



Robert V. Stevens

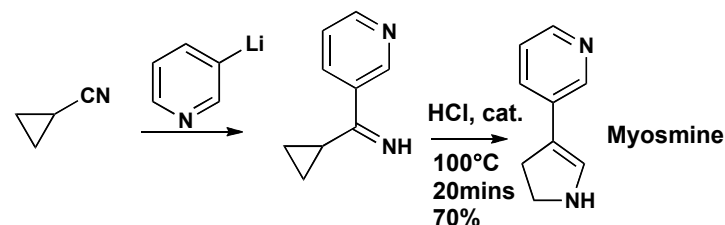
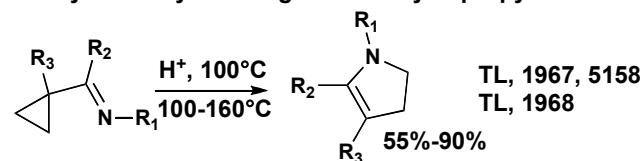
Biographical Information:

- Born on March 24, 1941 in Mason City, Iowa
- Received B.S. degree in 1963 in Iowa State University
- Ph. D at Indiana University with Professor Ernest Wenkert (1963-1966)
- Appointed to the faculty of Rice University (1966-1977)
- Professor of Chemistry in UCLA (1977-1984)
- Deceased on March 9, 1984



Studies on total Syntheses of Alkaloids

Alkaloids synthesis by rearrangement of cyclopropyl imines



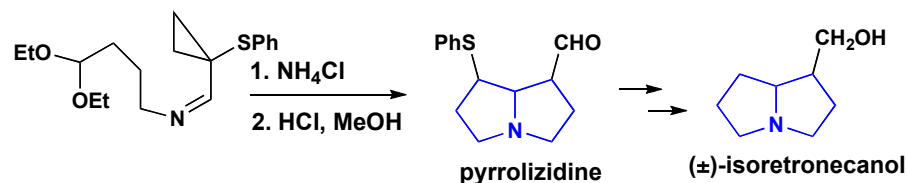
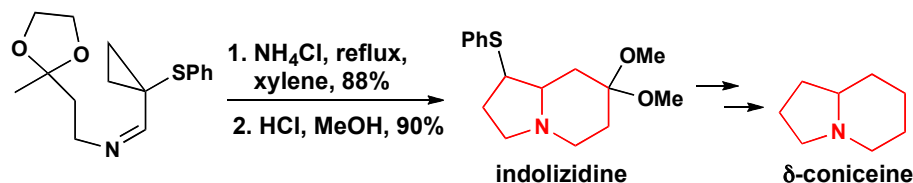
"Professor Stevens was a special kind of teacher. He would shuffle into an undergraduate class, clear his throat, and say, "Unhuh." The metamorphosis came when he picked up the chalk. No one who saw Professor Stevens work with chalk and the elegant structures he drew will forget the simple beauty of his lectures. He was a transformed man with chalk in his hands. His dry wit and diffident charm came through with clarity, and his sense of style and art pervaded the room"

-Professor Orville L. Chapman of UCLA

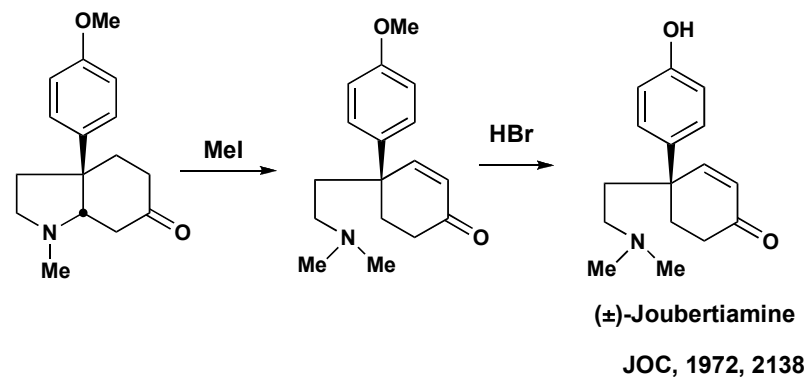
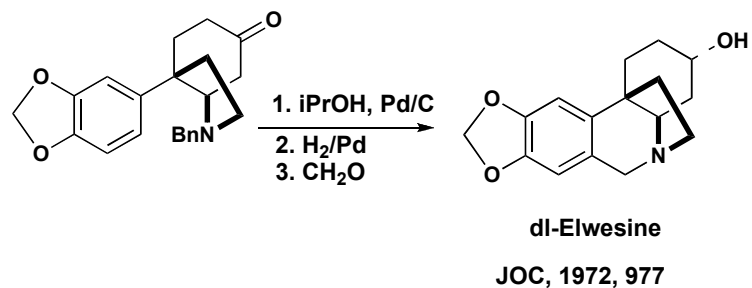
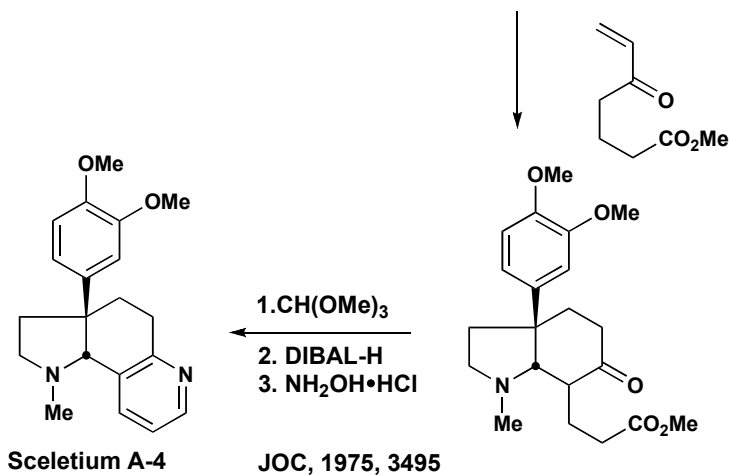
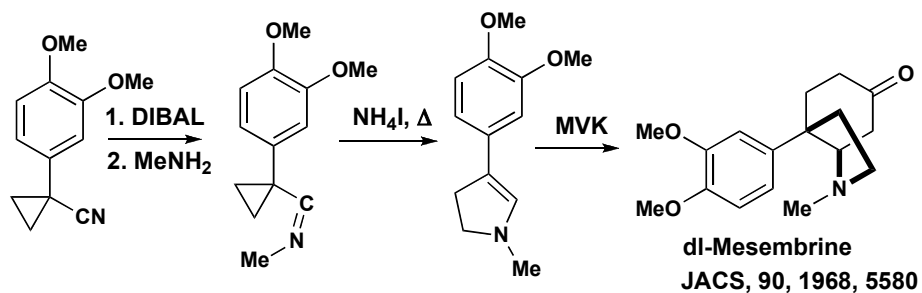
Summary of research interests throughout Professor Stevens's career:

- Total synthesis of natural products
 - alkaloids
 - steroids
 - vitamins
- Development of chemical methods in synthesis
 - rearrangement of cyclopropyl imines
 - stereocontrolled nucleophilic attack on immonium ions
 - nitron additions

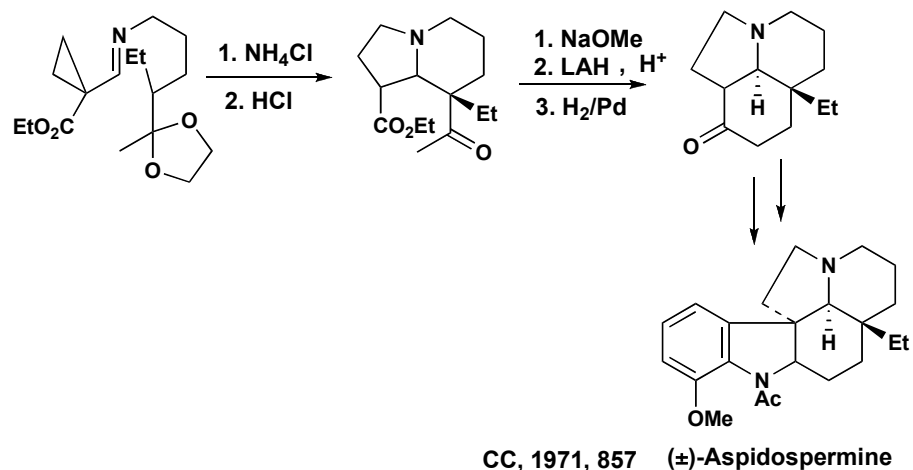
Synthesis of pyrrolizidine and indolizidine nucleus TL, 1976, 3799



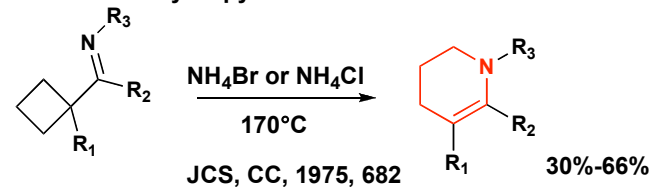
Applications to complex nature product



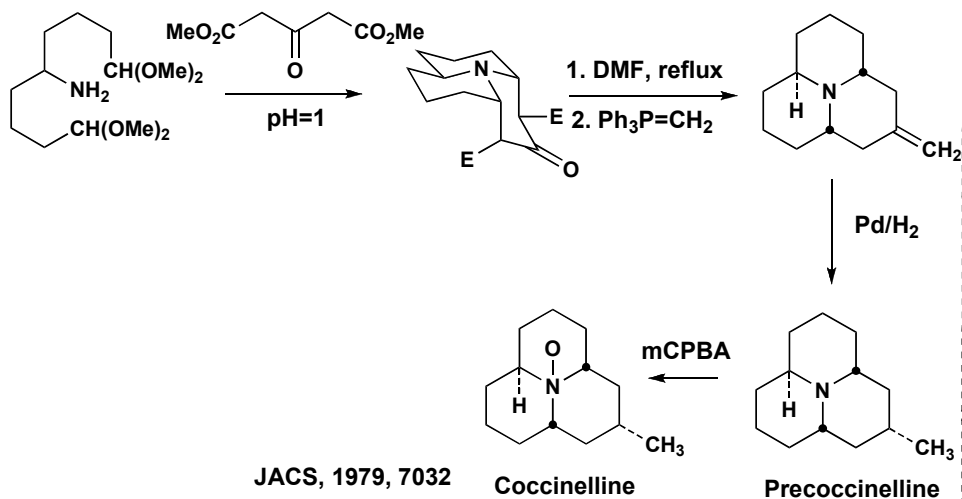
A formal synthesis of (±)-Aspidospermine



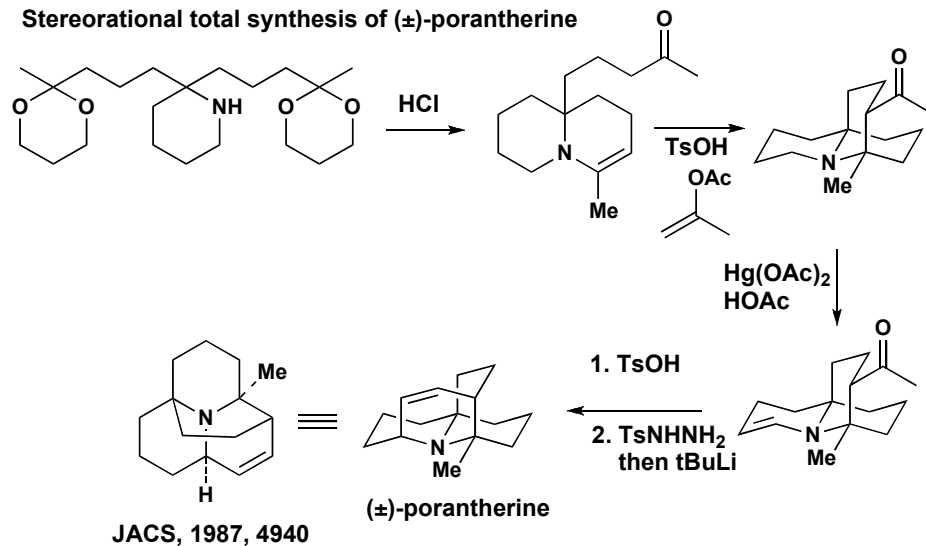
Acid catalysed rearrangement of cyclobutylimines synthesis of tetrahydropyridines



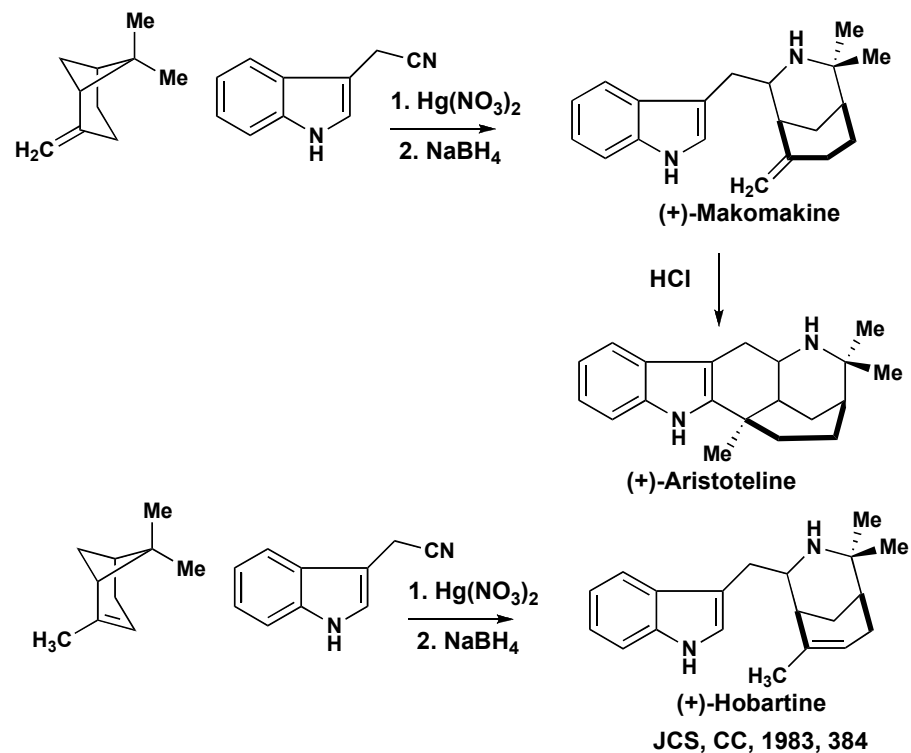
Total synthesis of precoccinelline and coccinelline with Robinson-Schopf reaction as the key step



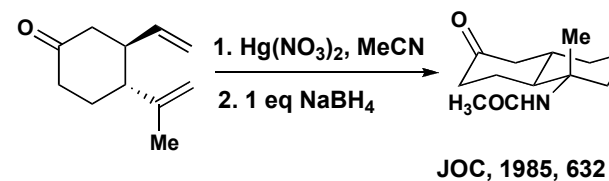
Stereorational total synthesis of (±)-porantherine



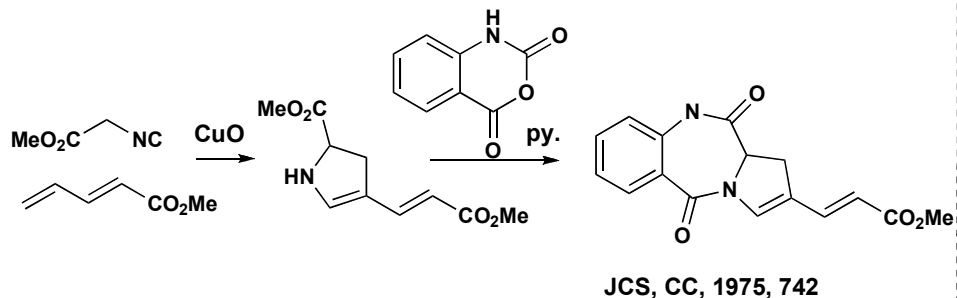
Expedient stereospecific total syntheses of (+)-Makomakine, (+)-Aristoteline and (+)-Hobartine



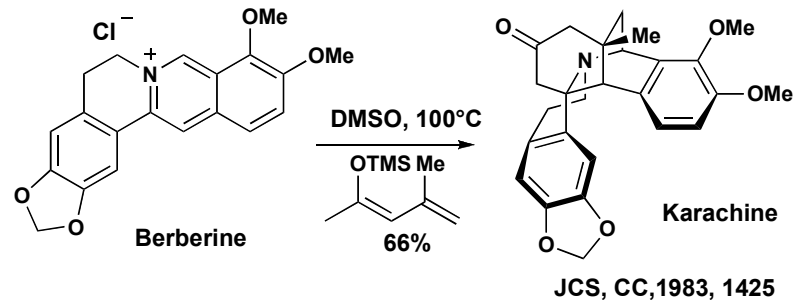
Use of nitriles as terminators of carbocation-olefin cyclization



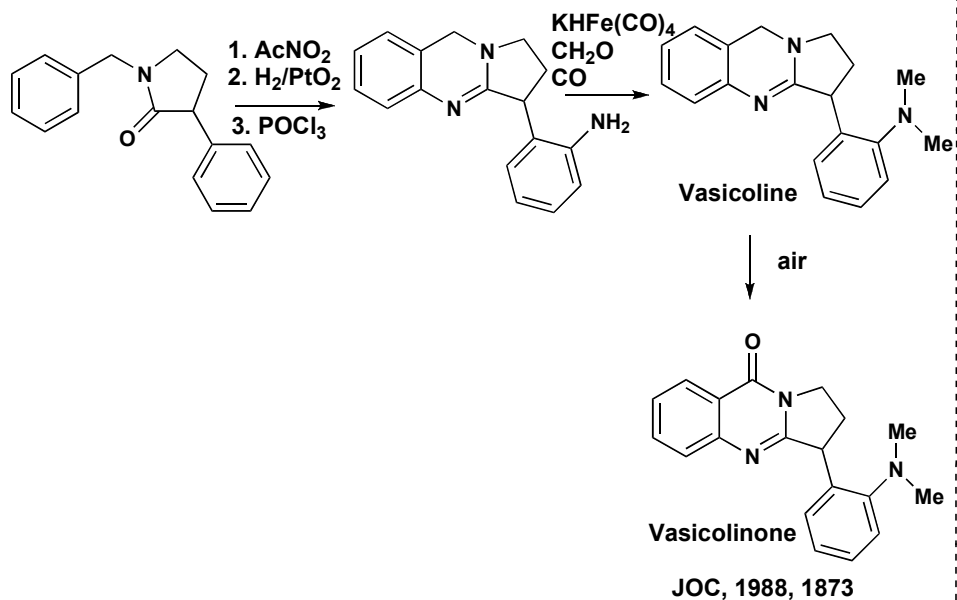
Synthesis of pyrrolobenzodiazepine nucleus of anthramycin



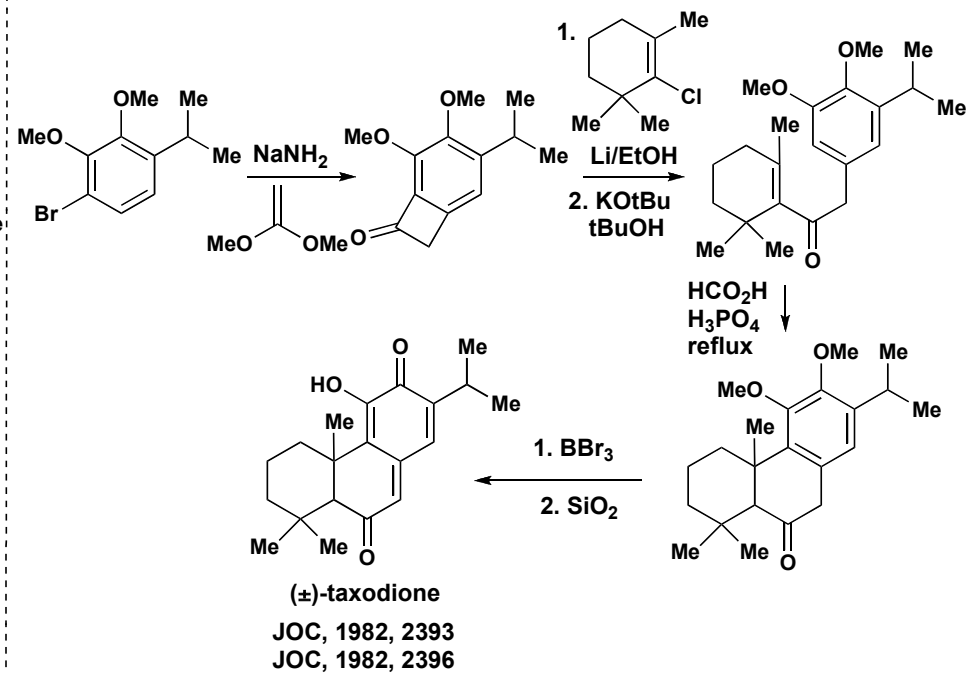
Expedient total synthesis of karachine



Total syntheses of vasicoline and vasicolinone

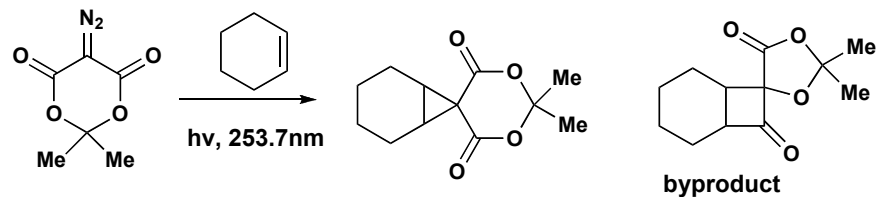


Studies on benzocyclobutenones and total synthesis of (±)-taxodione

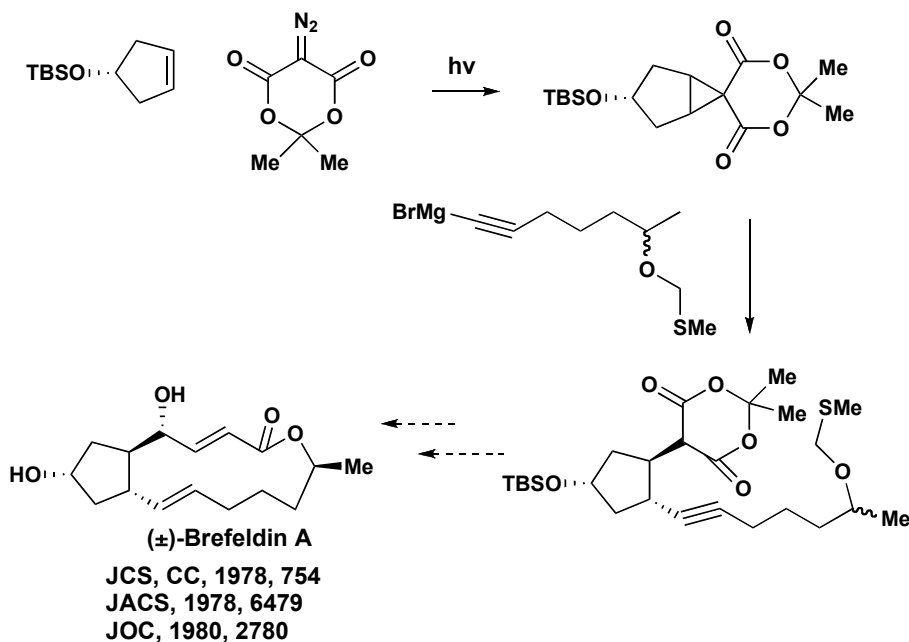


Studies on Spiro-Activated Cyclopropanes

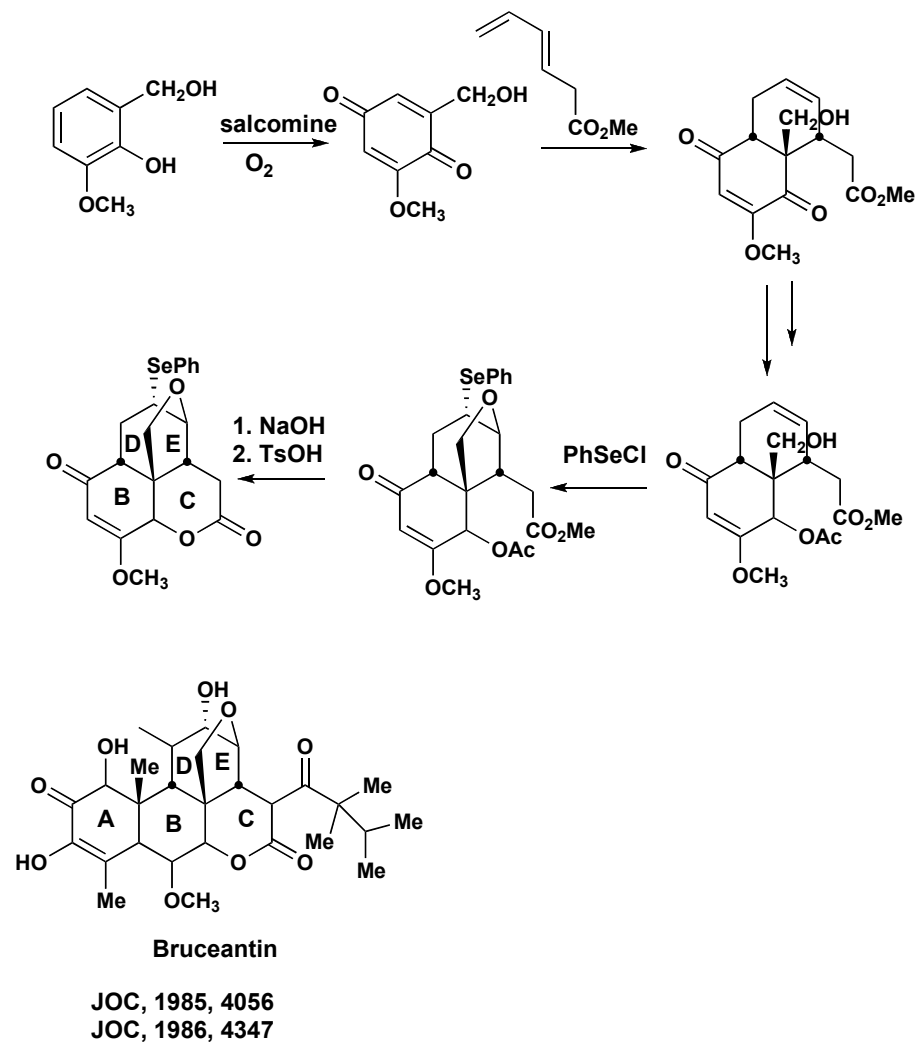
1. synthesis of cyclopropane



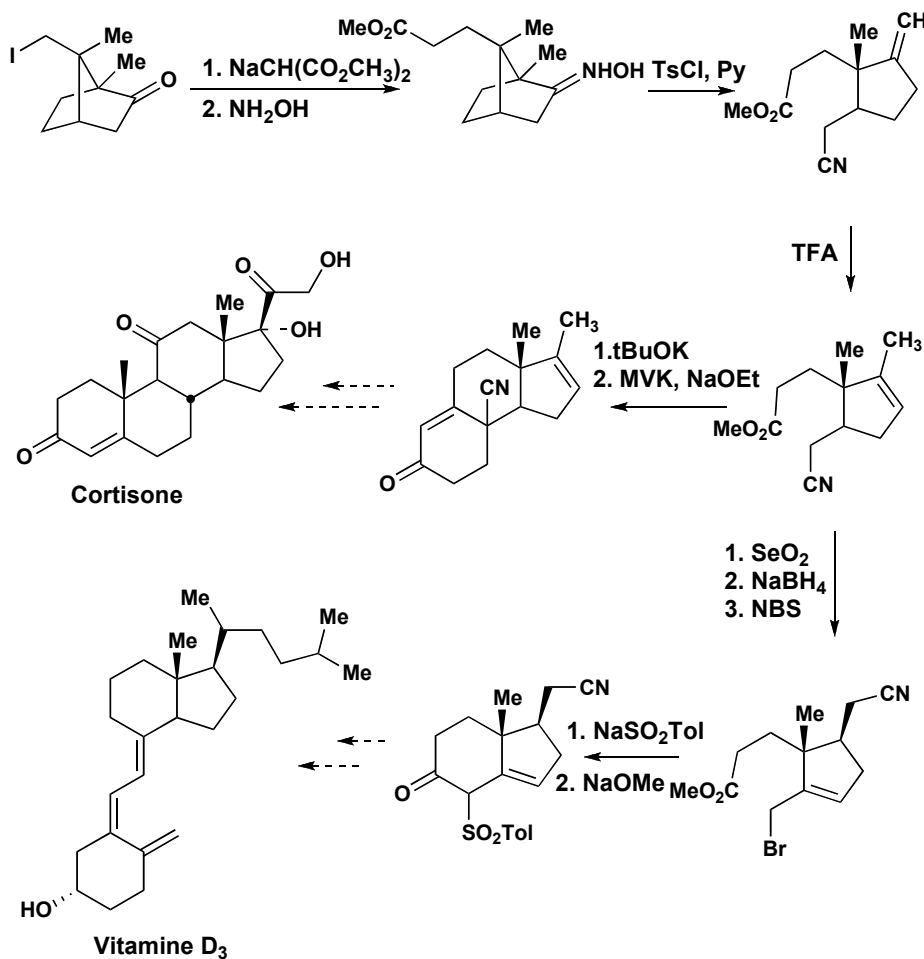
2. Homoconjugated addition of Grignard



Studies on Quassinoids



Total synthesis of steroids and vitamine D₃ using camphorae as chiral intermediate



JACS, 1977, 6105
JACS, 1983, 7713
T, 1985, 93

Studies on Sodium Hypochlorite "swimming pool chlorine"

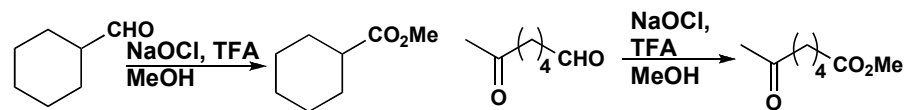
1. selective oxidation of secondary alcohol in the presence of primary alcohol

ENTRY	DIOL	PRODUCT	% YIELD ^a
1			85
2			83
3			91
4			73 ^b
5			70
6			75
7			90

^a All yields represent isolated pure products

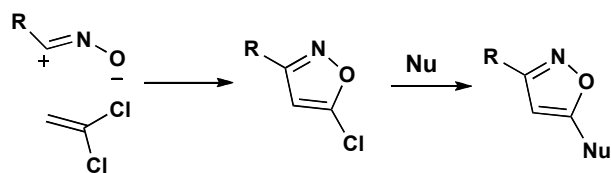
^b Isolated as the benzoate ester

2. conversion of aldehyde to ester



JOC, 1980, 2030, TL, 1982, 4647

Isoxazole synthesis and nucleophilic substitutions of 5-chloroisoxazoles



General Method for the nitrile oxide

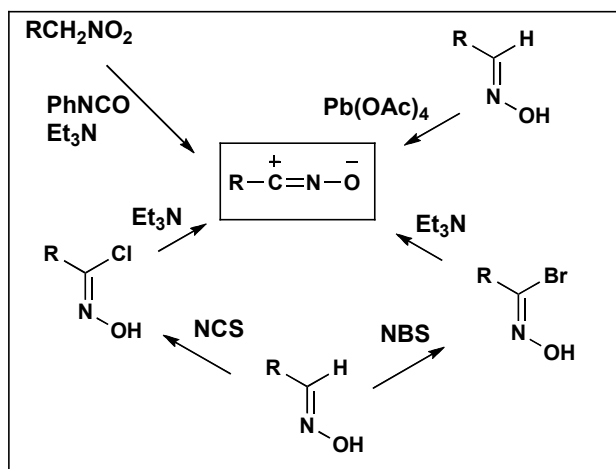


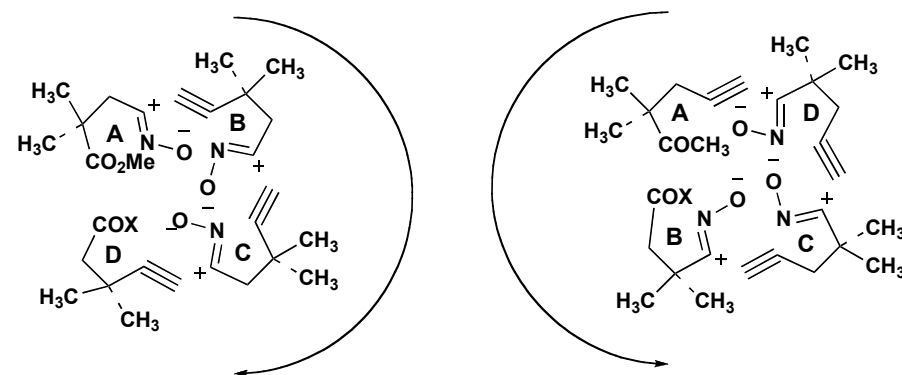
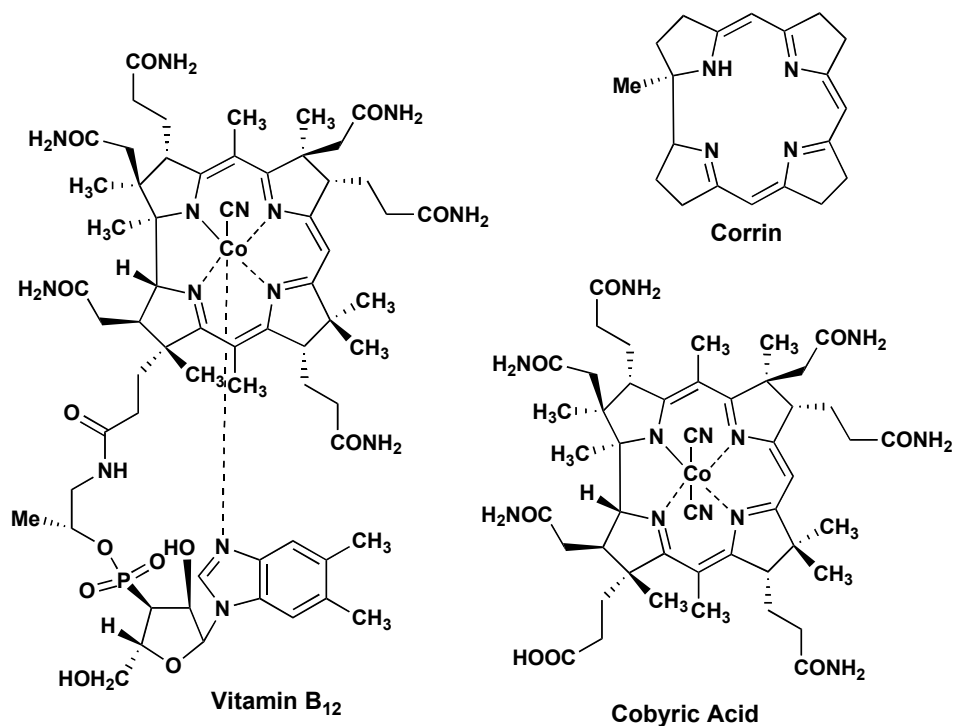
Table II. Nucleophilic Substitution of 5-Chloroisoxazoles^a

Substrate	Nucleophile, ^c Conditions	Product	Yield ^b
	NaOCH ₂ φ 3h/60 °C		85
	NaOCH ₃ 6h/65 °C		70
	NaOCH ₃ 18h/65 °C		89
II	NaOCH ₂ φ 5h/60 °C		72
II	φSLi 10h/60 °C		48
II	LIN 2h/23 °C		53

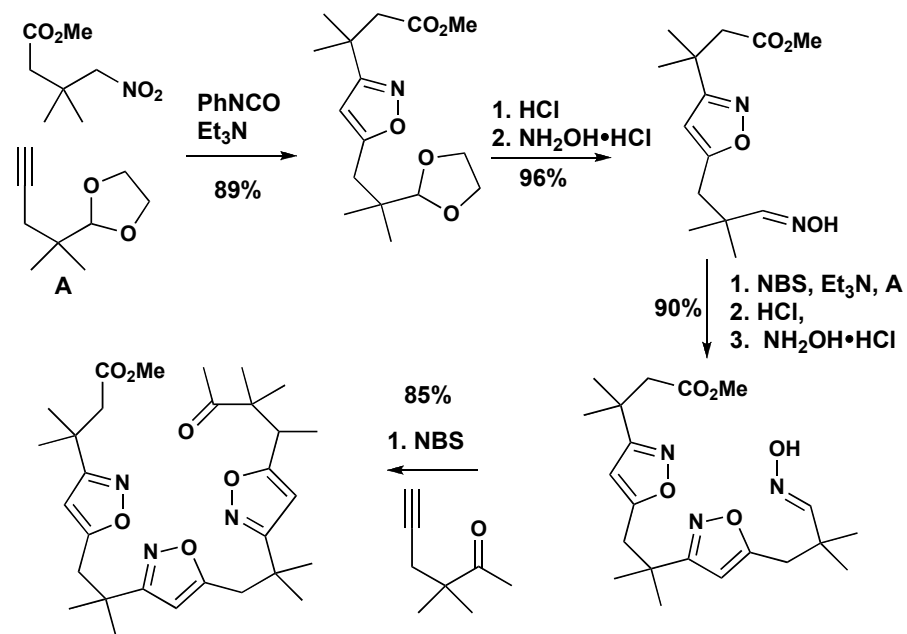
^a All isoxazoles were fully characterized spectroscopically;
^b Yields represent chromatographically pure products; ^c The alkoxides were generated from the alcohol and sodium metal, thiophenol and piperidine were deprotonated with *n*-BuLi at 0°C.

Nitrile oxide precursor	5-Chloroisoxazole	Yield ^b	Nitrile oxide precursor	5-Chloroisoxazole	Yield ^b
		82			36
		60			73
		30			78

Studies on Vitamine B₁₂ and Corrins



Total synthesis of Ni Octamethylcorphin



Synthetic Strategy

