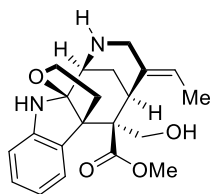
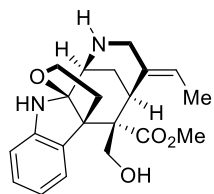


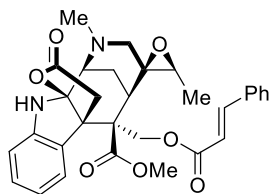
Total syntheses of Aspidodasycarpine, Lonicerine and Lanciferine



aspidodasycarpine

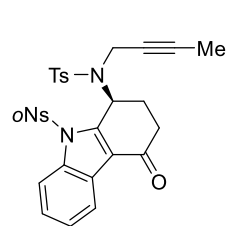
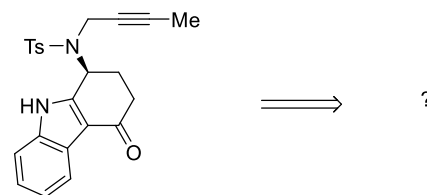


lonicerine

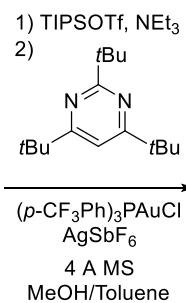


lanciferine
(proposed)

Retrosynthesis:

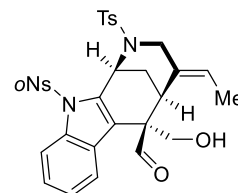


1

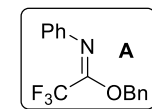


2

4 Steps



3



1) **A**, TfOH
2) NaBH₄,
then aq NaOH,
thioglycolic acid

3) allyl vinyl ether,
NIS, NaHCO₃

4

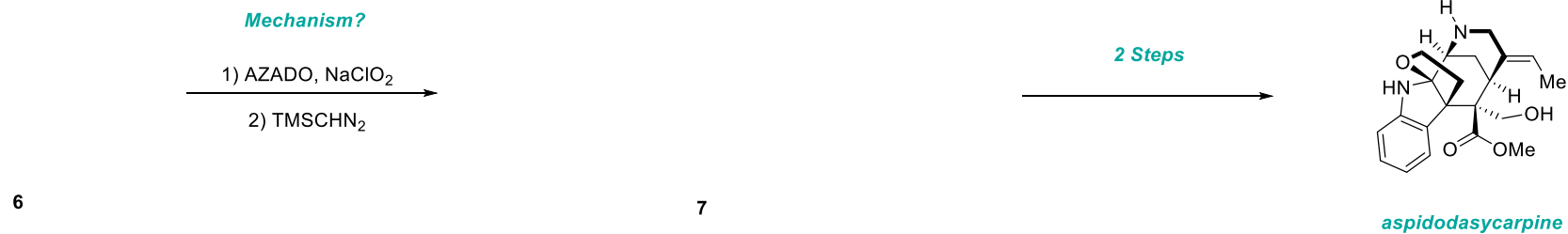
1) *t*BuOLi, 120 °C
2) [Ir(cod)(MePPh₂)₂]₂PF₆
then aq HClO₄

NaBH₄

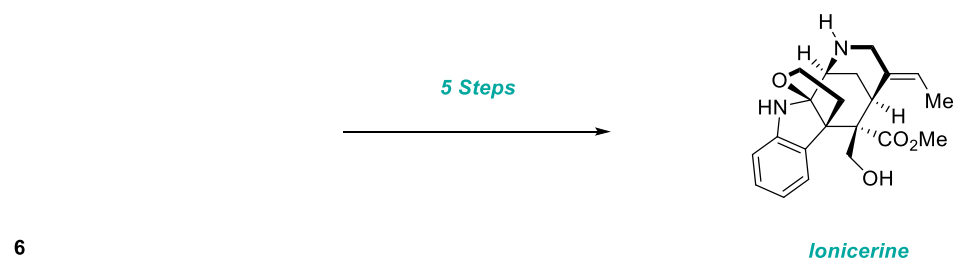
6

5

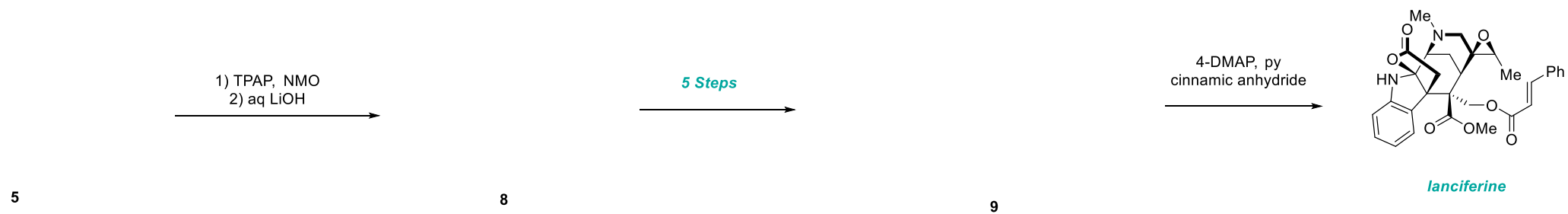
Aspidoasycarpine:

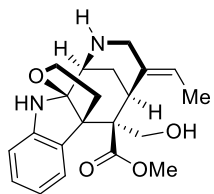


Lonicerine:

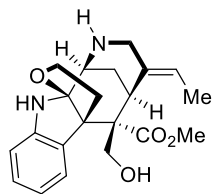


(proposed) Lanciferine:

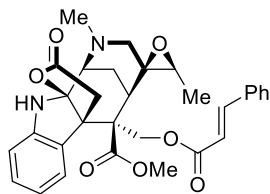




aspidodasycarpine

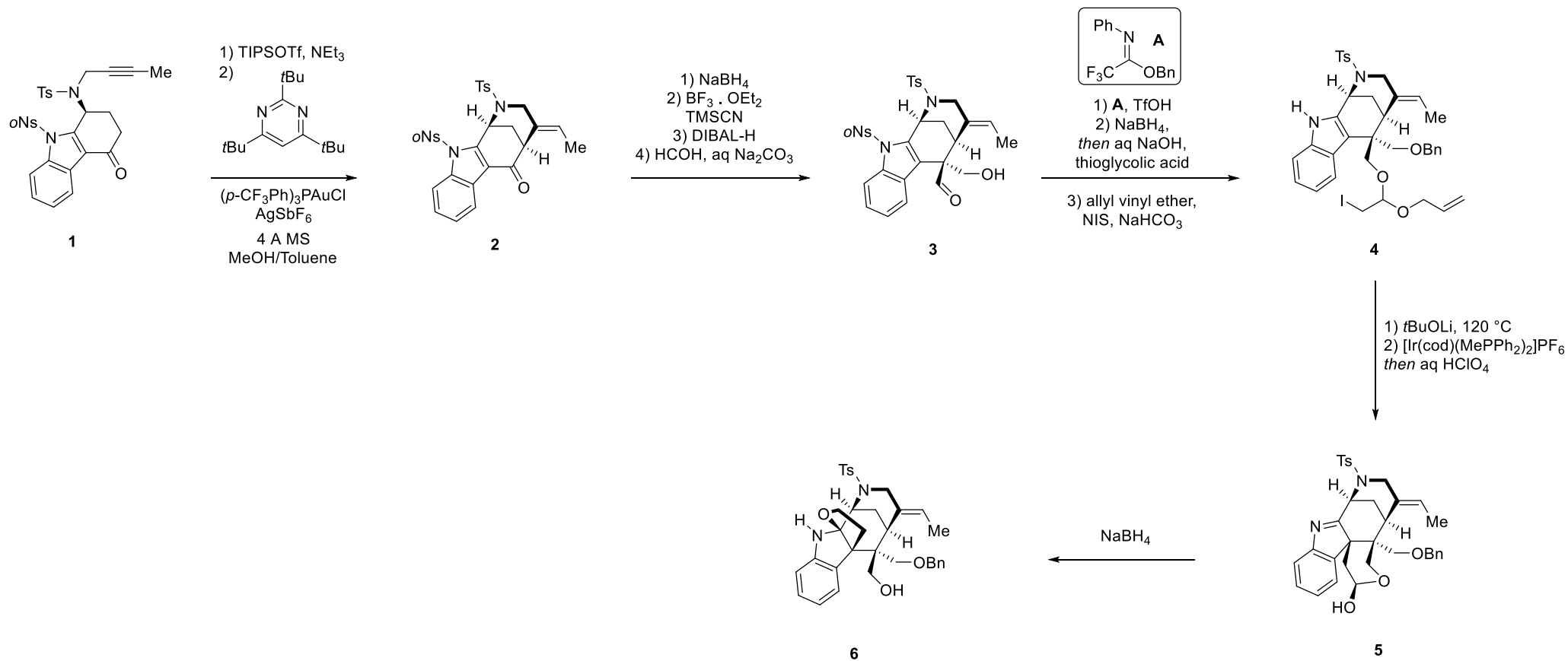
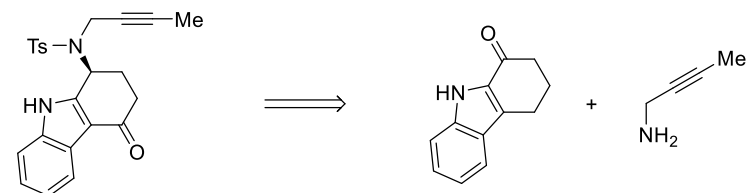


lonicerine

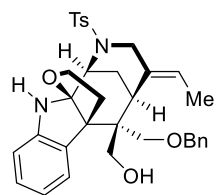


lanciferine
(proposed)

Retrosynthesis:



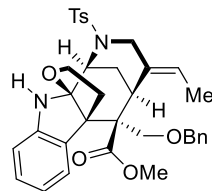
Aspidosyncarpine:



6

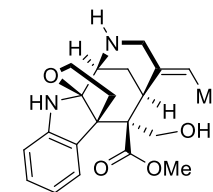
Mechanism?

1) AZADO, NaClO₂
2) TMSCHN₂



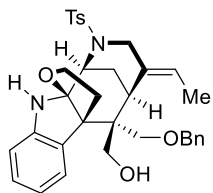
7

1) BBr₃
2) Na naphthalenide



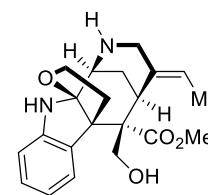
aspidosyncarpine

Lonicerine:



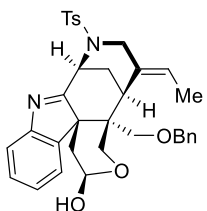
6

1) BBr₃
2) TPAP
3) NaClO₂
4) TMSCHN₂
5) Na naphthalenide



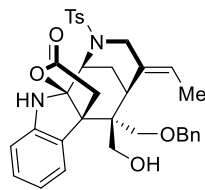
lonicerine

(proposed) Lanciferine:



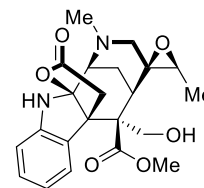
5

1) TPAP, NMO
2) aq LiOH



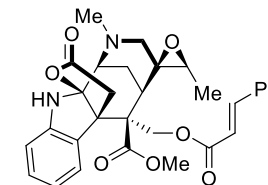
8

1) AZADO, NaClO₂
2) I₂, NaHCO₃
3) Na₂CO₃, MeOH
4) Na naphthalenide
5) HCOH, H₂, Pd/C



9

4-DMAP, py
cinnamic anhydride



lanciferine