

Synthetic Year in Review. JACS 1976

Annual Stat Sheet

Total Number of Papers Published: 1975

Most Cited Papers

1. LAUHER JW, HOFFMANN R

STRUCTURE AND CHEMISTRY OF BIS(CYCLOPENTADIENYL)-MLN COMPLEXES

JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 98 (7): 1729-1742 1976

Times Cited: [1226](#)

2. IRELAND RE, MUELLER RH, WILLARD AK

ESTER ENOLATE CLAISEN REARRANGEMENT - STEREOCHEMICAL CONTROL THROUGH STEREOSELECTIVE ENOLATE FORMATION

JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 98 (10): 2868-2877 1976

Times Cited: [874](#)

3. SCHAEFER J, STEJSKAL EO

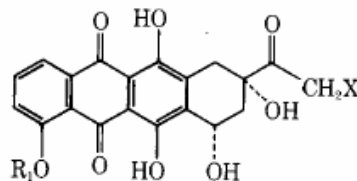
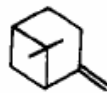
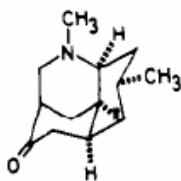
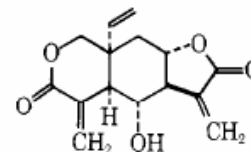
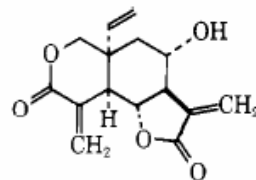
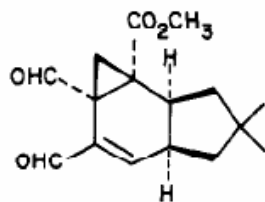
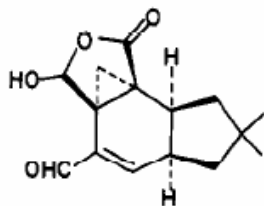
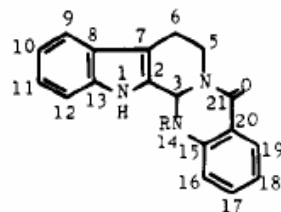
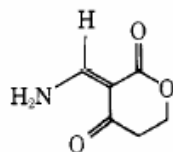
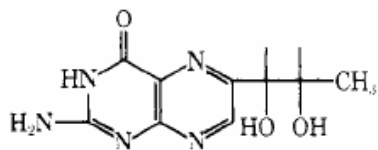
C-13 NUCLEAR MAGNETIC-RESONANCE OF POLYMERS SPINNING AT MAGIC ANGLE

JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 98 (4): 1031-1032 1976

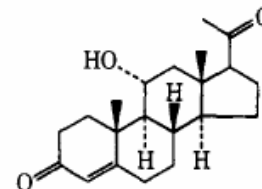
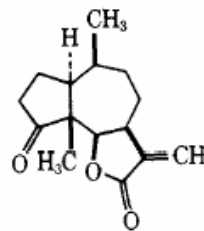
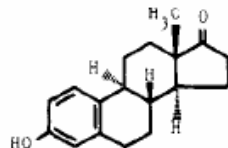
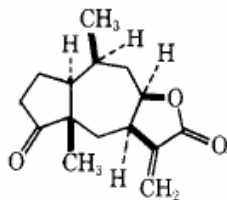
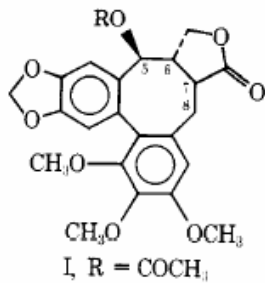
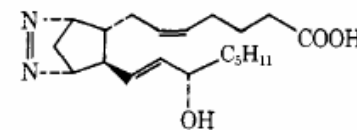
Times Cited: [762](#)

Most Prolific Authors

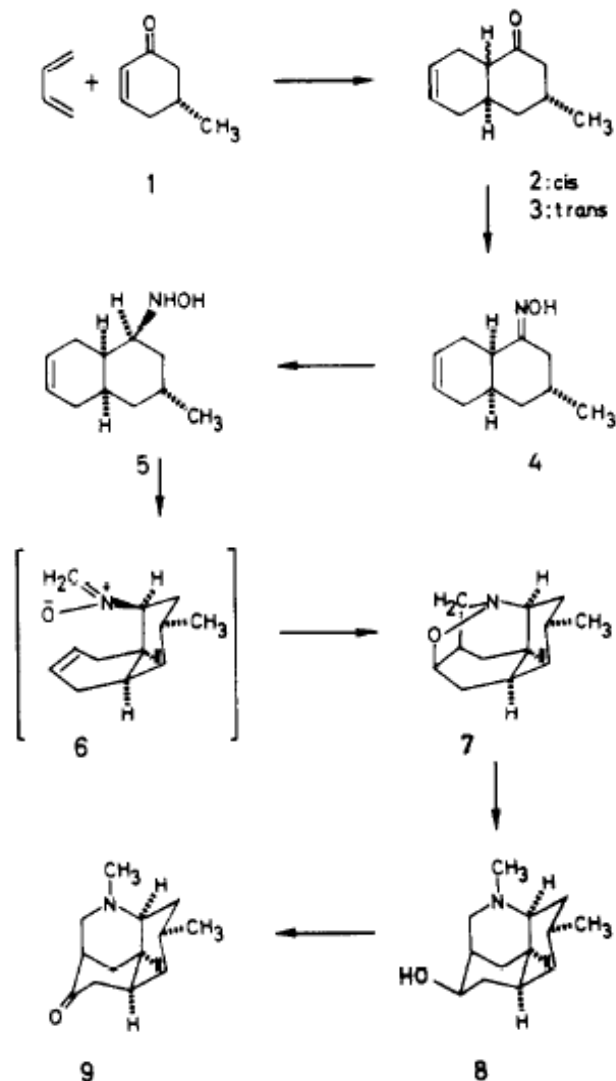
OLAH, GA (24), PAQUETTE, LA (14), HEHRE, WJ (13), COTTON, FA (12), BROWN, HC (11), GRAY, HB (10), KOCHI, JK (10), MICHL, J (10), TAFT, RW (10), BEAUCHAMP, JL (9), BRUICE, TC (9), IBERS, JA (9), INGOLD, KU (9), NAKANISHI, K (9), POPLE, JA (9), SCHAEFER, HF (9), TROST, BM (9), WRIGHTON, MS (9), EPIOTIS, ND (8)

Total Syntheses (15)

4, $R_1 = \text{CH}_3$; $X = \text{H}$

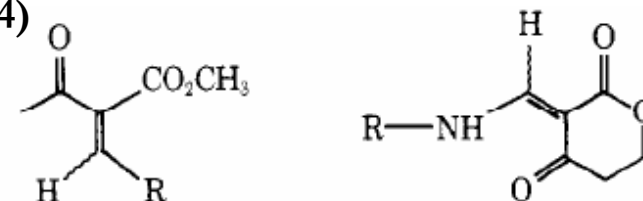


Oppolzer (Geneva)-d,l-Luciduline (p. 6722)



Bruce Ganem (Cornell)-Gentiochrucine

(p. 224)

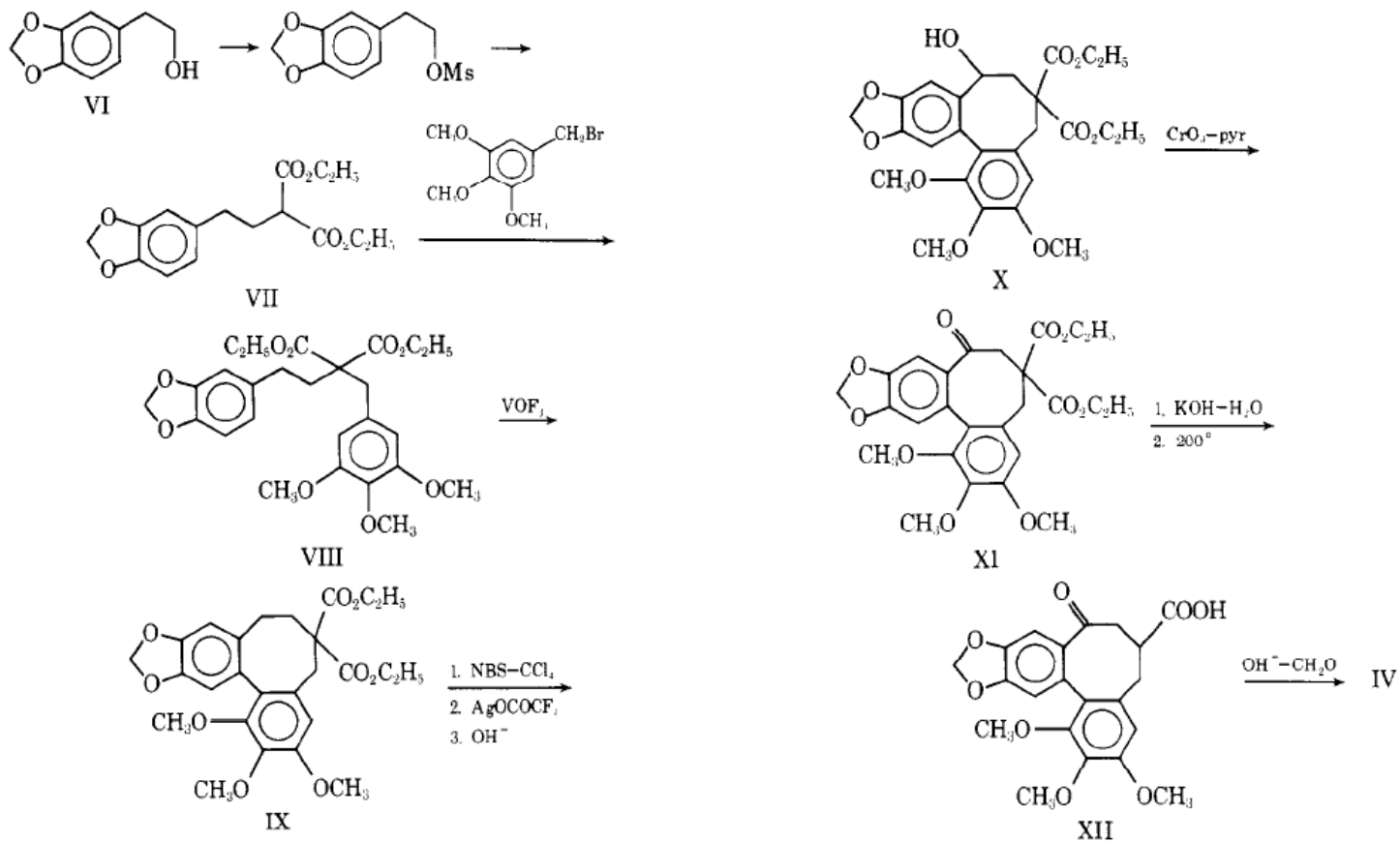
**Key Points:**

Amine anion inhibits polymerization of enone during aldol/lactonization

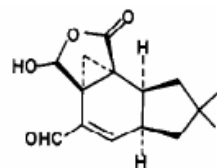
Key Points:

1. Highly regioselective intramolecular addition to a nonpolarized olefinic bond.
2. Intramolecular additions of N-alkenylnitrones as an equivalent of the Mannich reaction.

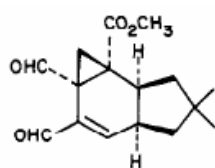


Kende (Rochester)- Steganacin (p. 267)**Key Points:**

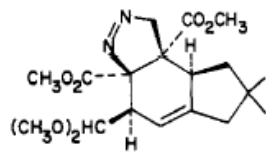
- Selective oxidative non-phenolic coupling
- Malonate used to differentiate active benzyl positions

Woodward (Harvard)- Marasmic Acid (p. 6075)

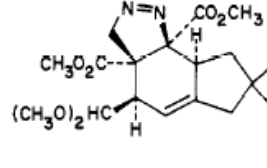
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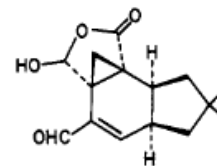
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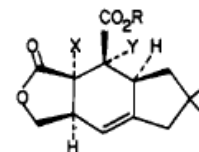
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9



17

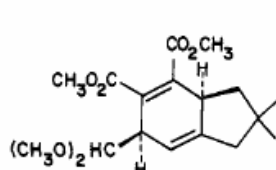


	X	Y	R
20	CH ₂ Br	H	H
21	H	CH ₂ Br	H
22	CH ₂ Br	H	C(CH ₃) ₃
23	H	CH ₂ Br	C(CH ₃) ₃

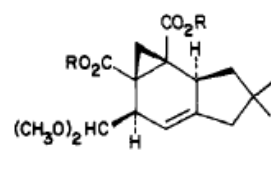


R

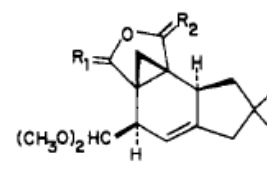
- 3 -CHO
 4 -CH(OCH₂CH₃)₂
 5 -CH(CHCHO)
 6 -CH(CHCH(OCH₃)₂)
 18 -CH(CHCH₂OH)



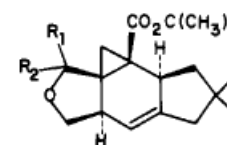
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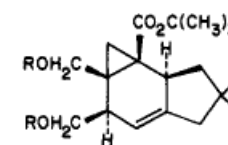
- 10 R = CH₃
 11 R = H



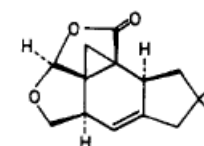
- 12 R₁ = O, R₂ = O
 13 R₁ = H,OH, R₂ = O
 14 R₁ = O, R₂ = H,OH
 15 R₁ = H,OAce, R₂ = O
 16 R₁ = O, R₂ = H,OAce



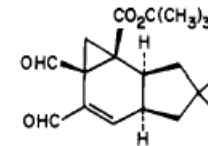
- 24 R₁, R₂ = O
 25 R₁ = OH, R₂ = H



- 26 R = H
 27 R = COCl



28

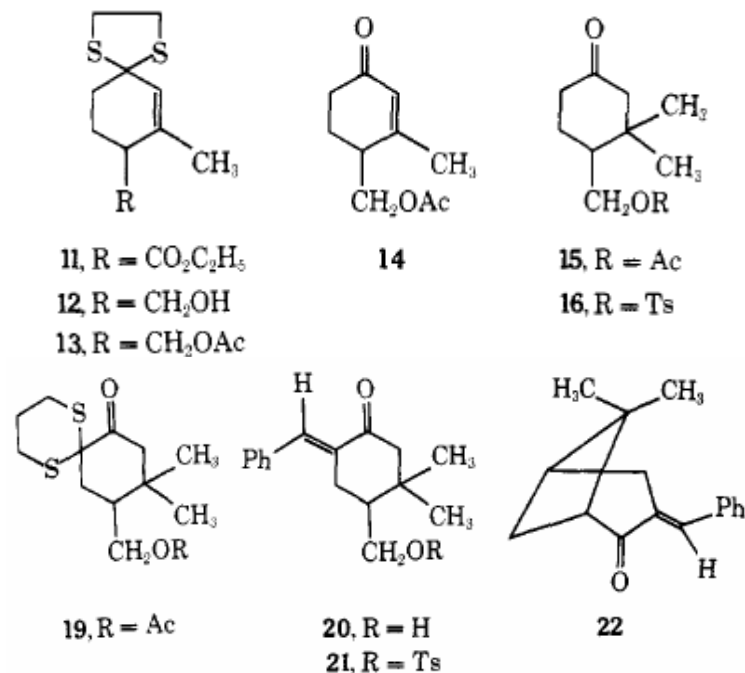
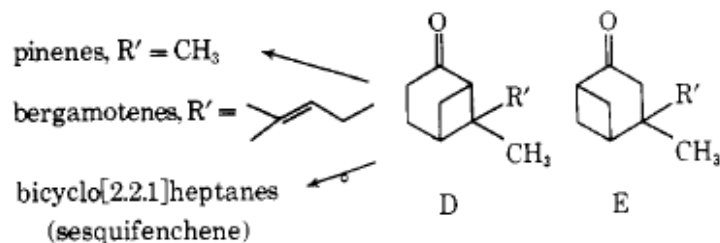
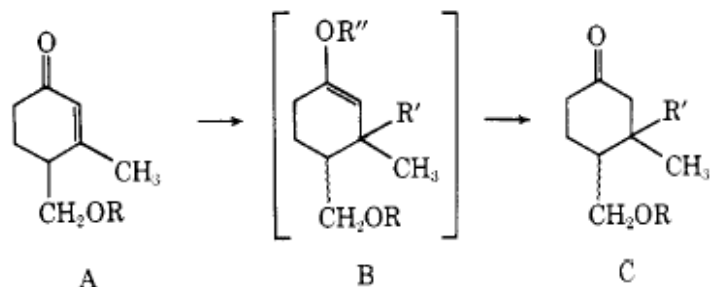


29

Key Points:

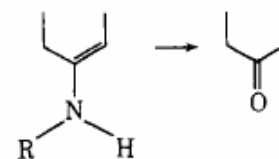
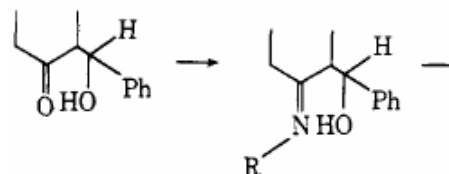
- Pyrazoline forms from the “more hindered” side as predicted by models and calculations.
- Appendage on dieneophile directs cyclopropane

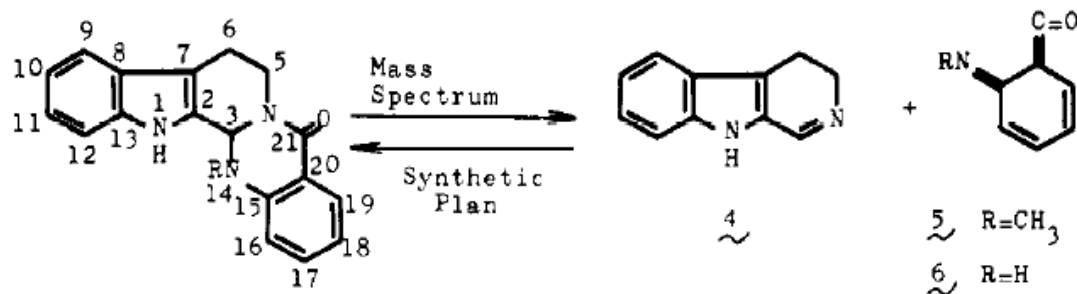
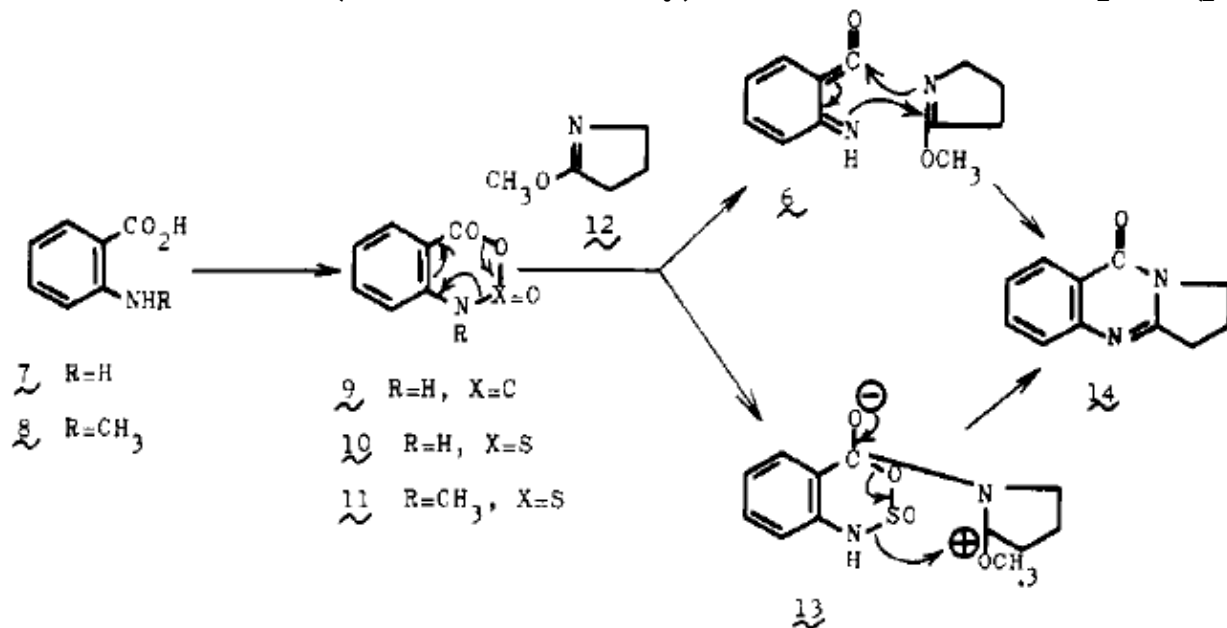
Fallis (Newfoundland)- Pinene (p. 1227)



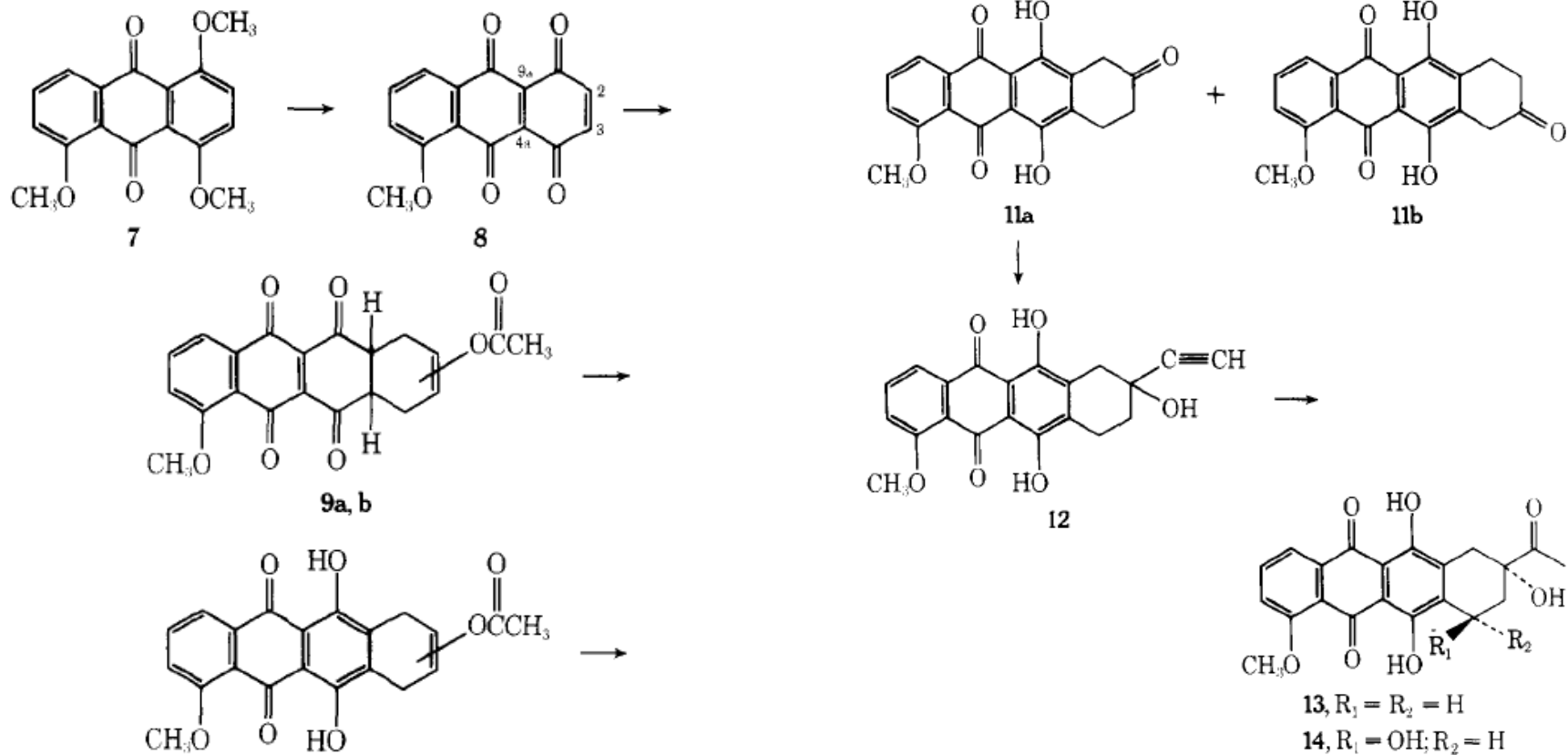
Key Points:

- Thioacetal protection without bond migration
- Benzaldehyde condensation as a blocking group
- Retro-aldol using imine formation



Kametani (Tohoku University)-Evodiamine/Rutecarpine (p. 6186)**Key Points:**

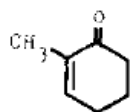
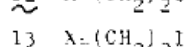
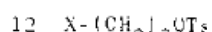
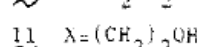
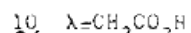
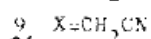
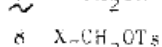
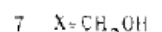
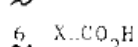
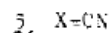
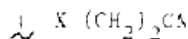
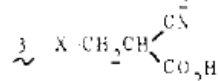
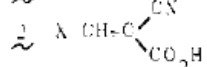
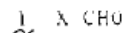
- Ketene imine heterodiene
- Retrosynthetic analysis from mass spec

Kende-(Rochester) Daunomycinone (p. 1967)**Key Points:**

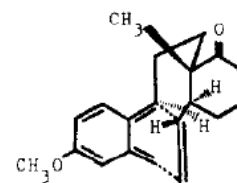
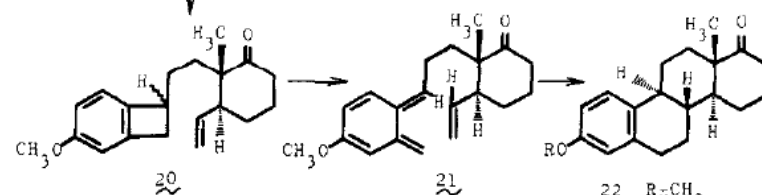
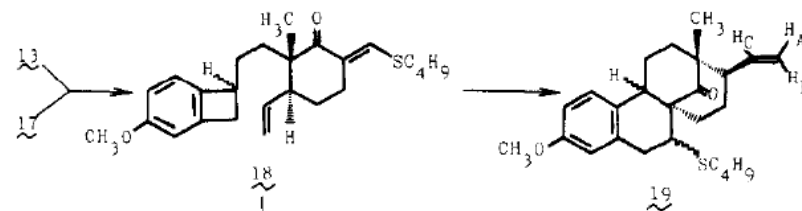
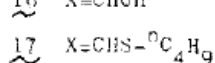
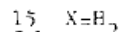
Less electron rich dienes add to
the terminal dienophile

Selective benzylic bromination

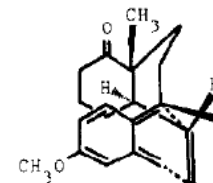
Kametani –(Tohoku University) d-Homoestrone (p. 3378)



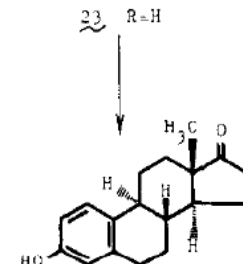
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A



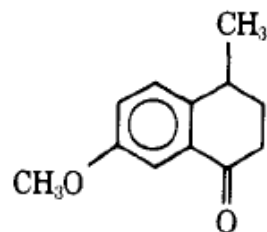
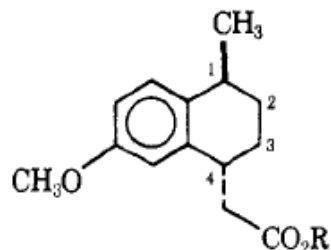
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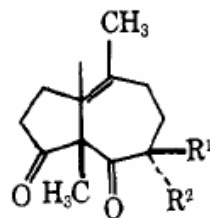
24

Key Points:

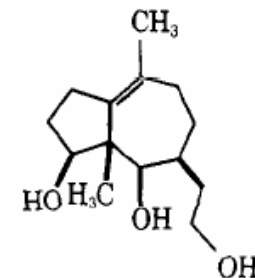
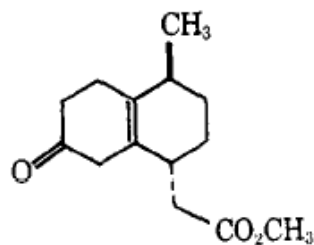
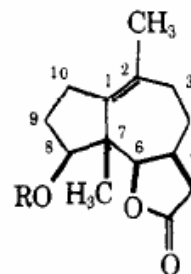
- Cyclobutane formation from addition to benzyne
- (E) stereochemistry from ring opening and exo transition state

Kretchmer (Ill. Inst. Tech.)-Damsin (p. 3379)**2**

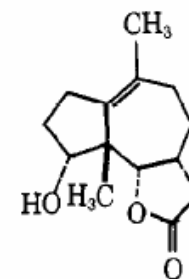
3a, R = C₂H₅
b, R = H



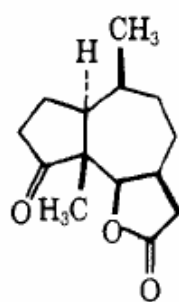
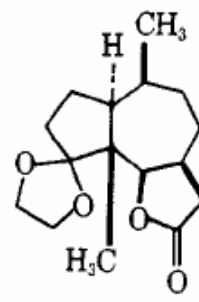
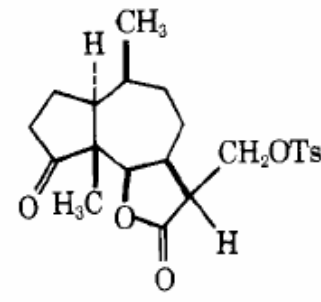
5a, R¹ = CH₂CO₂CH₃; R² = H
b, R¹ = H; R² = CH₂CO₂CH₃

**6****4**

7a, R = H
b, R = CONHC₆H₅

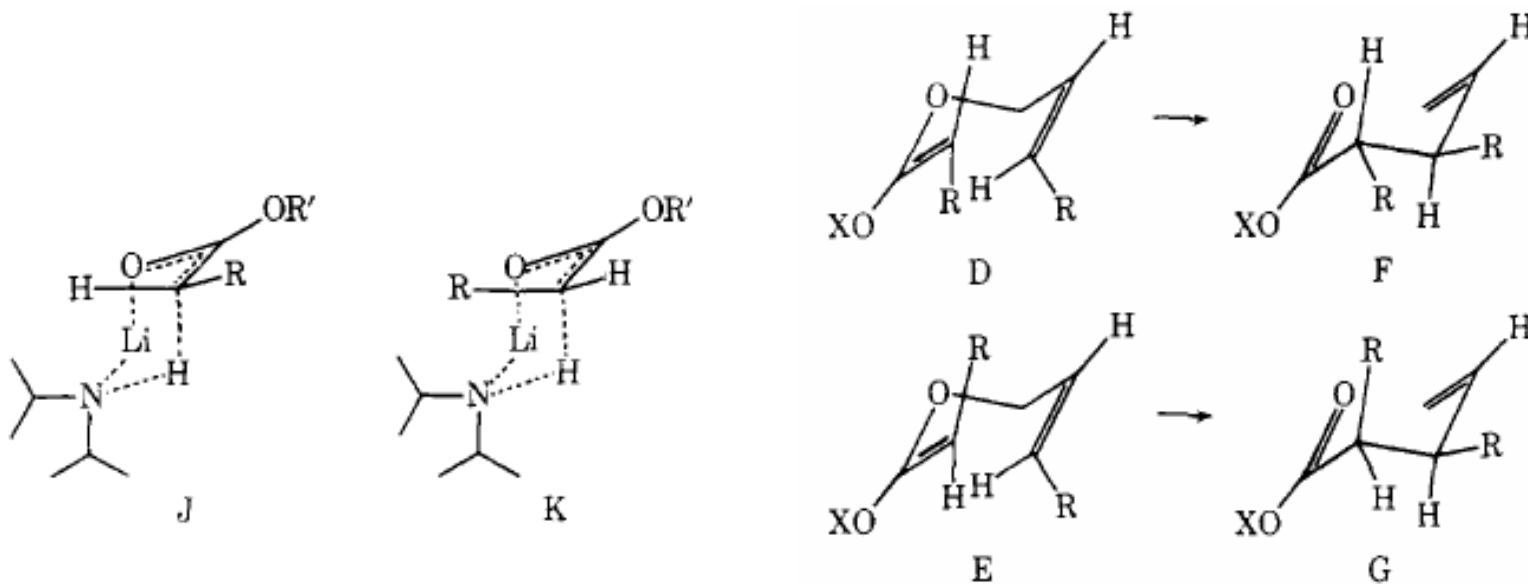
**8****Key Points:**

- Ring opening and aldol closing to form [5,7] ring system
- Catalytic oxidation (O₂ over platinum) to form lactone

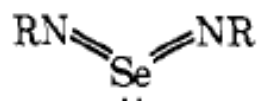
**9****10****11**

Rearrangements

Ireland (Caltech) Ester Enolate Claisen for Stereo Control

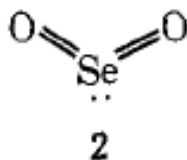


Sharpless (MIT) Allylic Amination of Olefins and Acetylenes by Imido Selenium Compounds

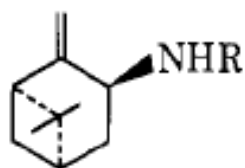
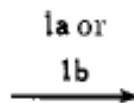


1a, R = *t*-Bu

1b, R = Ts



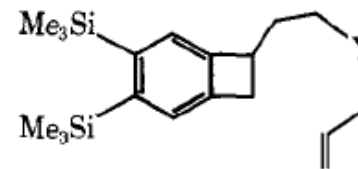
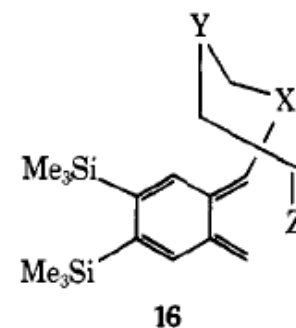
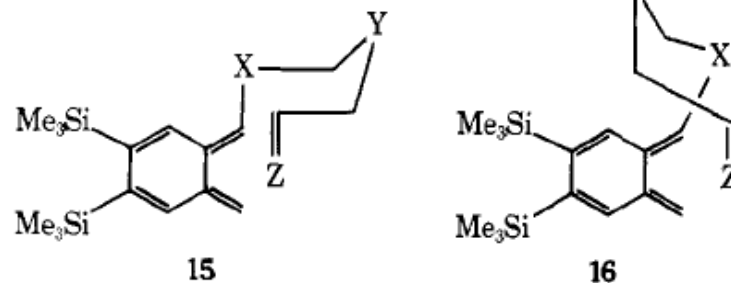
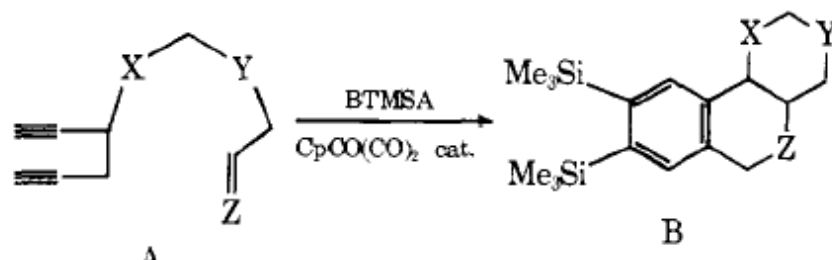
3



4a, R = *t*-Bu, 62%

4b, R = Ts, 82%

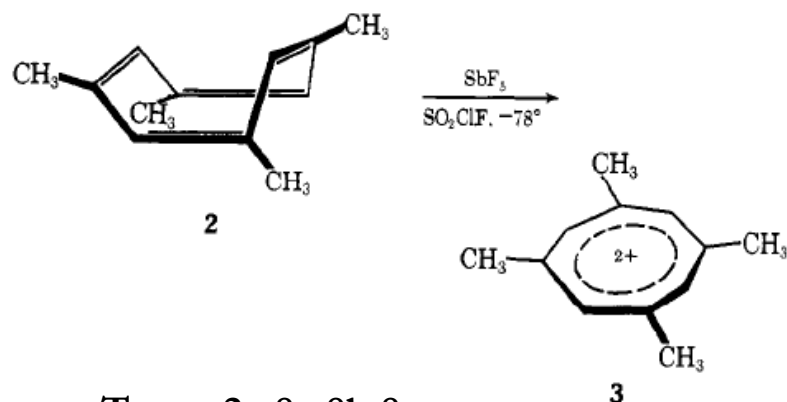
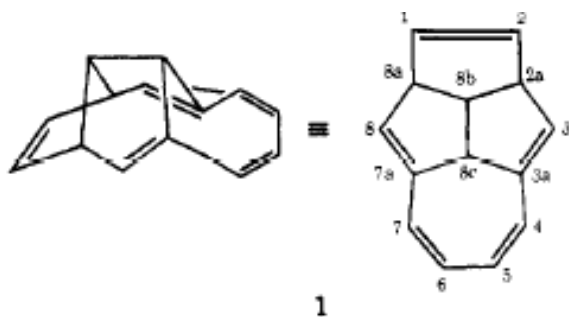
Vollhardt, (Berkeley) In situ synthesis and trapping of *o*-xylylene



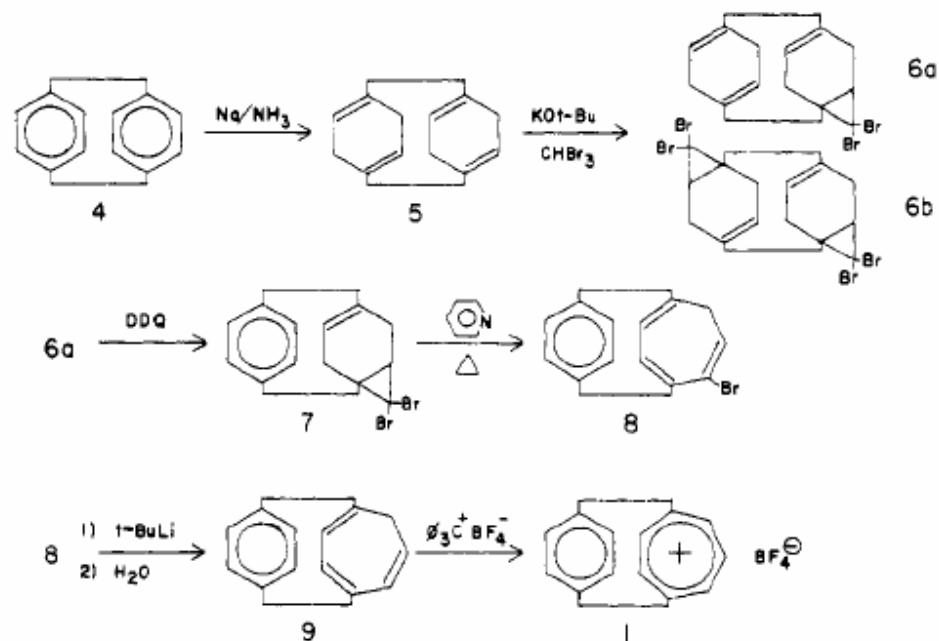
18, Y = CH₂

Interesting Molecules

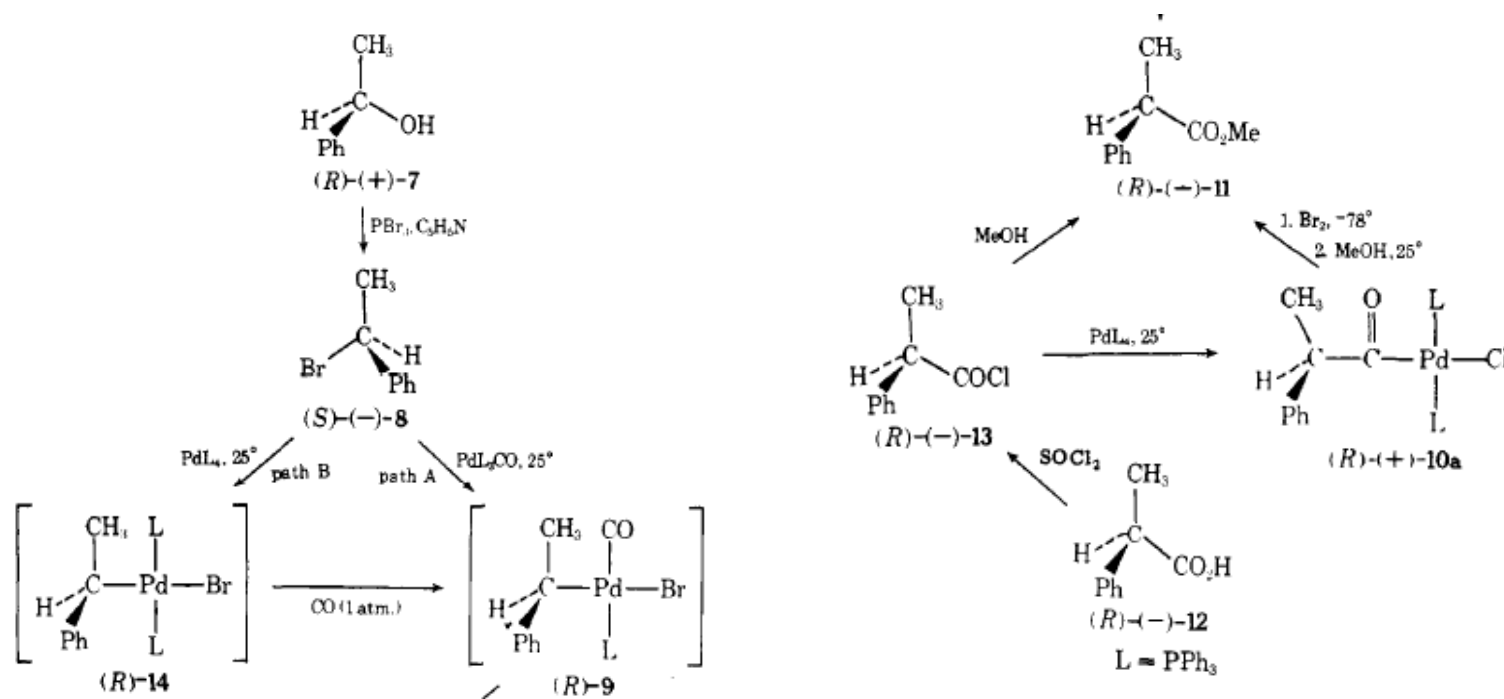
Paquette, Olah – first cyclooctatetraene dication

Trost- 2a,8a,8b,8c-
Tetrahydropentaleno[6,1,2-aj]luzulene

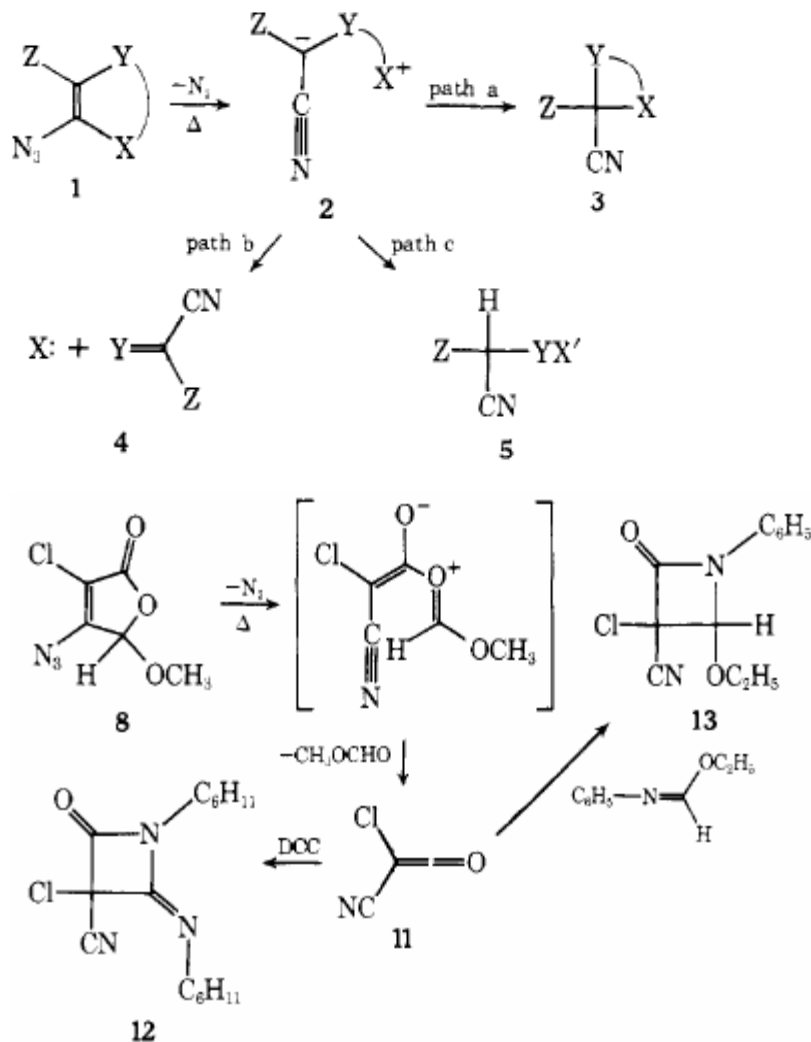
Keehn (Brandeis)- Tropyliocyclophane



Stille, (University of Iowa) Oxidative Addition of Benzyl Halides to Zero-Valent Palladium Complexes. Inversion of Configuration at Carbon

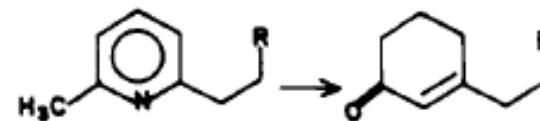


Moore, (Irvine) Chlorocyanoketene. A New P-Lactam Synthesis



Other things of note:

Danishefsky



The Bicentennial