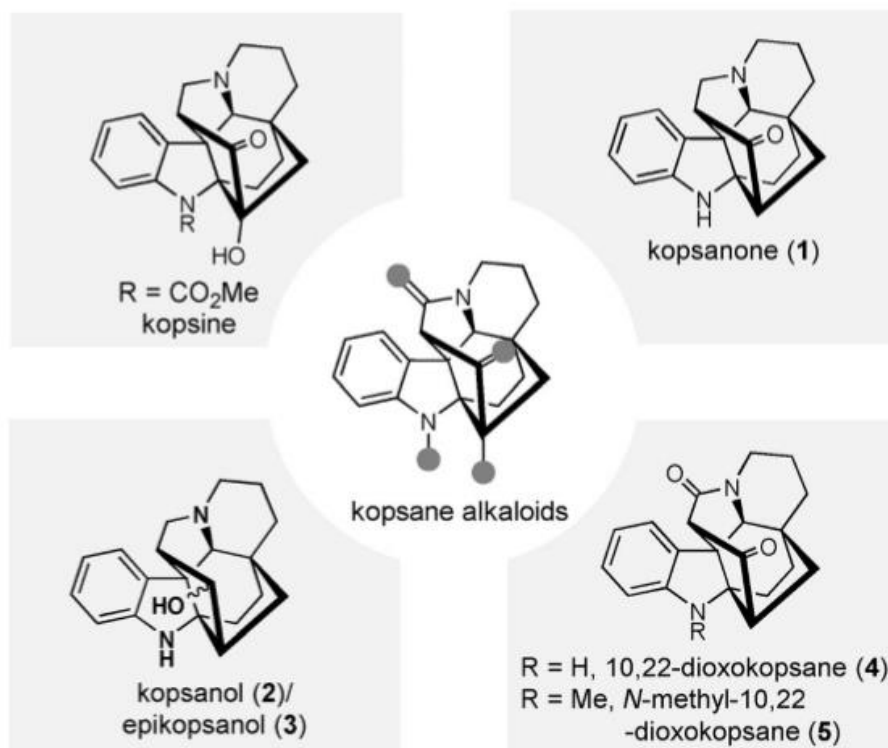
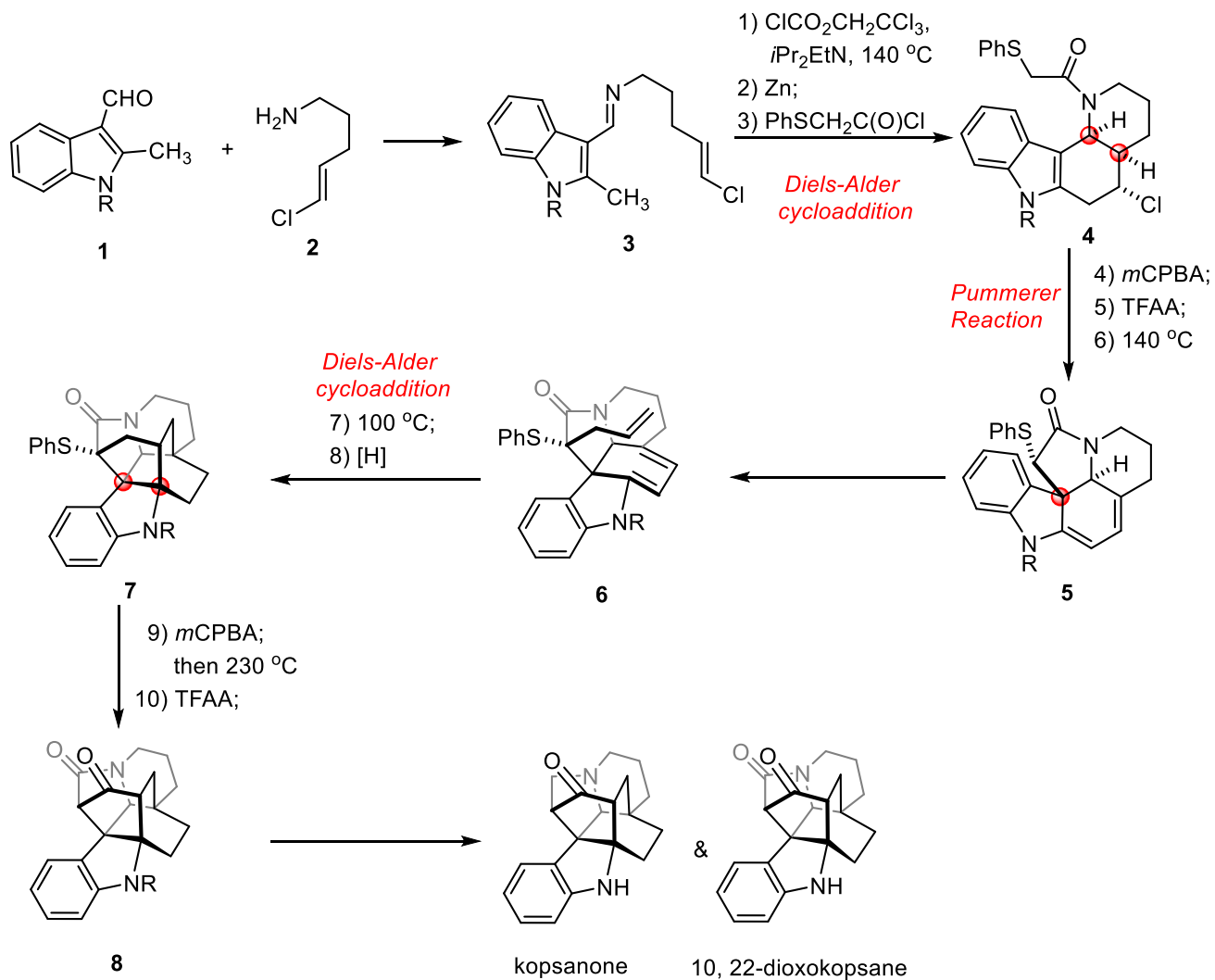


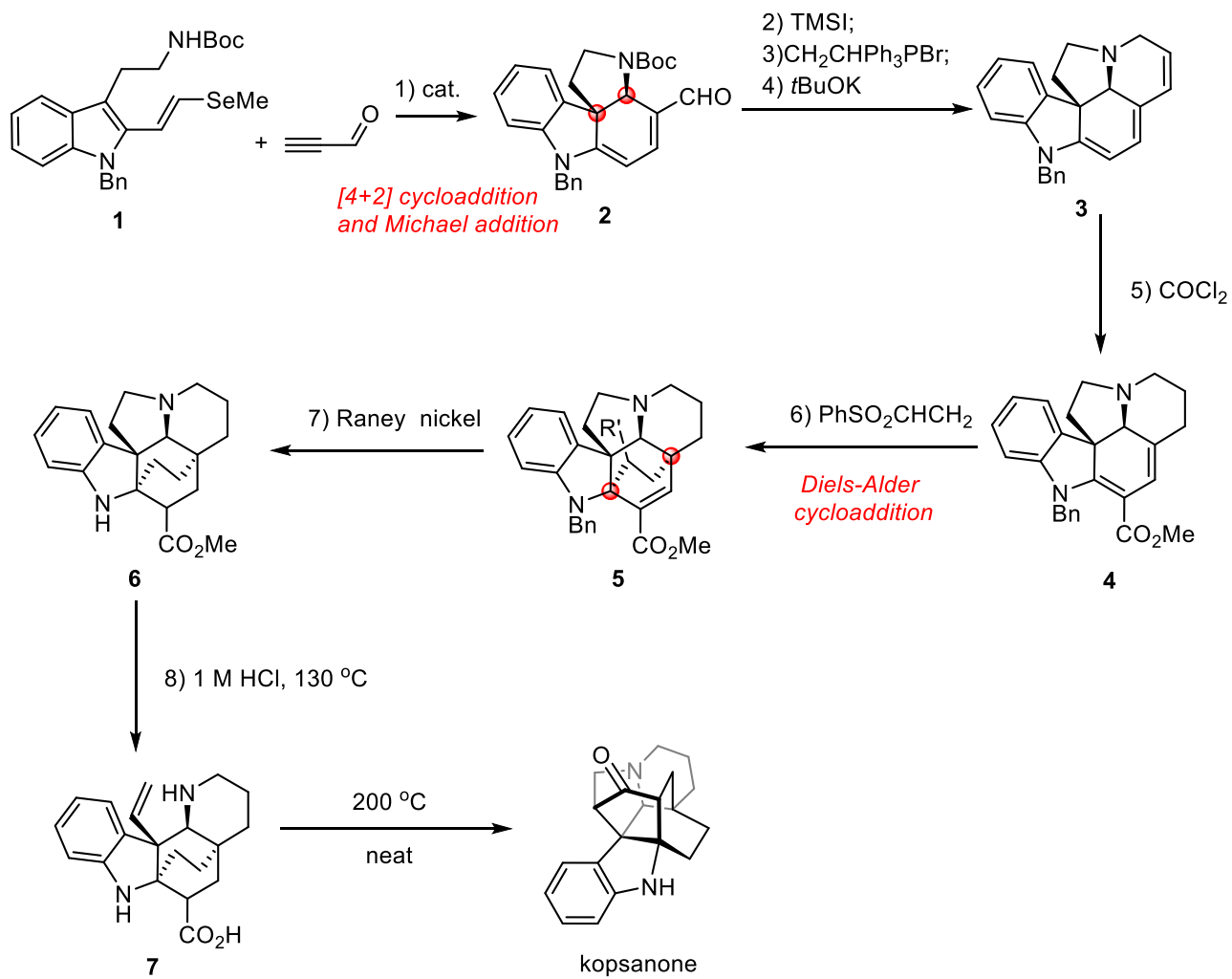
Asymmetric Total Syntheses of Kopsane Alkaloids via a PtCl₂-Catalyzed Intramolecular [3+2] Cycloaddition

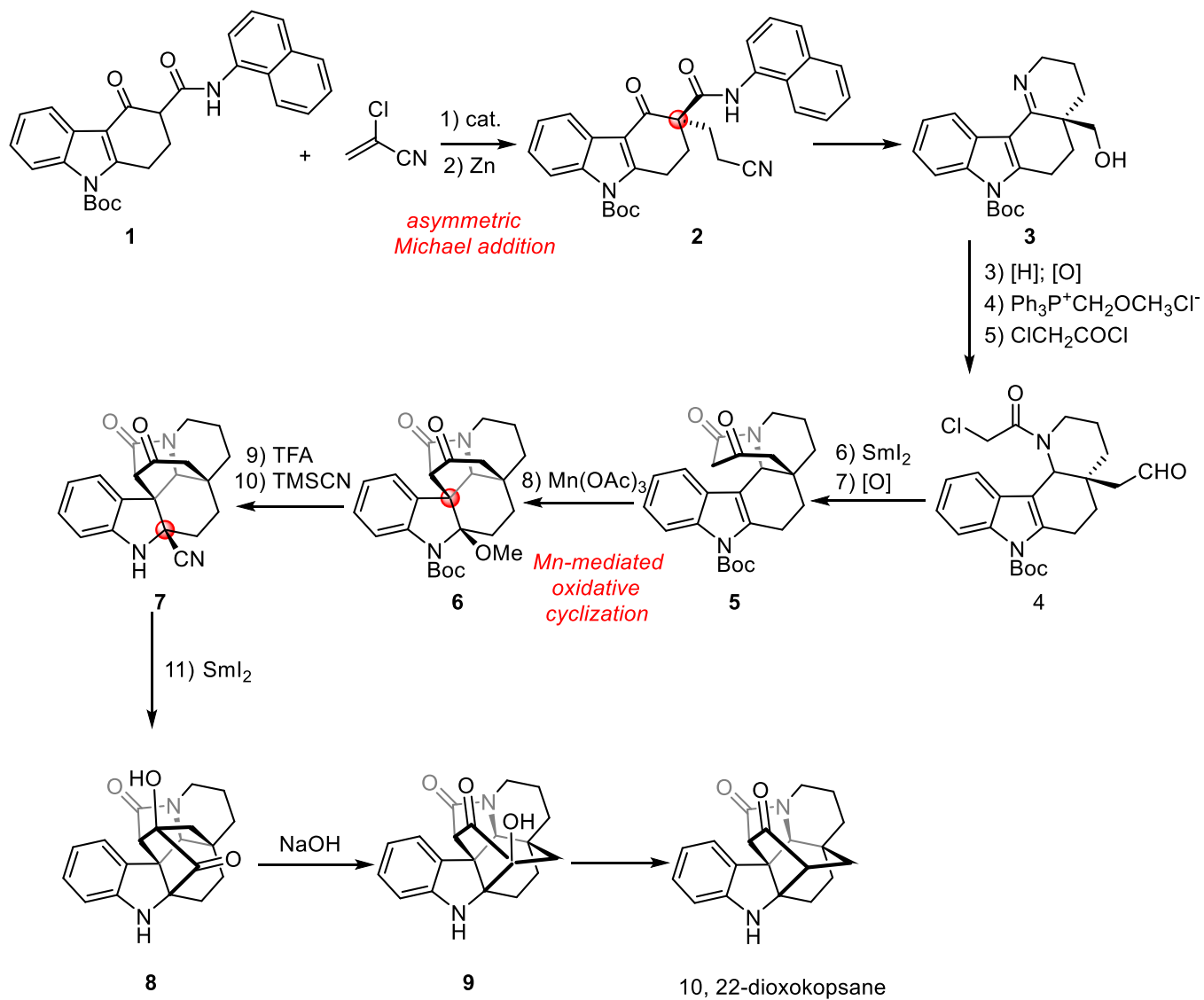
Xuelel Jia⁺, Honghui Lei⁺, Feipeng Han, Tao Zhang, Ying Chen, Zhengshuang Xu, Pratanphorn Nakliang, Sun Choi, Yian Guo,* and Tao Ye*

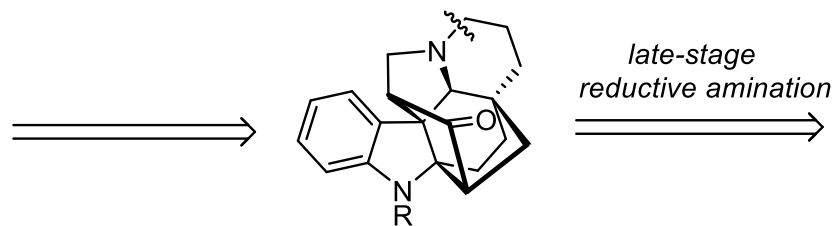
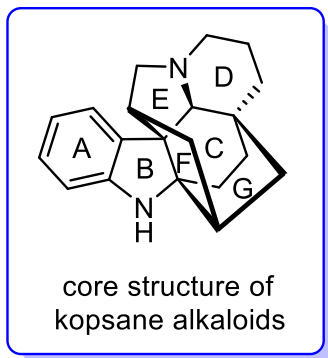


Scheme 1. Structures of the representative kopsane alkaloids.

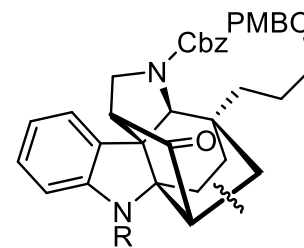




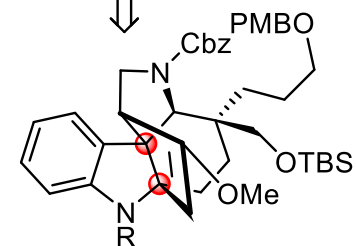




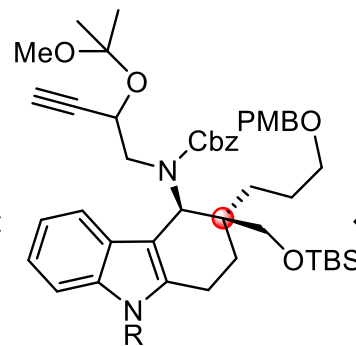
R = H, kopsanone (**1**)
R = Me, (**6**)



*transannular
alkylation*



Pt
[3+2]
cycloaddition



*domino
reaction*

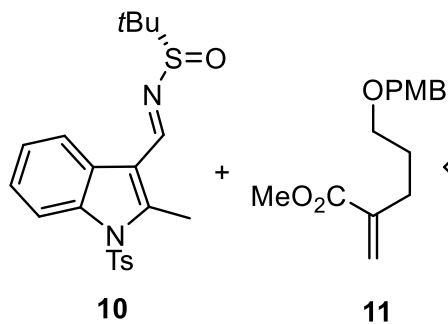
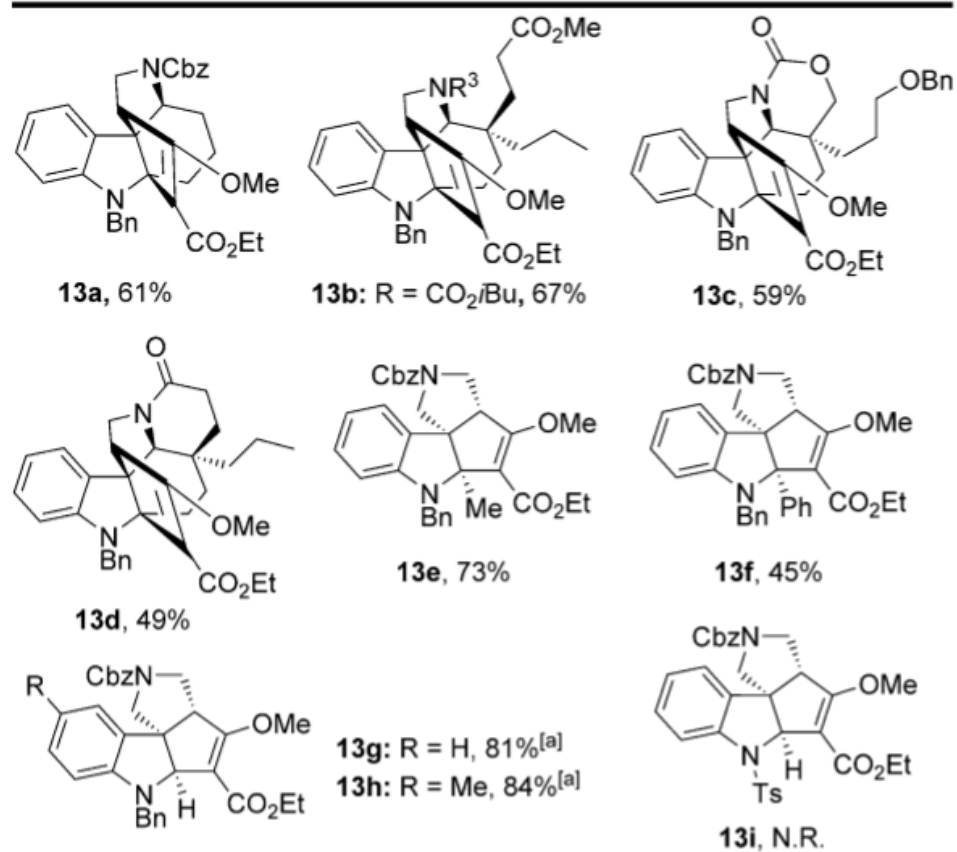
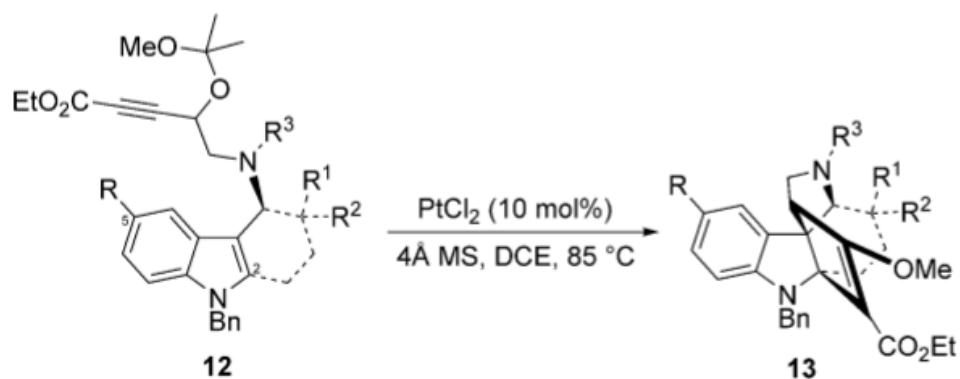
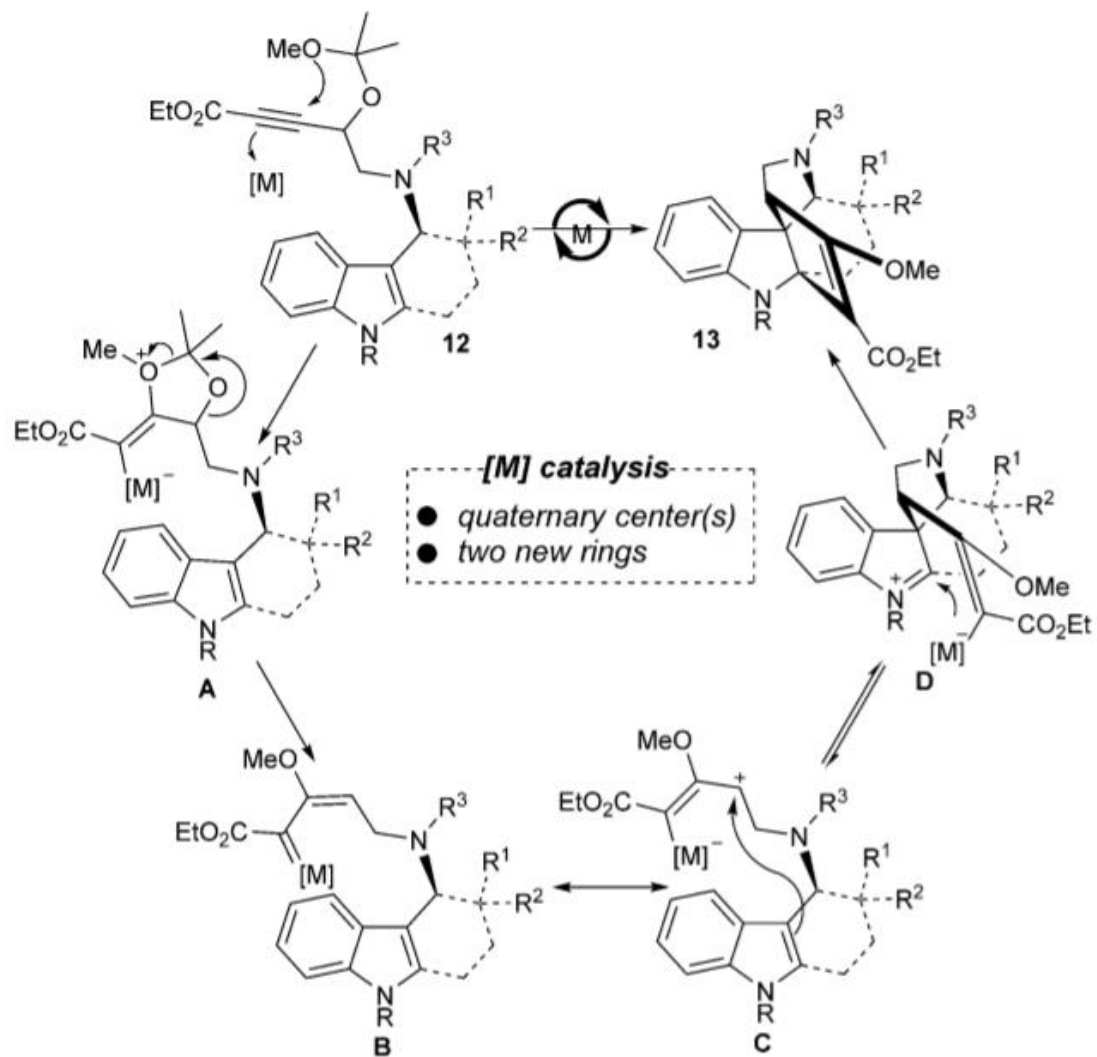


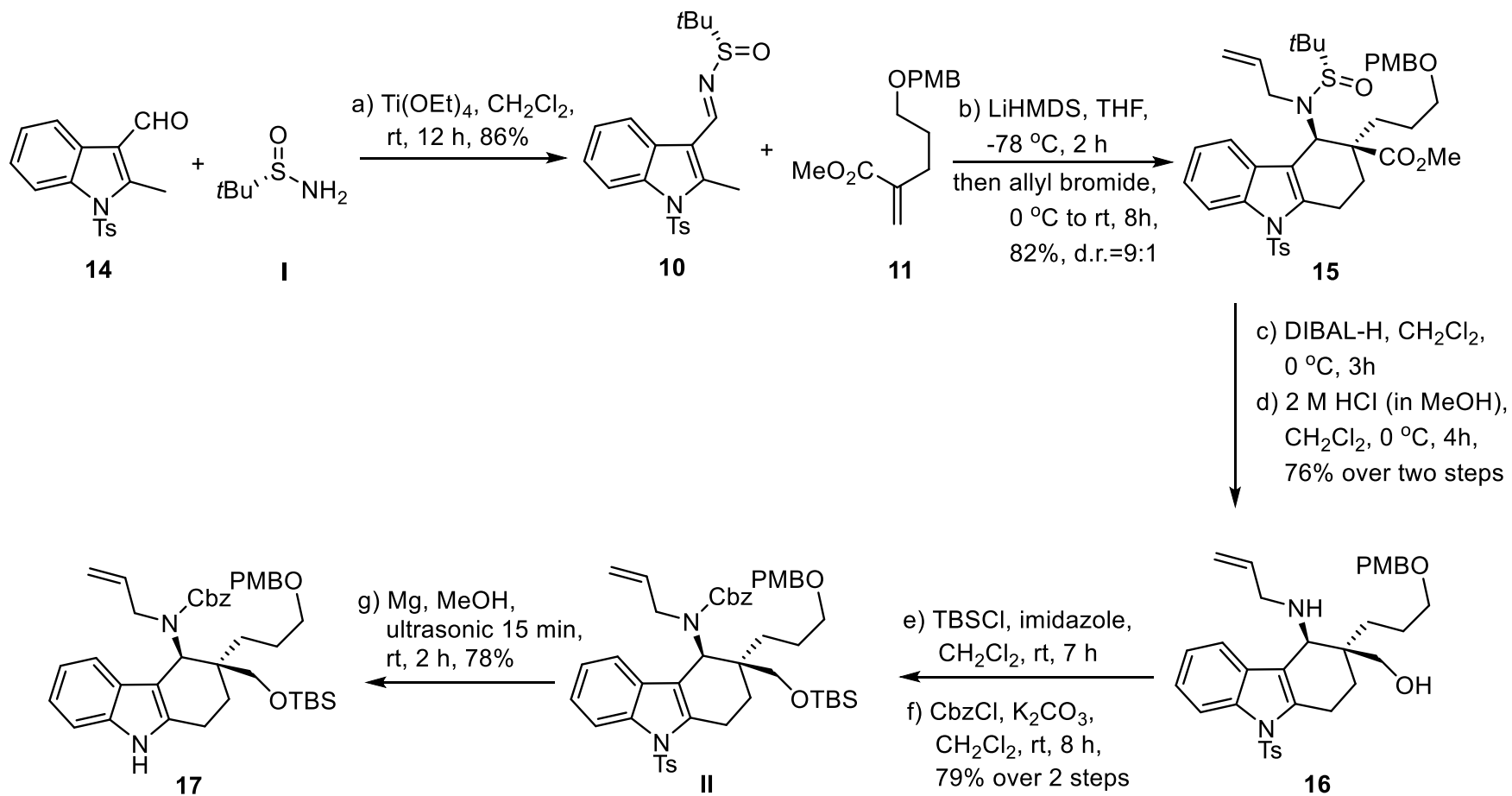
Table 1: Scope of the intramolecular [3+2] cycloaddition.

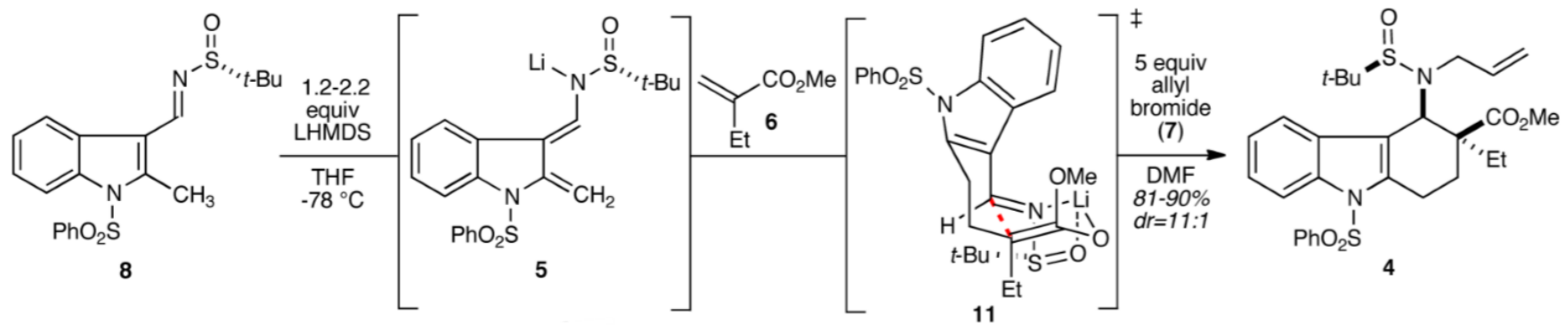


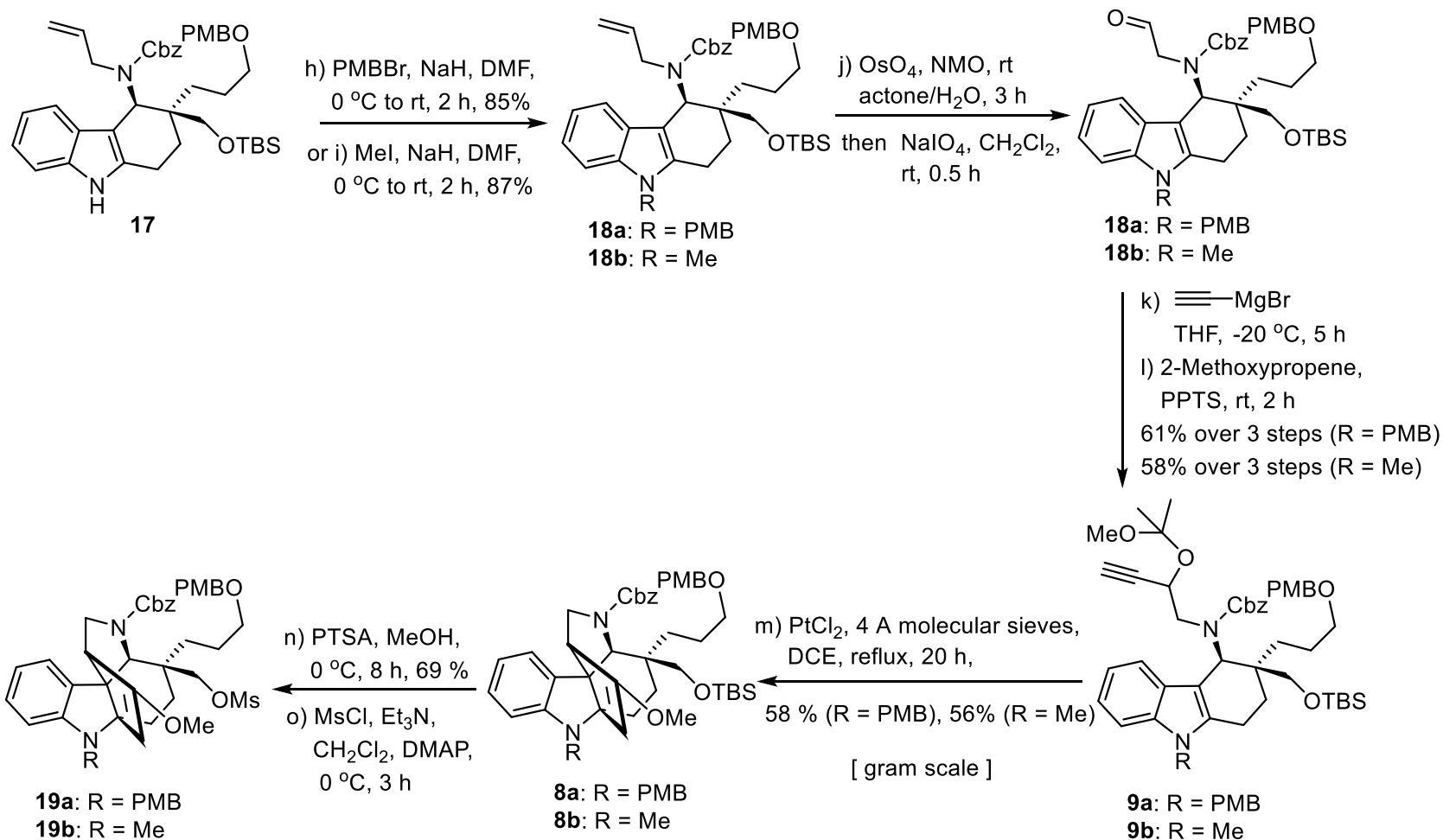
[a] PtCl_2 (10 mol%), 4Å molecular sieves, DCE, 70 °C.

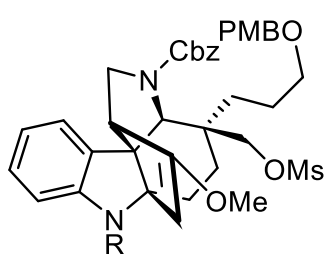


Scheme 3. Design of the 2,3-quaternary functionalization of indole via π -acid triggered [3+2] annulation.

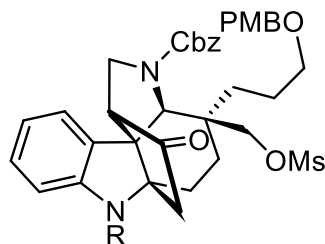
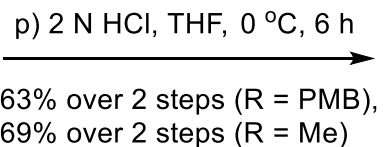




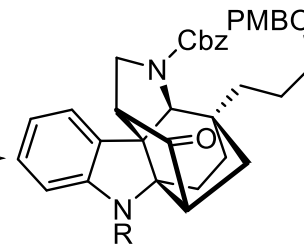
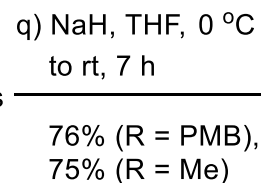




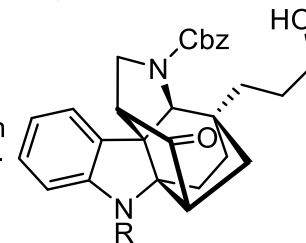
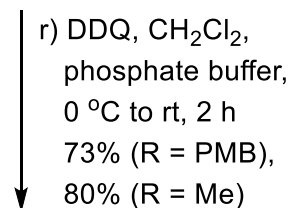
19a: R = PMB
19b: R = Me



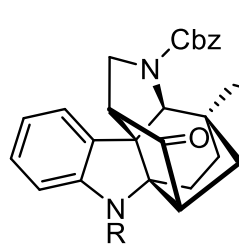
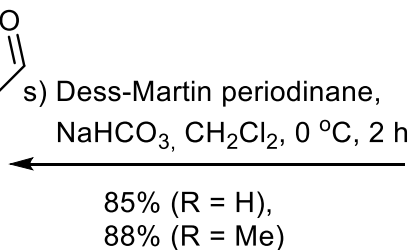
20a: R = PMB
20b: R = Me



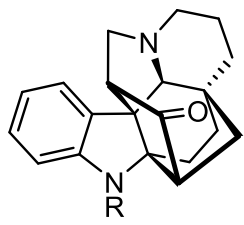
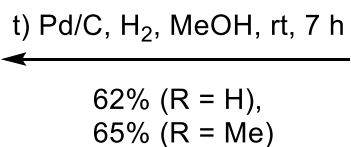
7a: R = PMB
7b: R = Me



IIIa: R = H
IIIb: R = Me



21a: R = H
21b: R = Me



R = H, kopsanone (**1**)
 R = Me, (**6**)

