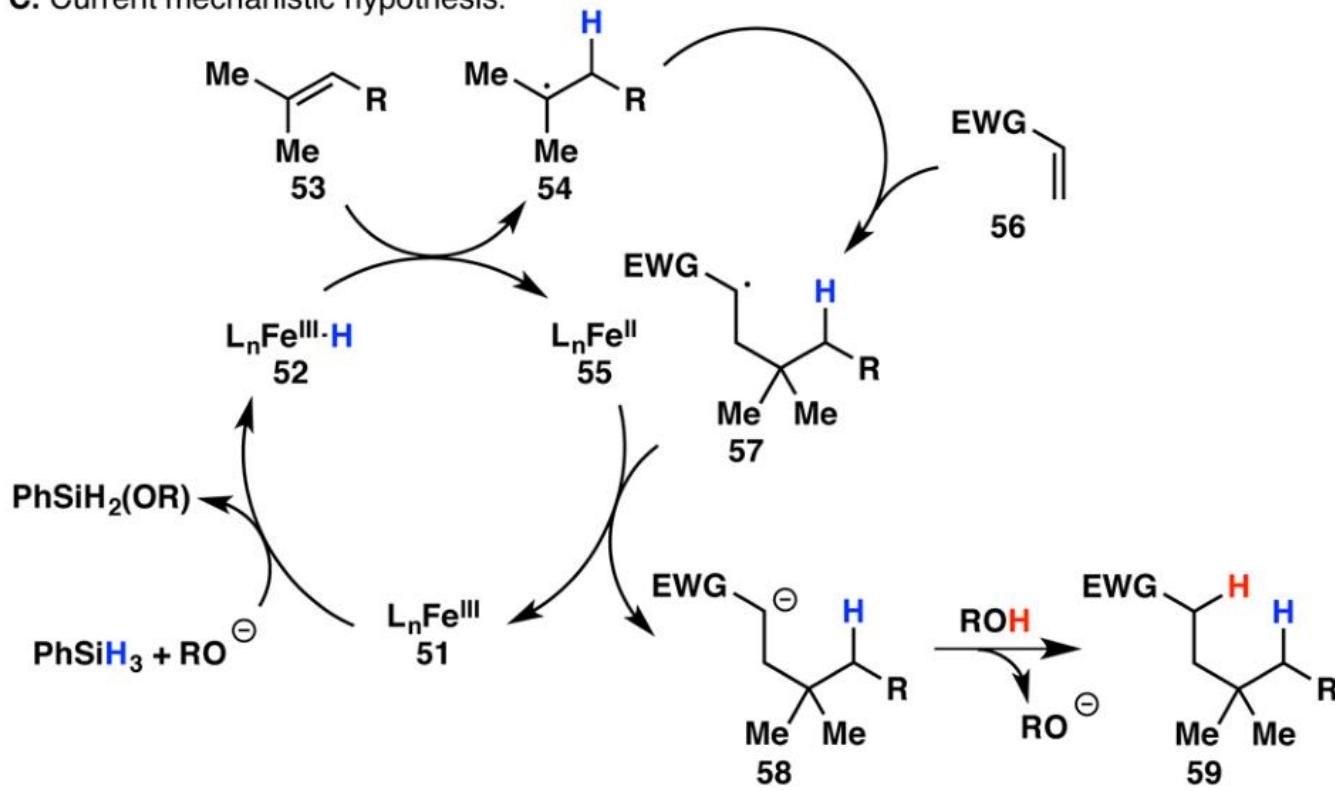
A. Control experiments.

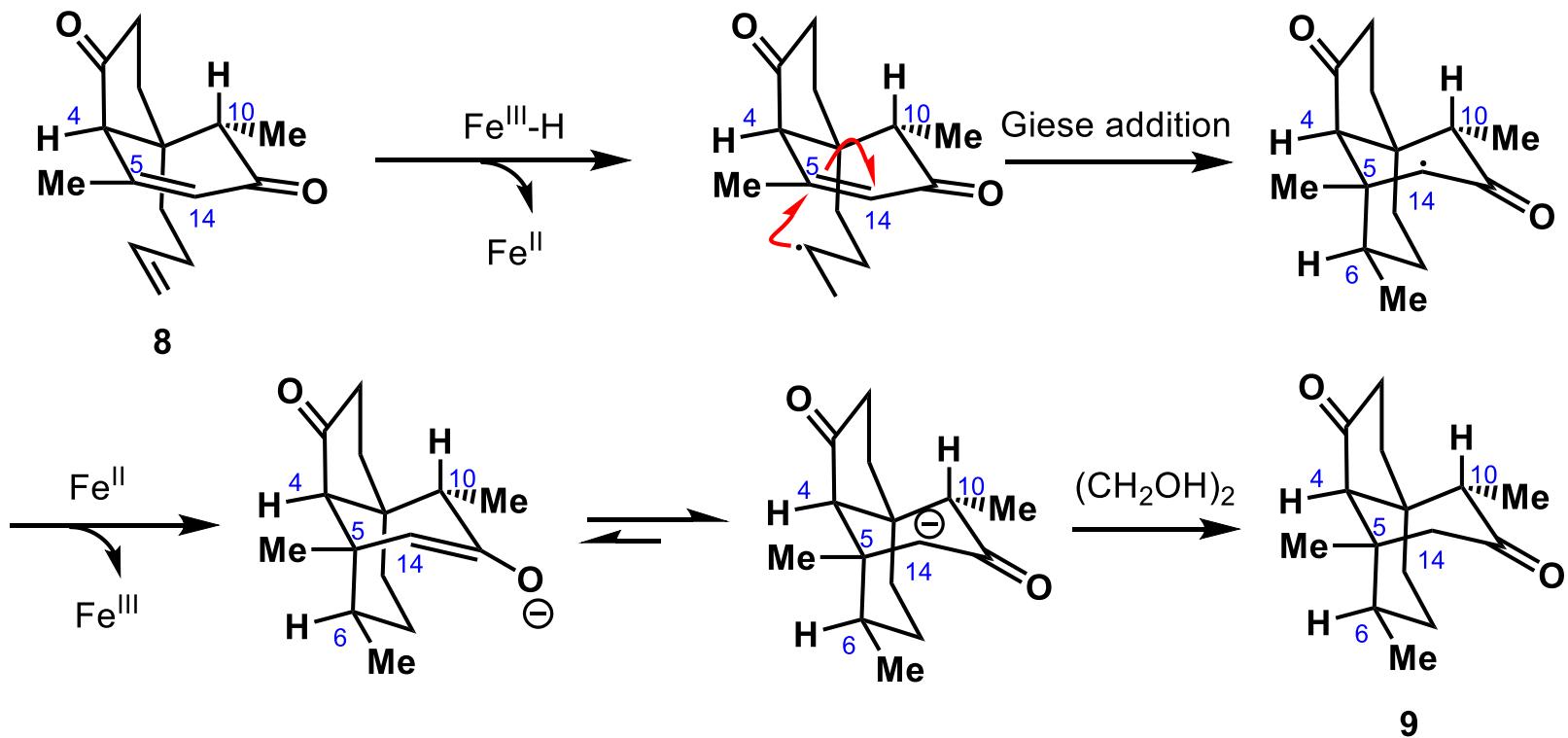


B. Deuterium labeling studies.



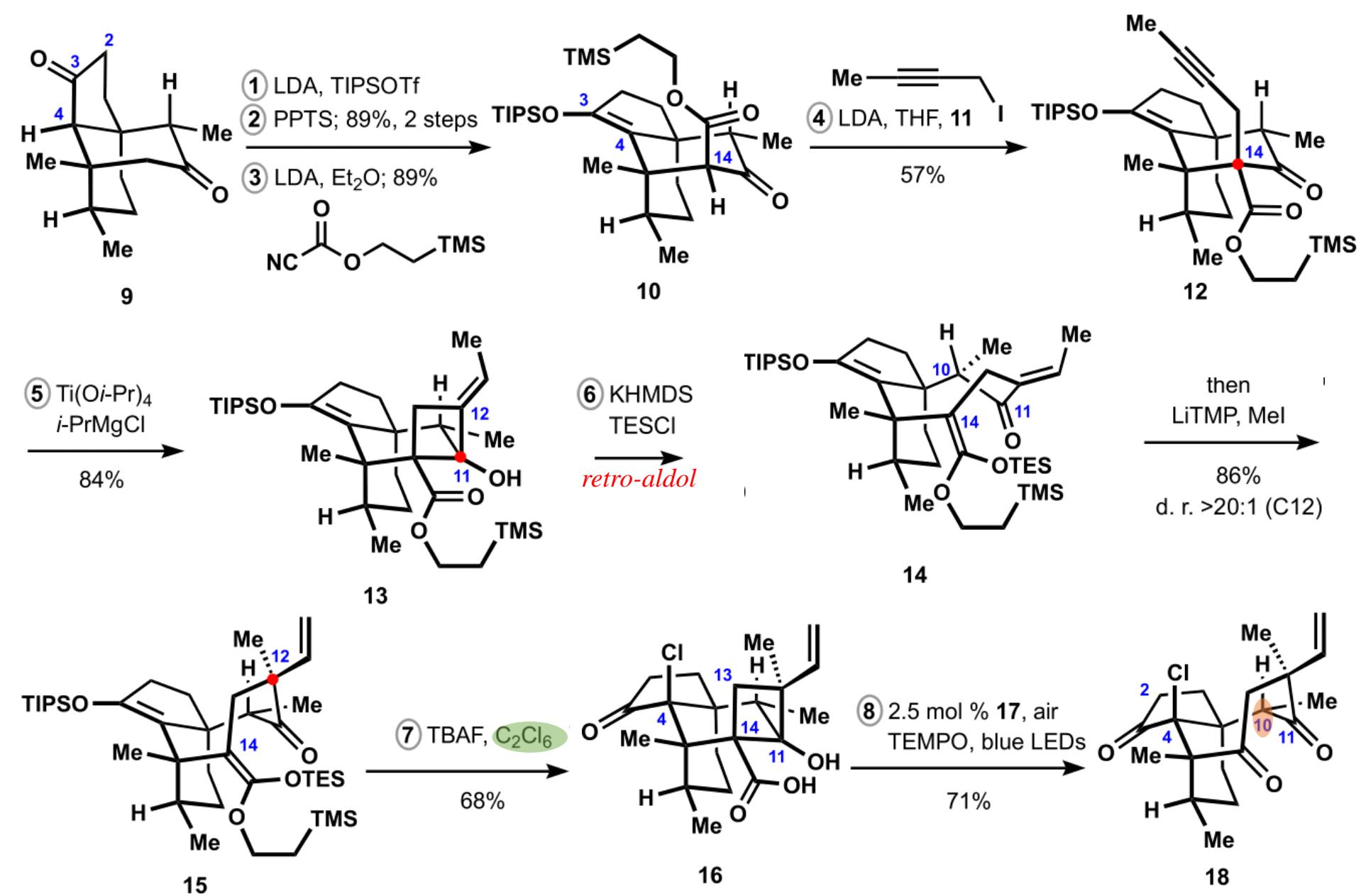
C. Current mechanistic hypothesis.

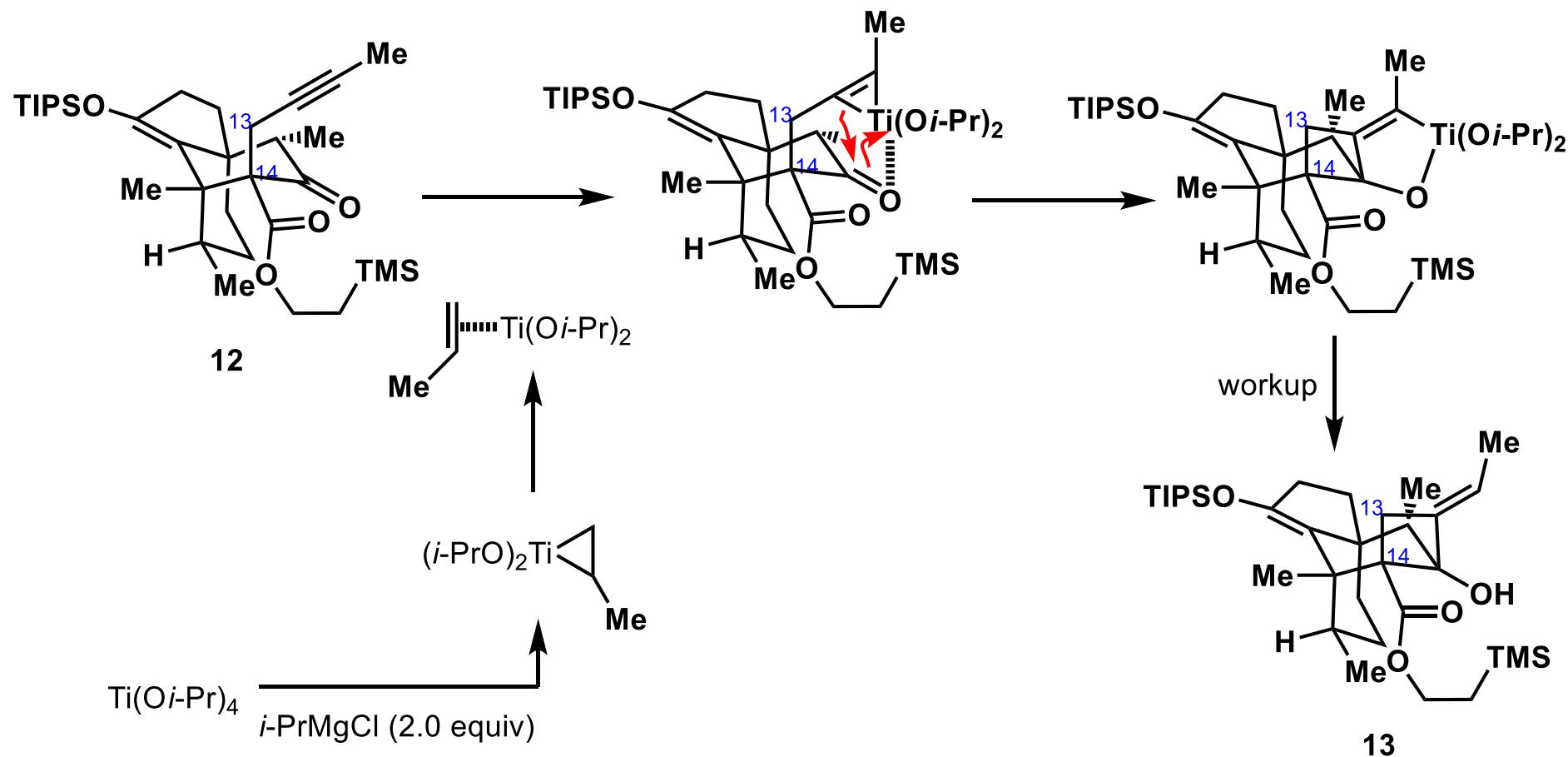




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Scheme 2. Synthesis of Pleuromutilin (1)





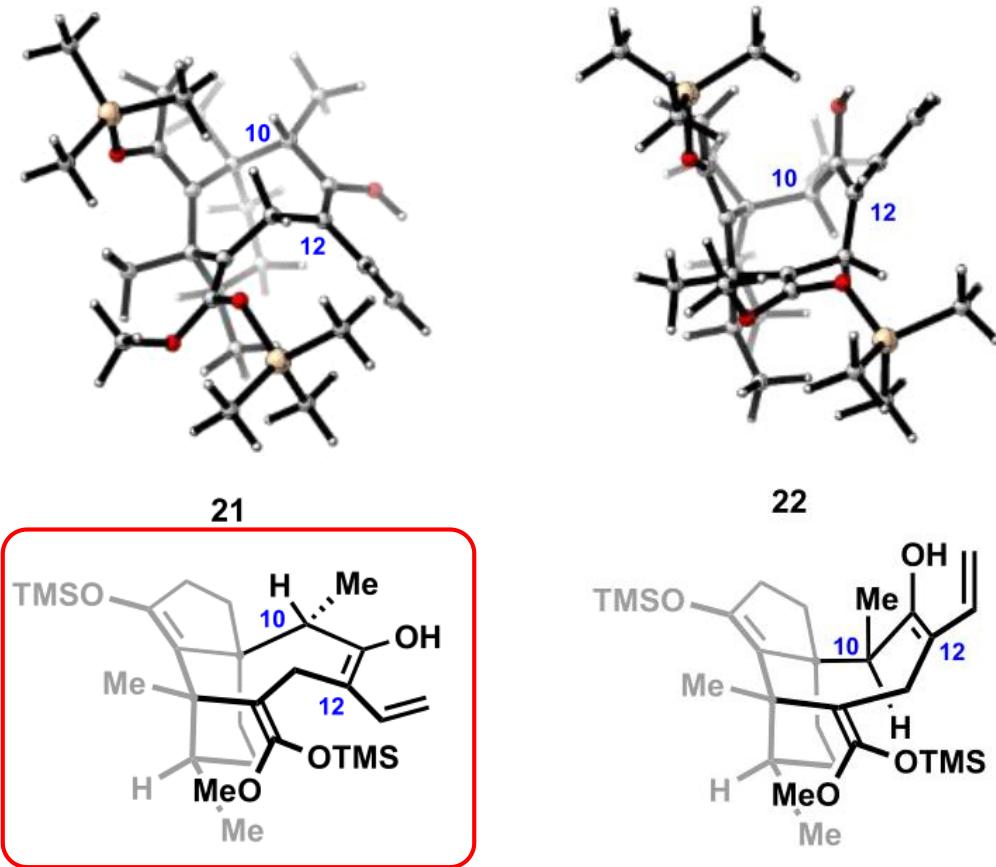
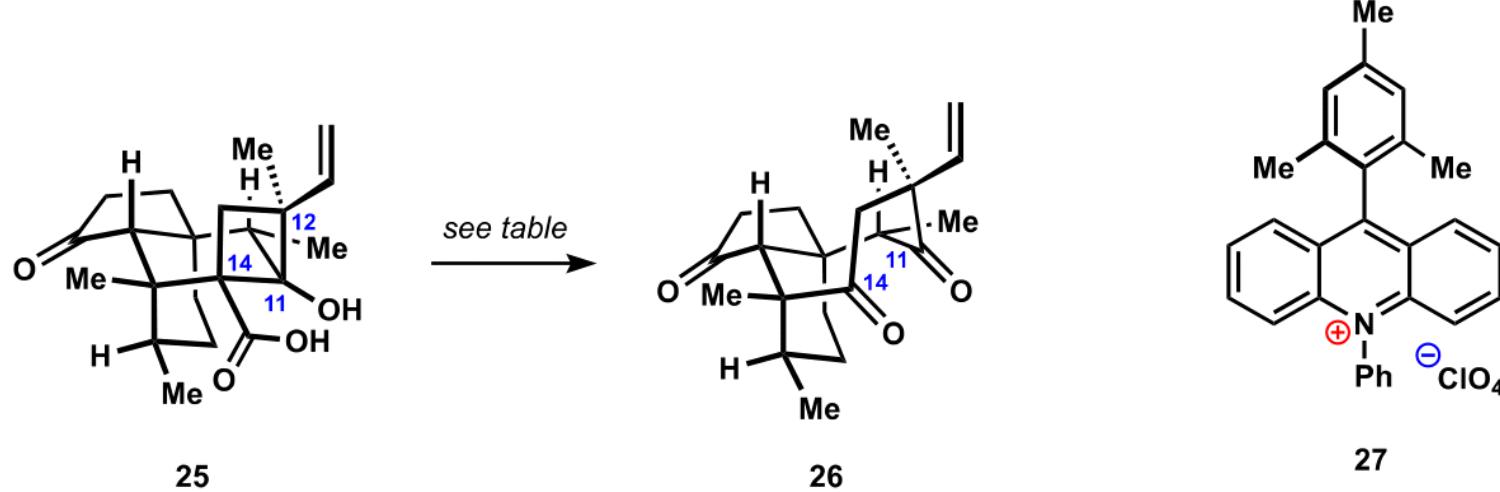
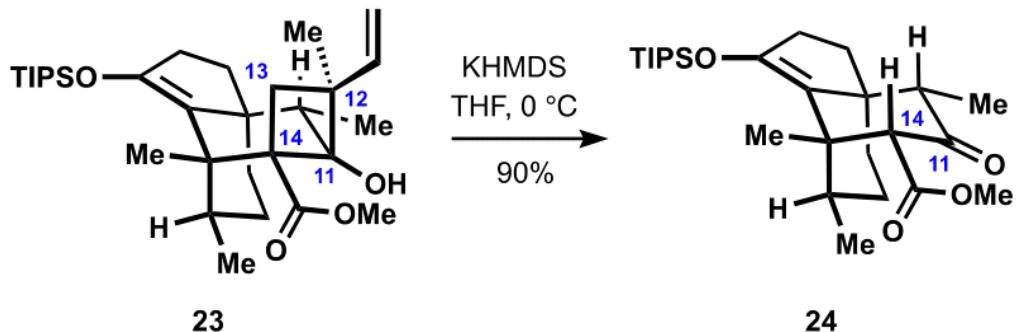
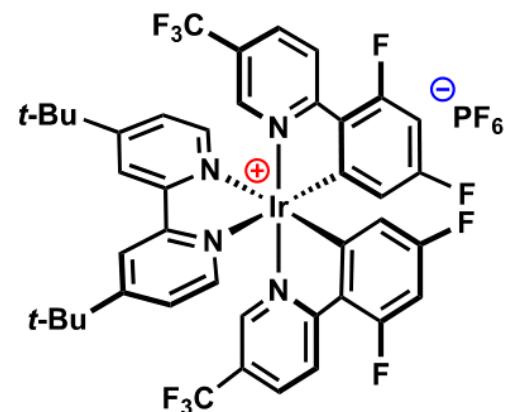
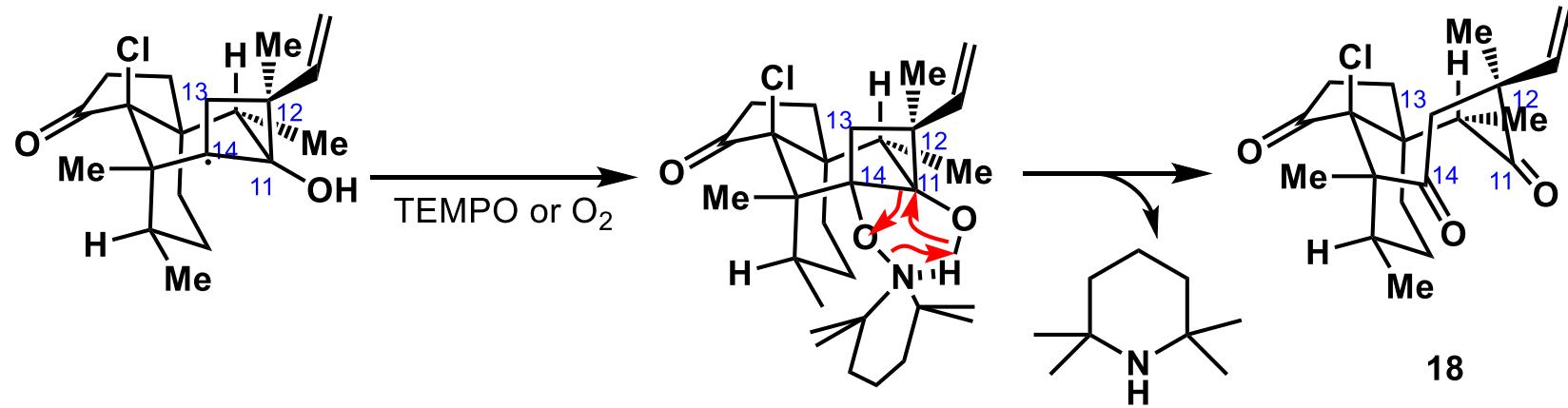
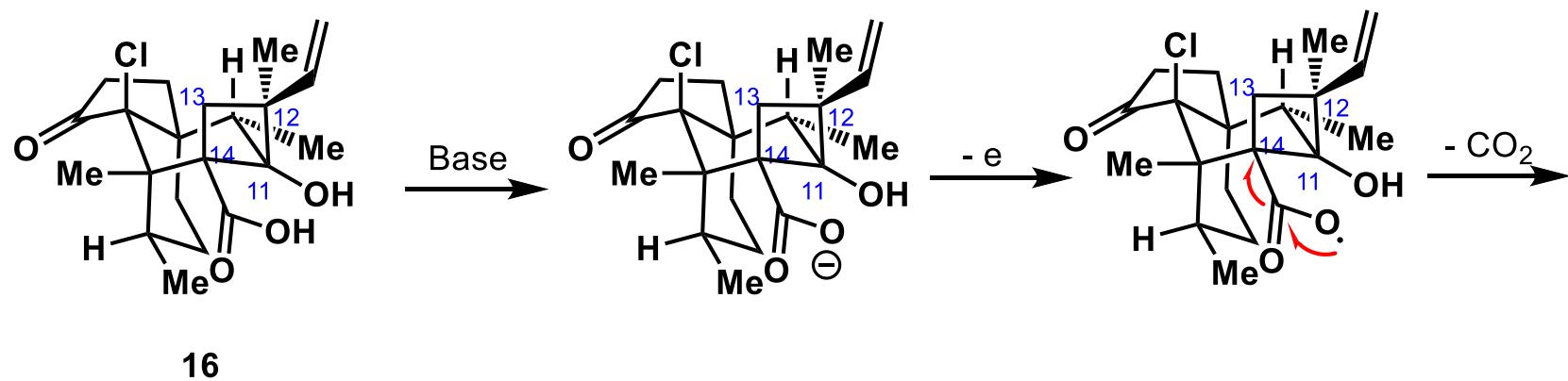


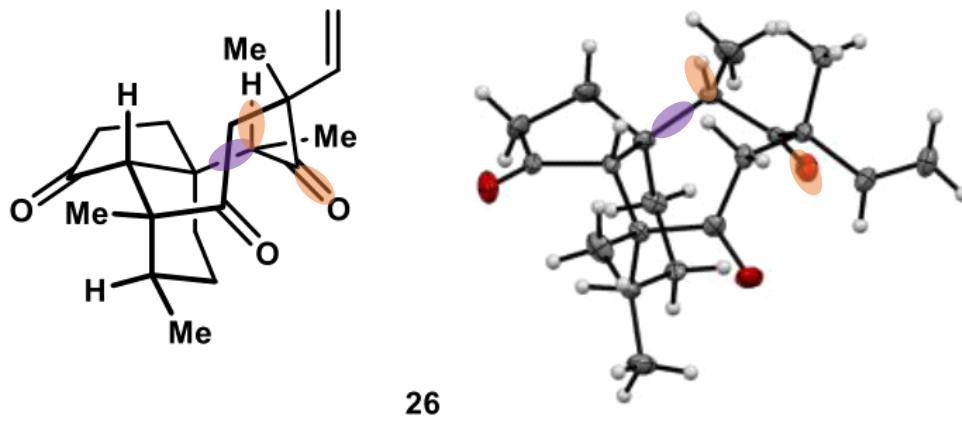
Figure 2. Computed lowest energy conformations of enols **21** and **22**. Computations were performed at the ω B97X-D/6-31G(d) level of theory.



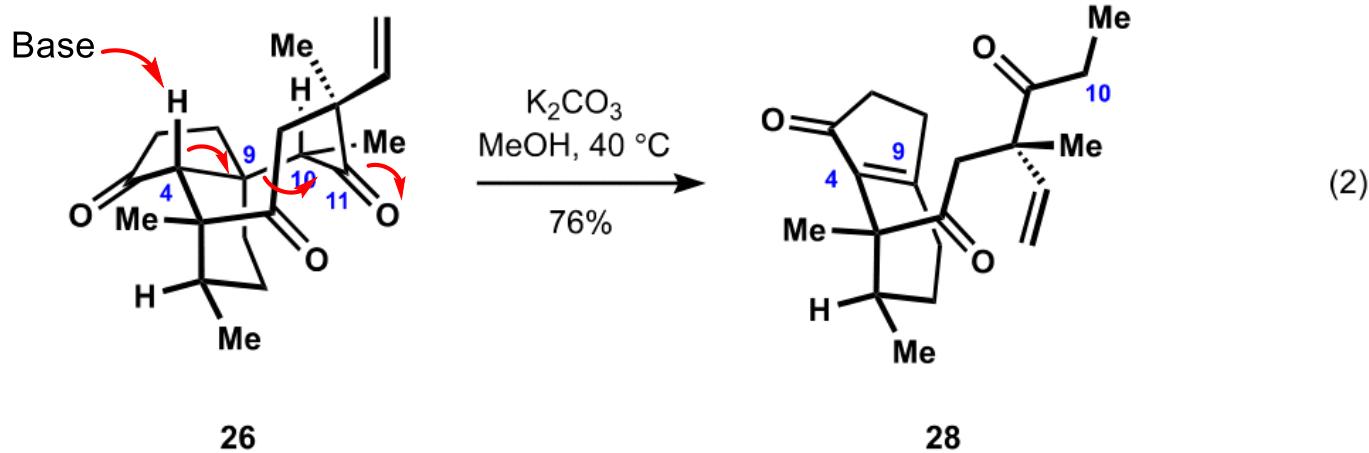
<i>entry</i>	<i>conditions</i>	<i>yield of 26 (%)^a</i>
1	2.5 mol % 27 , air, TEMPO, blue LEDs	23
2	2.5 mol % 17 , air, TEMPO, blue LEDs	80
3	2.5 mol % 17 , air, blue LEDs	9
4	AgNO ₃ , Me ₂ CO, 60 °C	< 5
5	Pb(OAc) ₄ , KOAc, AcOH, 50 °C	< 5







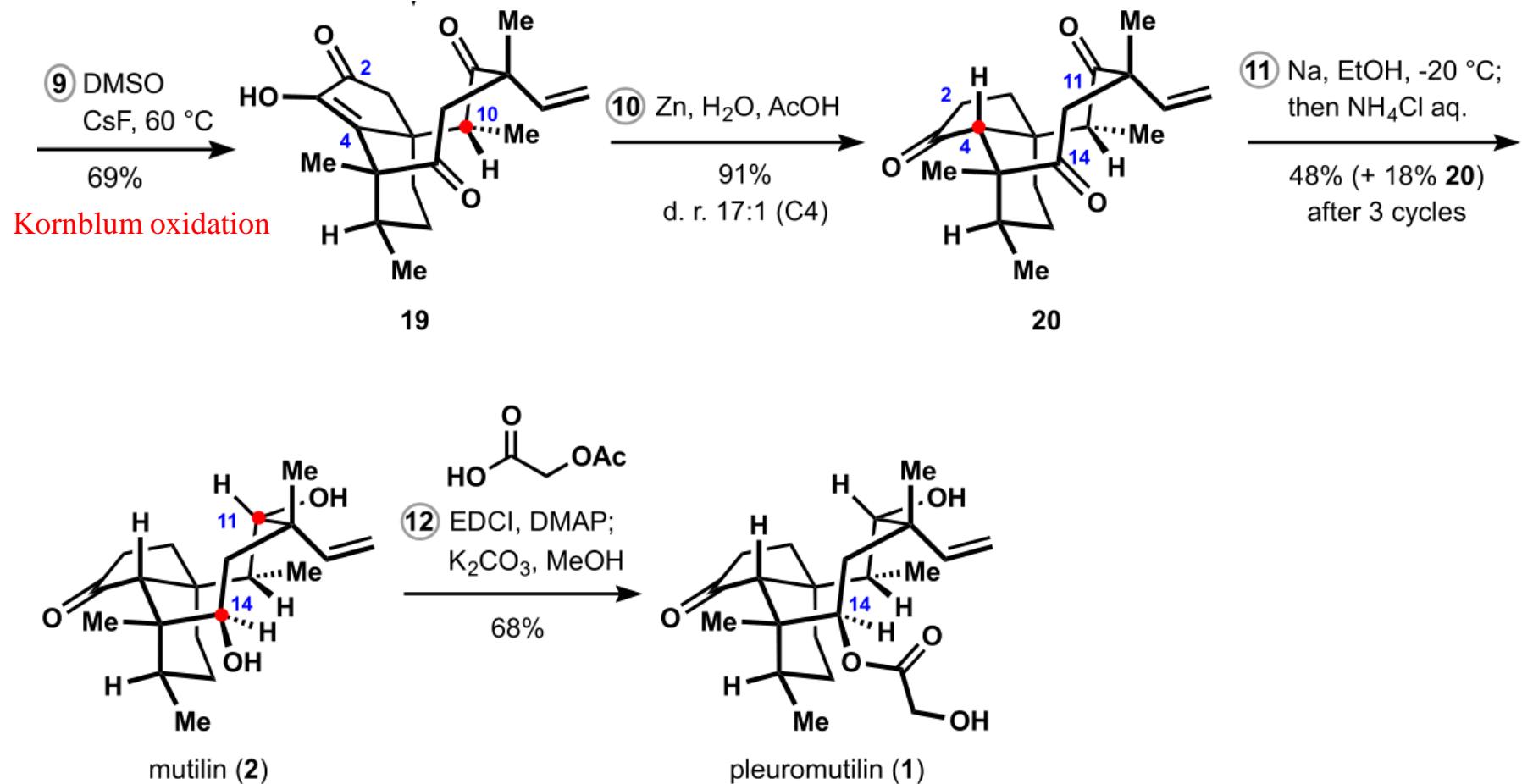
26



26

28

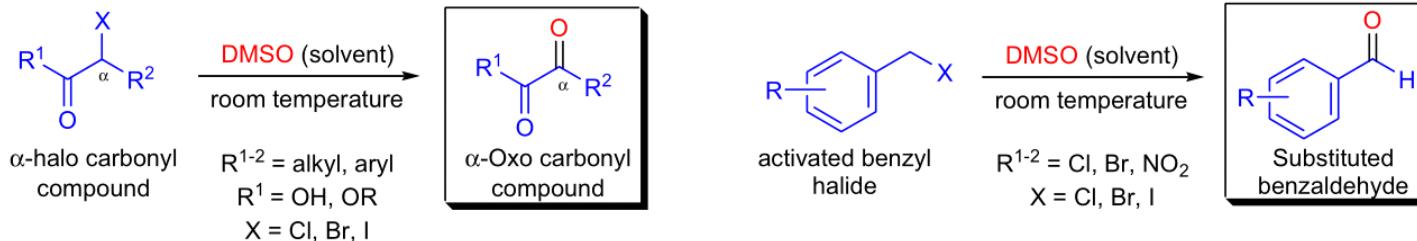
(2)



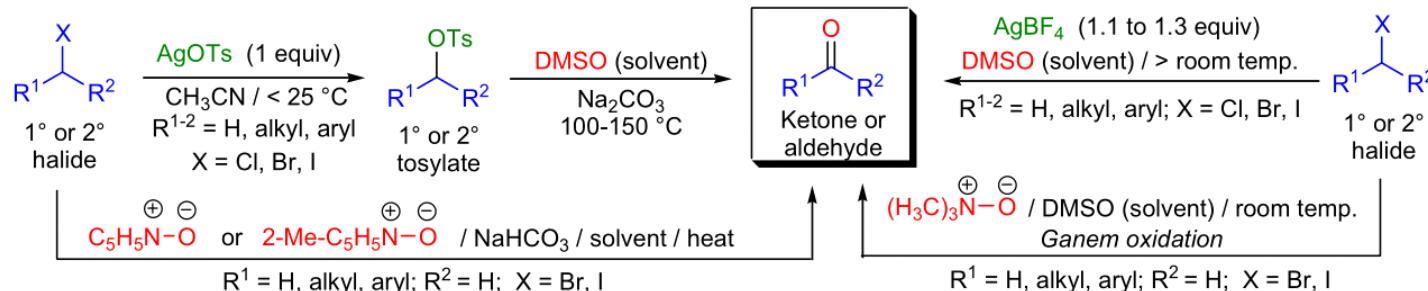
KORNBLOM OXIDATION

(References are on page 616)

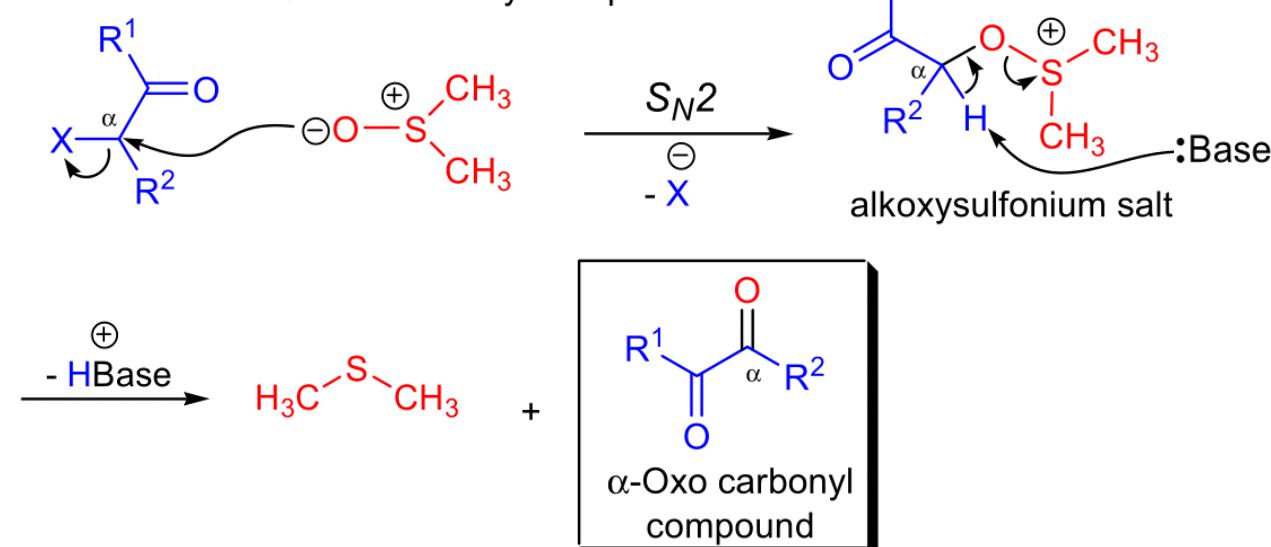
Original procedure (Kornblum, 1957):

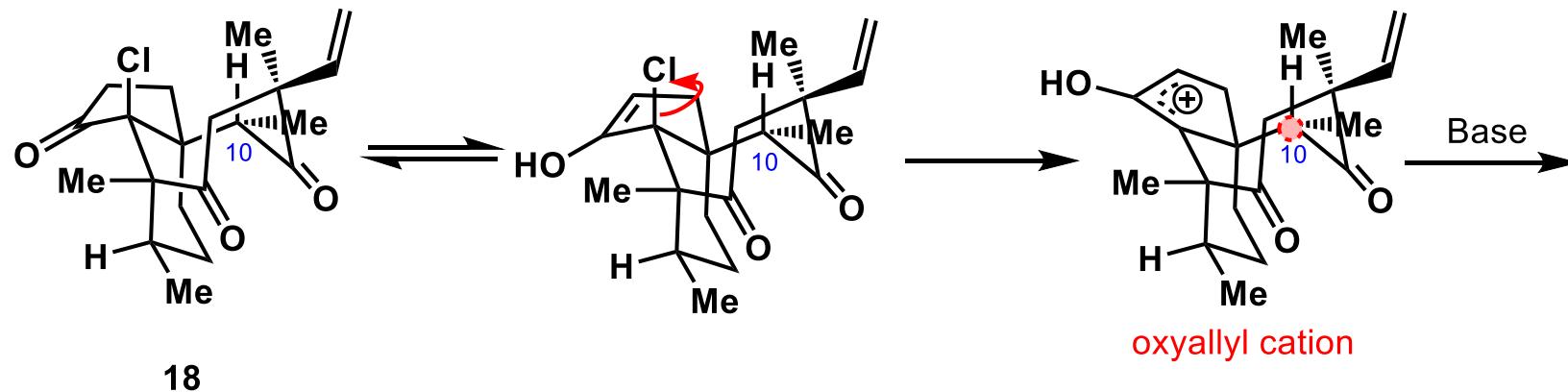


Improved procedure (Kornblum, 1959):



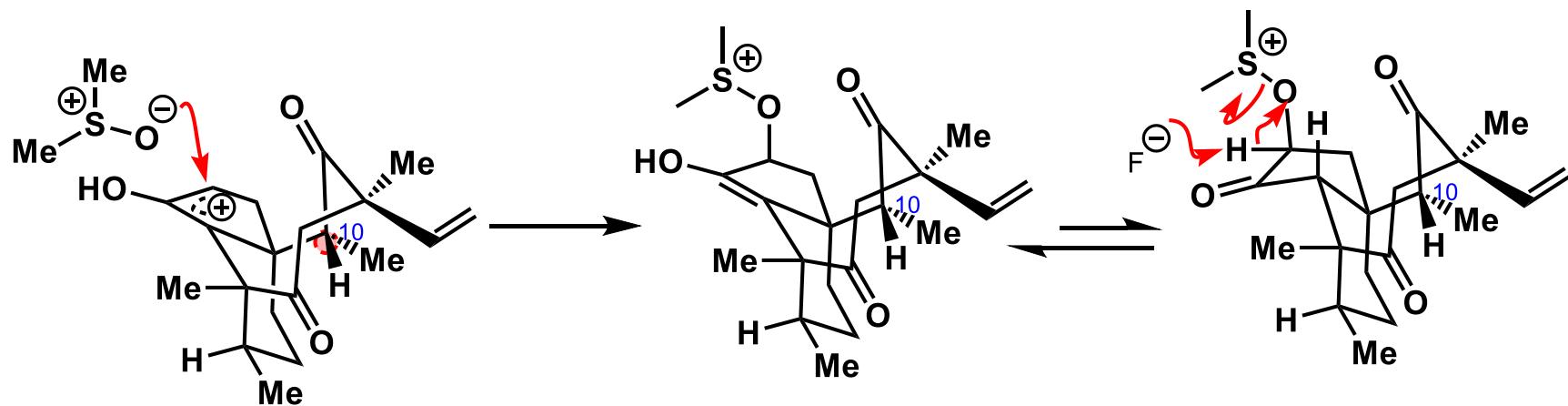
Oxidation of an α-halo carbonyl compound:





18

oxyallyl cation



19

