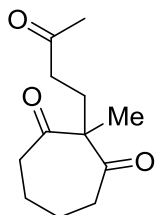


A Concise Total Synthesis of (-)-Himalensine A

Y. Chen, J. Hu, L.-D. Guo, W. Zhong, C. Ning, J. Xu

Angew. Chem. Int. Ed. 2019, 58, 7390–7394.



1 - 3



4 - 6

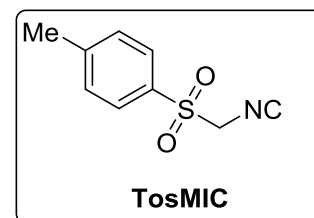


- 1) L-Prolinamide, AcOH
DCM, rt, 24 h
- 2) CH(OMe)₃, *p*-TsOH
THF, rt, 16 h
- 3) *t*-BuOK, **TosMIC**,
THF, MeOH, 55 °C, 20 h

- 4) Oxone, NaHCO₃,
THF/H₂O, 0 °C to rt, 20 h
- 5) TESOTf (1.2 eq), Et₃N,
DCM, 0 °C, 30 min
then, benzoquinone, Pd(OAc)₂,
MeCN, rt, 7h
- 6) Cu(OAc)₂, HONEt₂,
DCE, 50 °C, 9 h
then, DBU, rt, 10h

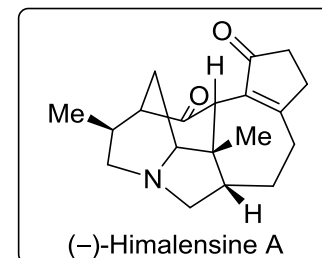
Mechanism for step 1?

Mechanism for step 3? Name reaction?



step 5: name reaction?

Mechanism for step 6?



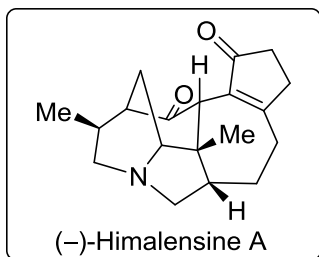
7 - 8



9 - 11



12 - 15



7) TsNHNH₂, EtOH, reflux, 3 h
then, Catecholborane,
DCM, 0 °C, 3 h,
then, NaOAc·3H₂O, reflux, 9 h
8) NaH, 2-bromo-allylbromide
THF, rt, 6 h

9) Pd(OAc)₂, PPh₃, Et₃N,
Dioxane, MW, 120 °C, 4 h
10) H₂, [Rh(COD)Cl]₂, PPh₃, AgBF₄,
DCM, rt, 6 h
then, AZADOL, PIDA, rt, 2 h
11) KHMDS, PhNTf₂,
THF, -78 °C, 6 h

12) Tributyl(vinyl)tin, Pd(PPh₃)₄, CO, LiCl,
THF, rt, 24 h
13) SnCl₄, DCM, rt, 30 min
14) *m*CPBA, DCM, 0 °C, 6 h,
then, BF₃·Et₂O, PhMe, 0 °C to rt, 5 min
15) Vaska's Catalyst, TMDS, DCM, rt
then, TFA, Et₃SiH, rt, 48 h

step 9: name reaction?

step 13: name reaction?

