Synthesis Alerts is a monthly feature to help readers of Synthesis keep abreast of new reagents, catalysts, ligands, chiral auxiliaries, and protecting groups which have appeared in the recent literature. Emphasis is placed on new developments but established reagents, catalysts etc are also covered if they are used in novel and useful reactions. In each abstract, a specific example of a transformation is given in a concise format designed to aid visual retrieval of information.

Synthesis Alerts is a personal selection by:

Elyse Bourque, Jennifer Delaney, Andrew Gunn, Stephen McAteer, Stefan Schunk and Josephine Yuen, Department of Chemistry, Leeds University, Leeds, LS2 9JT, UK.

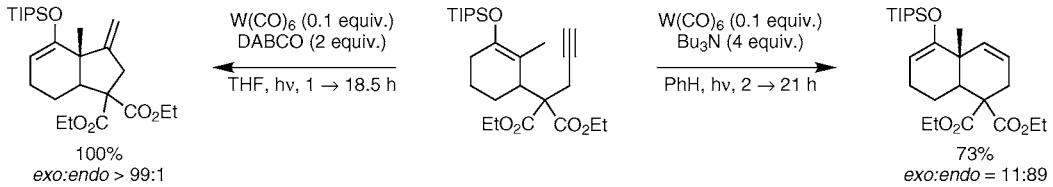
Georg Thieme Verlag does not accept responsibility for the accuracy, content, or selection of the data.

Synthesis 2003, No. 1, 30 12 2002. Article Identifier:
1437-210X,E;2003,0,01,1937,1944,ftx,en;X00103SS.pdf.
© Georg Thieme Verlag Stuttgart · New York
ISSN 0039-7881

The journals regularly covered by the abstractors are:

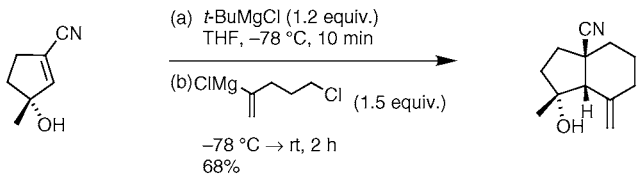
Angewandte Chemie International Edition
Bulletin of the Chemical Society of Japan
Chemical Communications
Chemistry A European Journal
Chemistry Letters
Collection Czechoslovak Chemical Communications
European Journal of Organic Chemistry
Helvetica Chimica Acta
Heterocycles
Journal of the American Chemical Society
Journal of Organic Chemistry
Organic Letters
Organometallics
Perkin Transactions 1
Synlett
Synthesis
Tetrahedron
Tetrahedron Asymmetry and Tetrahedron Letters

W(CO)$_6$-amine catalyzed *exo*- and *endo*-selective cyclizations of ω-alkynyl silyl enol ethers. **Cyclization**
Kusama, H.; Yamabe, H.; Iasawa, N. *Org. Lett.* **2002**, *15*, 2569.



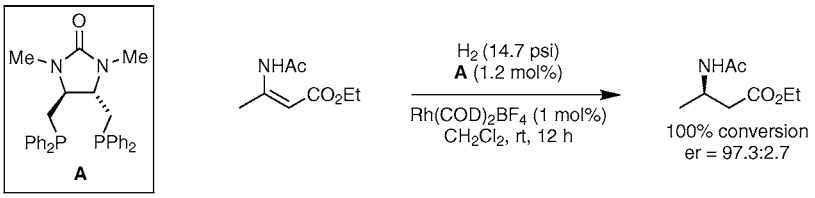
5 examples (yields 73-100%). The tandem cyclization of bis-alkynyl silyl enol ethers is also reported.

Chelation-controlled conjugate addition/annulation of alkenenitriles with ω-chloro Grignard reagents. **1,4-Addition/Annulation**
Fleming, F. F.; Zhang, Z.; Wang, Q.; Steward, O. W. *Org. Lett.* **2002**, *15*, 2493.



7 examples (yields 56-75%).

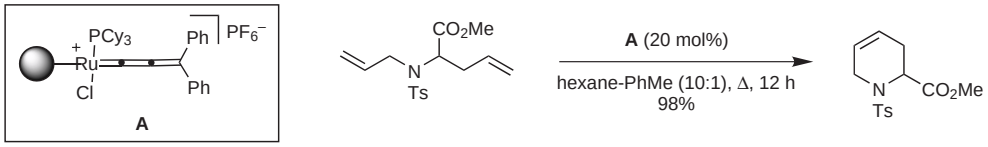
Enantioselective Rh-catalyzed hydrogenation of (*E*) and (Z)-β-(acylamino)acrylates. **Hydrogenation**
Lee, S-G.; Zhang, J. Y. *Org. Lett.* **2002**, *4*, 2429.



9 examples (conversion 100%, %ee 75.6-97.4%).

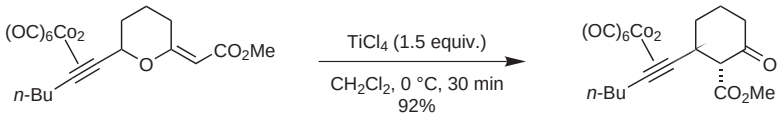
This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.

Polymer supported Ru-catalyzed ring closing olefin metathesis. **Ring Closing Metathesis**
Akiyama, R.; Kobayashi, S. *Angew. Chem. Int. Ed.* **2002**, *14*, 2602.



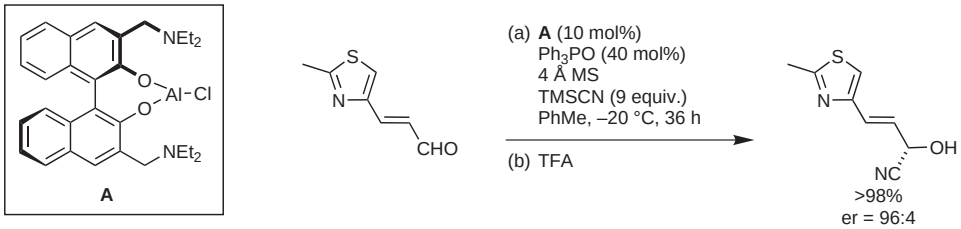
7 examples (yields 57-98%).

Co-mediated rearrangement of cyclic enol ethers. **Ferrier Rearrangement**
Carberry, D. R.; Reignier, S.; Myatt, J. W.; Miller, N. D.; Harrity, J. P. A. *Angew. Chem. Int. Ed.* **2002**, *14*, 2584.



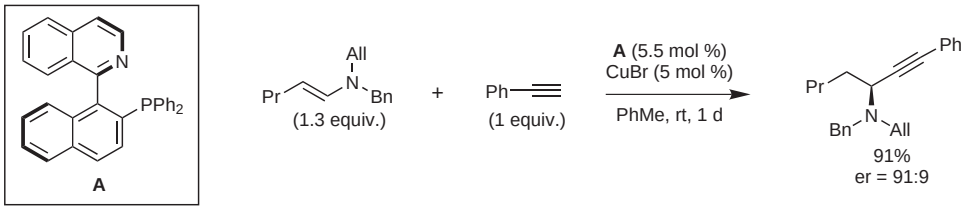
8 examples (yields 70-98%).

Enantioselective Al-catalyzed synthesis of cyanohydrins. **1,2-Addition**
Casas, J.; Nájera, C.; Sansano, J. M.; Saá, J. M. *Org. Lett.* **2002**, *15*, 2589.



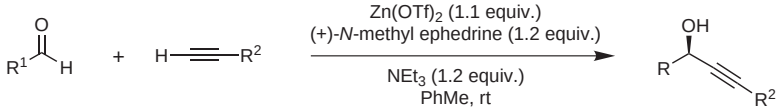
13 examples (yields 70-99%, %ee 66->99%).

Enantioselective Cu-catalyzed addition of alkynes to enamines. **1,2-Addition**
Koradin, C.; Polborn, K.; Knochel, P. *Angew. Chem. Int. Ed.* **2002**, *14*, 2535.



13 examples (yields 50-99%, %ee 54-90%).

Enantioselective Zn-catalyzed addition of terminal alkynes to aldehydes. **1,2-Addition**
Byoall, D.; Frantz, D. E.; Carreira, E. M. *Org. Lett.* **2002**, *15*, 2605.

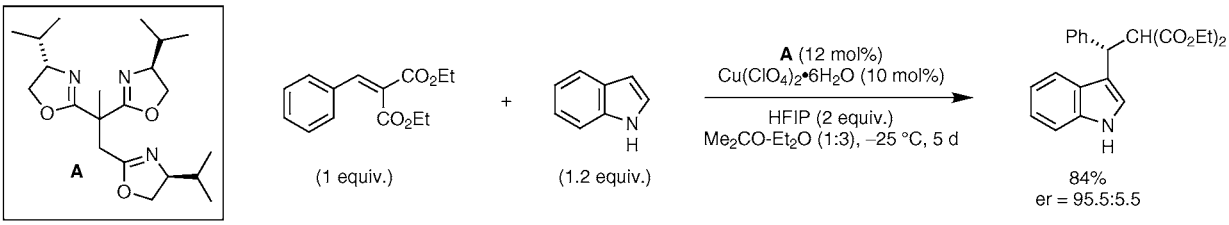


R^1	R^2	Yield	*%ee*
C_6H_{11}	$SiMe_3$	90%	95%
i-Pr	Ph	96%	92%
t-Bu	$(CH_2)_2Ph$	85%	99%
Ph	$(CH_2)_2Ph$	67%	89%

14 examples (yields 67-96%, %ee 80-99%).

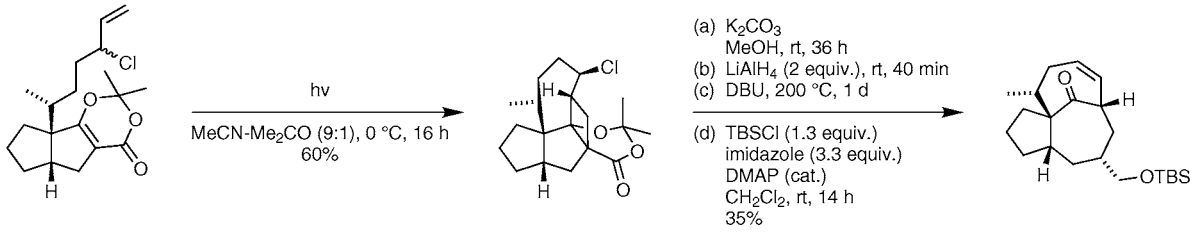
This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.

Improvement of the enantiomeric excess in the asymmetric Michael addition of indoles to alkylidene malonates. **1,4-Addition**
Zhou, J.; Tang, Y. *J. Am. Chem. Soc.* **2002**, *124*, 9030.



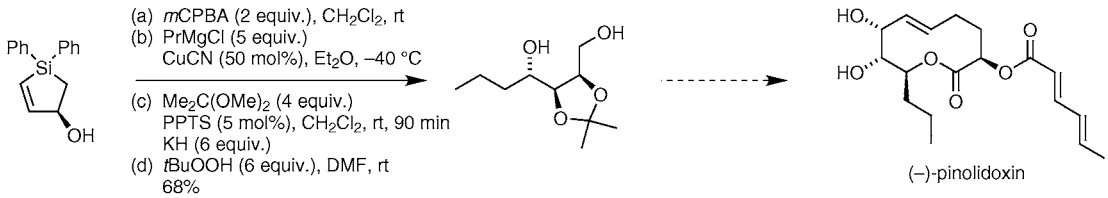
13 examples (yields 73-99%, %ee 60-92%).

Total synthesis of (±)-ingenol. **[2+2]-Cycloaddition/Fragmentation**
Winkler, J. D.; Rouse, M. B.; Greaney, M. F.; Harrison, S. J.; Jeon, Y. T. *J. Am. Chem. Soc.* **2002**, *124*, 9727.



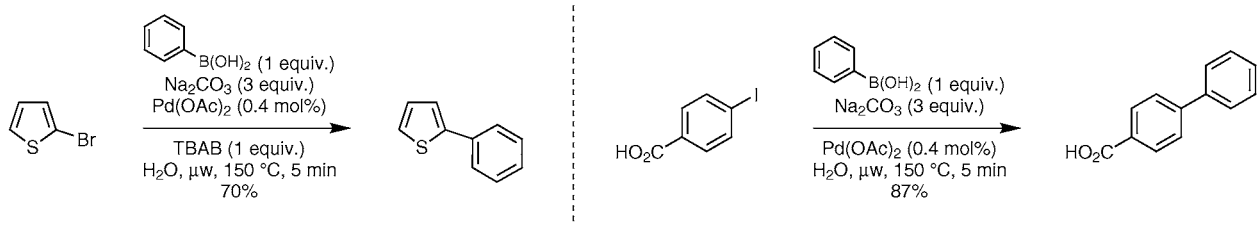
Application to the total synthesis of (±)-ingenol.

Synthesis of (–)-pinolidoxin from a common silacyclic precursor. **Nucleophilic Addition**
Liu, D.; Kozmin, S. A. *Org. Lett.* **2002**, *4*, 3005.



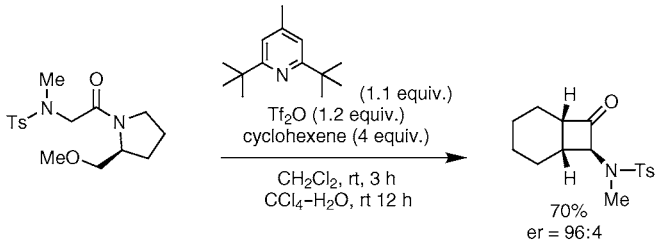
Both enantiomers are employed in the synthesis.

Microwave-accelerated Pd-catalyzed Suzuki reaction in water. **sp²-sp² Coupling**
Leadbetter, N. E.; Marco, M. *Org. Lett.* **2002**, *4*, 2973.



25 examples (yields 45-96%).

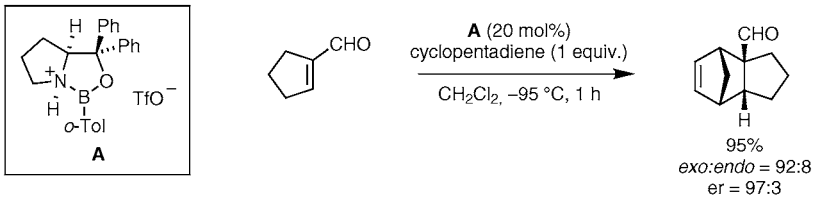
Enantioselective synthesis of cyclobutanones. **[2+2] Cycloaddition**
Ghosez, L.; Mahuteau-Betzer, F.; Genicot, C.; Vallribera, A.; Cordier, J . F. *Chem.–Eur. J.* **2002**, *8*, 3411.



21 examples (yields 32-89%, %ee 0-98%).

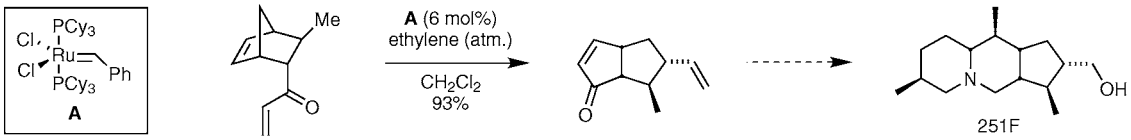
This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.

Enantioselective cationic oxazaborolidine-catalyzed Diels-Alder reaction . **[4+2]-Cycloaddition**
Ryu, D. H.; Lee, T. W.; Corey, E. J. *J. Am. Chem. Soc.* **2002**, *124*, 9992.



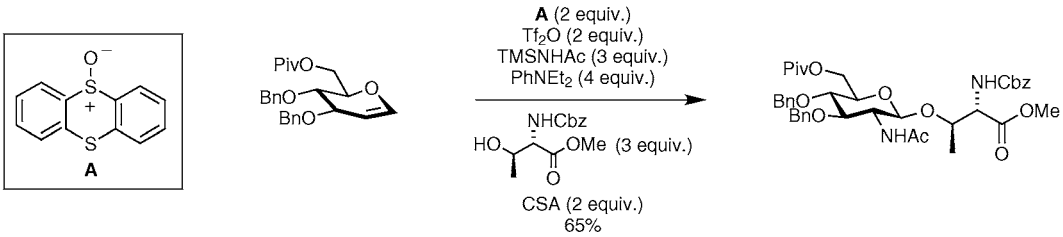
15 examples (yields 33-99%, %ee 69-99%).

Total synthesis of dendrobatid alkaloid 251F via Ru-catalyzed ring closing metathesis **Ring Closing Metathesis**
Wrobleski, A.; Sahasrabudhe, K.; Aubé, J. *J. Am. Chem. Soc.* **2002**, *124*, 9974.



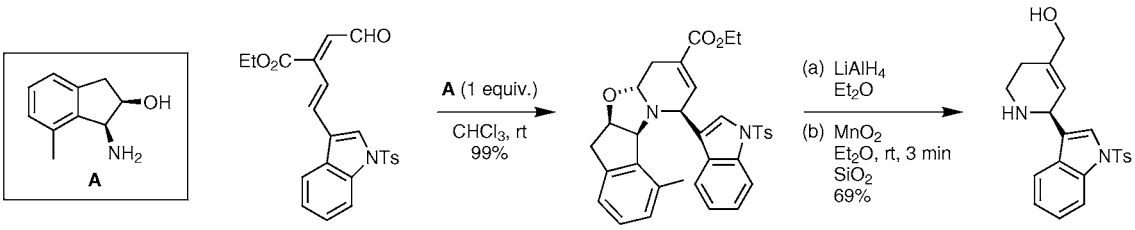
Total synthesis of alkaloid 251F (13 steps, overall yield 5-8%).

C2-Amidoglycosylation: the scope and mechanism of nitrogen transfer. **Amidoglycosylation**
Liu, J.; Gin, D. Y. *J. Am. Chem. Soc.* **2002**, *124*, 9789.



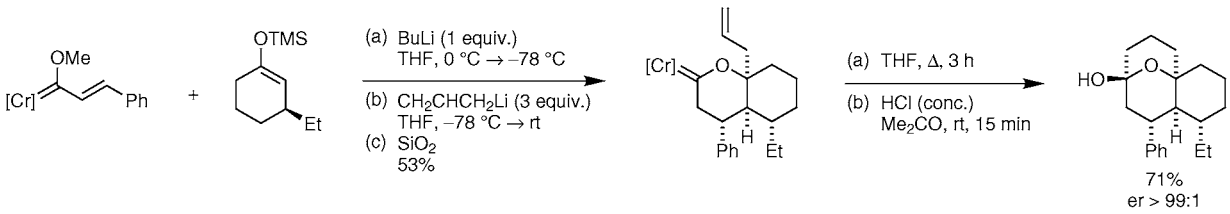
12 examples (yields 51-77%).

Asymmetric 6π-azaelectrocyclization. **Electrocyclization**
Tanaka, K.; Katsumura, S. *J. Am. Chem. Soc.* **2002**, *124*, 9660.



Application to a formal synthesis of 20-epiuleine is reported.

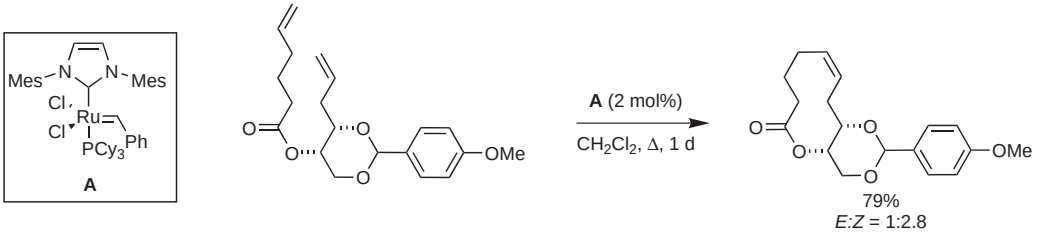
Enantioselective formation of eight-membered rings from alkenyl Fischer carbene and ketone enolates. **Cyclization**
Barluenga, J.; Diéguez, A.; Rodriguez, F.; Florez, J.; Fananas, F. J. *J. Am. Chem. Soc.* **2002**, *124*, 9056.



6 examples (yields 69-82%, %ee >98%).

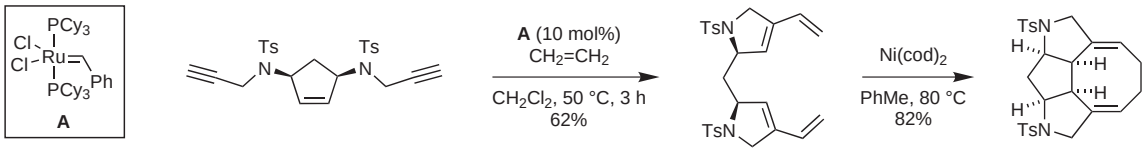
This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.

Formal total synthesis of ascidiatrienolide A and the didemnilactones. **Ring Closing Metathesis**
Fürstner, A.; Schlede, M. *Adv. Synth. Catal.* **2002**, *344*, 657.



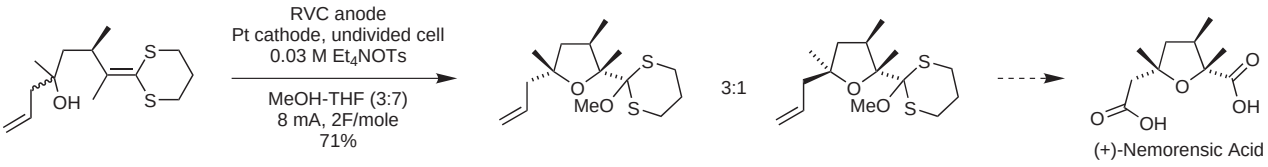
4 examples (yields 43-83%, 1:2.8 ≥ *E:Z* ≥ 8.4:1).

Ru-catalysed enyne metathesis. **Metathesis**
Randl, S.; Lucas, N.; Connon, S. J.; Blechert, S. *Adv. Synth. Catal.*, **2002**, *344*, 631.



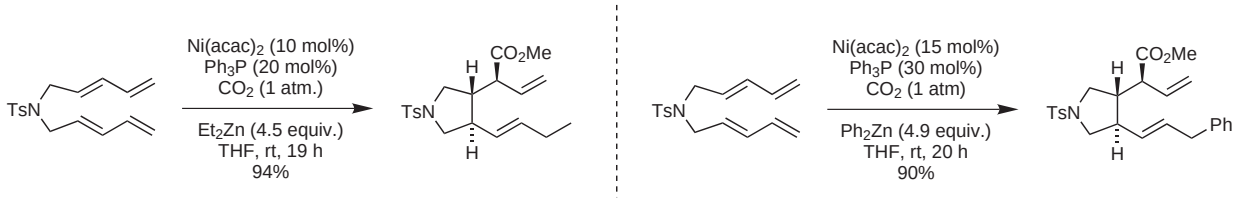
9 examples of enyne metathesis (yields 49-99%).

Oxidative cyclization based on reversing the polarity of enol ethers and ketene dithioacetals. **Oxidative Cyclization**
Liu, B.; Duan, S.; Sutterer, A. C.; Moeller, K. D. *J. Am. Chem. Soc.* **2002**, *124*, 10101.



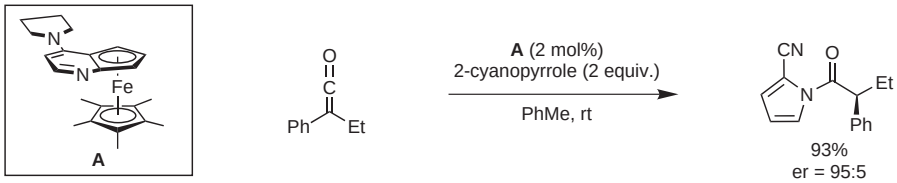
29 examples (yields 20-96%).

Regio- and stereoselective Ni-catalyzed ring-closing carboxylation of bis-1,3-dienes. **Ring Closing Carboxylation**
Takimoto, M.; Mori, M. *J. Am. Chem. Soc.* **2002**, *124*, 10008.



9 examples (yields 56-95%).

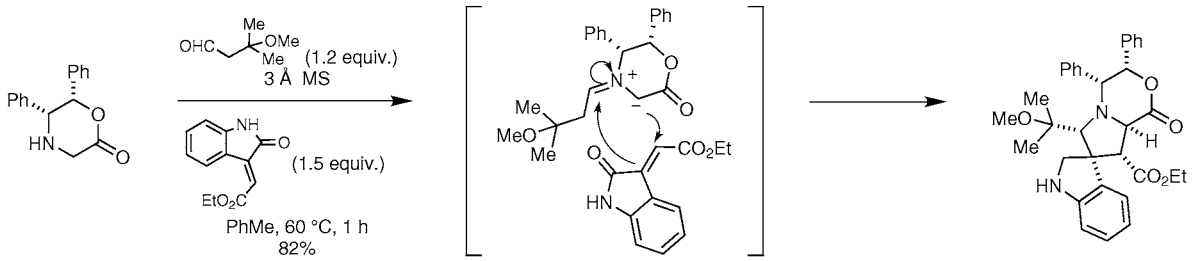
Enantioselective Fe-catalyzed addition of amines to ketenes. **1,2-Addition**
Hodous, B. L.; Fu, G. C. *J. Am. Chem. Soc.* **2002**, *124*, 10006.



7 examples (yields 80-96%, %ee 81-98%).

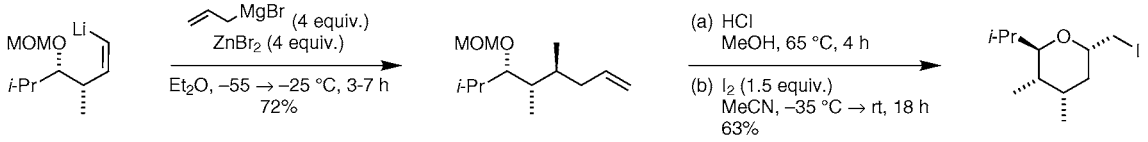
This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.

Diastereoselective azomethine ylide [1,3]-dipolar cycloaddition. **[1,3]-Cycloaddition**
Sebahar, P. R.; Osada, H.; Usui, T.; Williams, R. M. *Tetrahedron*, **2002**, *58*, 6311.



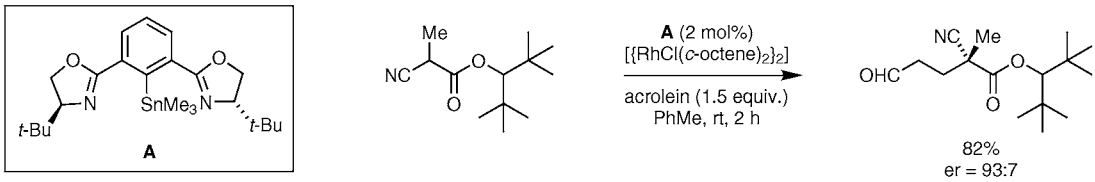
Application toward the synthesis of (+) and (–)-spirotryprostatin .

Addition of allylzinc reagents to δ-alkoxy-γ,δ-disubstituted alkenyllithium compounds. **Carbometallation**
Bernard, N.; Chemla, F.; Ferreira, F.; Mostefai, N.; Normant, J. F. *Chem.–Eur. J.* **2002**, *8*, 3139.



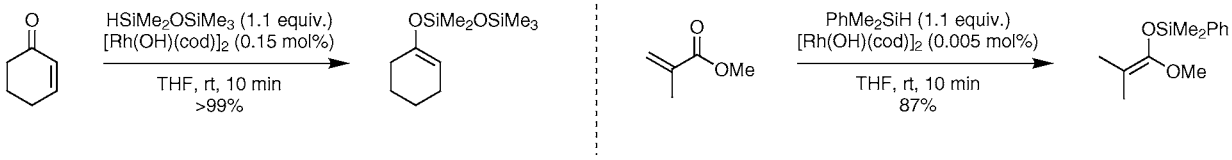
11 examples of carbomatallation (yields 52-79%).

Asymmetric Rh-catalyzed Michael addition of α-cyanopropionates to acrolein. **1,4-Addition**
Motoyama, Y.; Koga, Y.; Kobayashi, K.; Aoki, K.; Nishiyama, H. *Chem.–Eur. J.* **2002**, *8*, 2968.



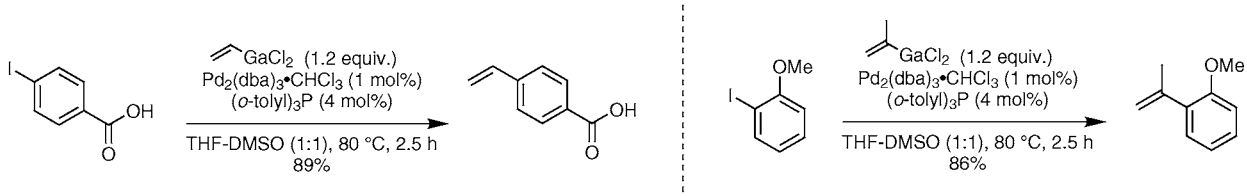
7 examples (yields 92-97%, %ee 69-86%).

1,4-Hydrosilylation of α,β-unsaturated carbonyl compounds. **1,4-Addition**
Mori, A.; Kato, T. *Synlett* **2002**, 1167.



13 examples (yields 82->99%).

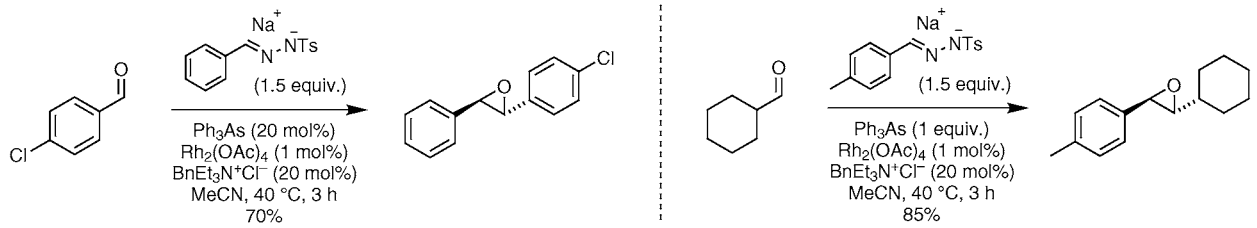
Pd-catalyzed coupling reaction of alkenylgalliums with aryl halides. **sp²-sp² Coupling**
Mikami, S.; Yorimitsu, H.; Oshima, K. *Synlett* **2002**, 1137.



18 examples (yields 33-97%).

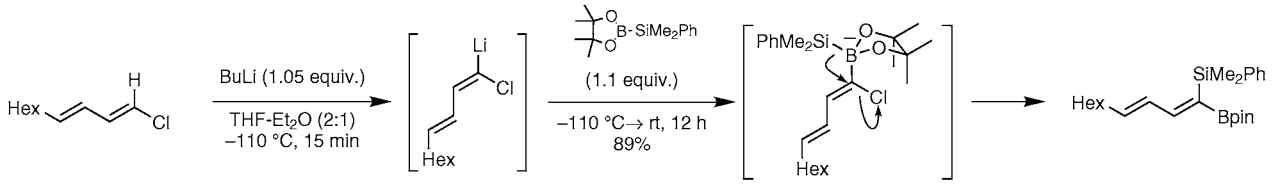
This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.

Rh-catalyzed synthesis of epoxides from aldehydes and tosylhydrazone sal ts. **Epoxidation**
Aggarwal, V. K.; Patel, M.; Studley, J. *Chem. Commun.* **2002**, 1514.



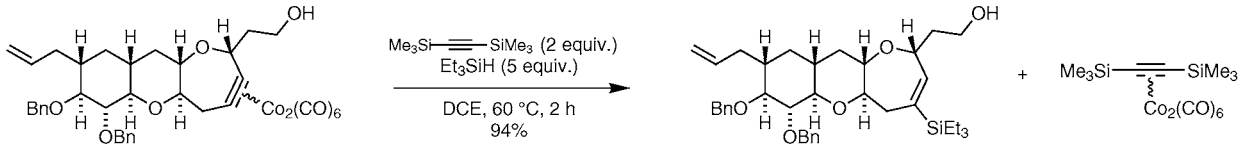
18 examples (yields 10-98%). Complete *trans* selectivity in all cases.

Geminal dimetallation of alkylidene-type carbenoids with silylboranes and diborons. **Metallation**
Kurahashi, T.; Hata, T.; Masai, H.; Kitagawa, H.; Shimizu, M.; Hiyama, T . *Tetrahedron*, **2002**, *58*, 6381.

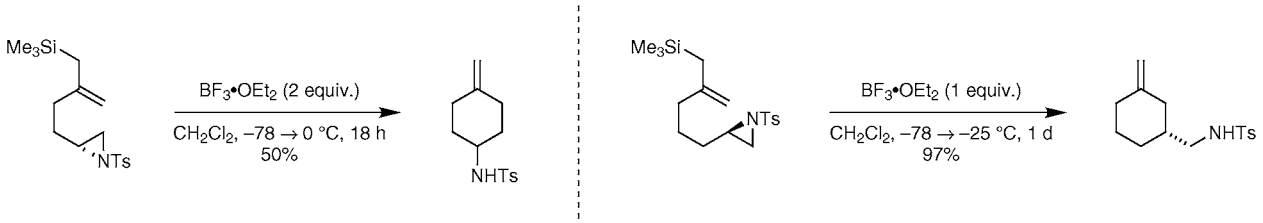


23 examples (yields <1->99%).

Hydrosilylation of an acetylene cobalt complex. **Hydrosilylation**
Kira, K.; Tanda, H.; Hamajima, A.; Baba, T.; Takai, S.; Isobe, M. *Tetrahedron*, **2002**, *58*, 6485.

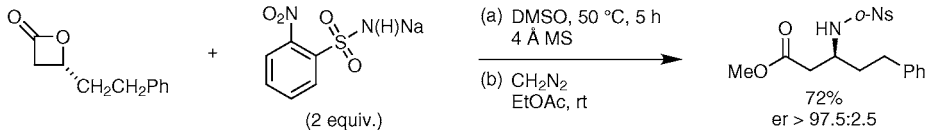


Intramolecular addition of allylsilanes to aziridines. **Cyclization**
Lapinsky, D. J.; Bergmeier, S. C. *Tetrahedron*, **2002**, *58*, 7109.



3 examples (yields 50-97%).

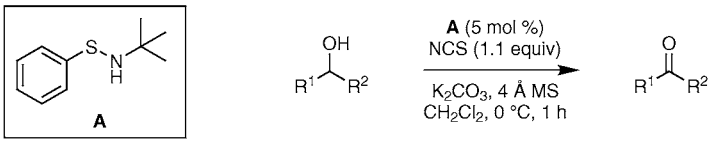
Nucleophilic β-lactone ring opening. **S_N2 Ring Opening**
Nelson, S. G.; Spencer, K. L.; Cheung, W. S.; Mamie, J. *Tetrahedron*, **2002**, *58*, 7081.



5 examples (yields 43-83%, %ee 93->95%). Ring opening with NaN_3 (8 examples, yields 78-95%, %ee 92-97%) is also reported.

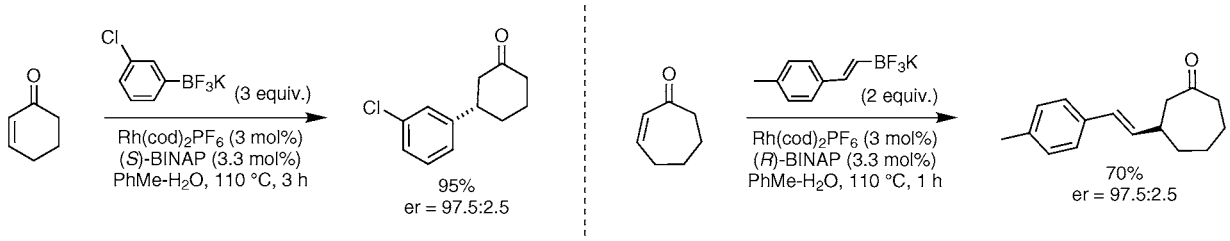
This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.

Catalytic oxidation of alcohols. **Oxidation**
Mukaiyama, T.; Matsuo, D.; Iida, D.; Kitagawa, H. *Chem. Lett.* **2001**, 864.



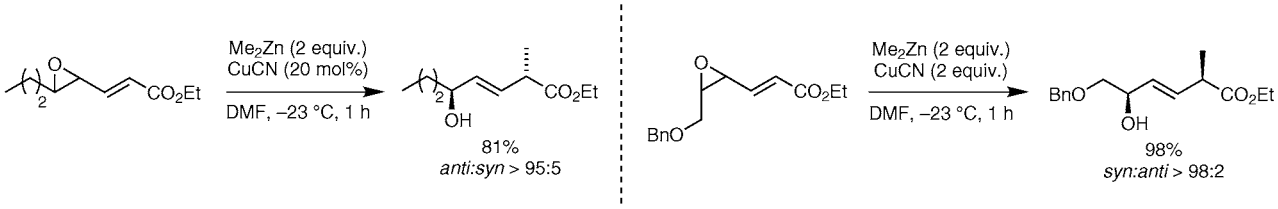
R^1	R^2	Yield
Ph	H	98%
pClC_6H_4	H	93%
$CH_2CH(CH_2)_8$	H	99%
$CH_3(CH_2)_2$	$CH_3(CH_2)_2$	99%

Enantioselective Rh-catalyzed conjugate additions to enones using potassium organotrifluoroborates. **1,4-Addition**
Pucheault, M.; Darses, S.; Genet, J. -P. *Tetrahedron Lett.* **2002**, *43*, 6155.



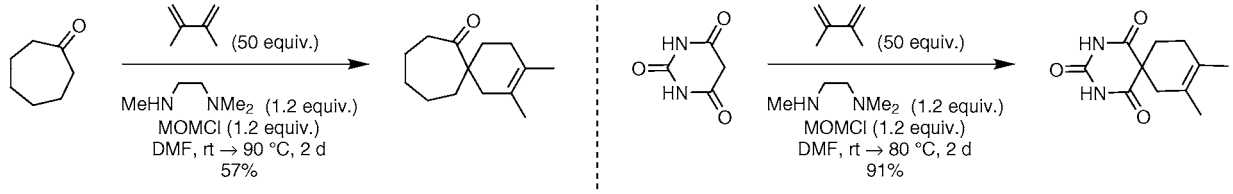
10 examples (yields 70-99%, %ee 90-98%).

Regio- and stereoselective α-methylation of γ,δ-epoxy-α,β-unsaturated esters. **S_N2' Reaction**
Hirai, A.; Matsui, A.; Komatsu, K.; Tanino, K.; Miyashita, M. *Chem. Commun.* **2002**, 1970.



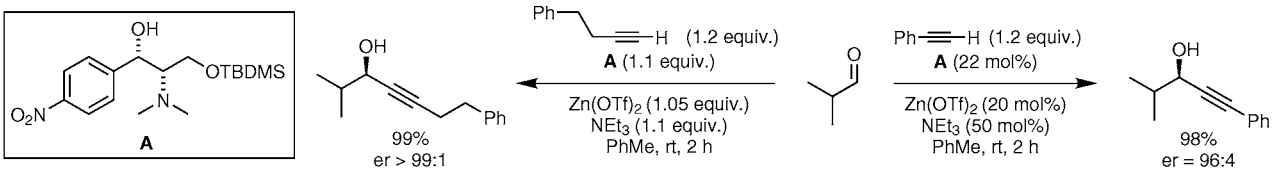
7 examples (yields 75-99%).

Synthesis of spiranones *via* a tandem α-methylenation/Diels–Alder reaction. **Diels–Alder**
Nakamura, H.; Yamamoto, H. *Chem. Commun.* **2002**, 1648.



15 examples (yields 20-91%).

Enantioselective alkynylation of aldehydes. **1,2-Addition**
Jiang, B.; Chen, Z.; Xiong, W. *Chem. Commun.* **2002**, 1524.



21 examples, yields 73-99%, ee 85->99%.

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.