

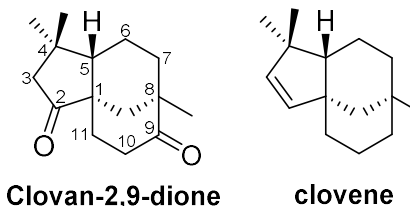


# Asymmetric Total Synthesis of (–)-Clovan-2,9-dione Using Catalyzed [3+2+1] Cycloaddition of 1-Yne-vinylcyclopropane and CO

Yang, J. Xu, W. Cui, Q. Fan, X. Wang L. –N. Yu, Z.-X. *Org. Lett.* **2017**, *56*, ASAP.

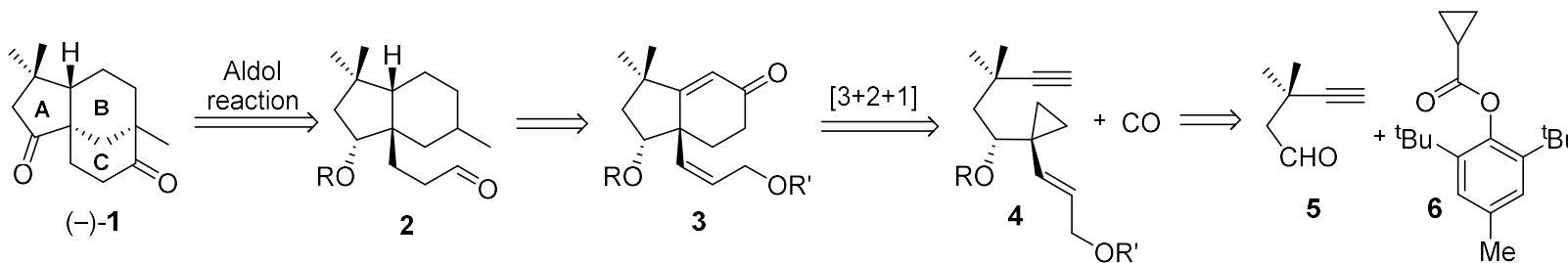
Clovan-2,9-dione belong to a novel class of clovane-type sesquiterpenes isolated from the gorgonian coral *Rumphella antipathies*

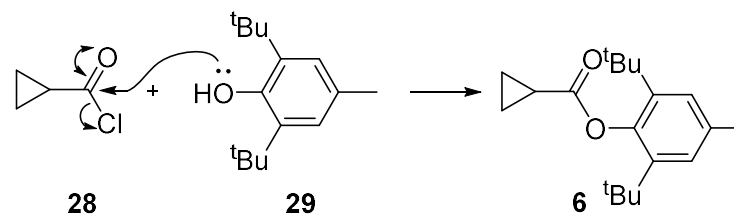
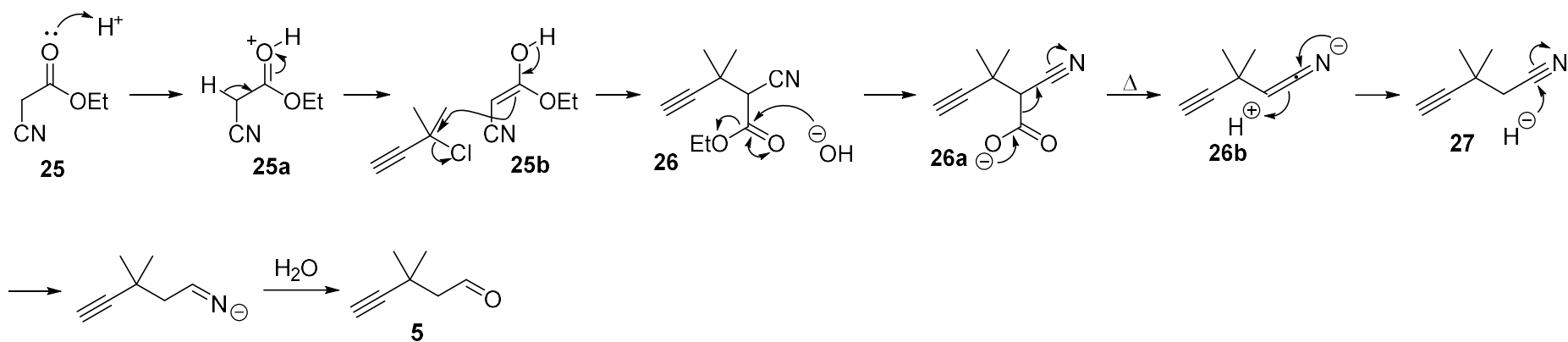
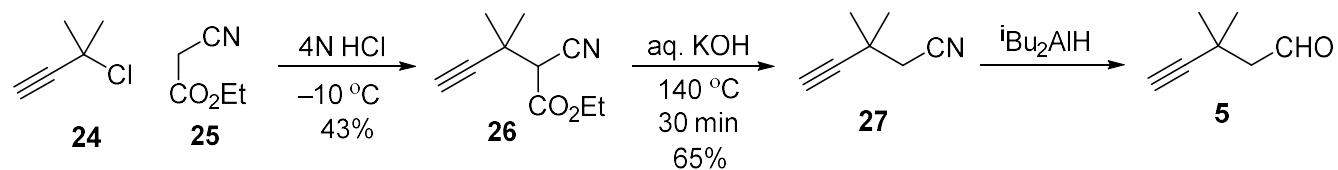
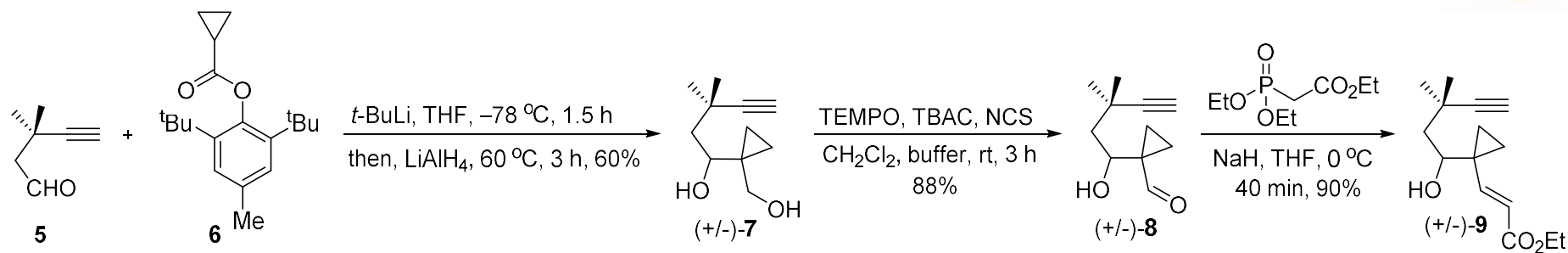
Collected at the southern coast of Taiwan by Sung et al..

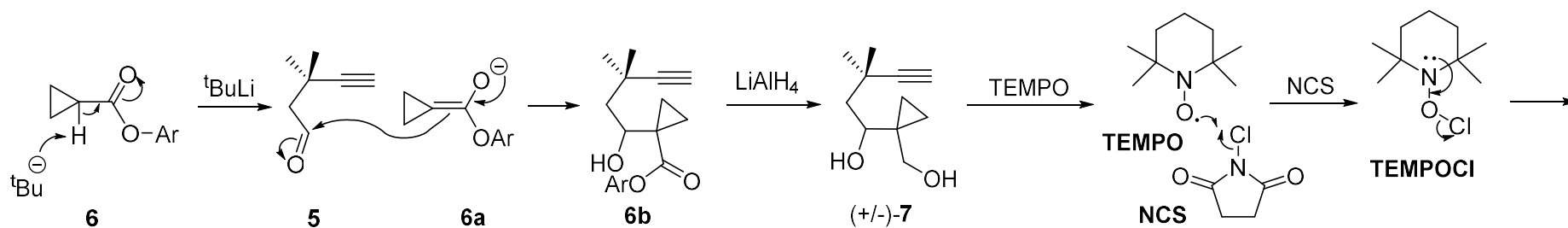
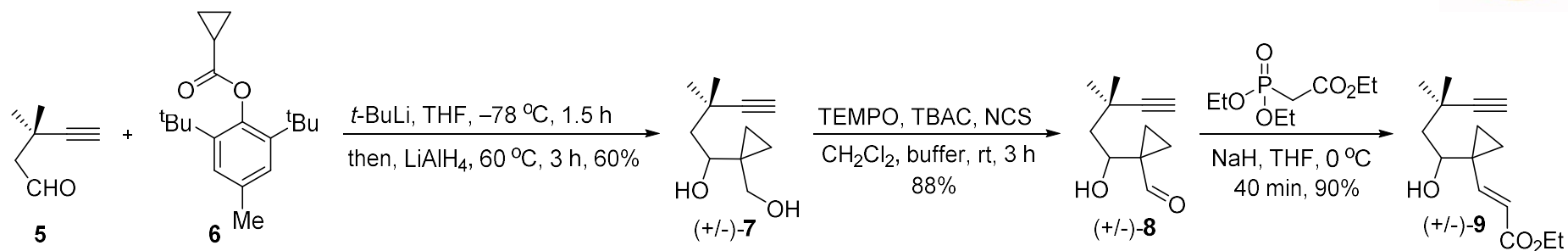


These molecules contain a tricyclic [6.3.1.0]dodecane skeleton with three quaternary carbon centers at C1, C4 and C8 positions.

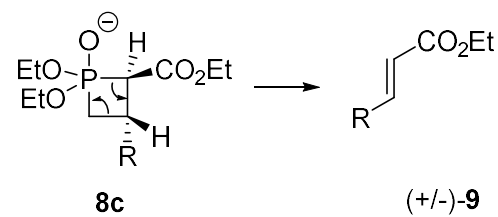
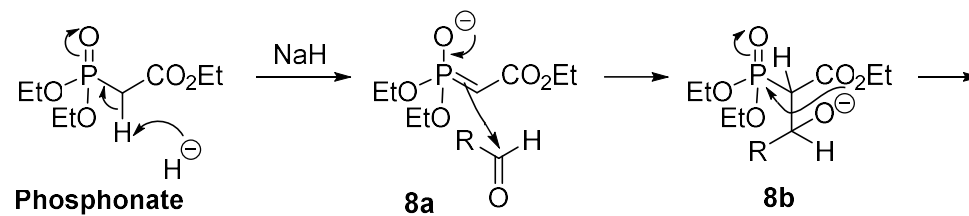
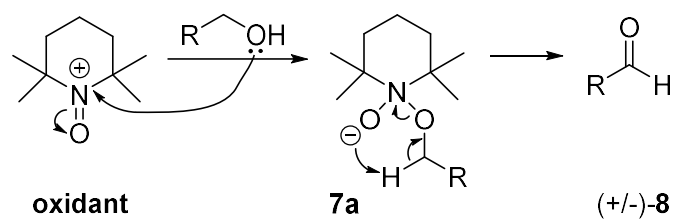
## Retrosynthesis

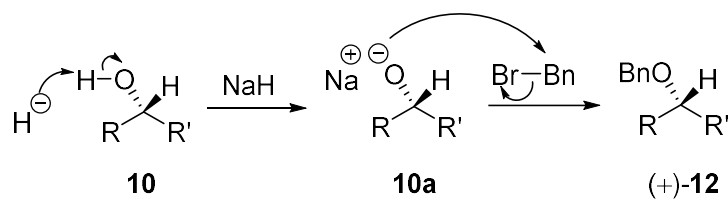
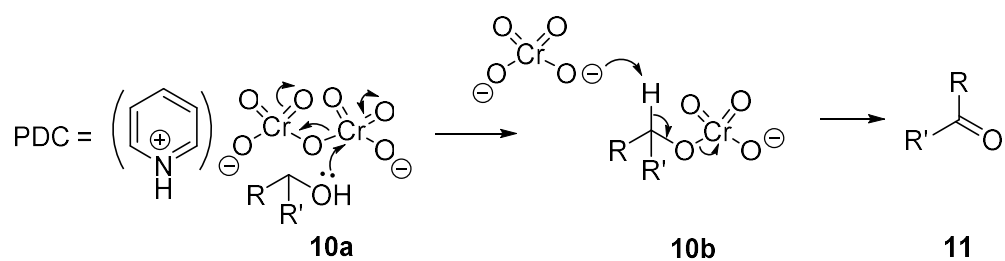
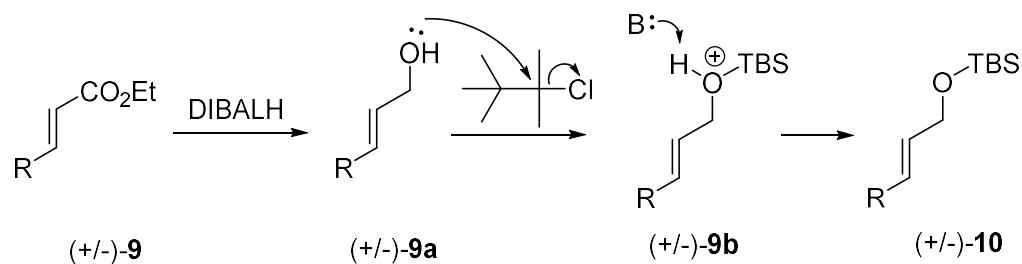
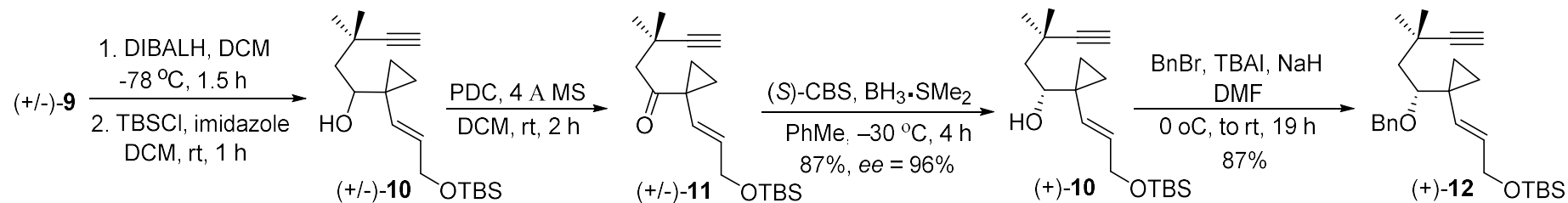




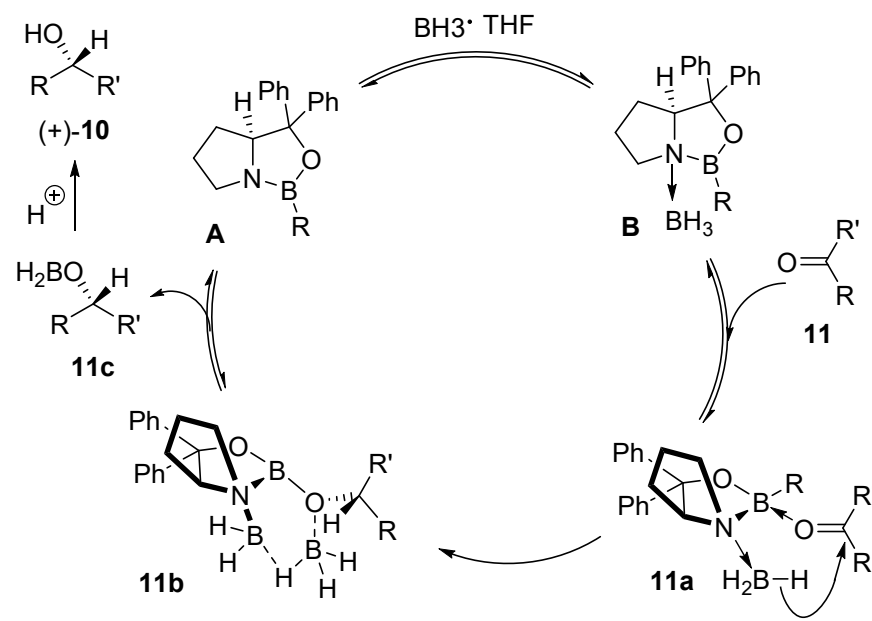


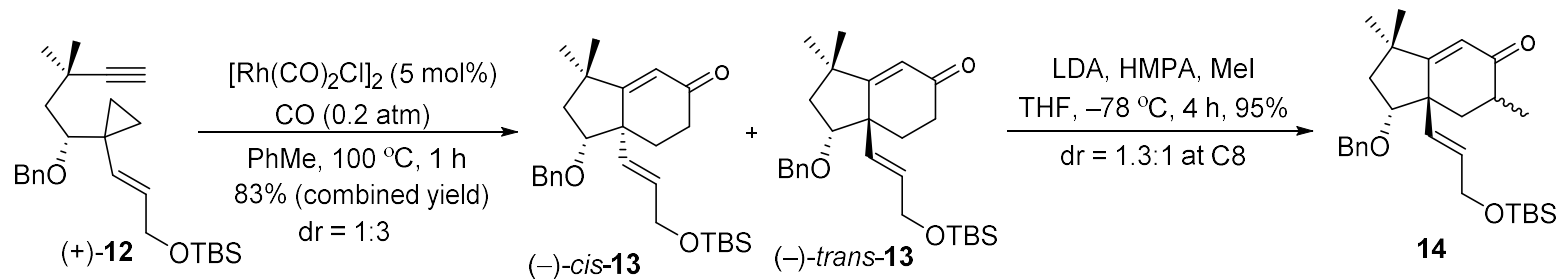
### HWE reaction



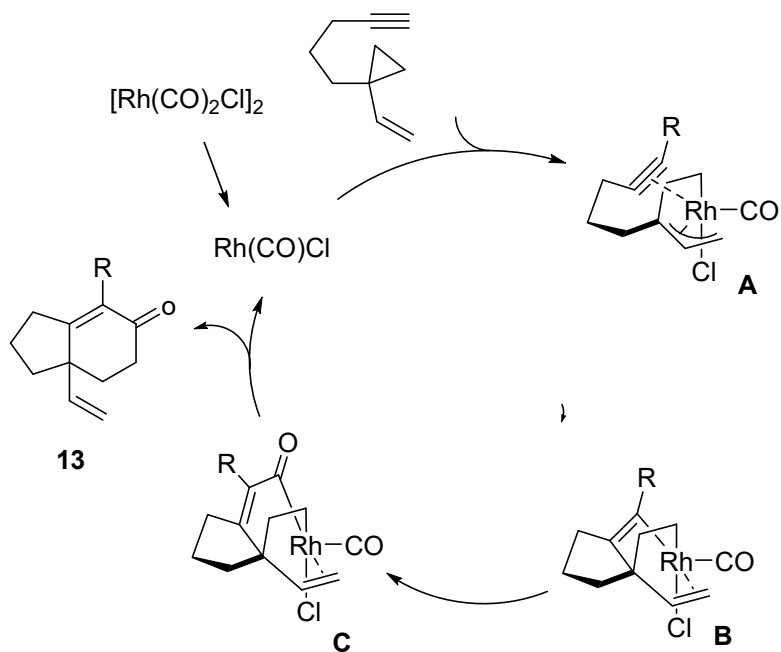


### Corey-Bakshi-Shibata reduction





### Rh(I) catalyzed [3+2+1] cycloaddition



### Regioselectivity

