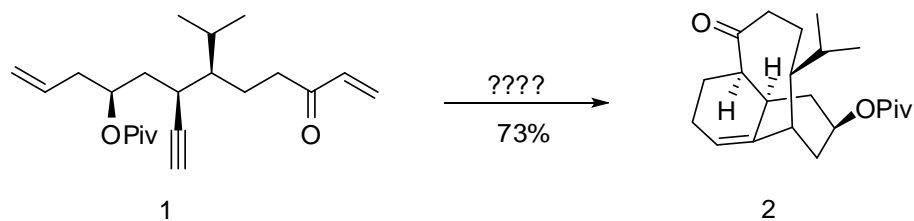
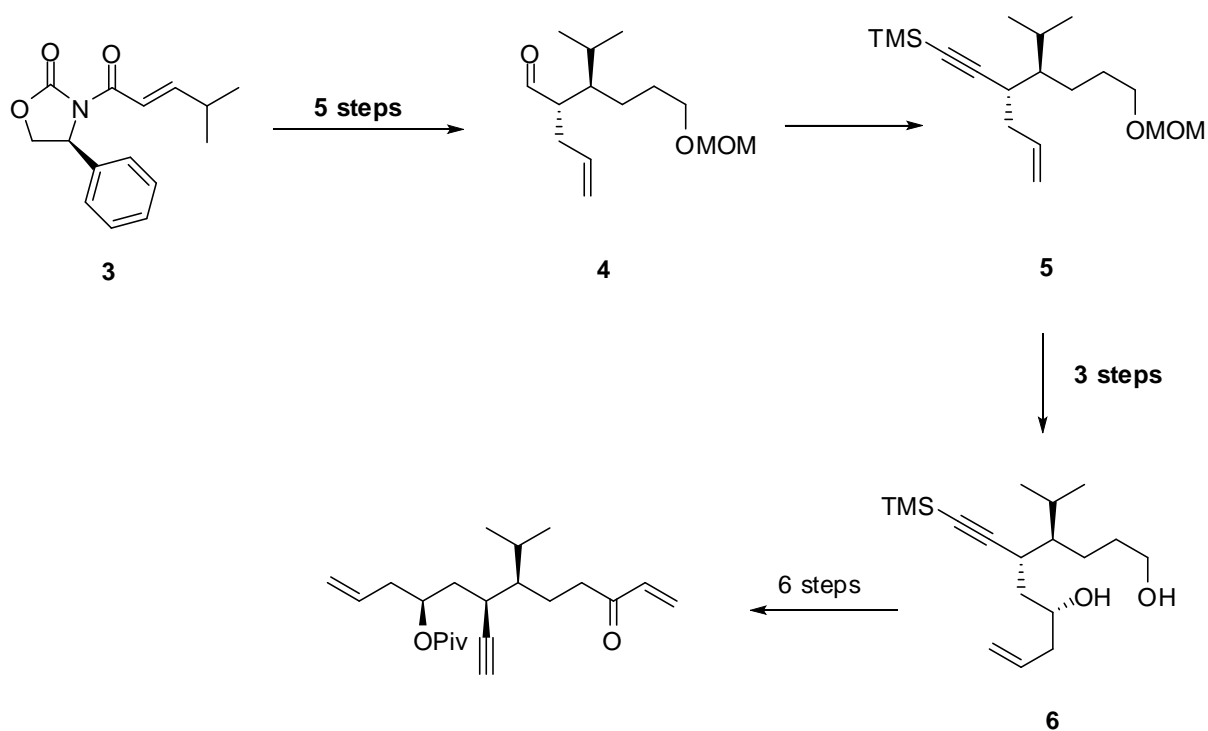


## Core structure of (-)-Vinigrol

## Problem

Synthesis of **1**

1. What kind of reaction is this? And write the mechanism of the formation of **2** from **1**
2. How would you convert **4** from **3**?
3. How would you synthesize **6** from **5** in 3 steps?
4. How would you synthesize **1** from **6**?

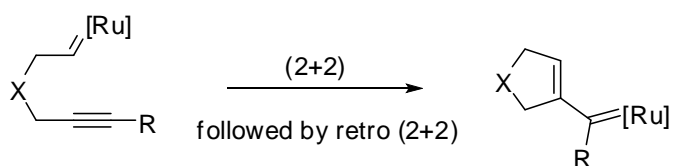
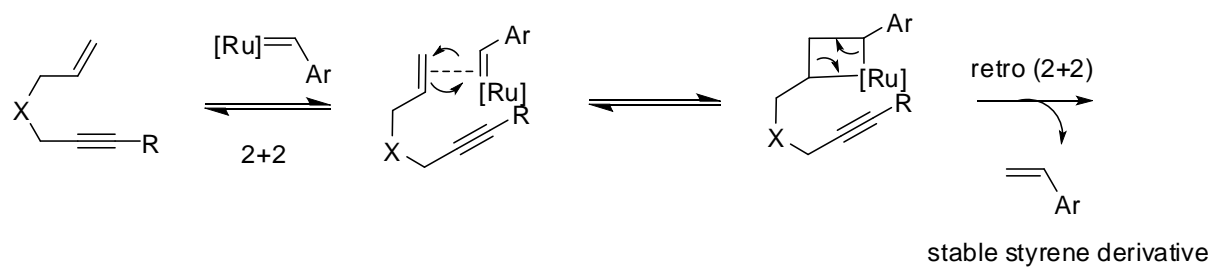
## References

Kaliappan K. P et al. Org. Lett. 2014, ASAP

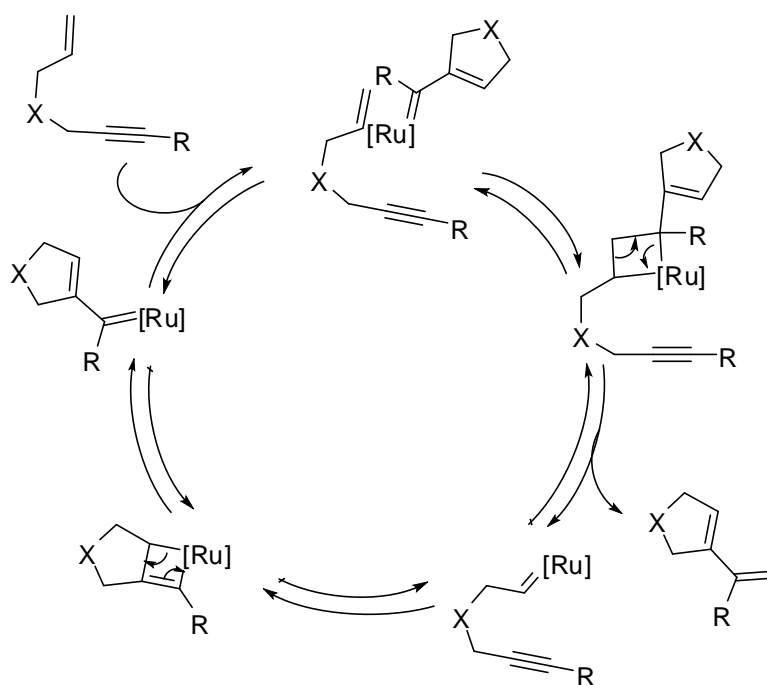
## Solution

### 1. Domino Ene-yne/IMDA reaction

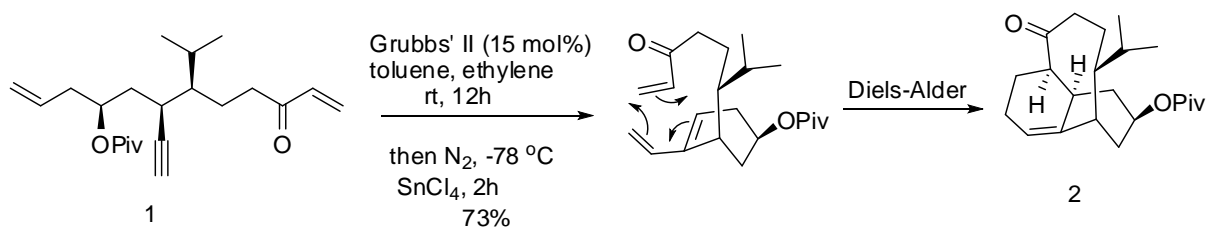
#### Mechanism of eneyne metathesis



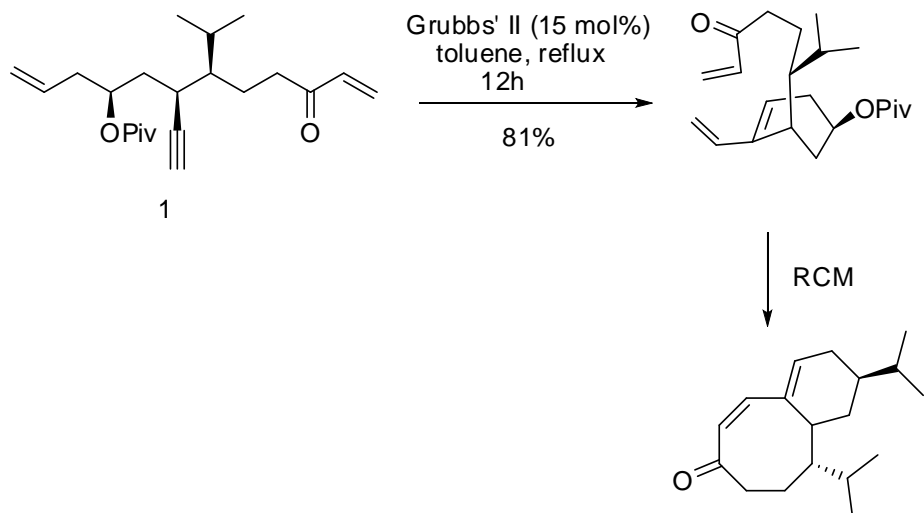
#### Catalytic cycle



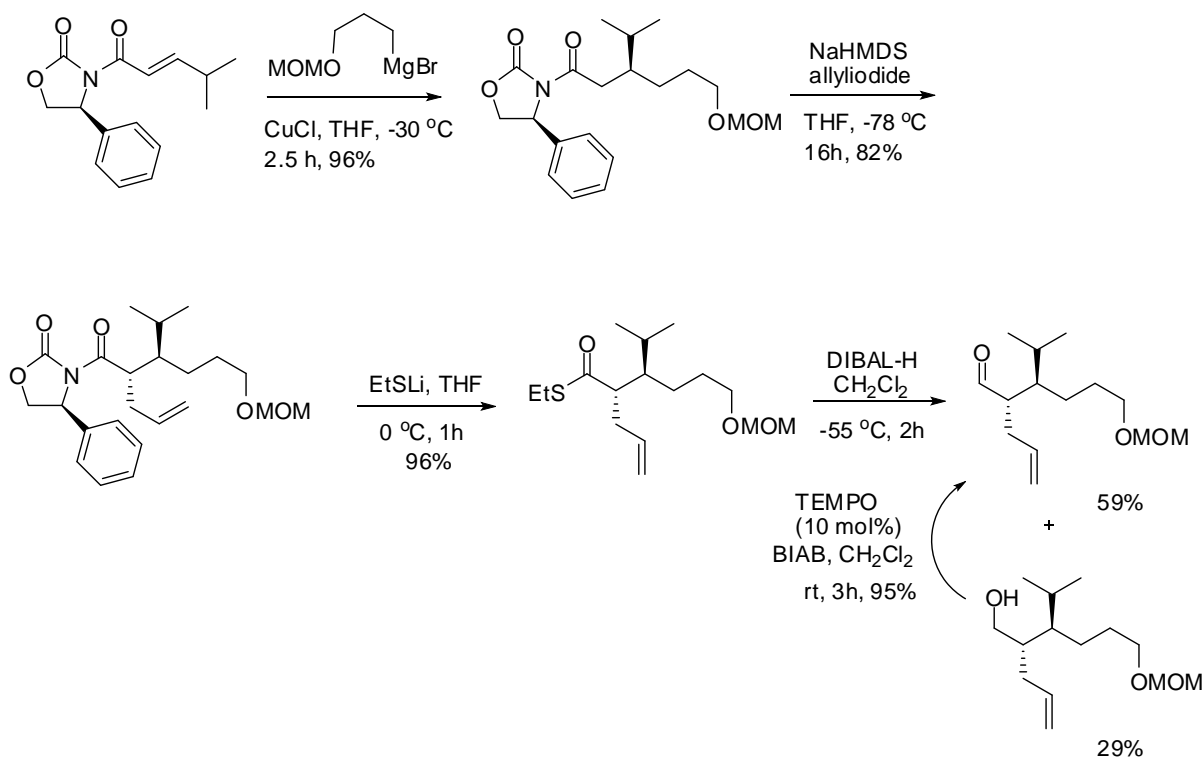
#### Tandem Ene-yne/IMDA reaction:

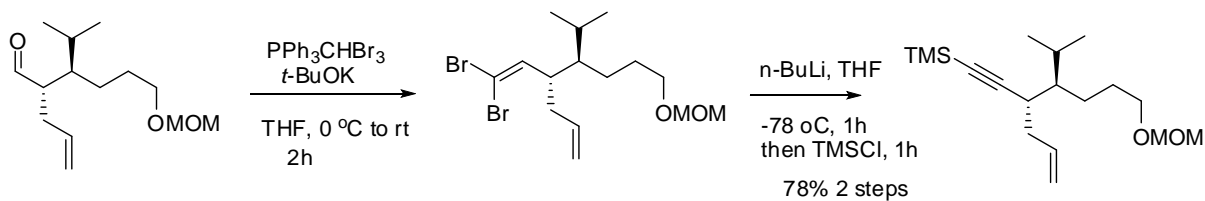


Ene-yne reaction in absence of ethylene atmosphere leads to RCM product.

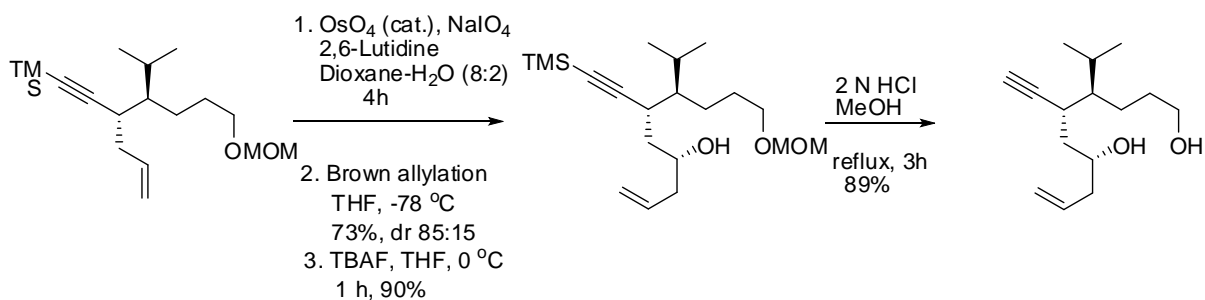


Solution for 2<sup>nd</sup> question

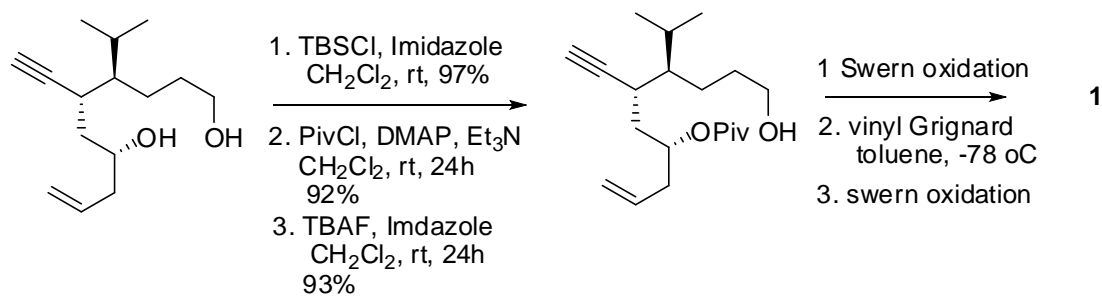




Solution for 3<sup>rd</sup> question



Solution for 4<sup>th</sup> question



Comments:

Tandem enyne metathesis, Intra molecular Diels-Alder reaction