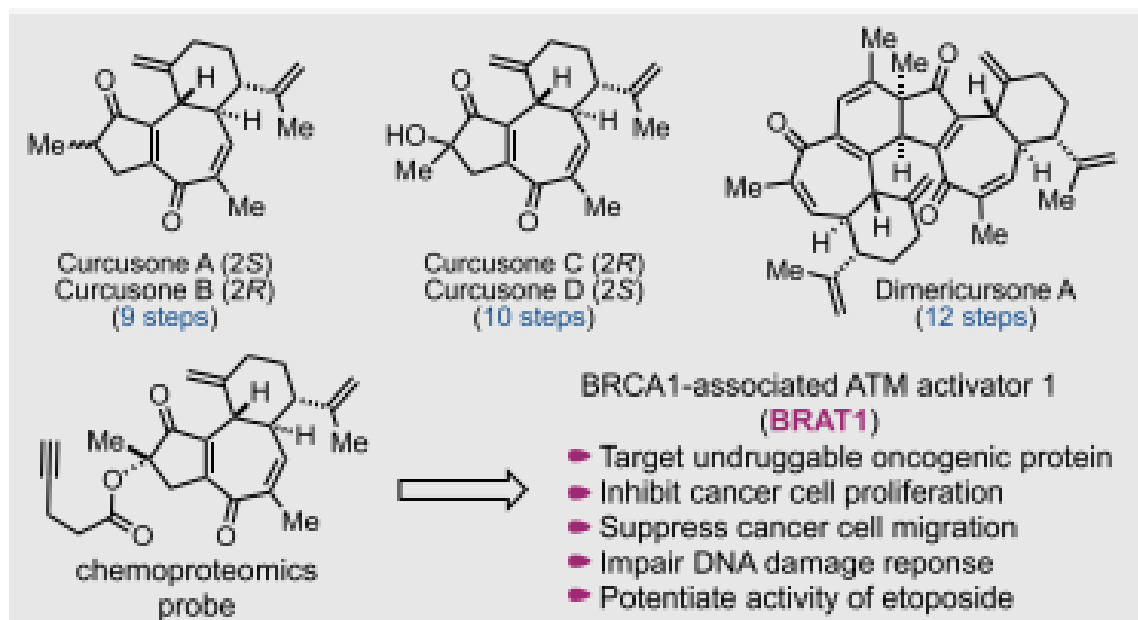


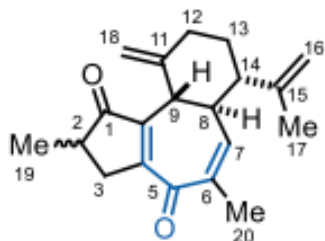
Total Synthesis and Target Identification of the Curcusone Diterpenes

Chengsen Cui,[§] Brendan G. Dwyer,[§] Chang Liu, Daniel Abegg, Zhong-Jian Cai, Dominic G. Hoch, Xianglin Yin, Nan Qiu, Jie-Qing Liu, Alexander Adibekian,* and Mingji Dai*

 Cite This: *J. Am. Chem. Soc.* 2021, 143, 4379–4386

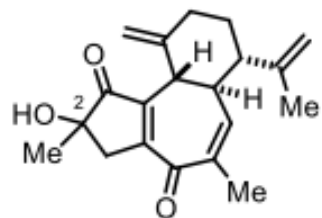
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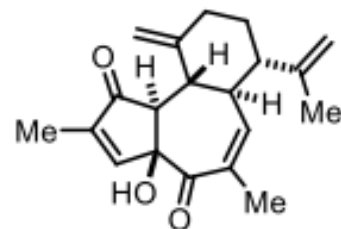


Curcusone A (**1a**: 2*S*)
Curcusone B (**1b**: 2*R*)

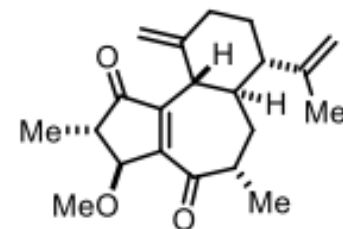
anti cancer cell proliferation and antimetastatic



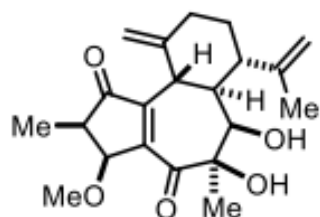
Curcusone C (**1c**: 2*R*)
Curcusone D (**1d**: 2*S*)



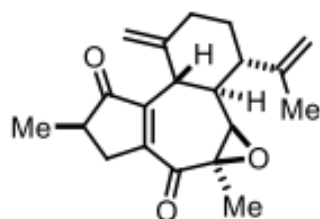
Curcusone E (**1e**)



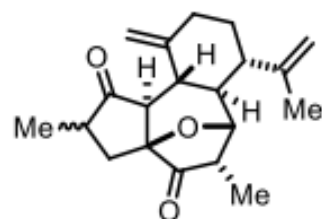
Curcusone F (**1f**)



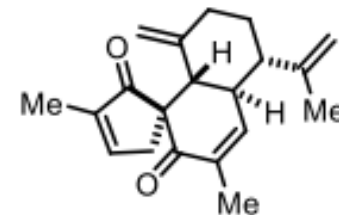
Curcusone G (**1g**)



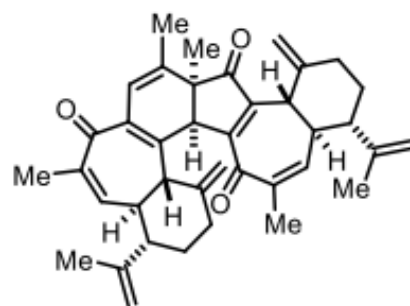
Curcusone H (**1h**)



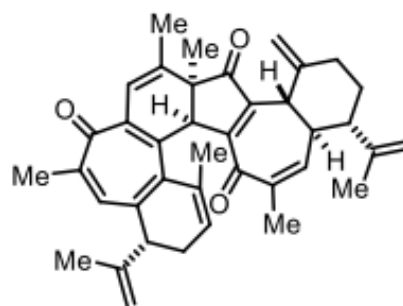
Curcusone I (**1i**: 2*S*)
Curcusone J (**1j**: 2*R*)
putative structures



Spirocurcasone (**3**)

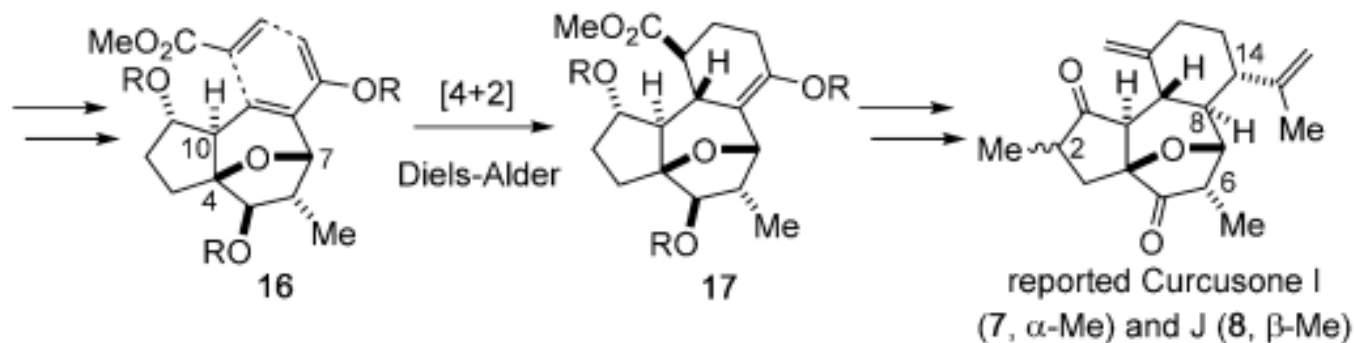
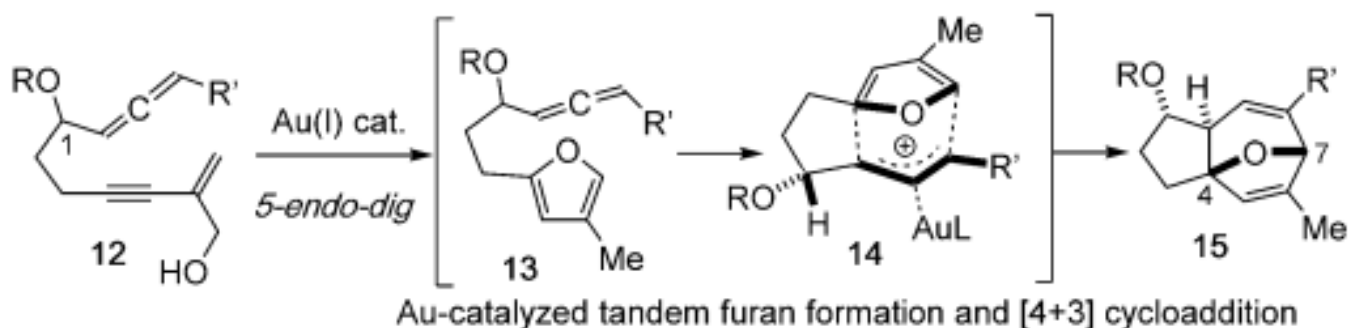
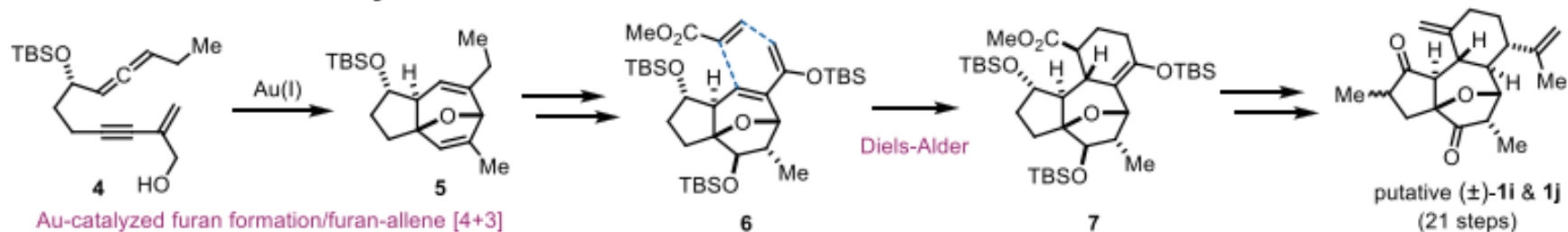


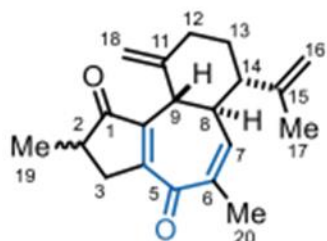
Dimericursone A (**2a**)



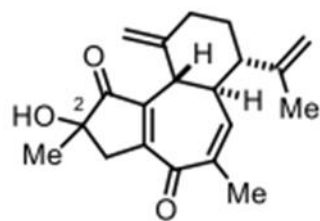
Dimericursone B (**2b**)

B Our Previous Total Syntheses of Curcusones I and J



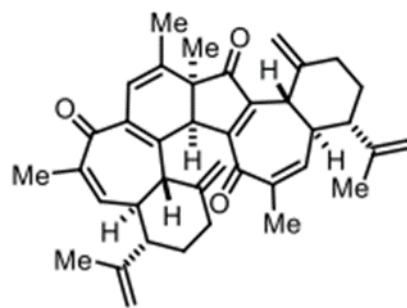


Curcusone A (**1a**: 2*S*)
Curcusone B (**1b**: 2*R*)

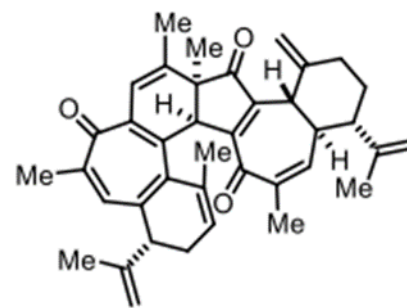


Curcusone C (**1c**: 2*R*)
Curcusone D (**1d**: 2*S*)

anti cancer cell proliferation and antimetastatic

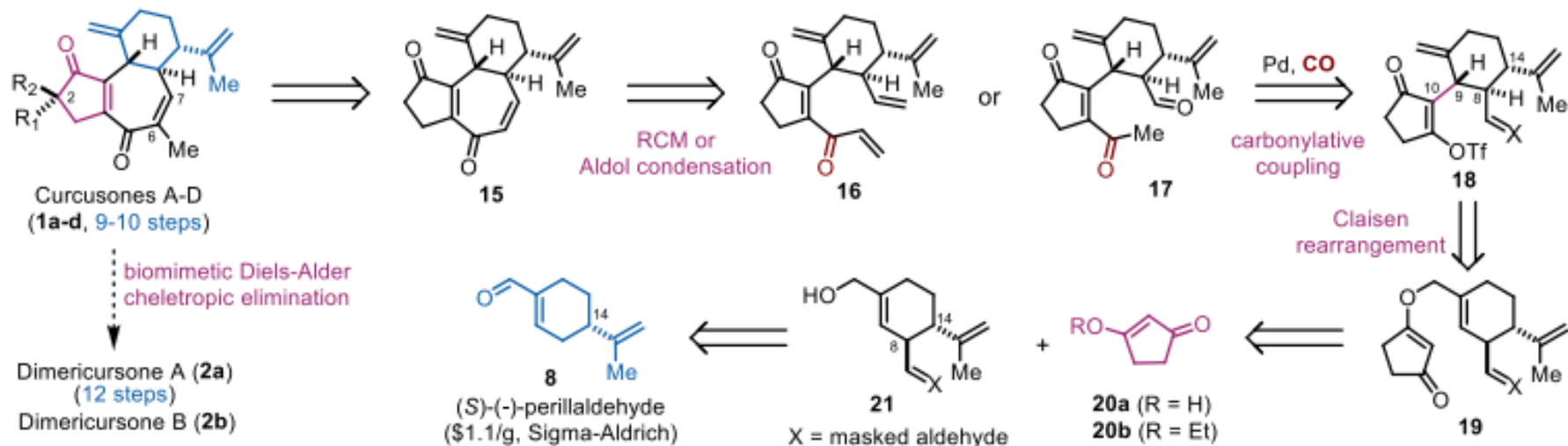


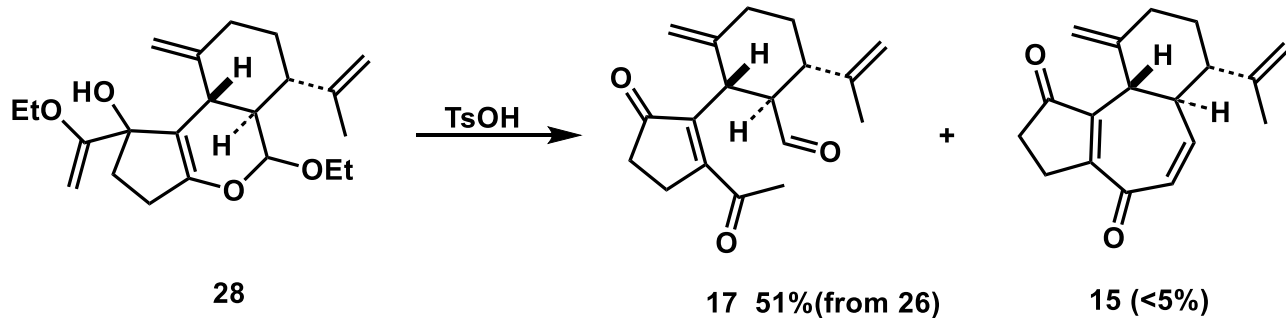
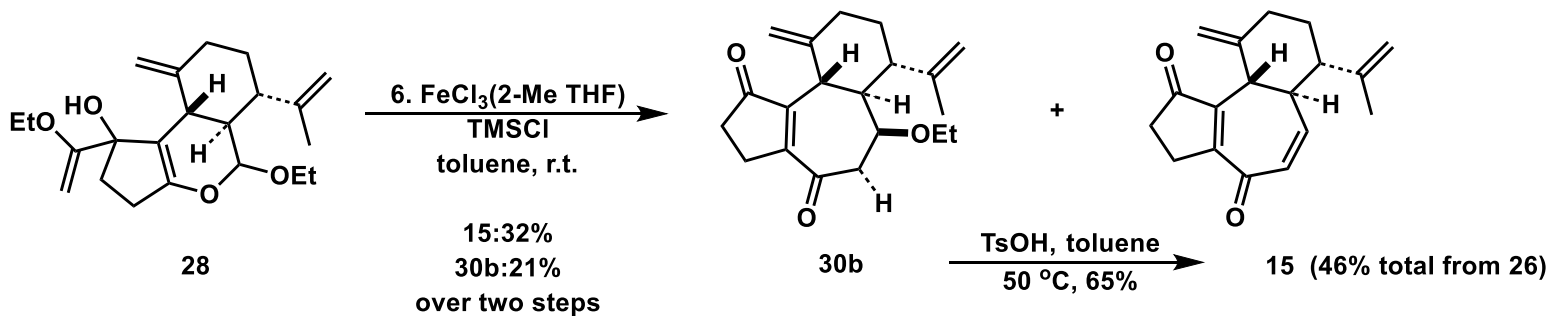
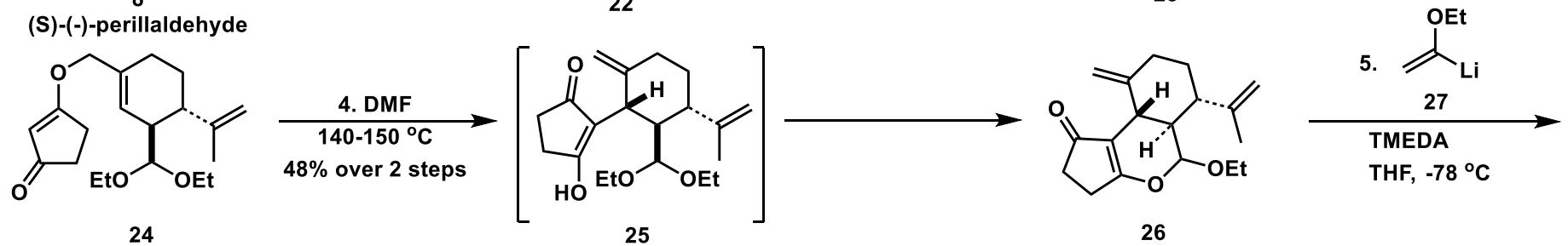
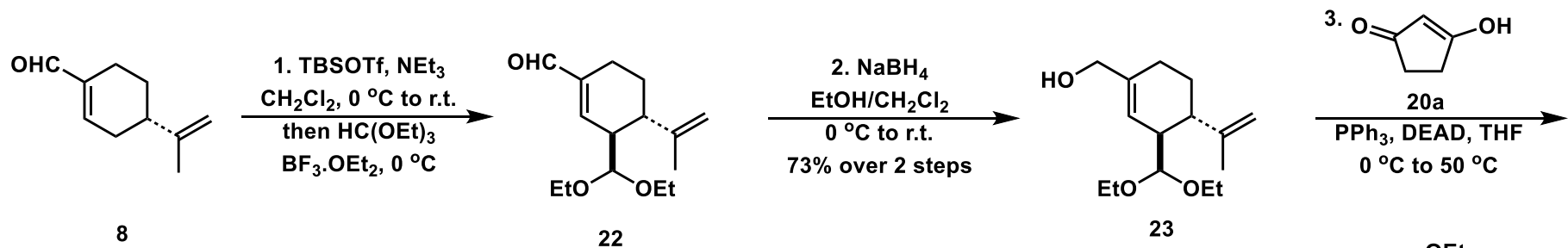
Dimericursone A (**2a**)

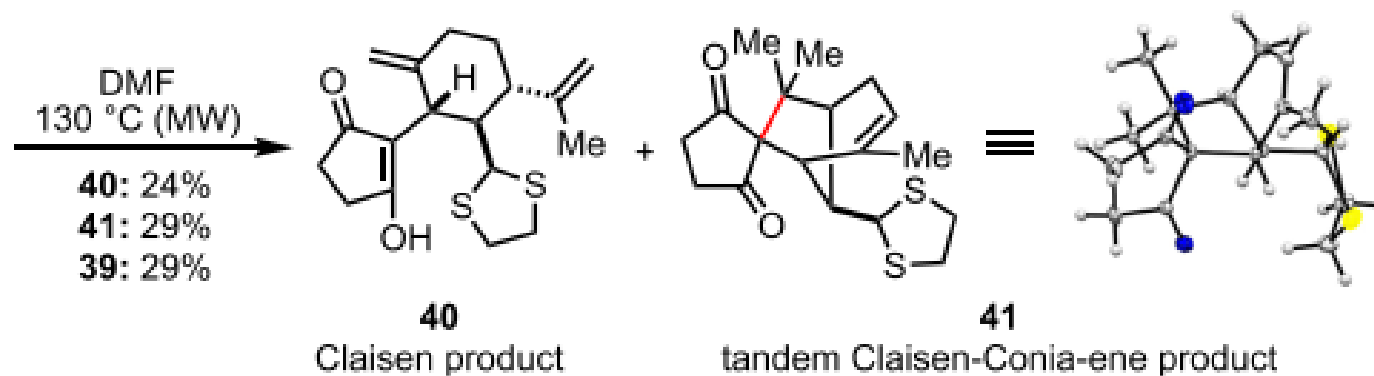
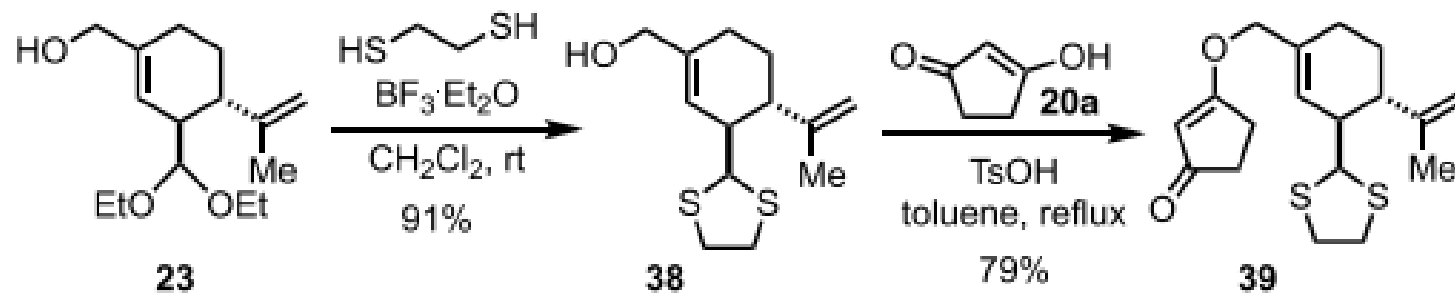


Dimericursone B (**2b**)

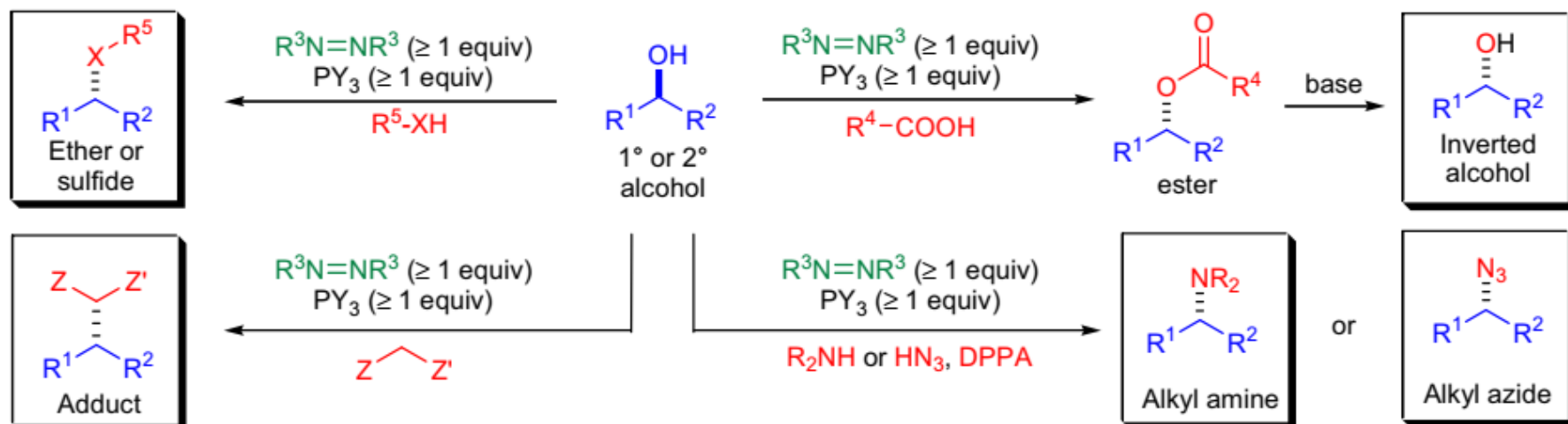
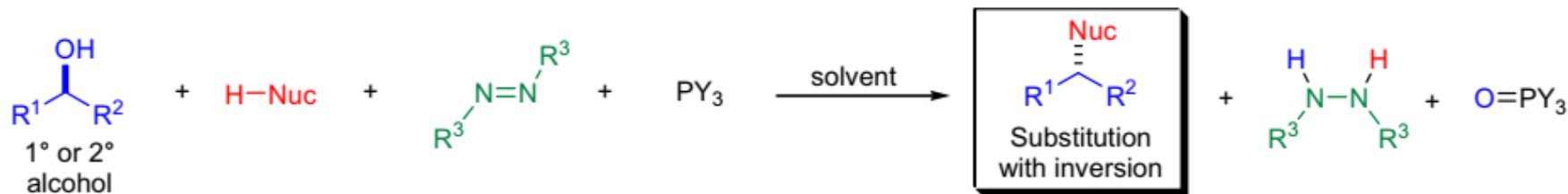
D Retrosynthetic Analysis



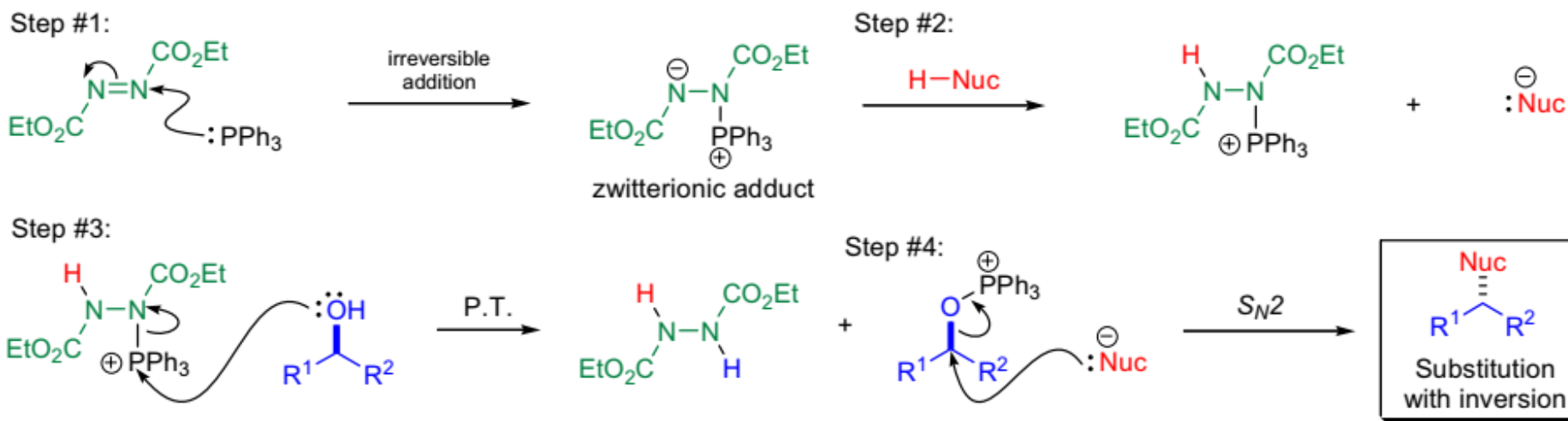




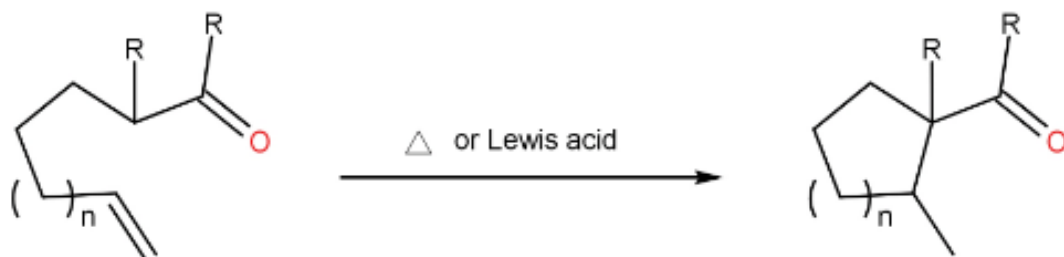
MITSUNOBU REACTION



Mechanism: ²⁵⁻⁴⁵



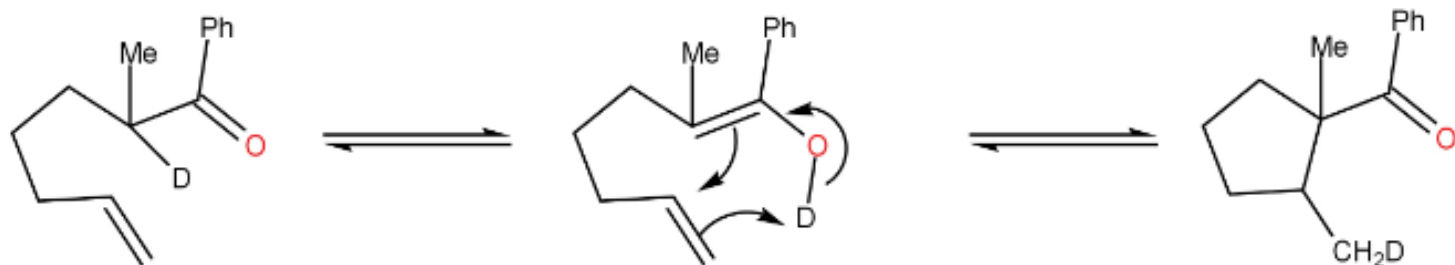
Conia-Ene环化反应

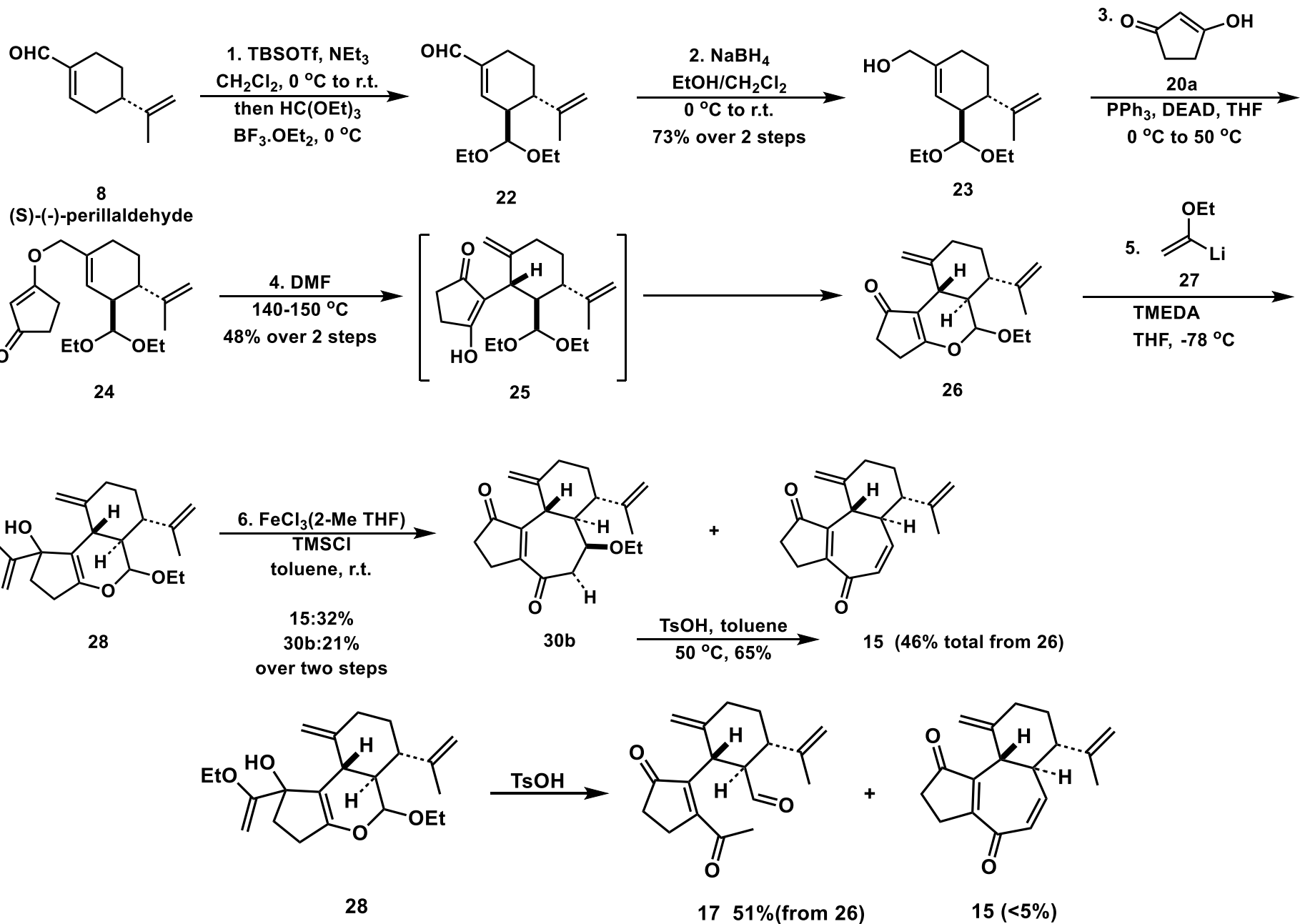


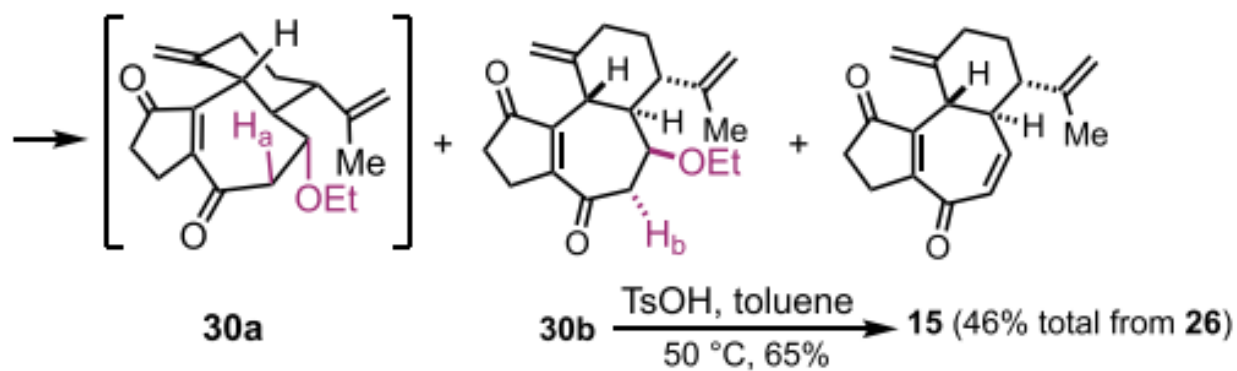
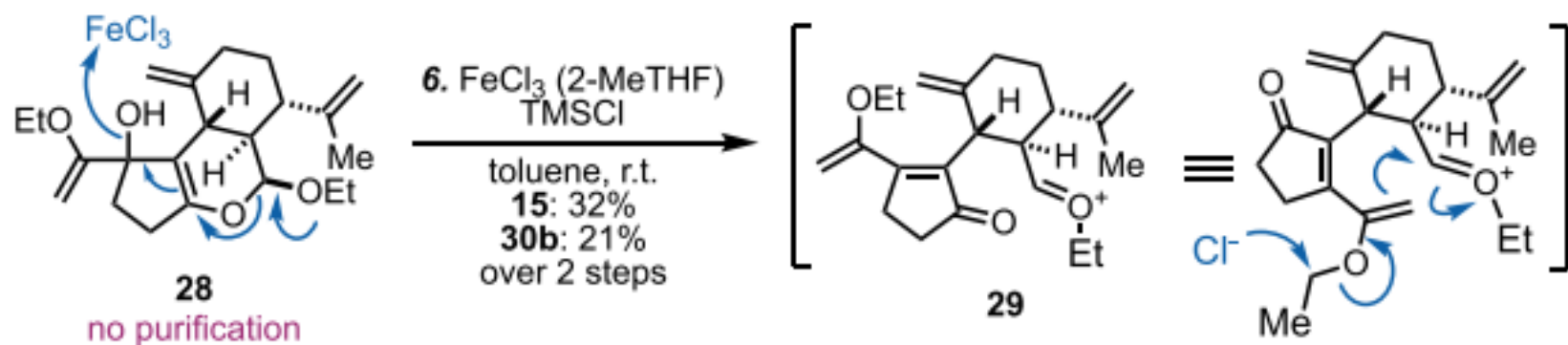
Conia-ene环化反应是在加热或者路易斯酸的催化下，烯酮和炔酮等不饱和羰基化合物所发生的分子内环化反应，是一种重要的合成环状化合物的方法。

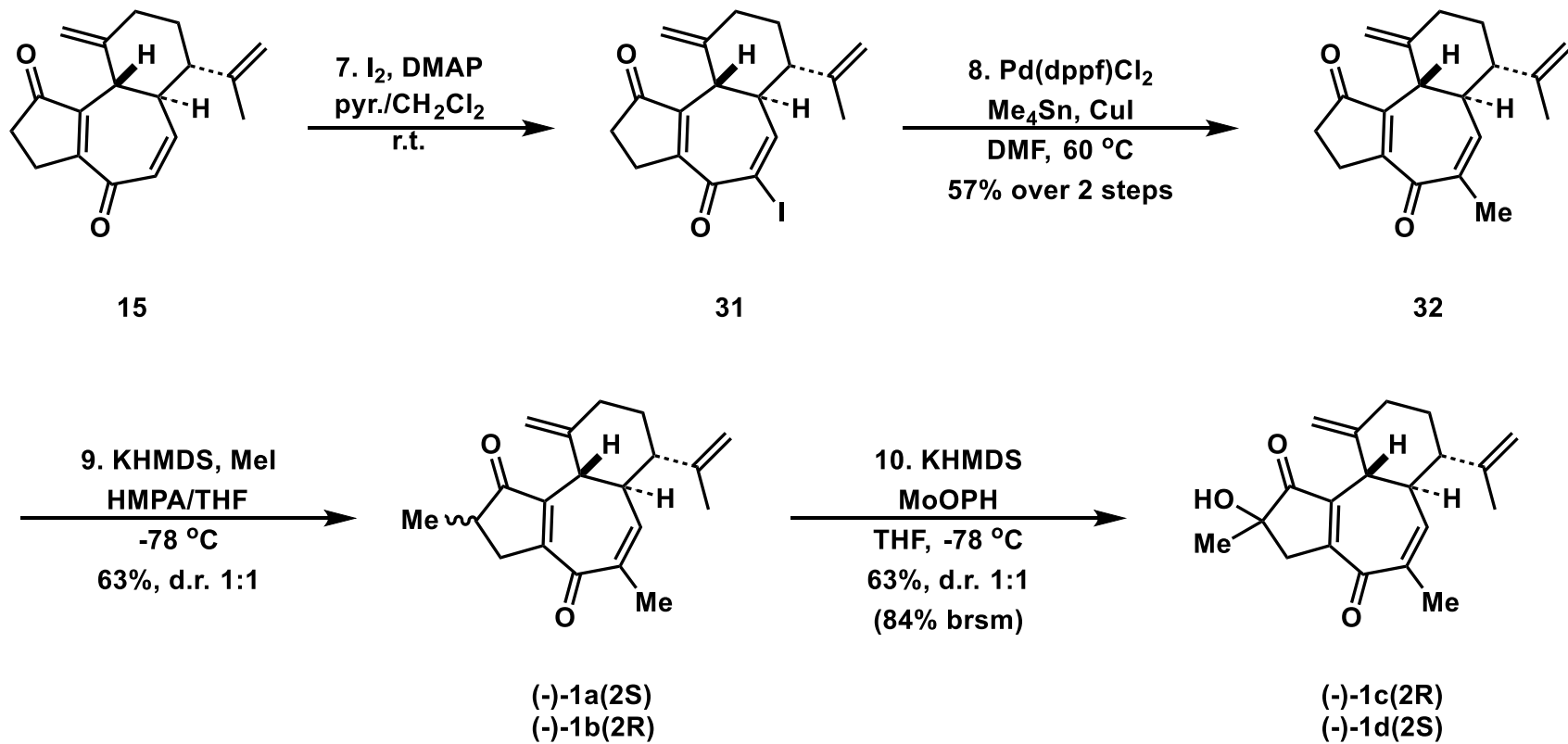
Conia-Ene环化反应机理

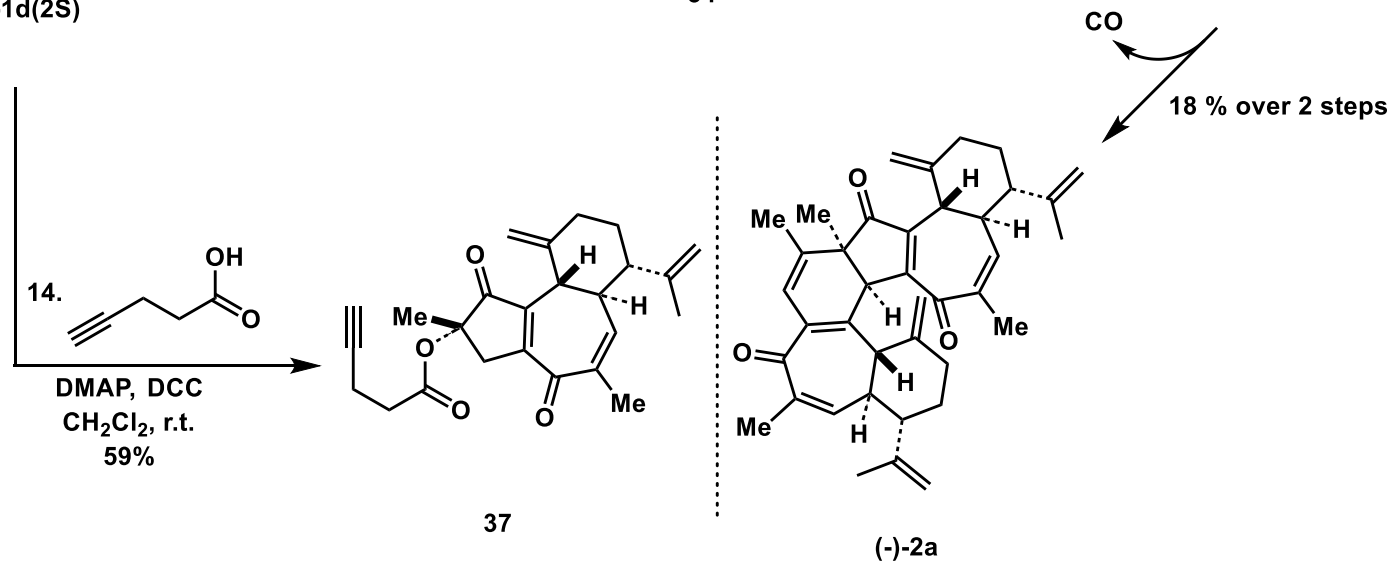
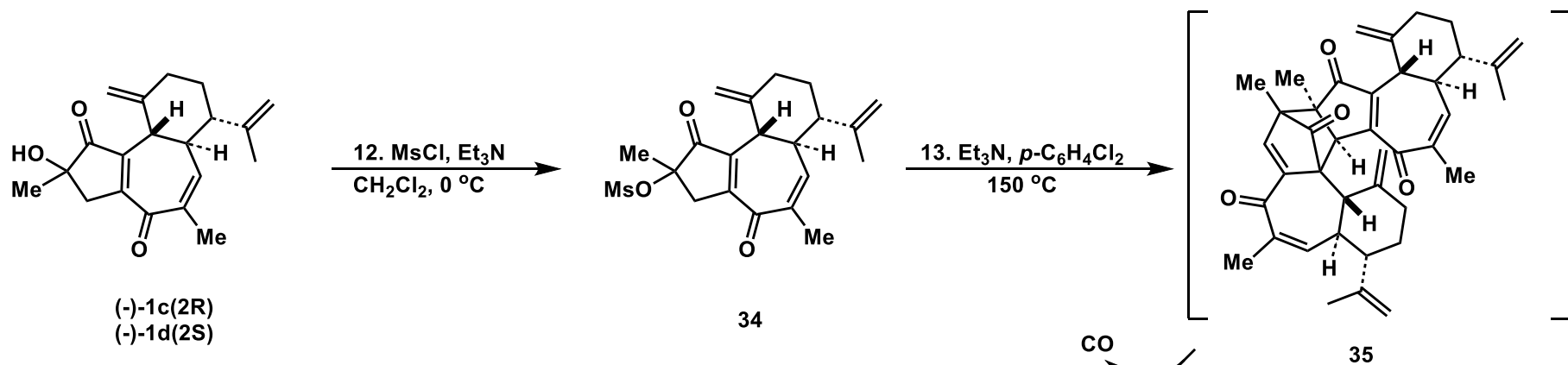
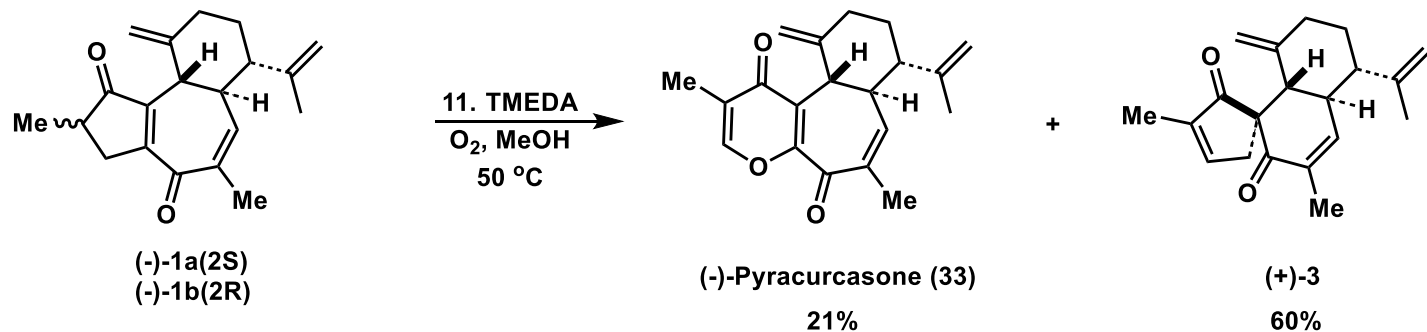
反应的机理是酮烯醇化，烯醇氢迁移形成C-C键，因此Conia-Ene反应是分子间Ene反应的分子内变体。Conia-ene反应适用于合成五元和六元环状化合物。含有端烯和端炔的环酮可以用于制备桥环、螺环和稠环化合物。



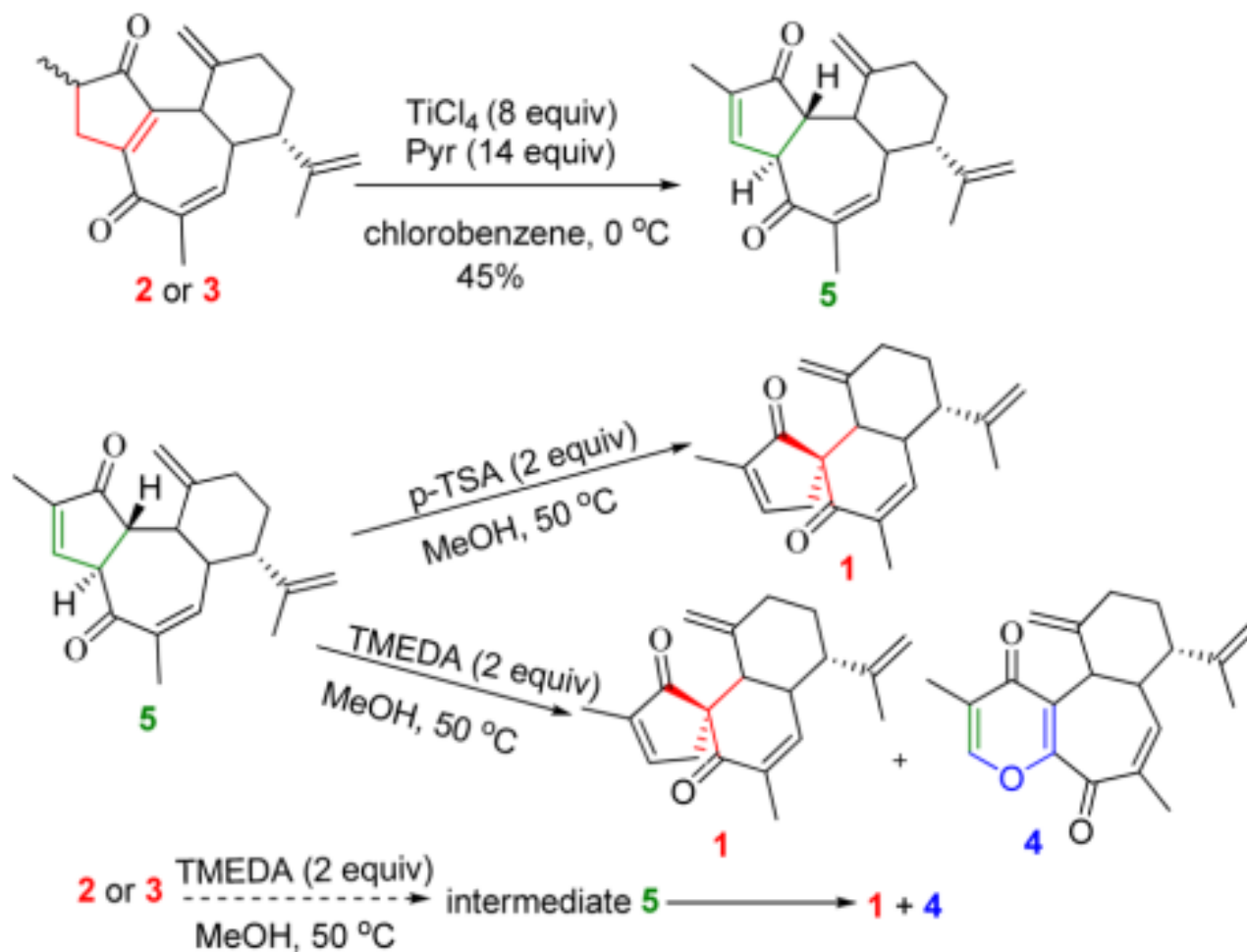




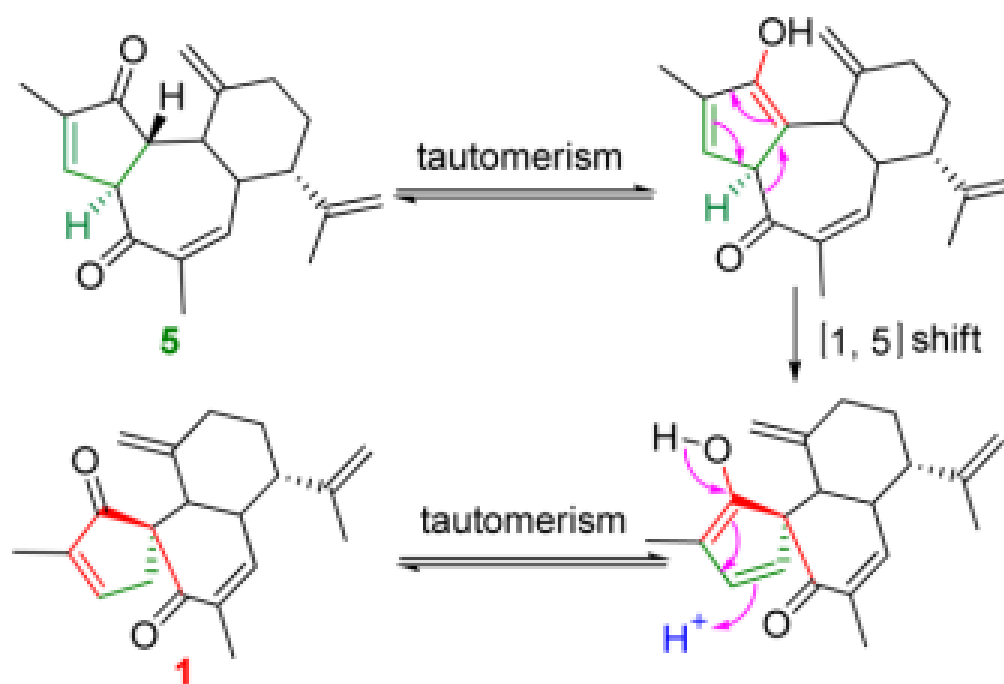




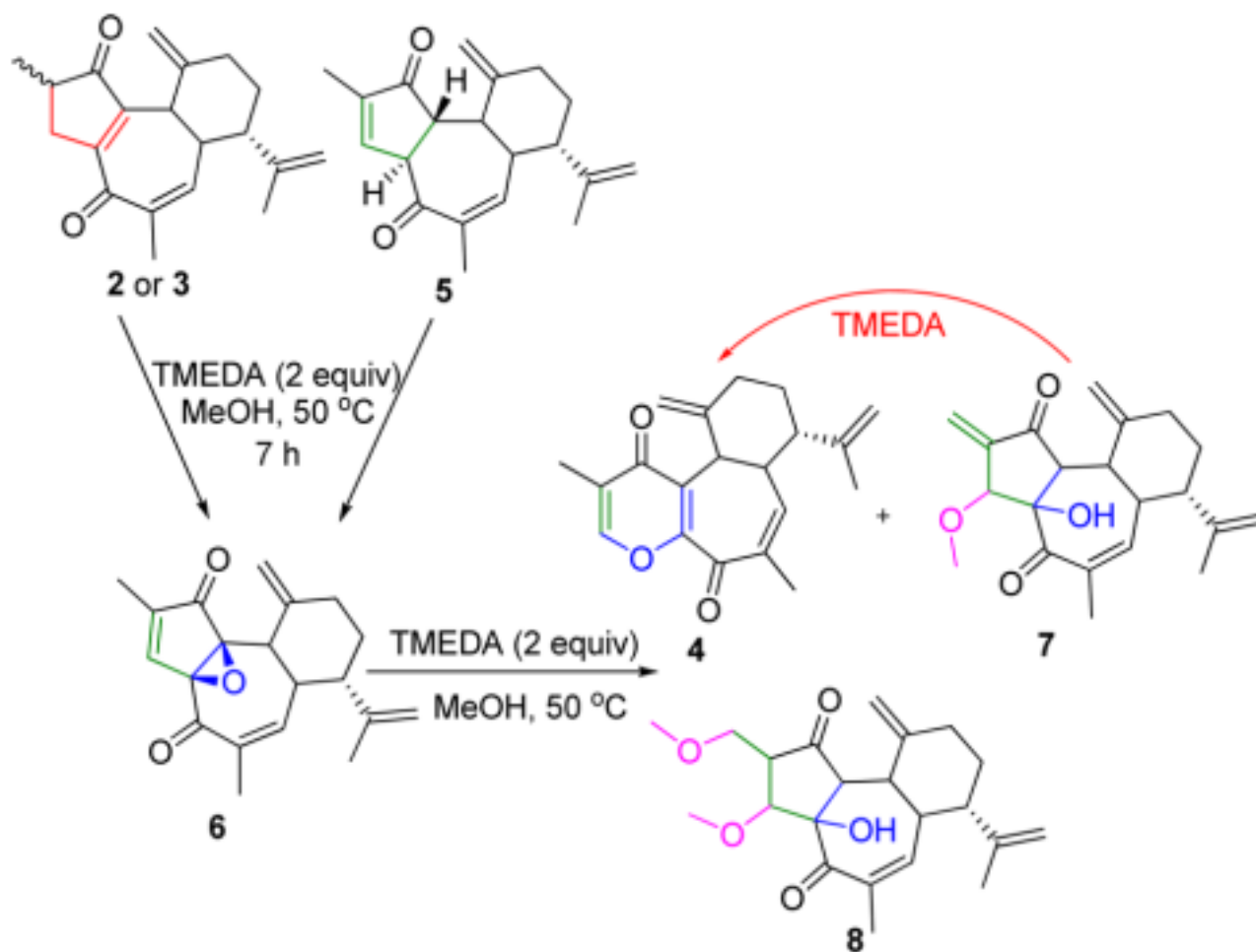
Scheme 1. Synthesis of Compounds 1 and 4 from 5



Scheme 2. Stereospecific Rearrangement of the Rhamnofolane 5



Scheme 3. Intermediates of the Formation of Compound 4



Scheme 4. Plausible Reaction Mechanism of the Formation of Compound 4

