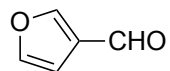


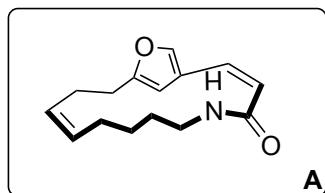
Total Synthesis of (-)-Nakadomarin A

Simone Bonazzi, Bichu Cheng, Joseph S. Wzorek, and David A. Evans

J. Am. Chem. Soc. **2013**, *135*, 9338–9341.



1-6

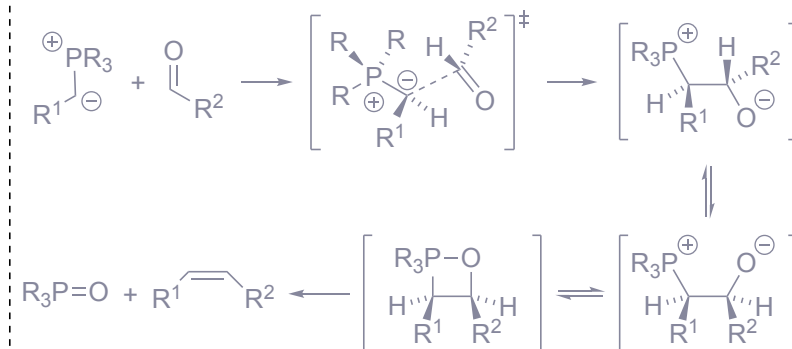


1. *n*-Buli, morpholine, then *s*-Buli, then I₂
2. CH(OMe)₃, TsOH
3. Pd(OAc)₂, allyl alcohol
4. KHDMS, BocNH(CH₂)₅PPh₃I, then HCl
5. CH₃O₂CCH₂P(O)(OCH₂CF₃)₂, 18-crown-6, KHDMS
6. NaOH, MeOH, H₂O
7. TFA
8. HBTU, NEt₃

1. Hint: the product is a 2,4-disubstituted furan

3. Name Reaction? *Heck Reaction*

4. Provide a mechanism for this step

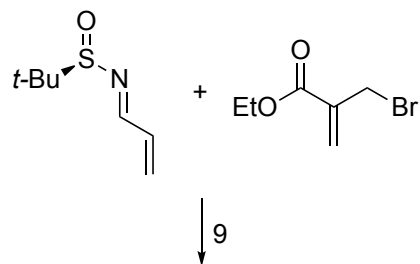


5. Name Reaction?

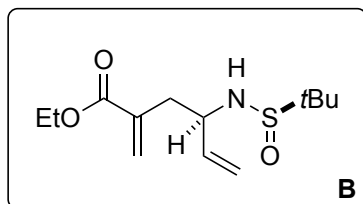
Still-Gennari Olefination

9. Name of the chiral auxiliary. How would you prepare it?

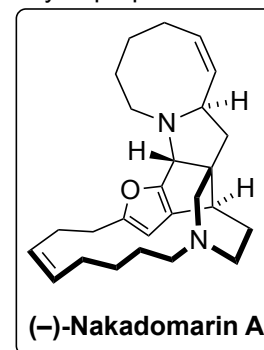
Ellman Auxiliary
see preparation below



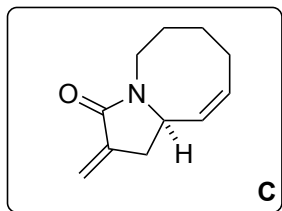
9



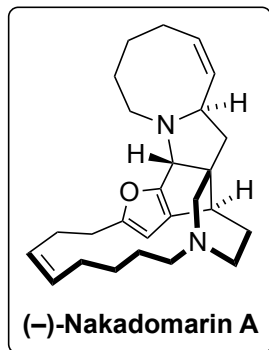
9. Zn, LiCl, H₂O



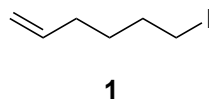
10-12



13-15

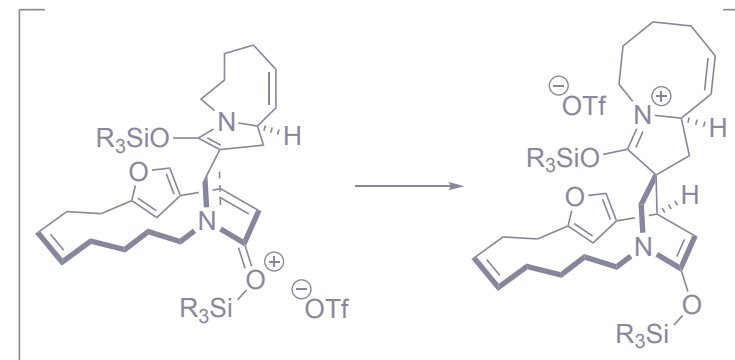


10. HCl, MeOH, then NaOH
 11. NaH, **1**
 12. Grubbs I



13. **A**, TBSOTf, *i*-Pr₂NEt, then **C**
 14. Me₃OBf₄, then NaBH₄, MeOH
 15. Tf₂O, 2,6-di-*tert*-butyl-4-methylpyridine, then NaBH₃CN, MeOH

13. Provide mechanism for this step



Solution to step 9:

