

# Creativity From the Chiral Pool

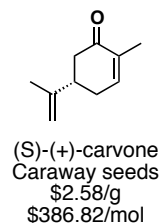
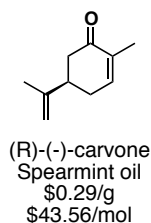
## Part 1: Carvone

Baran Group Meeting

Brandon Rosen

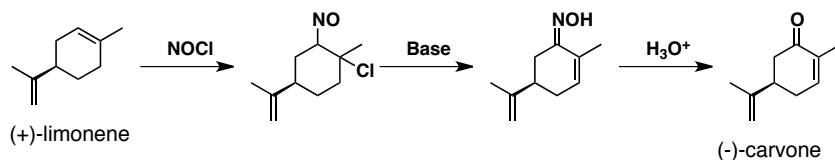
### A useful reference

Enantioselective Synthesis: Natural Products From Chiral Terpenes by Tse-Lok Ho



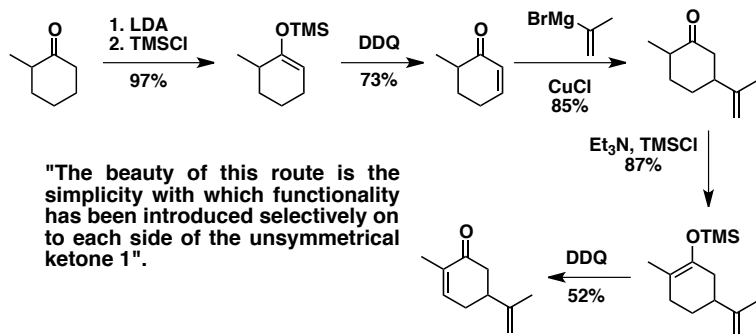
### Industrial preparation of (-)-Carvone:

See "Fragrances and Flavors", *Ullman's Encyclopedia of Industrial Chemistry*.

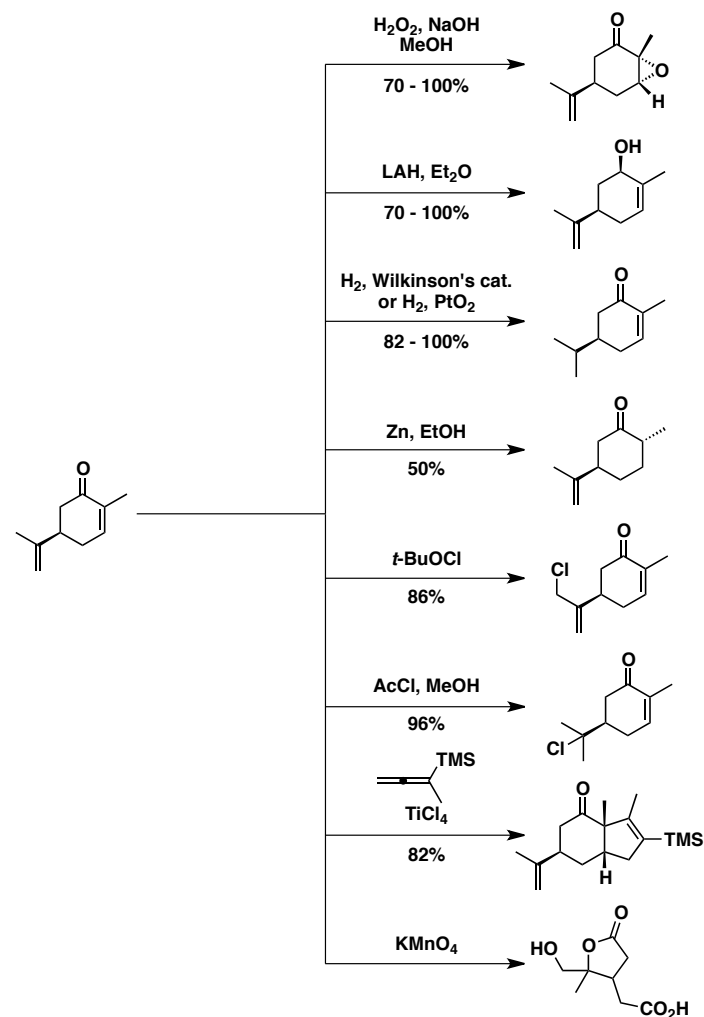


### Fleming's Total Synthesis of (±)-Carvone

Fleming, *Synthesis*, 1979, 736.



### Some Basic (Obvious) Transformations of Carvone



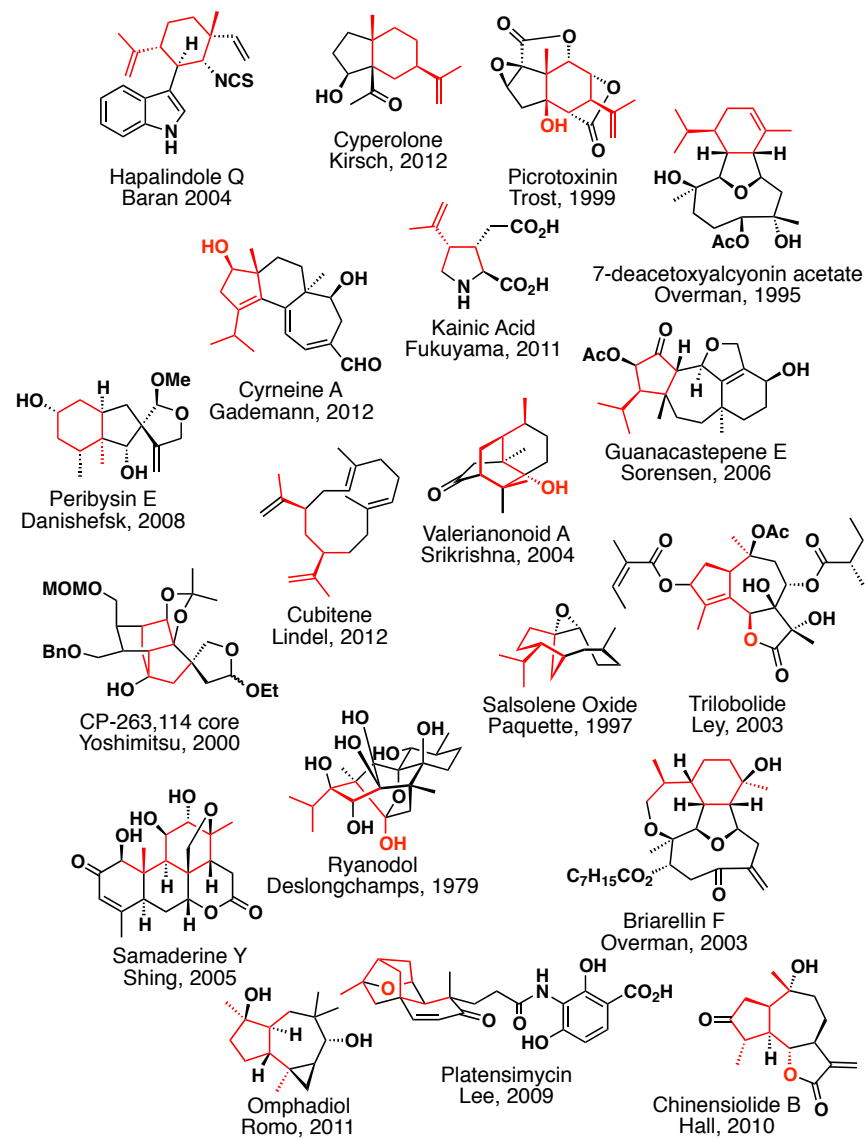
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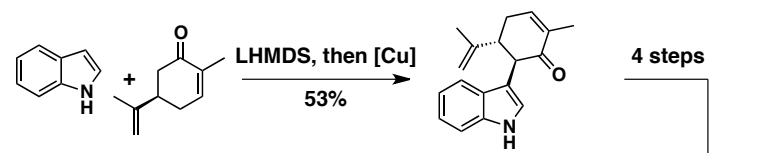
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### An Overwhelming Sample of Carvone-Derived Syntheses



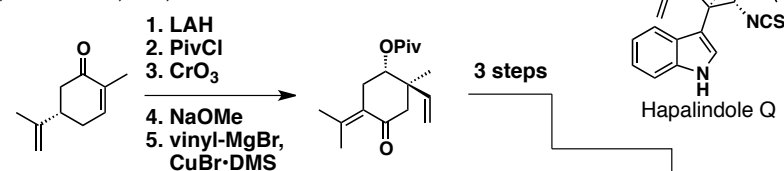
### Hapalindole Q

Baran, JACS 2004, 126, 7450.



### (M)-Methylwelwitindolinone C Isothiocyanate

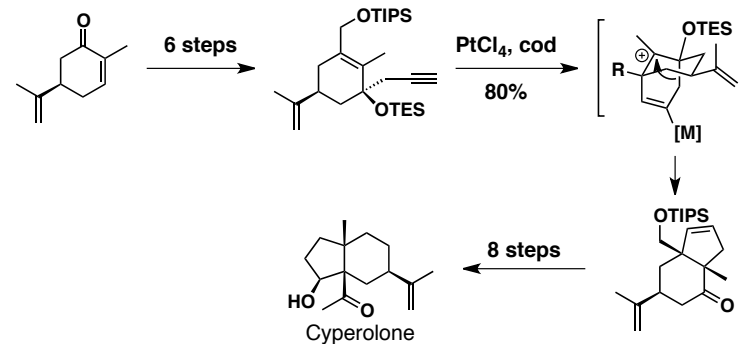
Garg, JACS 2011, 133, 15797.



(N)-Methylwelwitindolinone C  
Isothiocyanate

### Cyperolone

Kirsch, Org Lett 2012, 14, 1250.



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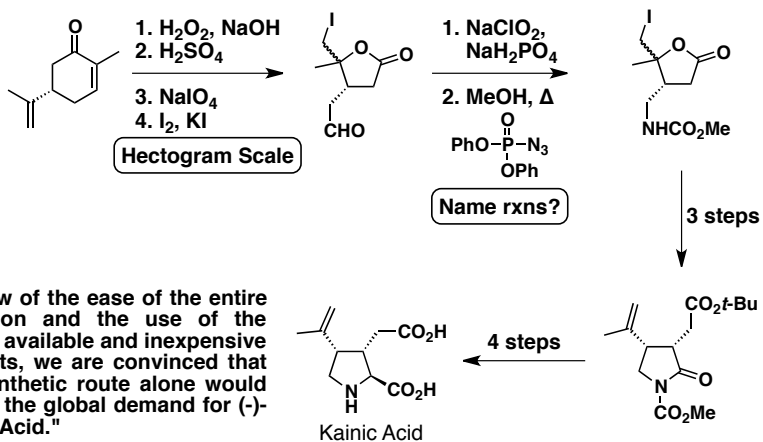
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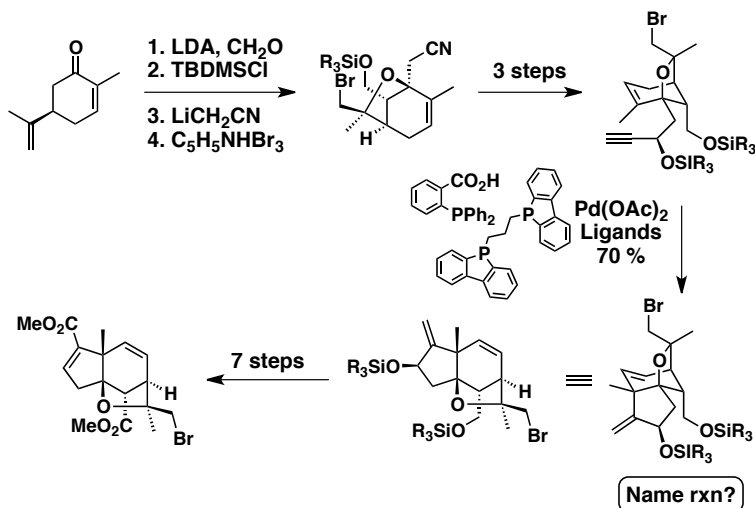
### Kainic Acid

Fukuyama, *Org Lett* 2011, 13, 2068.



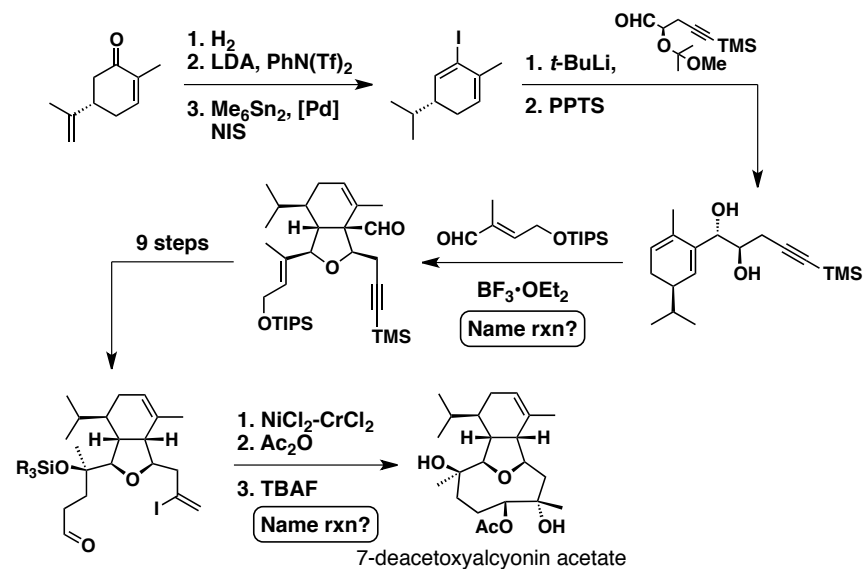
### Picrotoxinin and Corianin

Trost, *JACS* 1996, 118, 233.  
Trost, *JACS* 1999, 121, 6131 and 6183.



### 7-Deacetoxyalcyonin Acetate

Overman, *JACS* 1995, 117, 10391.



# Creativity From the Chiral Pool

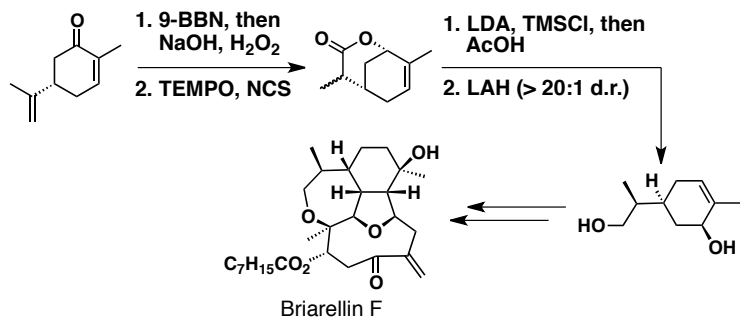
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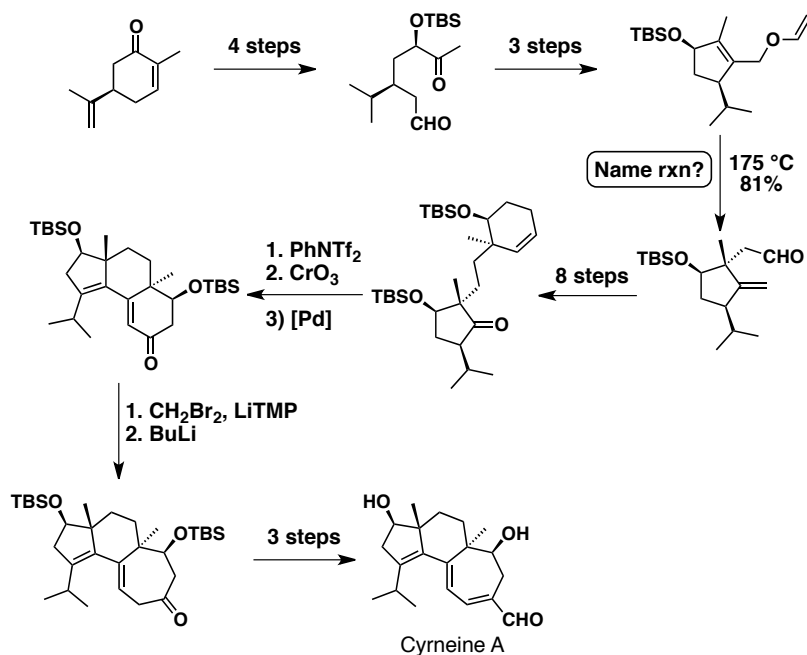
### Briarellin F

Overman, JACS 2003, 125, 6650.



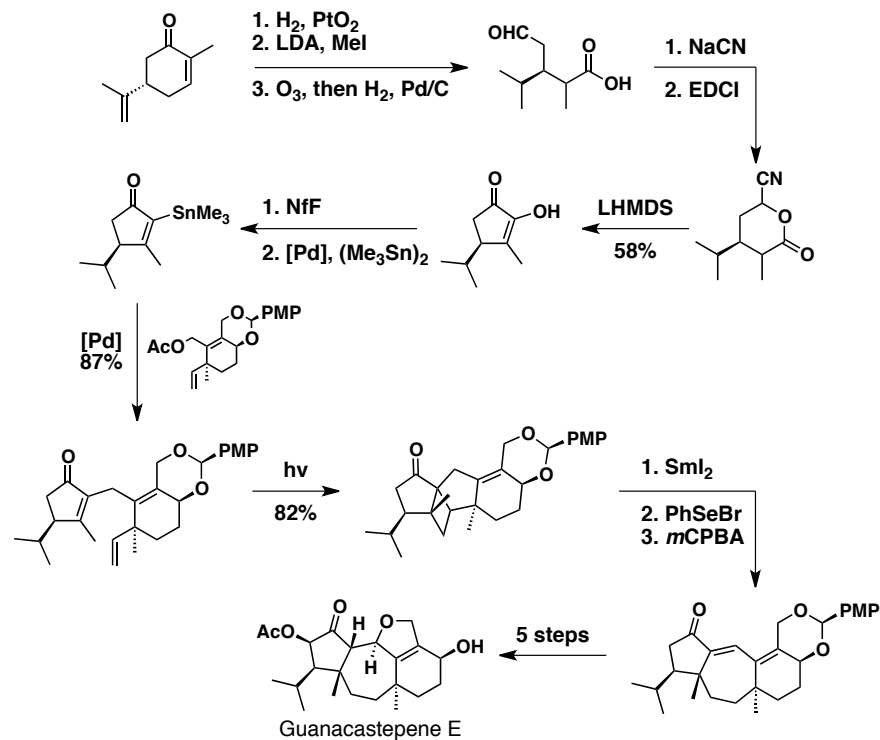
### Cyrneine A

Gademann, ACIE 2012, 51, 4071



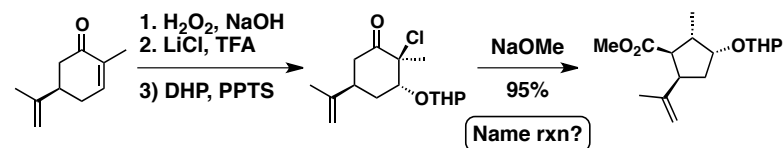
### Guanacastepene E

Sorensen, JACS 2006, 128, 7025.



### Cladantholide

Lee, JACS 1997, 119, 8391.

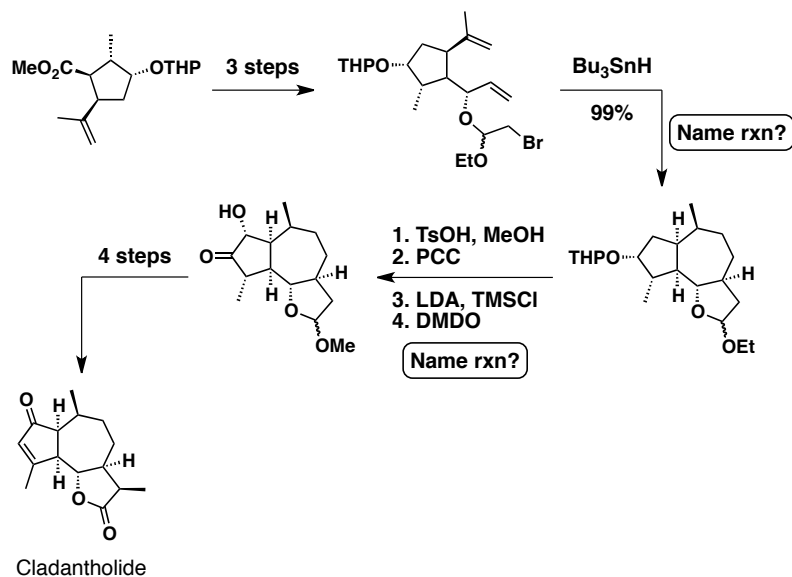


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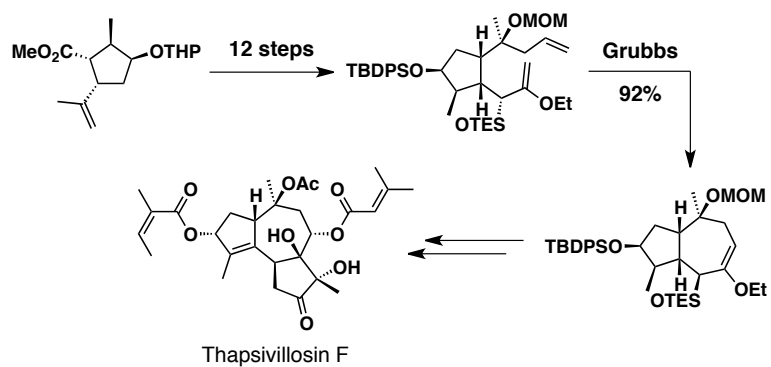
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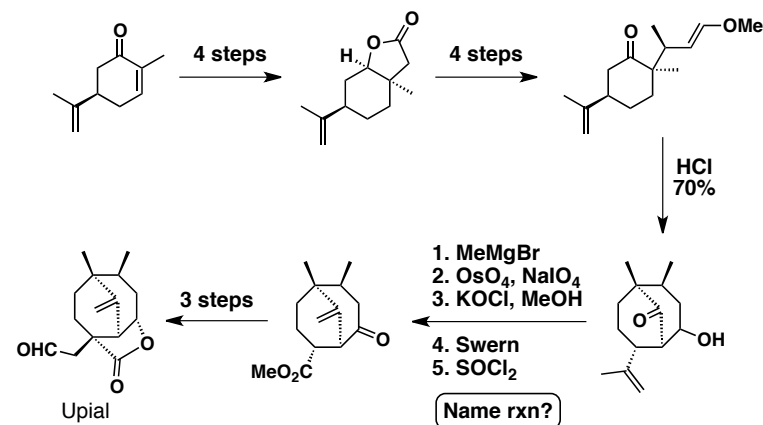
### Thapsigargin

Ley, ACIE 2003, 42, 5996  
See "Steven Ley" group meeting



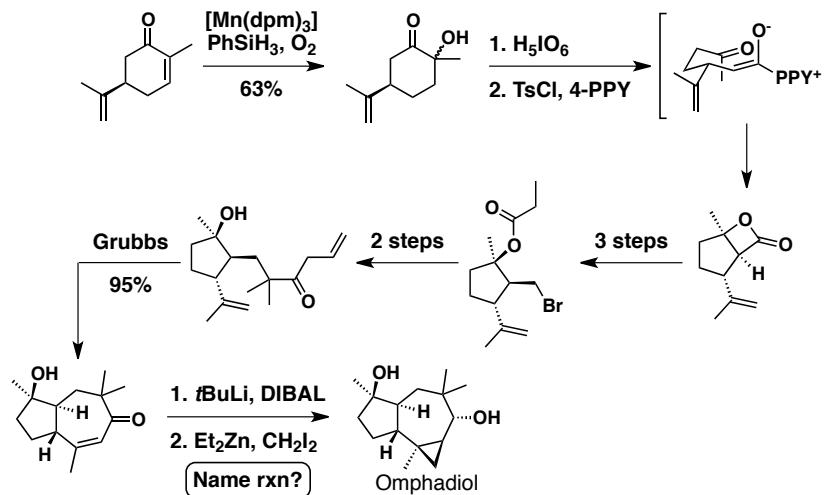
### Upial

Taschner, JACS 1985, 107, 5570.



### Omphadiol

Romo, ACIE 2011, 50, 7537.



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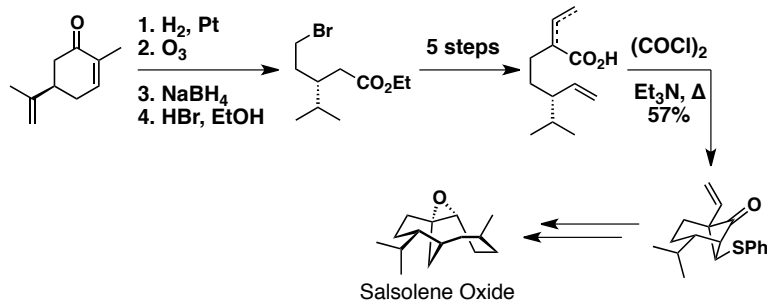
## Part 1: Carvone

### Baran Group Meeting

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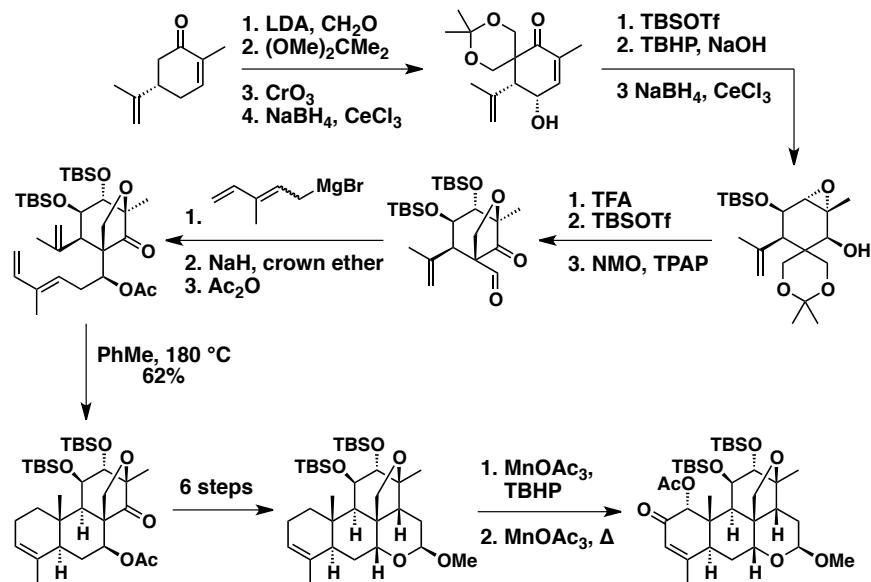
#### Salsolene Oxide

Paquette, JACS 1997, 119, 2767.  
See "Leo A. Paquette" group meeting



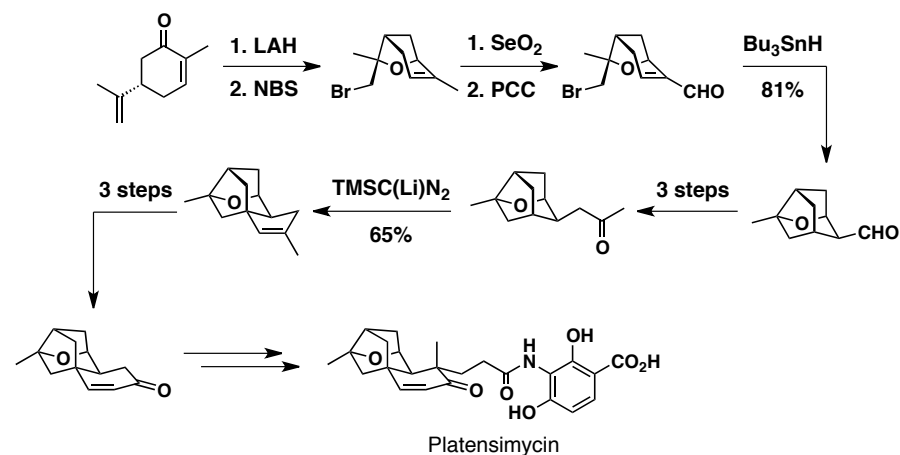
#### Samaderine Y

Shing, ACIE 2005, 44, 7981.  
See "Traditional Chinese Medicine" group meeting



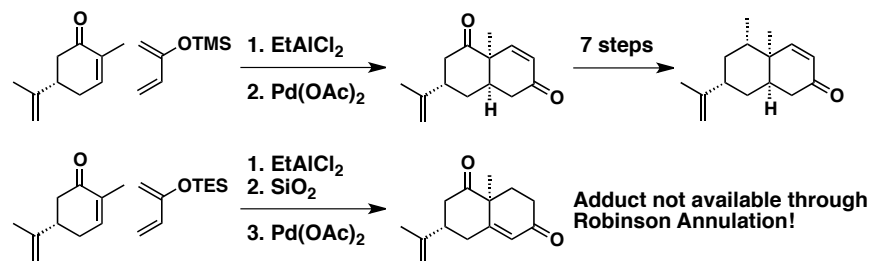
#### Platensimycin

Lee, JACS 2009, 131, 8413.



#### Peribysin E

Danishefsky, JACS 2008, 130, 13765

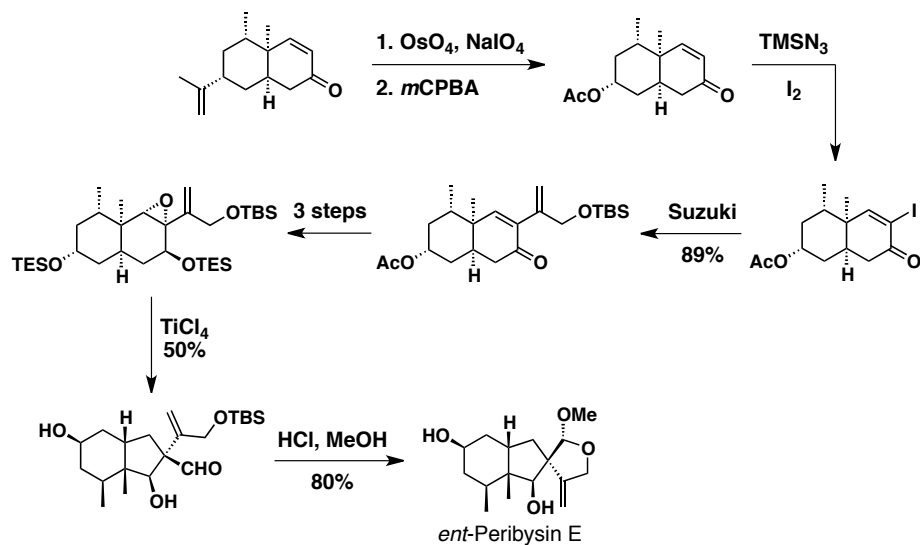


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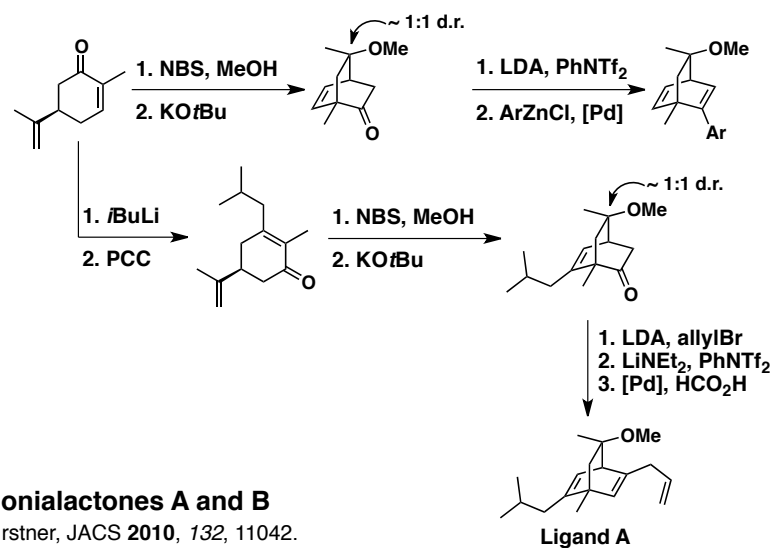
Baran Group Meeting

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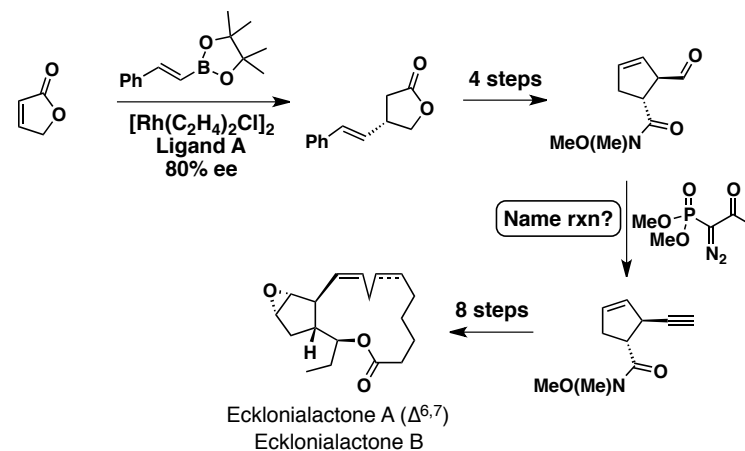
### Carvone-Derived Diene Ligands

Carreira, JACS 2004, 126, 1628.  
Carreira, Org Lett 2004, 6, 3873.



### Ecklonialactones A and B

Fürstner, JACS 2010, 132, 11042.



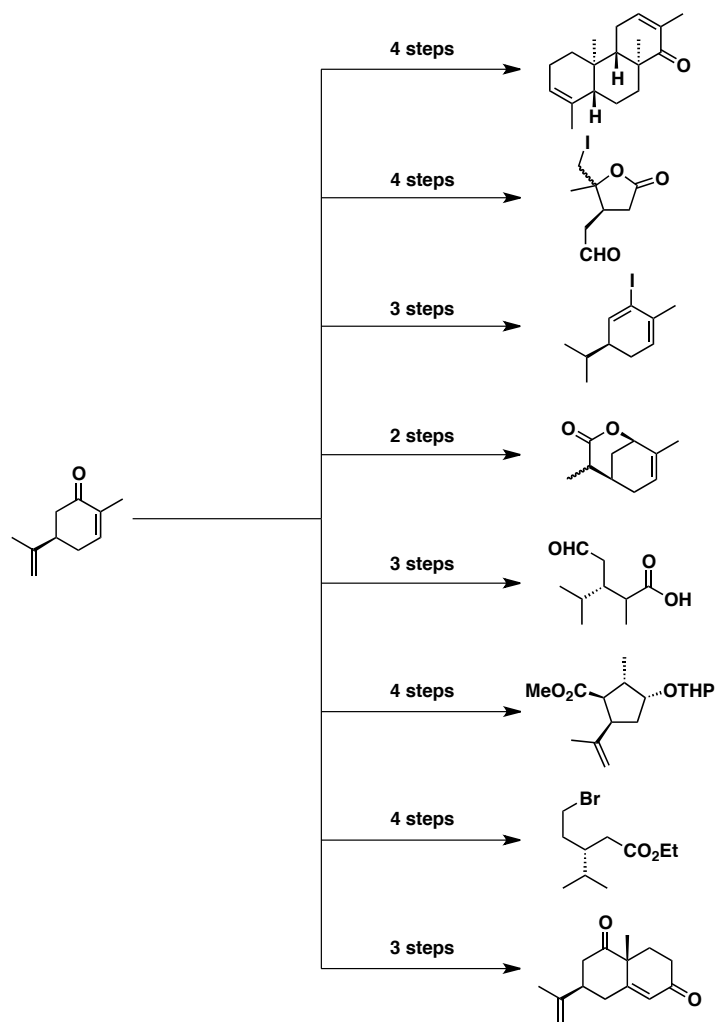
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### Some Basic (Less Obvious) Transformations of Carvone



### Do it at home!

Derive retrosyntheses of the following molecules using carvone as a starting material!

