

Jun's Current Literature

2004, 09-04

Relay Ring-Closing Metathesis and Total Synthesis of Oximidine III

T. R. Hoye *et al.* JACS 2004, 126, 10210

J. A. Porco *et al.* ACIEE 2004, 43, 3601

RRCM (Relay Ring-Closing Metathesis)

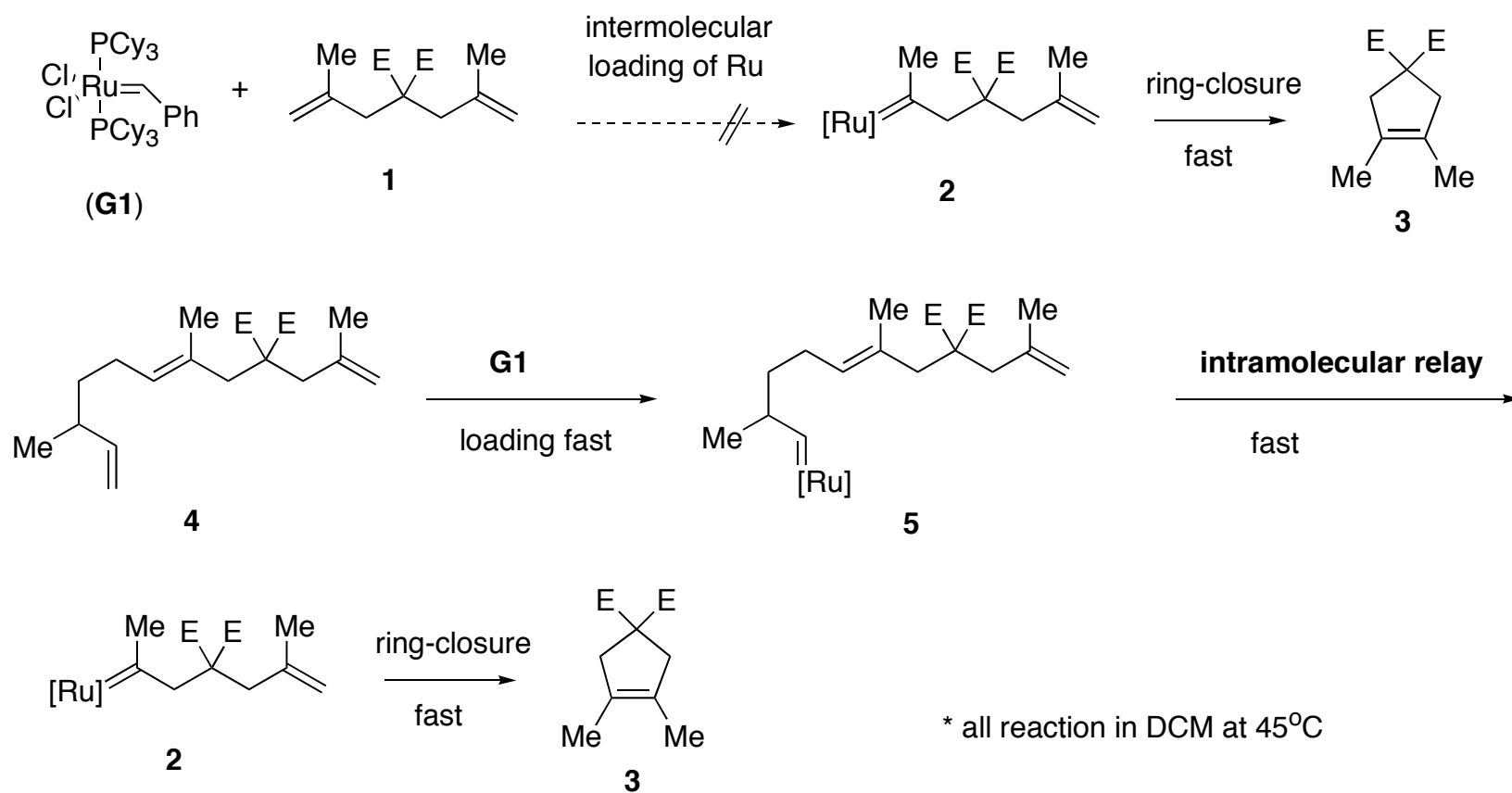
RCM : a powerful and generally applicable method, but has limitations in sterically hindered or electronically deactivated alkenes

RRCM : the design of substrate that permit one to dictate the sequence of metathesis events by choreographing the metal atom through the individual steps of the RCM cascade

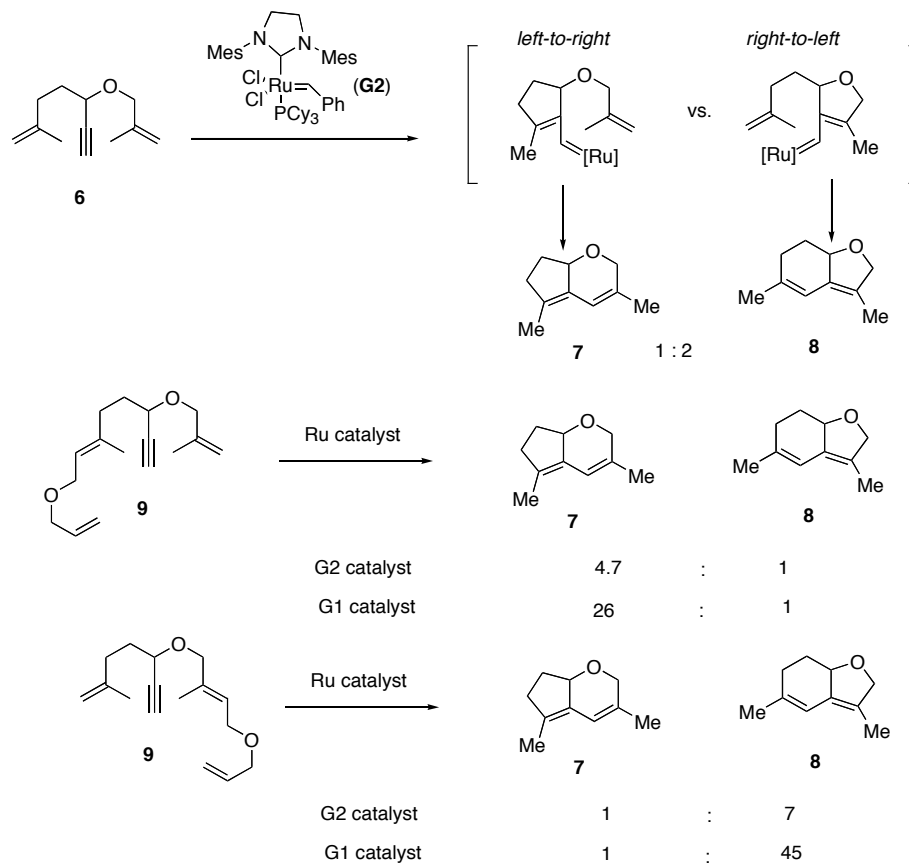
Substrate controlled reaction

Intramolecular loading of Ru

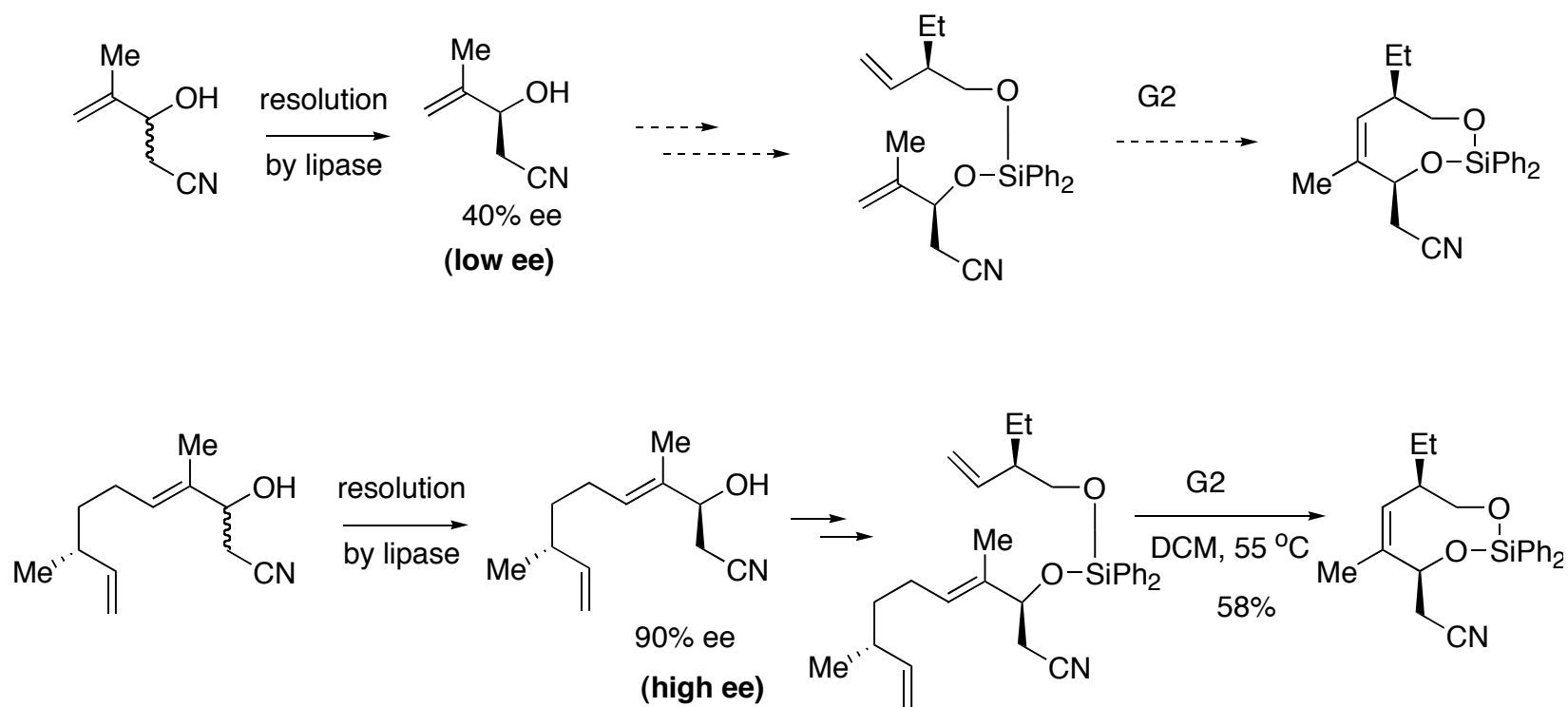
Increasing Reactivity by RRCM



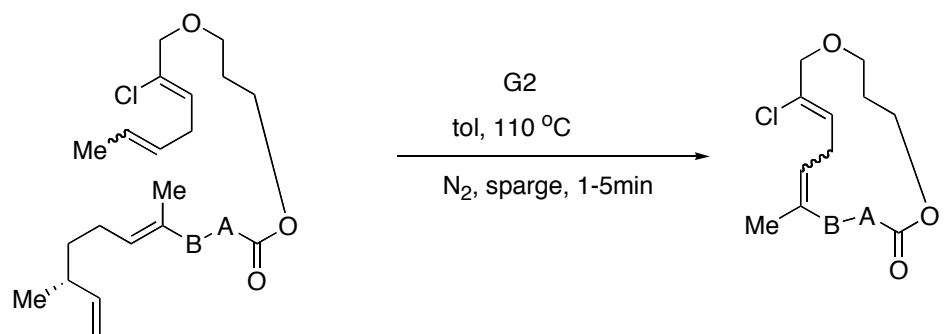
Increasing Selectivity by RRCM



Nonobvious Size Effect by RRCM



Modulation of Olefin Geometry by RRCM



11

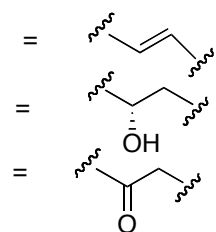
12

13

B-A

B-A

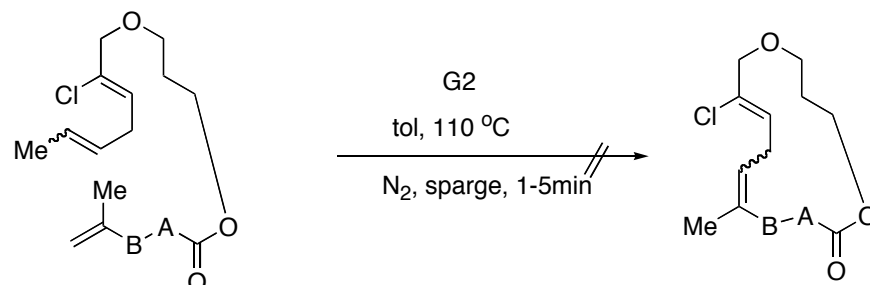
B-A



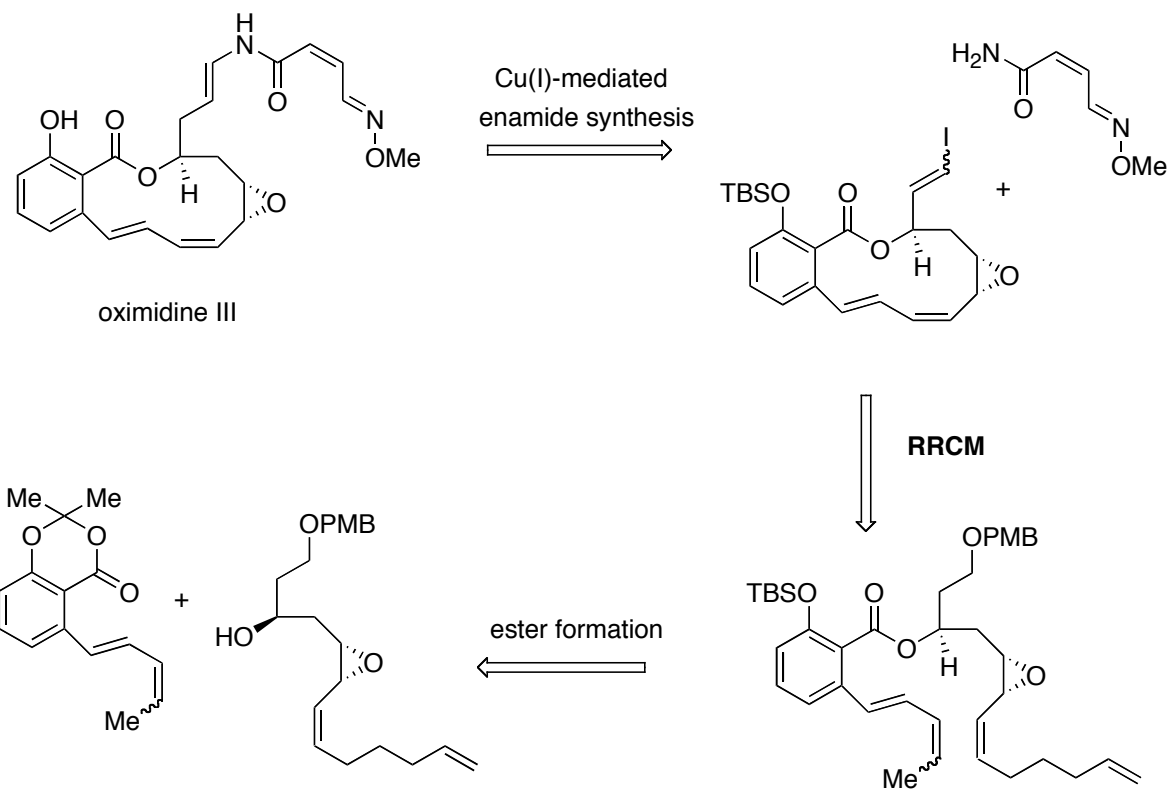
14 (Z only)

15 (E only)

16 (E only)

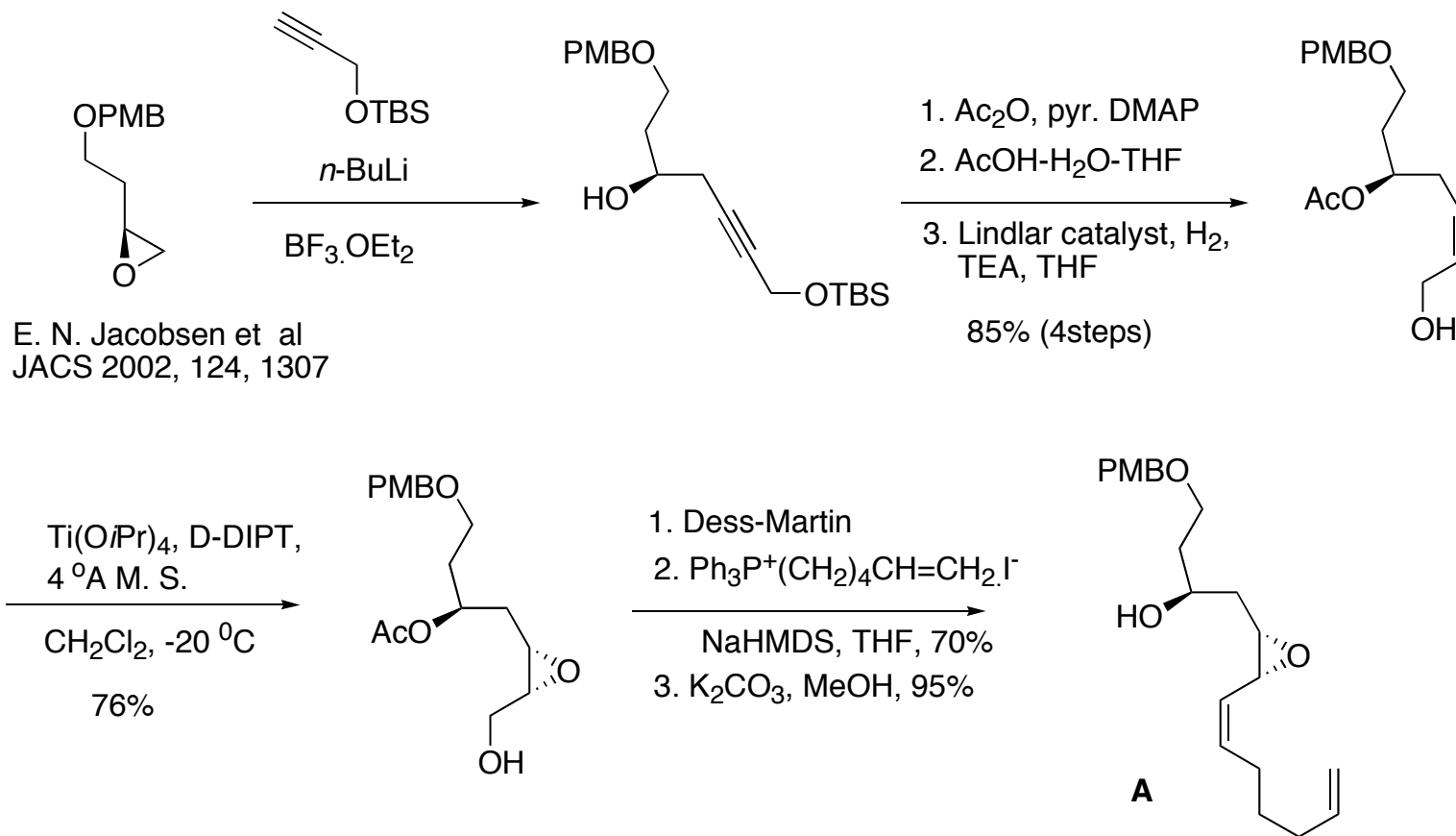


Retrosynthesis of Oximidine III

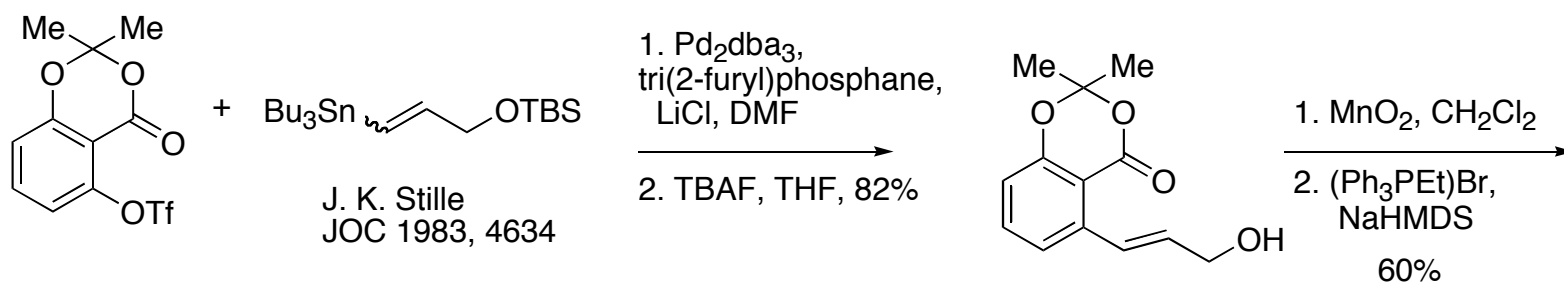


J. A. Porco, Jr. et al. *ACIEE* 2004, 43, 3601.

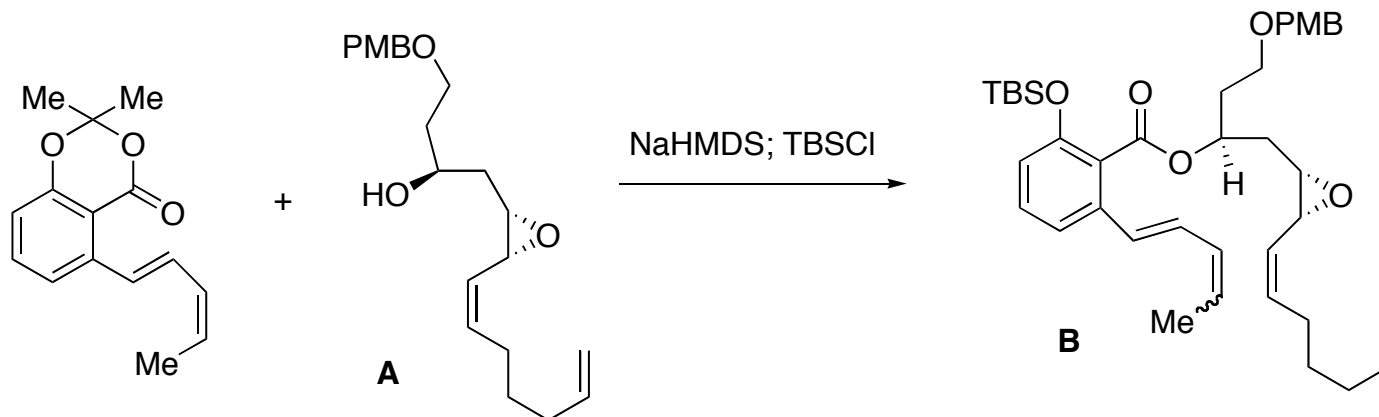
Synthesis of Intermediate A



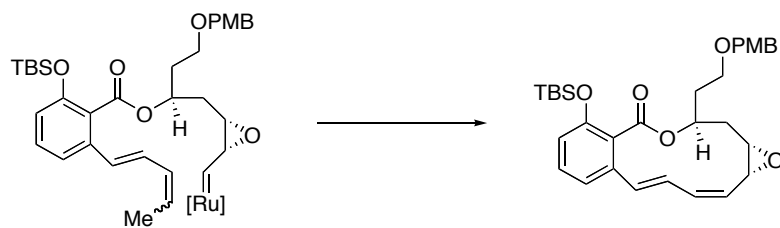
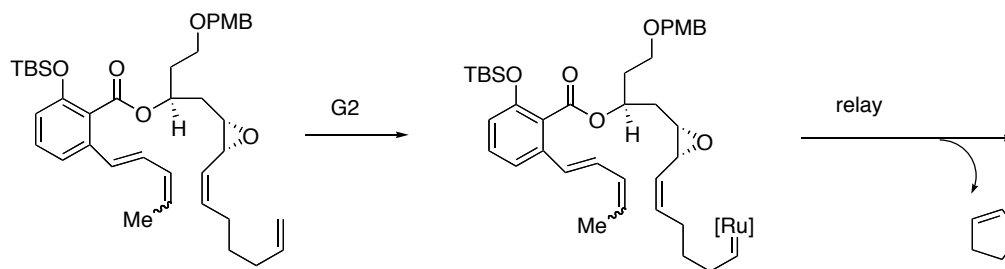
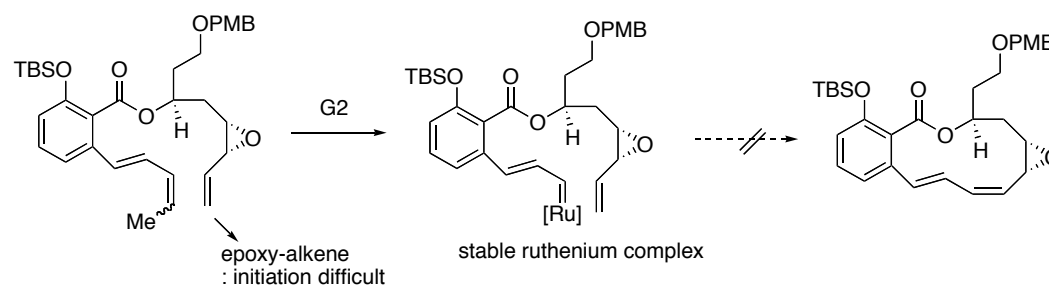
Synthesis of Intermediate B



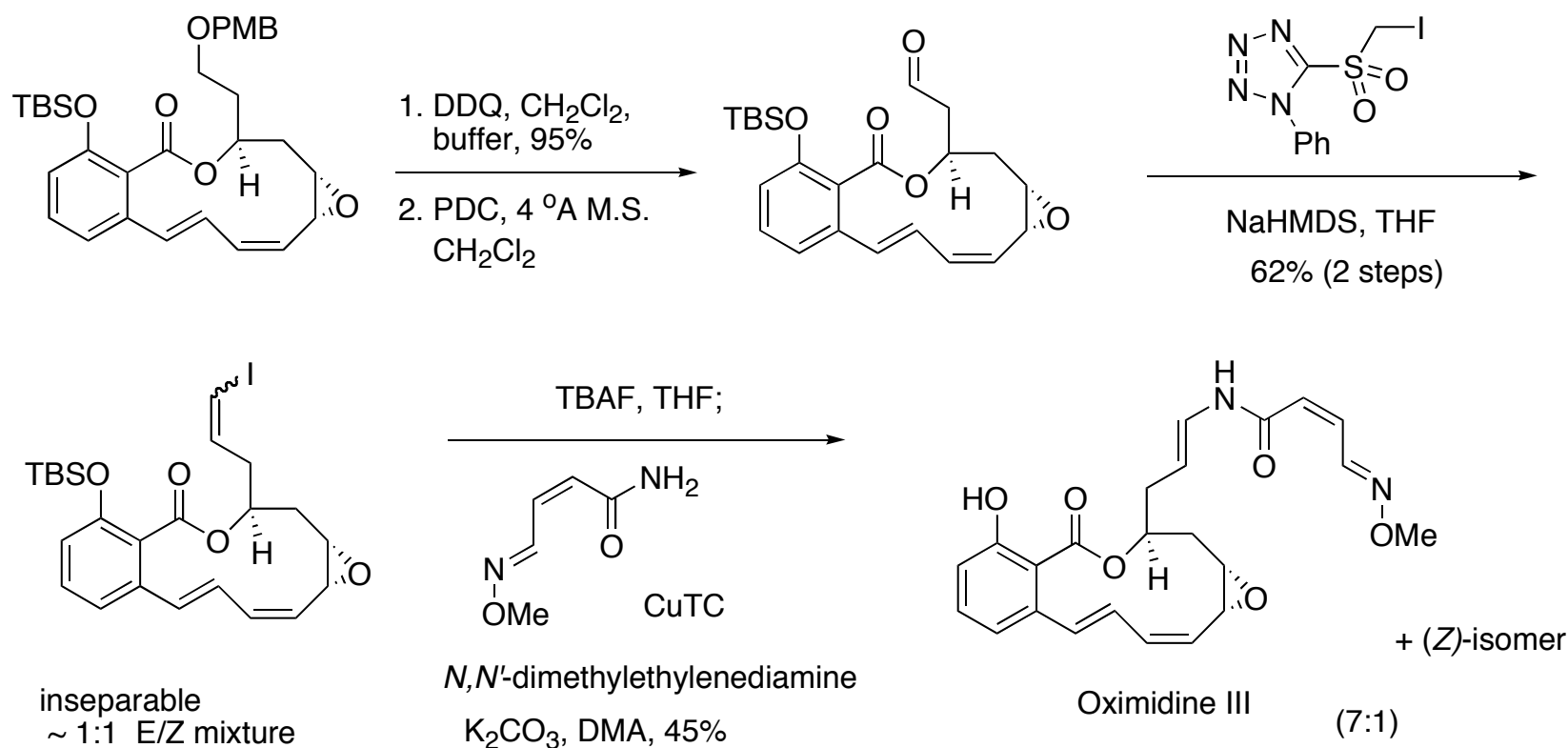
A. Fustner et al.
 Chem. Eur. J. 2001, 7, 5286



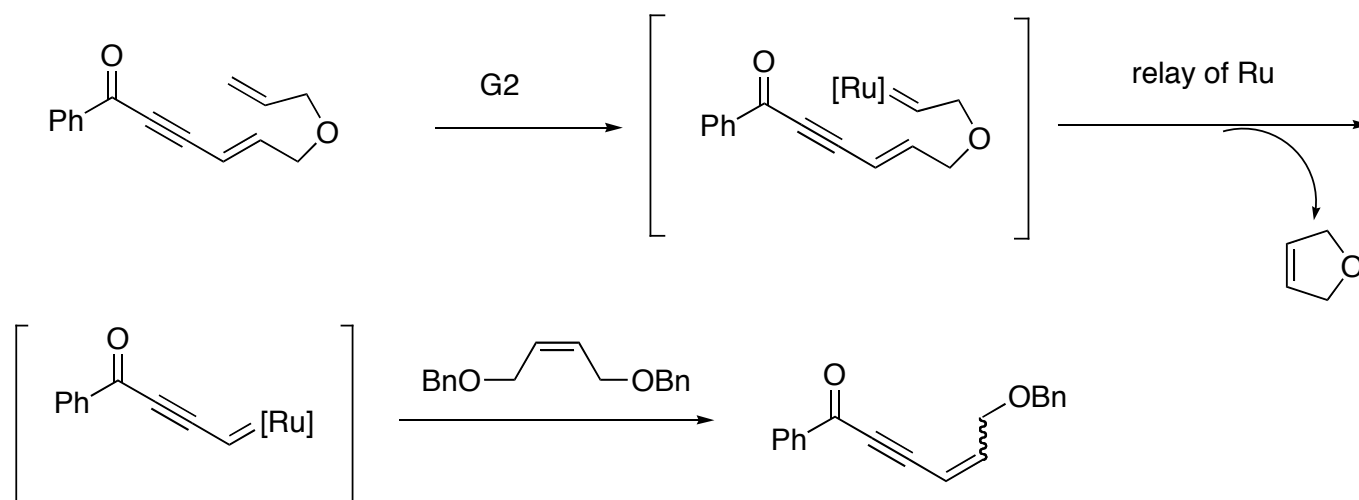
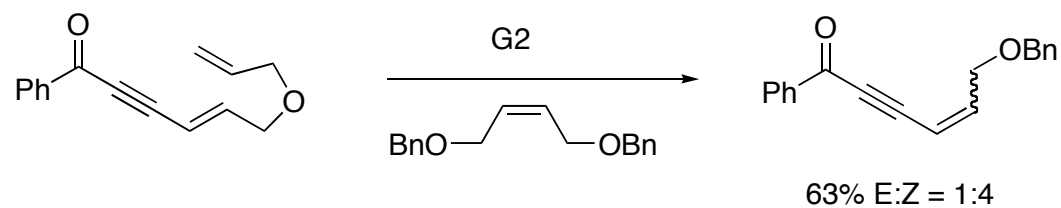
Key RRCM Reaction



Completion of Synthesis of Oximidine III



RRCM of Conjugated Enyne



D. Lee et al, *Org. Lett.* 2004, 6, 2035.