Review:
Angew. Chem. Int. Ed. 2000

Philipp Gritsch

Group seminar Kalesse & Gaich

2. 11. 2011

Angew. Chem. Int. Ed. 2000

Publication Record

- 4617 pages
- 1086 papers in total
- 33 „Total Synthesis“ as research topic

Notable events

- Wladimir Putin is elected President of Russia
- First year of the FPÖ-ÖVP Government in Austria
- American Beauty wins Academy Award for Best Picture
- Maschen-Draht-Zaun by Stefan Raab is No. 1 for 14 weeks
- First permanent resident aboard the ISS
- EXPO 2000 in Hannover

Most cited papers

1) (2729) **Ionic Liquids – new „Solution“ for Transition Metal Catalysis;**
Wasserscheid, P.; Keim, W. *Angew. Chem. Int. Ed.* **2000**, *39(21)*, 3772 – 3789;

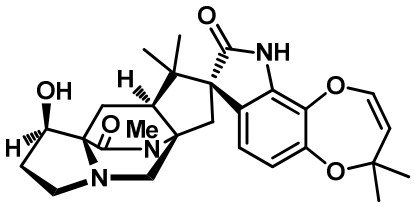
2) (1488) **Olefin Metathesis and Beyond;**
Fürstner, A. *Angew. Chem. Int. Ed.* **2000**, *39(17)*, 3012 – 3043;

3) (1363) **Multicomponent Reactions with Isocyanides;**
Domling, A.; Ugi, I. *Angew. Chem. Int. Ed.* **2000**, *39(18)*, 3168 – 3210;

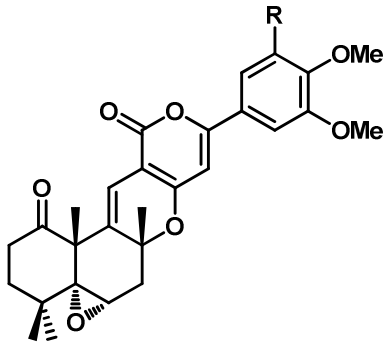
Angew. Chem. Int. Ed. 2000

Philipp Gritsch

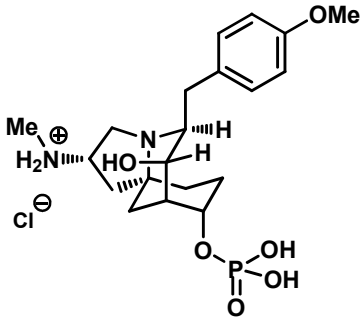
Detailed Syntheses



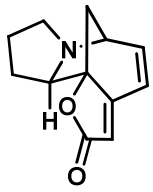
Paraherquamide A



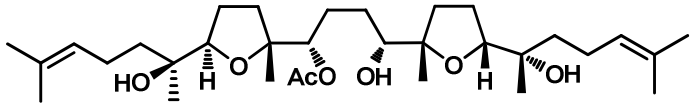
Arisugacin A R = H
Territrem B R = OMe



FR901483

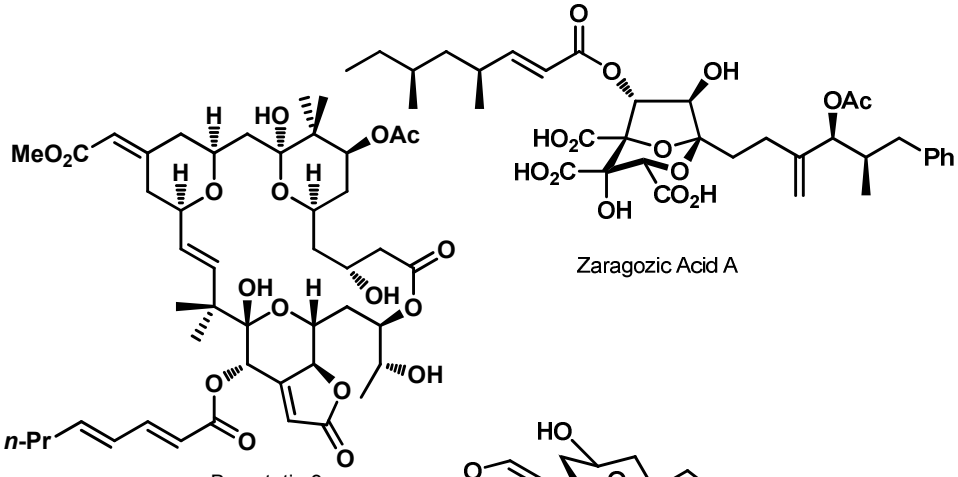


(-)-Norsecurinine



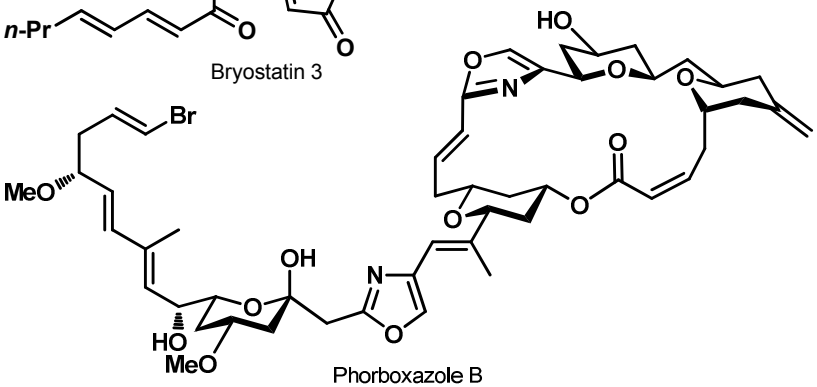
(+)-14-deacetyl eurylene

Concise Syntheses

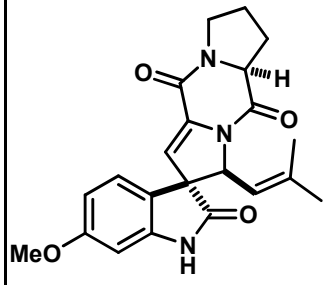


Bryostatin 3

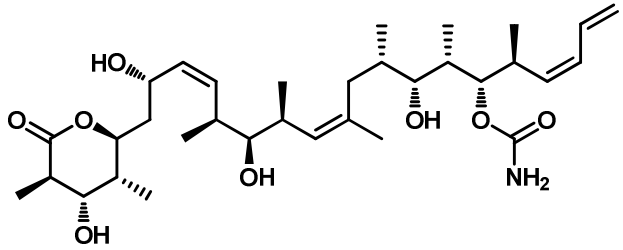
Zaragozic Acid A



Phorboxazole B



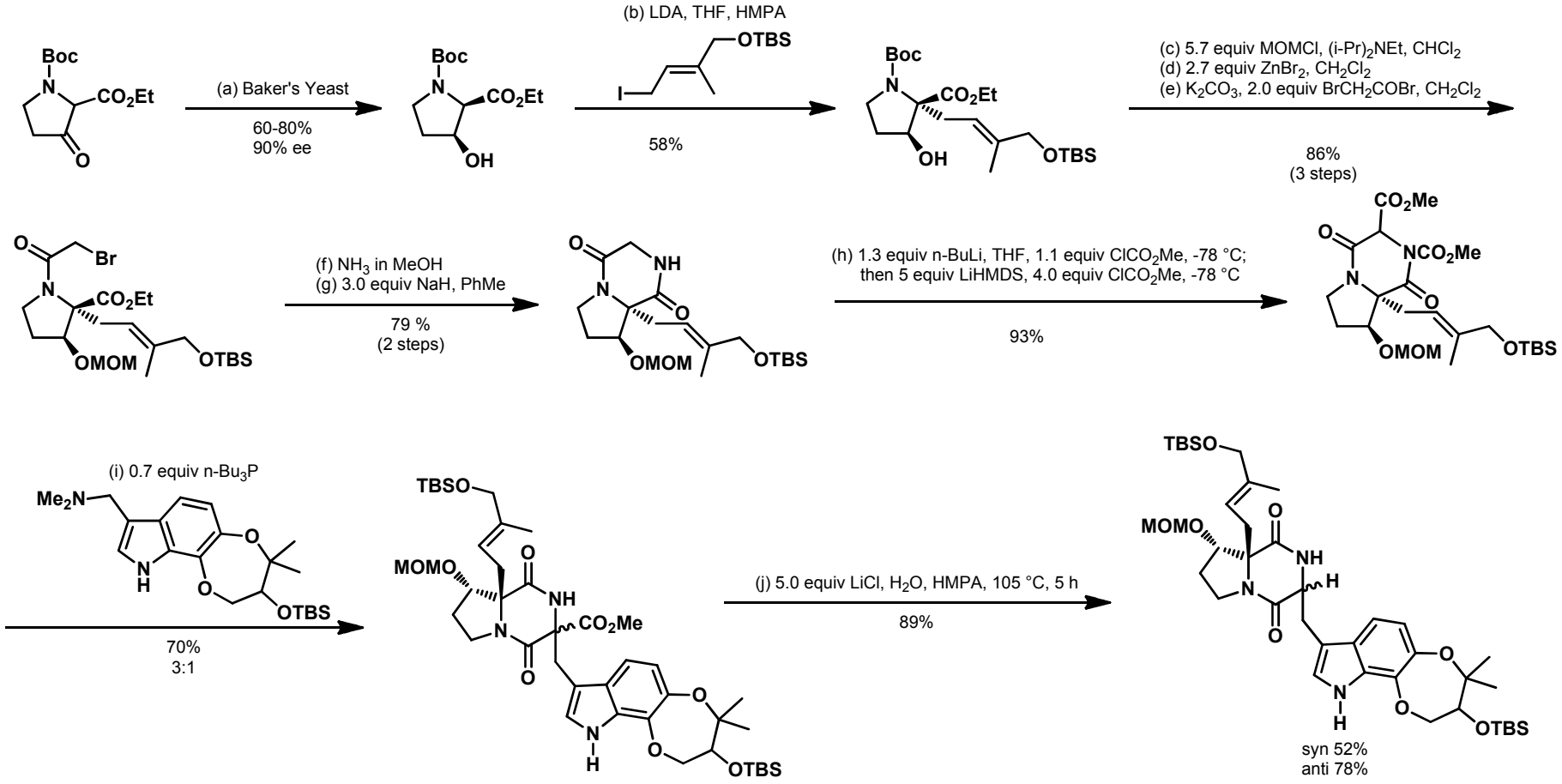
(–)-Spirotyprostatin B



(+)-Discodermolide

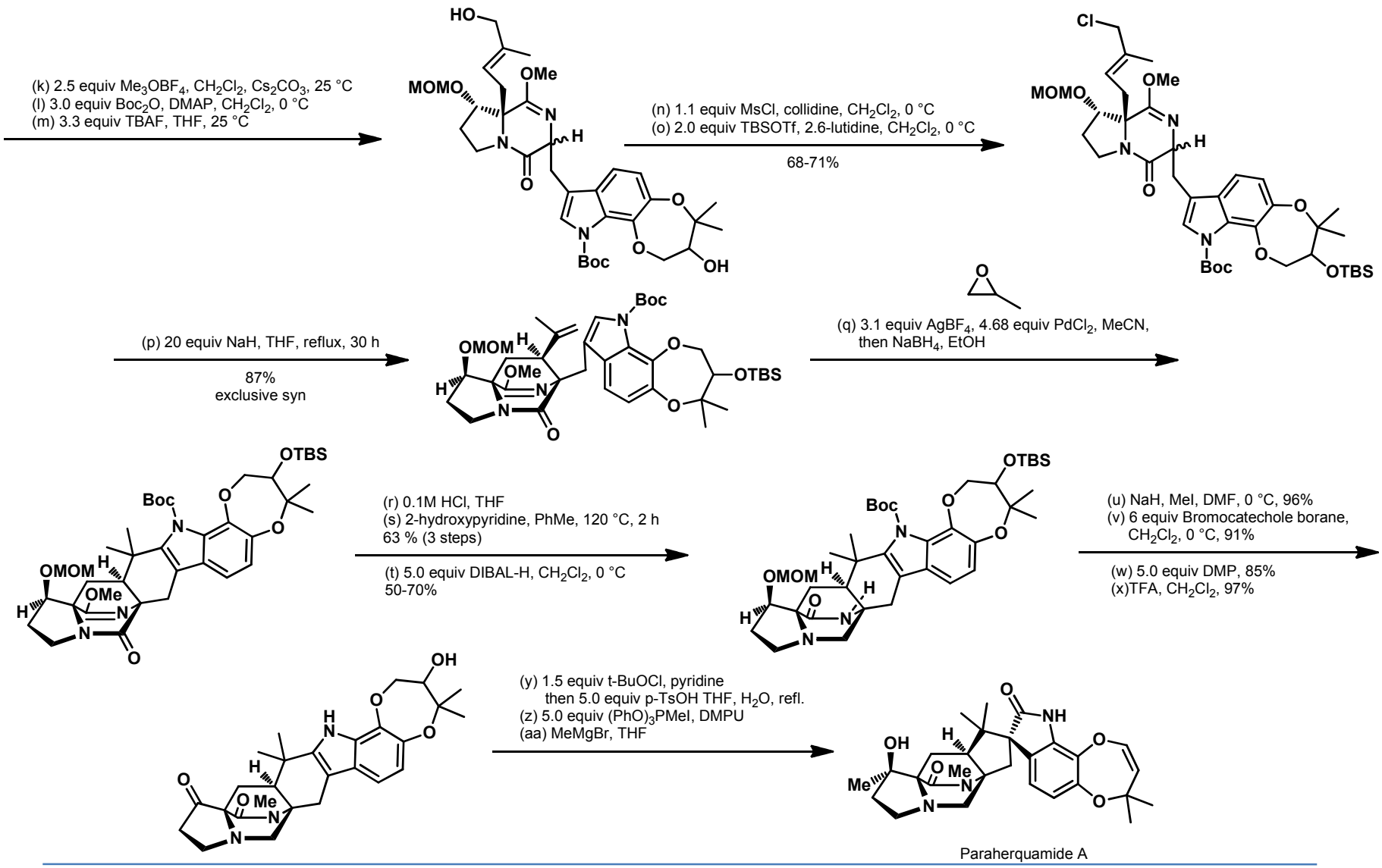
Asymmetric, Stereocontrolled Total Synthesis of Paraherquamide A;

Williams, R. M.; Cao, J.;Tsujishima, H. *Angew. Chem. Int. Ed.* **2000**, *39(14)*, 2540 - 2544

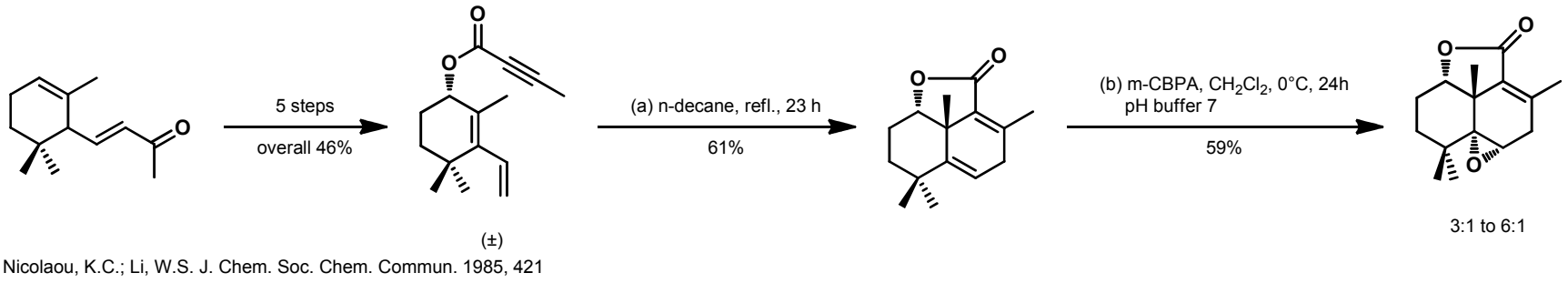


Angew. Chem. Int. Ed. 2000

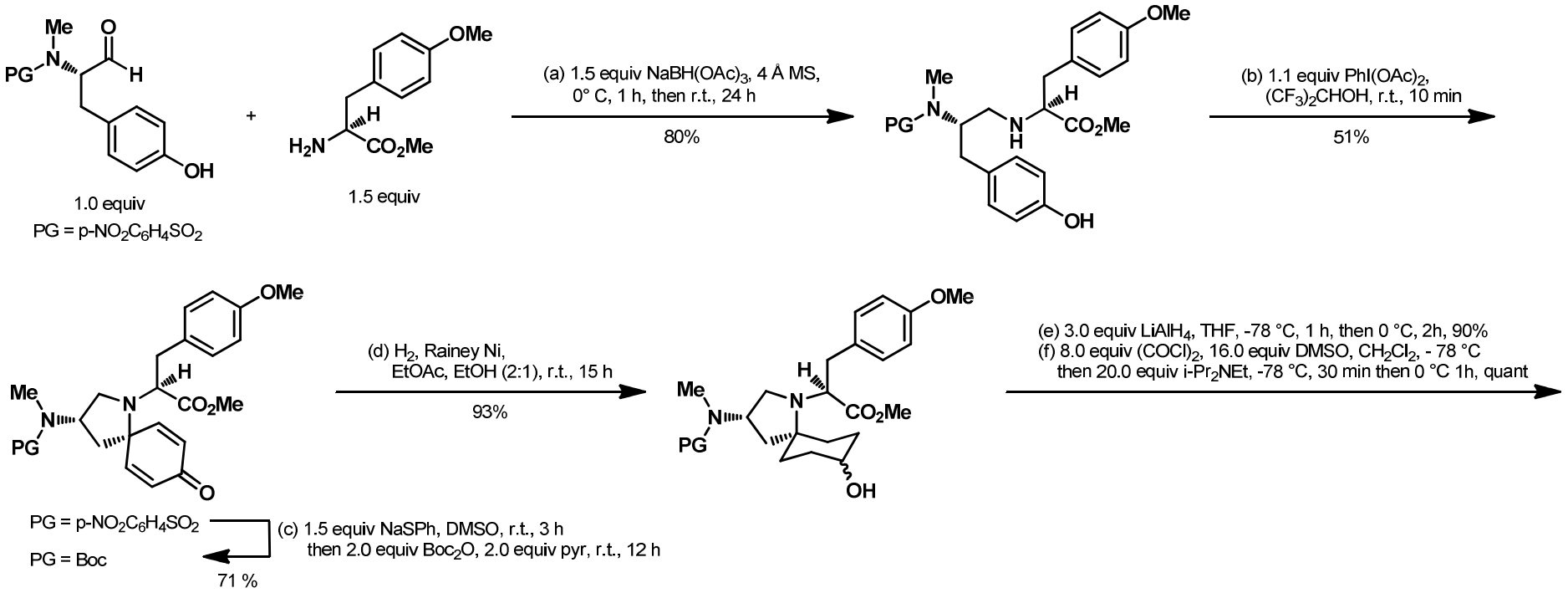
Philipp Gritsch



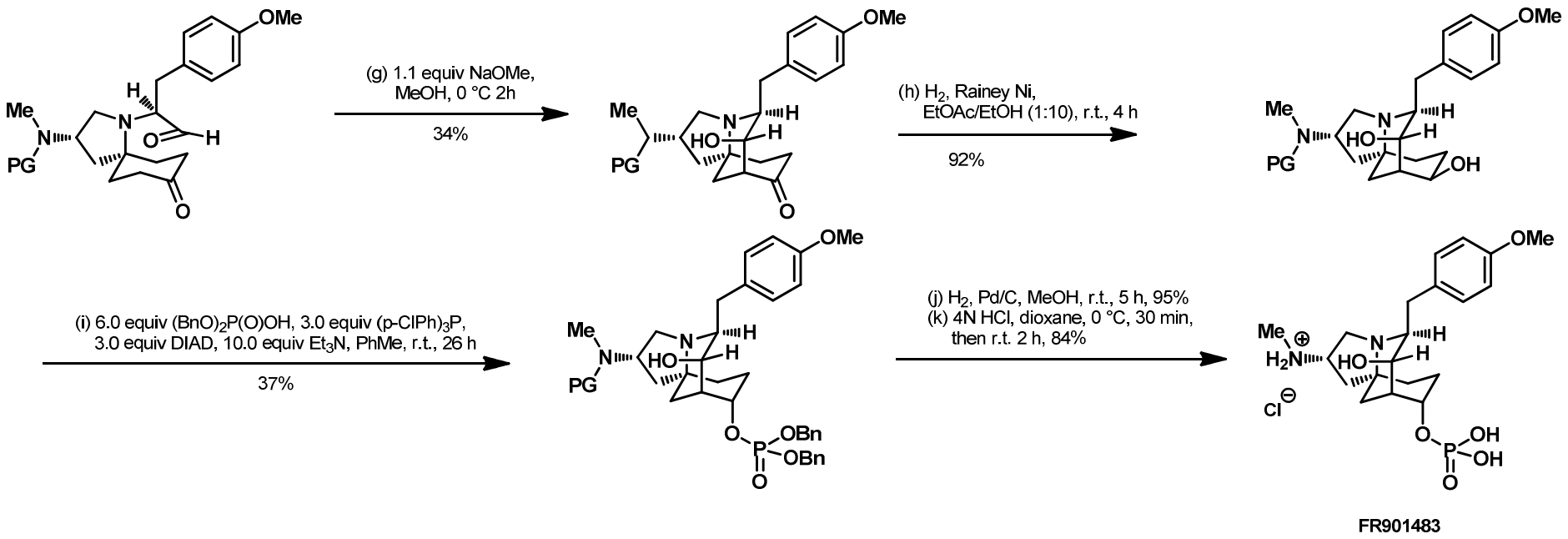
A Concise Stereoselective Route to the Pentacyclic Framework in Arisugacin A and Territrem B;
Hsung, R. P.; Zehnder, L. R.; Wang, J.; Golding, G. M. *Angew. Chem. Int. Ed.* **2000,** *39(21)*, 3876 - 3879



An Enantiospecific Synthesis of the Potent Immunosuppressant FR901483;
Sorensen, E. J.; Scheffler, G.; Seike, H. *Angew. Chem. Int. Ed.* **2000**, *39(24)*, 4593 - 4596



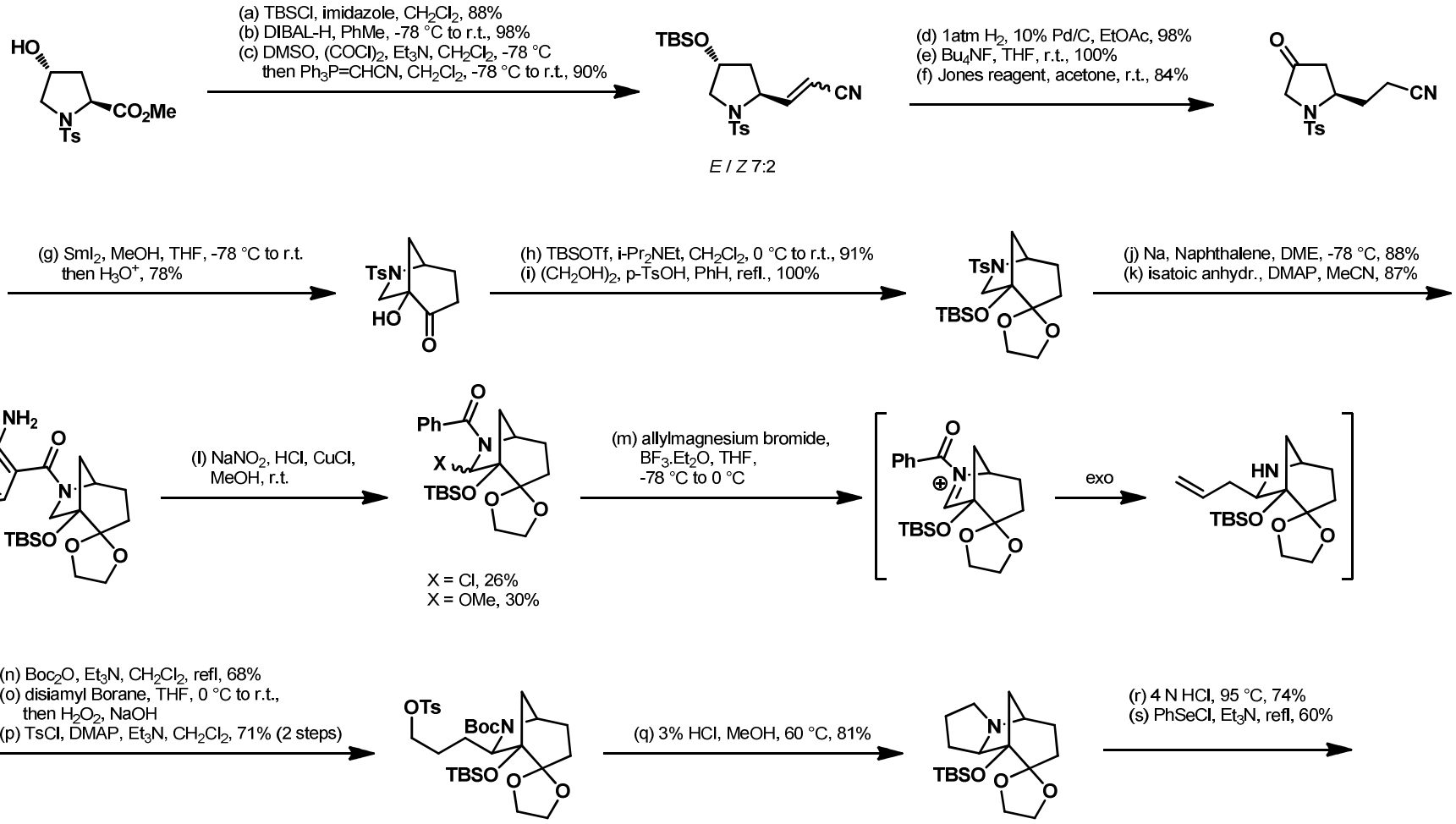
Angew. Chem. Int. Ed. 2000



FR901483

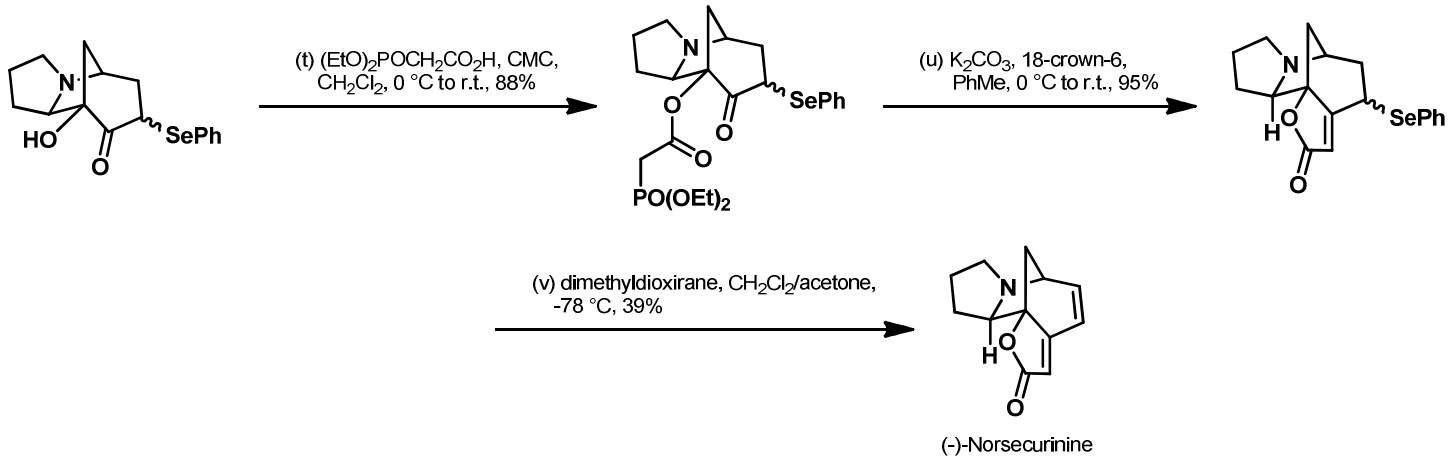
A New Enantioselective Approach to Total Synthesis of the Securinega Alkaloids: Application to (-)-Norsecurinine and Phyllantine;

Weinreb, S.M.; Han, G.; LaPorte, M. G.; Folmer, J. J.; Werner, K. M.; *Angew. Chem. Int. Ed.* **2000**, *39(1)*, 237 - 240



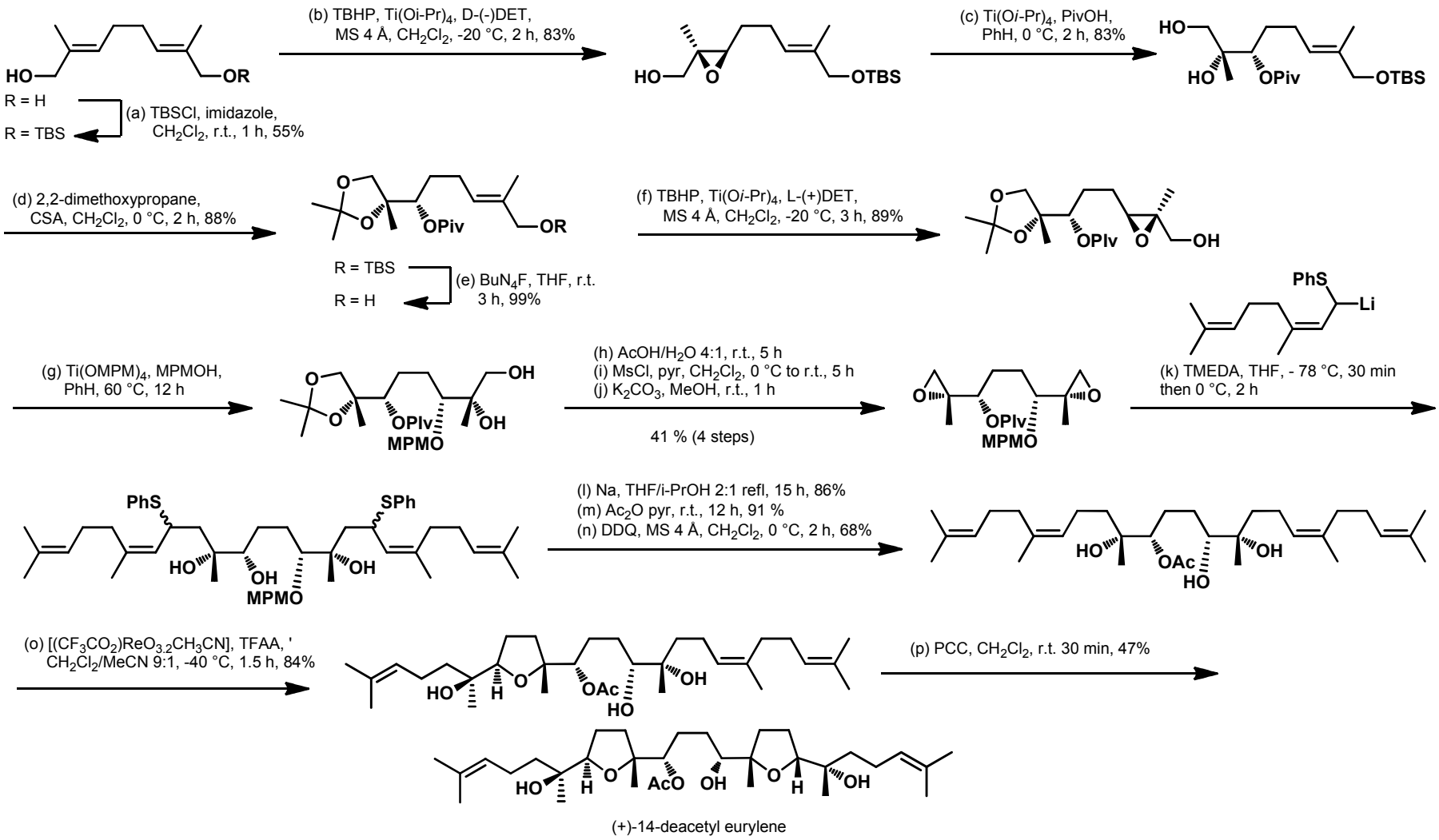
Angew. Chem. Int. Ed. 2000

Philipp Gritsch

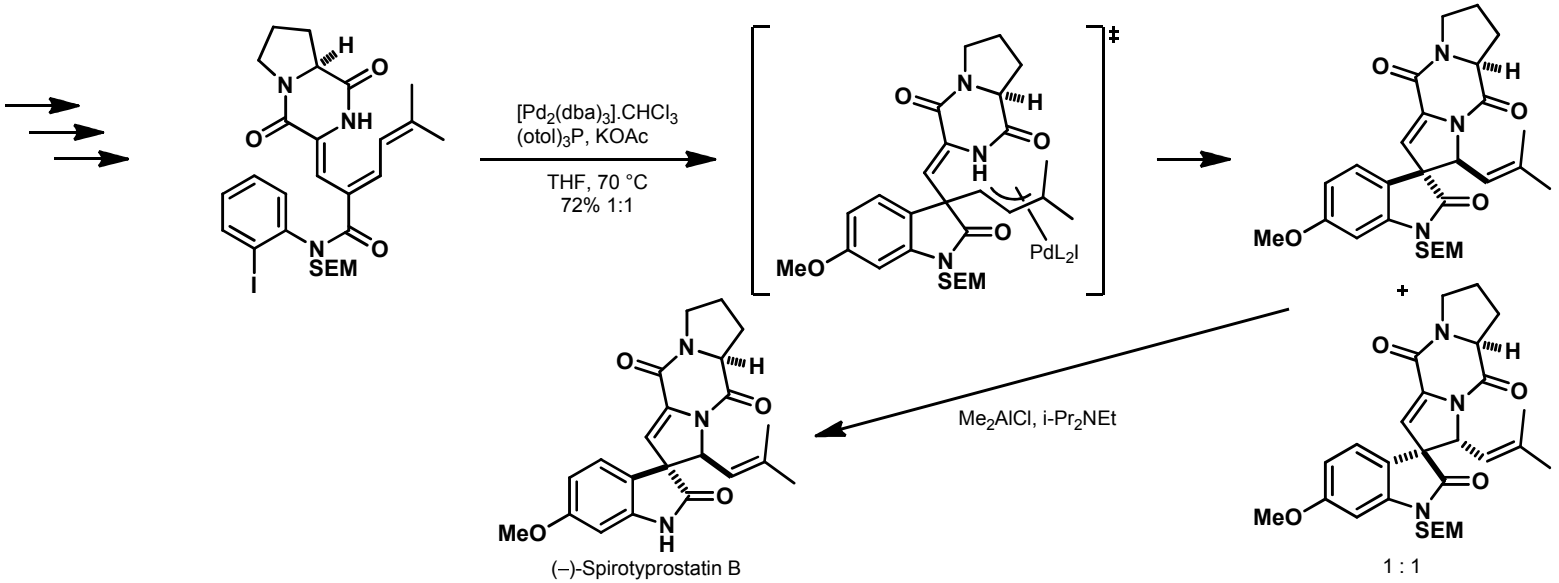


Total Synthesis of (+)-Eurylene and (+)-14-Deacetyleurylene;

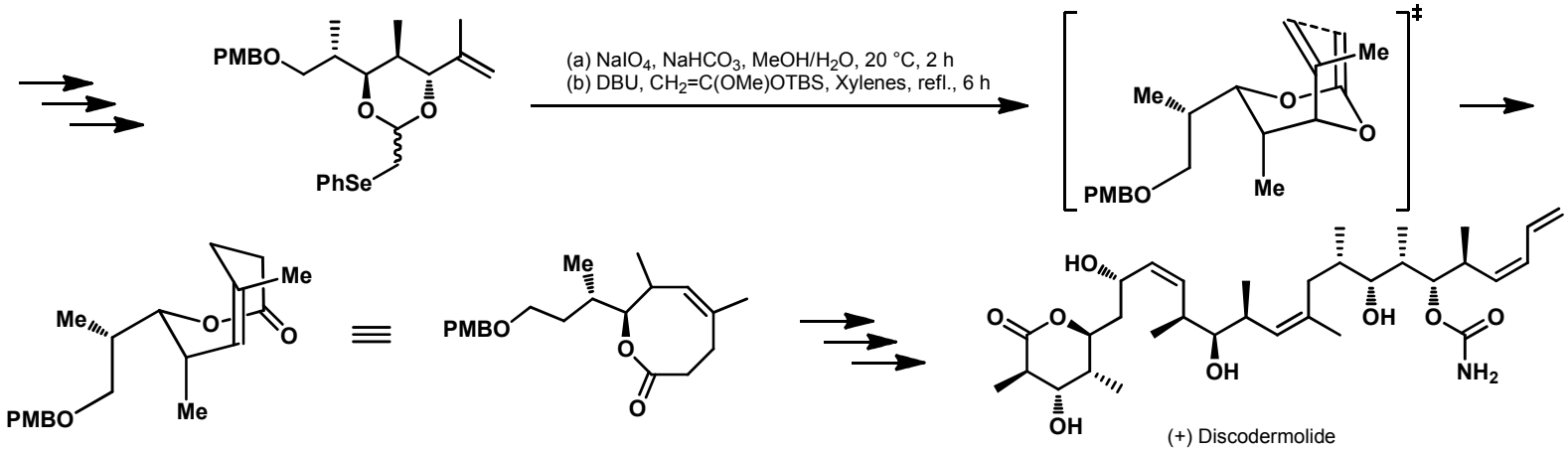
Morimoto, Y.; Muragaki, K.; Iwai, T.; Morishita, Y.; Kinoshita, T. *Angew. Chem. Int. Ed.* **2000**, *39(22)*, 4082 - 4084



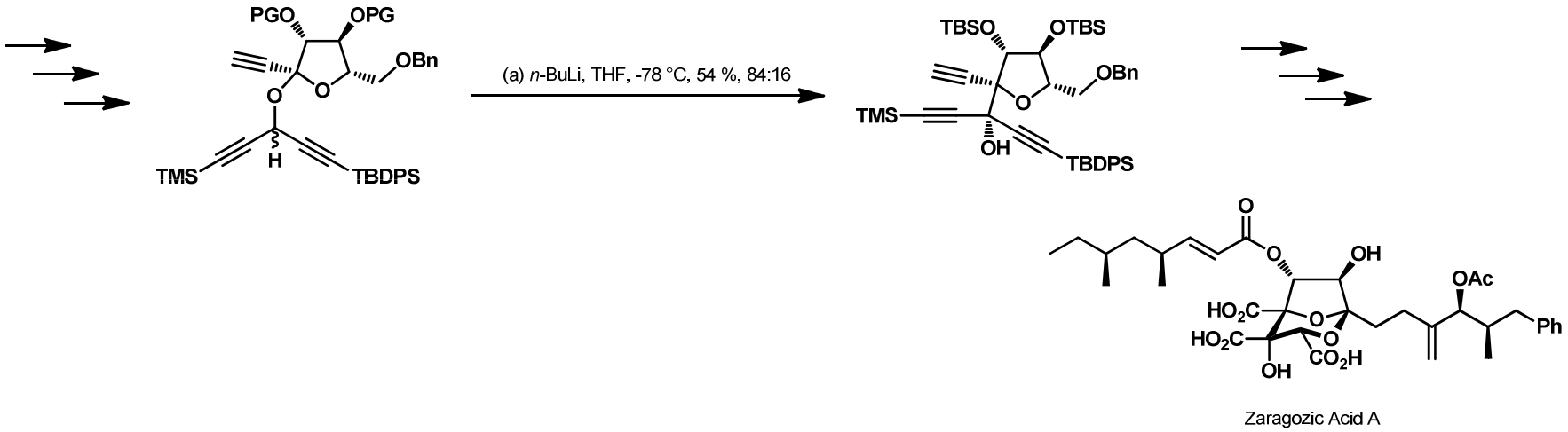
Total Synthesis of (–)-Spirotryprostatin B and Three Stereoisomers;
Overman, L. E.; Rosen, D. M. *Angew. Chem. Int. Ed.* **2000**, *39(24)*, 4596 - 4599



Total Synthesis of the Antimicrotubule Agent (+)-Discodermolide Using Boron-Mediated Aldol Reactions;
Paterson, I.; Florence, G. J.; Gerlach, K.; Scott, J. P. Angew. Chem. Int. Ed. 2000, 39(2), 377- 380

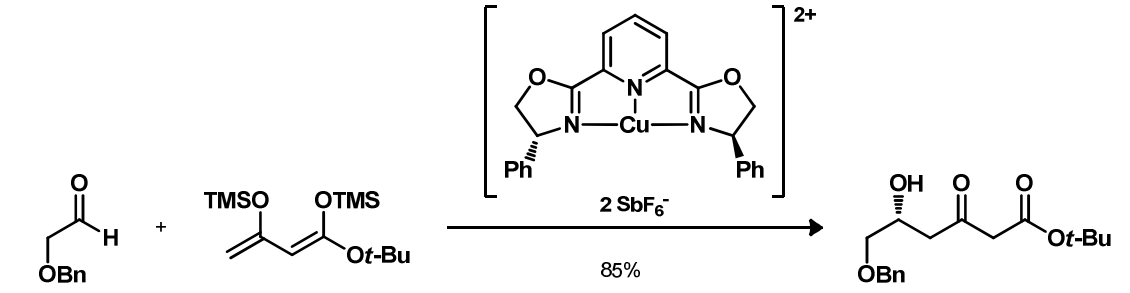


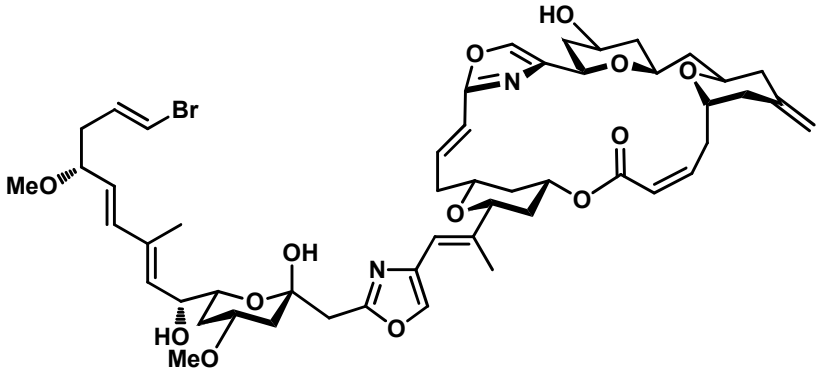
A Stereoselective Total Synthesis of Zaragozic Acid A based on an Acetal [1,2] Wittig Rearrangement;
Tomooka, K.; Kikuchi, M.; Igawa, K.; Suzuki, M.; Keong, P.-H.; Nakai, T. *Angew. Chem. Int. Ed.* **2000**, *39(24)*, 4502 - 4505



Zaragozic Acid A

Asymmetric Synthesis of Phorboxazole B – Part I: Synthesis of the C_{20}-C_{38} and C_{39}-C_{46} Subunits;
Evans, D. A.; Cee, V. J.; Smith, T. E.; Fitch, D. M., Cho, P. S. *Angew. Chem. Int. Ed.* **2000**, *39(14)*, 2533 - 2536

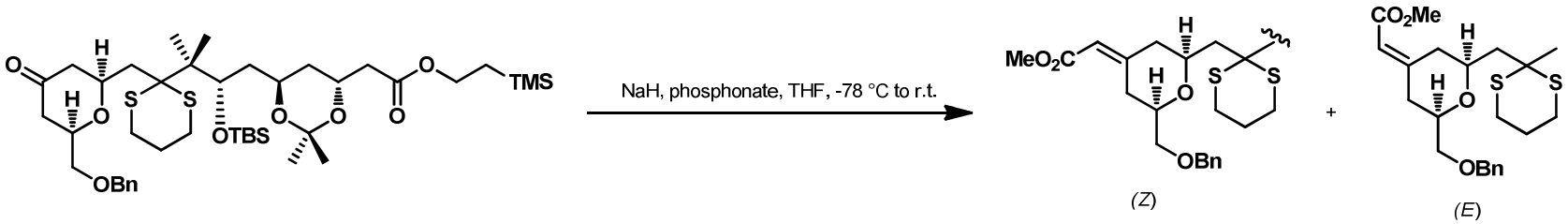


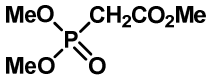
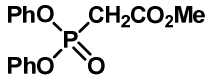
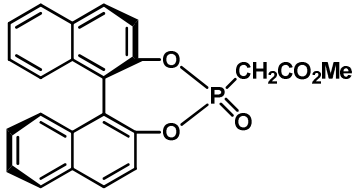
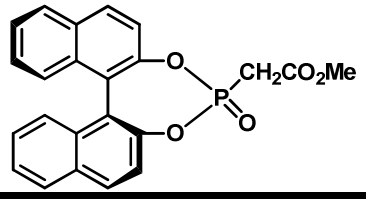


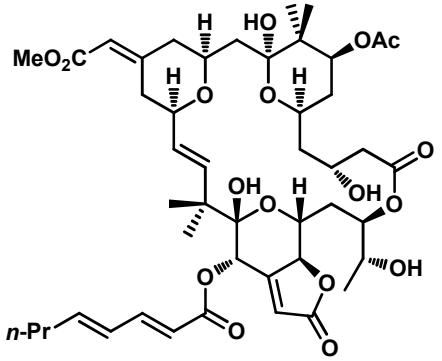
Phorboxazole B

Total Synthesis of Bryostatin 3;

Nishiyama, S.; Yamamura, S.; Ohmori, K.; Ogawa, Y.; Obitsu, T.; Ishikawa, Y. *Angew. Chem. Int. Ed.* **2000**, *39(13)*, 2290 - 2294

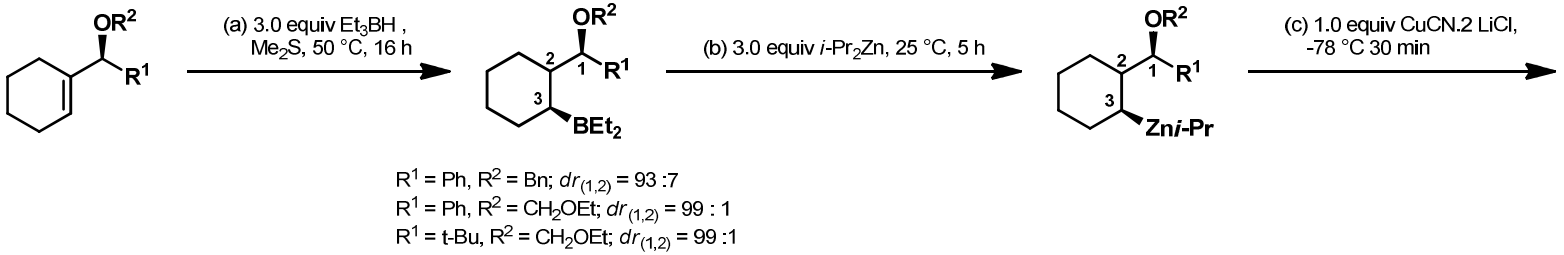


Entry	Phosphonate	Yield	*Z* : *E*
1		94	1.6 : 1
2		90	2.0 : 1
3		92	4.0 : 1
4		85	2.3 : 1

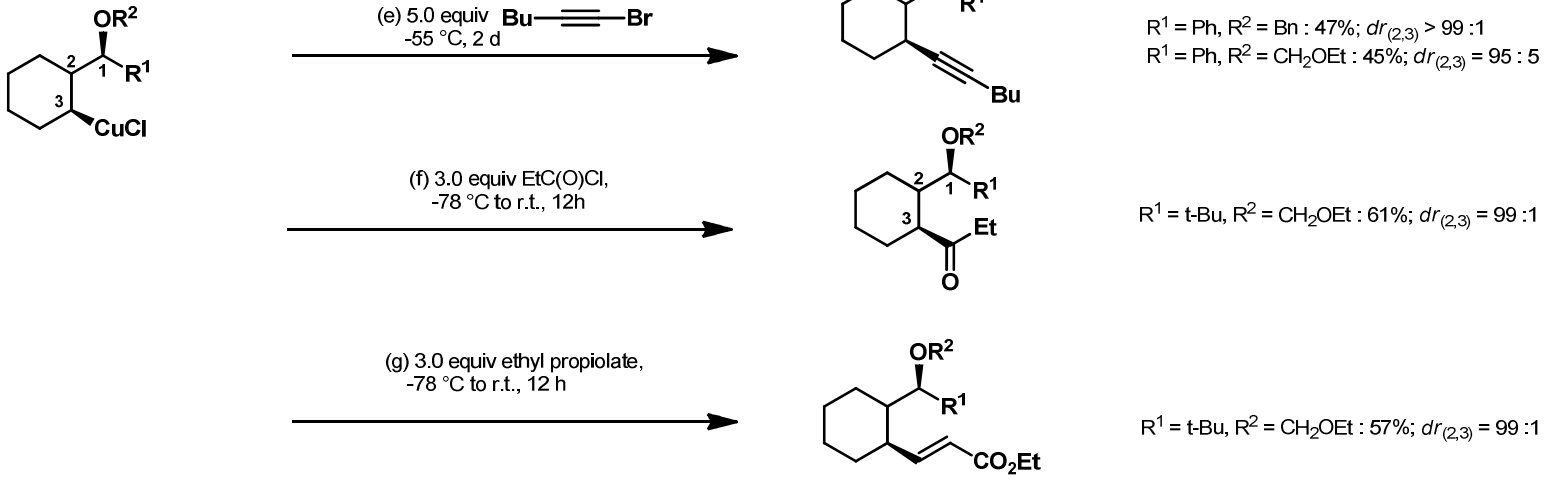


Bryostatin 3

Highly diastereoselective Synthesis of Monocyclic and Bicyclic Secondary Diorganozinc Reagents with defined Configuration;
Knochel, P.; Boudier, E.; Hupe, E. *Angew. Chem. Int. Ed.* **2000**, *39(13)*, 2294 - 2997



R^1 = Ph, R^2 = Bn; $dr_{(1,2)}$ = 93 :7
R^1 = Ph, R^2 = CH_2OEt; $dr_{(1,2)}$ = 99 : 1
R^1 = t-Bu, R^2 = CH_2OEt; $dr_{(1,2)}$ = 99 :1



R^1 = Ph, R^2 = Bn : 65%; $dr_{(2,3)}$ > 99 : 1
R^1 = Ph, R^2 = CH_2OEt : 64%; $dr_{(2,3)}$ = 99 : 1
R^1 = t-Bu, R^2 = CH_2OEt : 65%; $dr_{(2,3)}$ = 99 :1

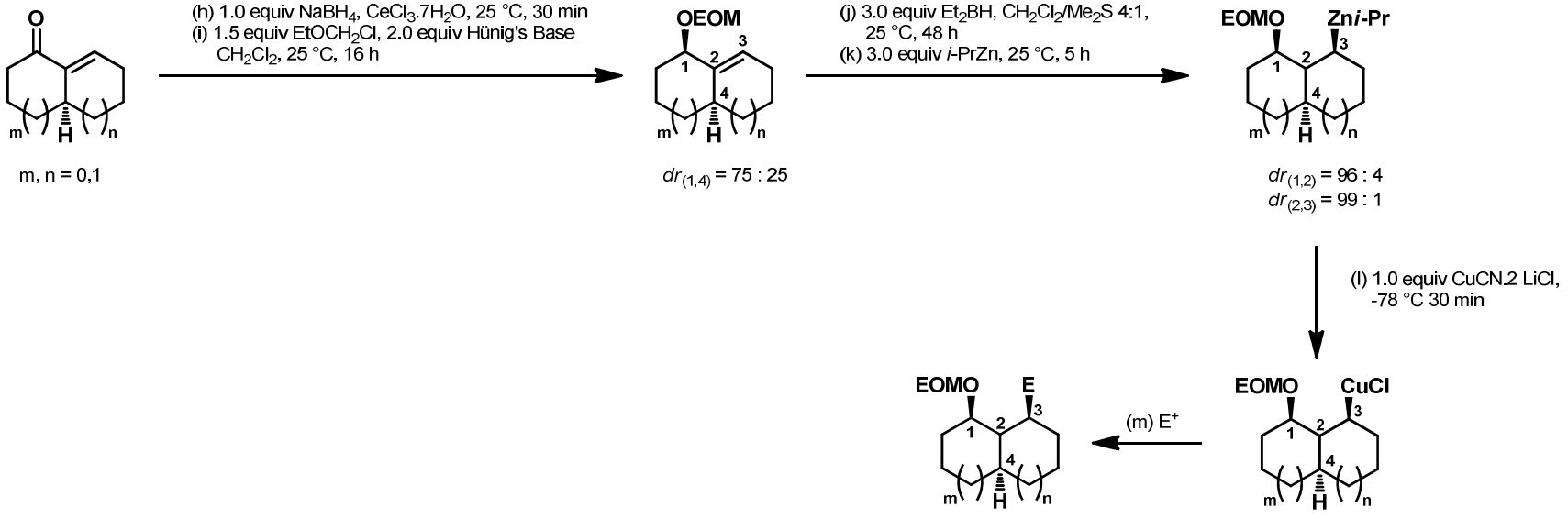
R^1 = Ph, R^2 = Bn : 47%; $dr_{(2,3)}$ > 99 :1
R^1 = Ph, R^2 = CH_2OEt : 45%; $dr_{(2,3)}$ = 95 : 5

R^1 = t-Bu, R^2 = CH_2OEt : 61%; $dr_{(2,3)}$ = 99 :1

R^1 = t-Bu, R^2 = CH_2OEt : 57%; $dr_{(2,3)}$ = 99 :1

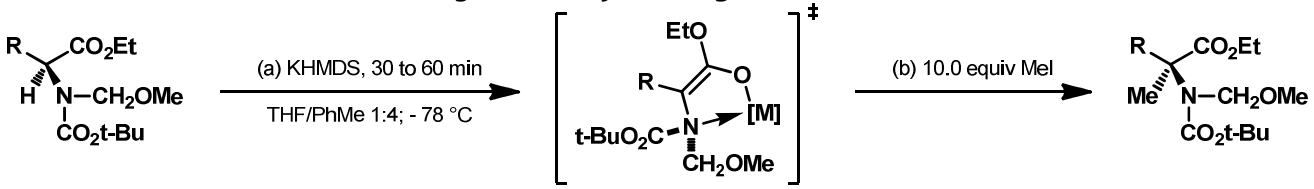
Angew. Chem. Int. Ed. 2000

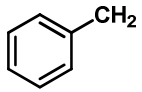
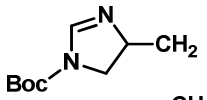
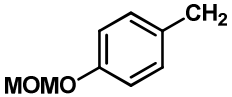
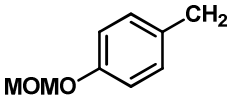
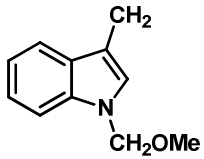
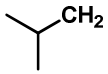
Philipp Gritsch



A Chiral, Nonracemic Enolate with Dynamic Axial Chirality: Direct Asymmetric α-Methylation of α-Amino Acid Derivatives;

Kawabata, T.; Suzuki, H.; Nagae, Y.; Fuji, K. *Angew. Chem. Int. Ed.* **2000**, *39(12)*, 2155 - 2157

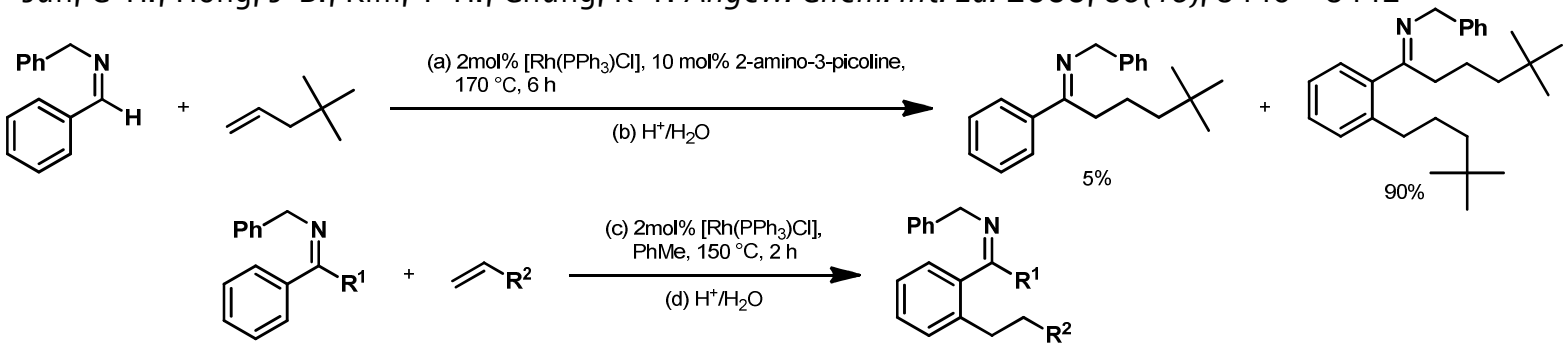


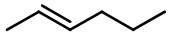
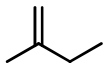
Entry	R [a]	Yield [%]	*ee* [%] [b]
1		96	81
2		83	93
3		94	79
4		95	80
5		88	76
6		81	87
7		78	78

[a]ee value for each substrate was >99 %; [b] determined by HPLC using columns with chiral stationary phase

The catalytic Alkylation of Aromatic Imines by Wilkinson's Complex: The Domino Reaction of Hydroacylation and *ortho*-Alkylation

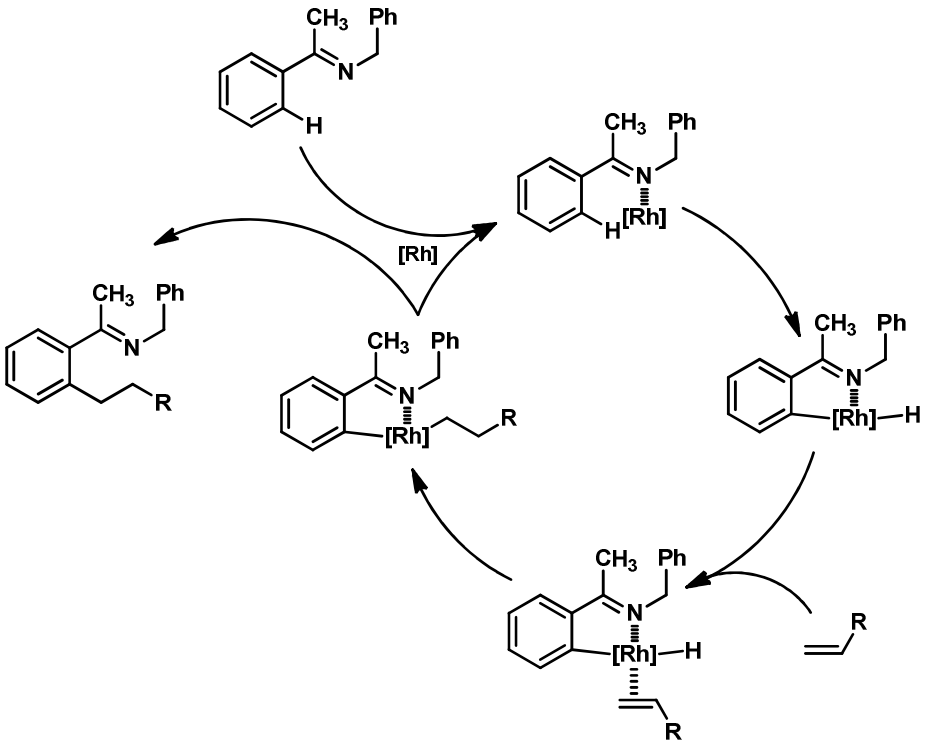
Jun, C-H.; Hong, J-B.; Kim, Y-H.; Chung, K-Y. *Angew. Chem. Int. Ed.* **2000**, *39(19)*, 3440 - 3442



Entry	R^1	R^2	Yield [%][a]
1	Me	*t*-C_4H_9	97 (100)
2	Me	C_6F_5	91 (100)
3	Me	Cy	65 (68)
4	Me	*n*-C_4H_9	94 (97)[b]
7	Me	TMS	92 (96)
9	Me		42 (47)[c]
10	Me		35
11	Et	TMS	93 (100)[d]
12	*n*-C_5H_{11}	TMS	73(80)[e]

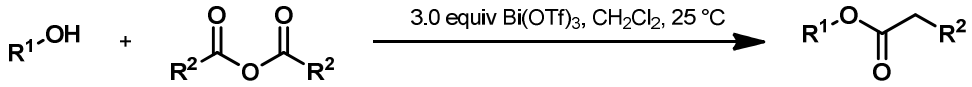
[a] GC yields are given in parentheses; [b] 5.0 equiv of olefin were used; [c] 3.0 equiv of olefin were used; [d] 12% of di-*ortho* alkylation included; [e] 16% of di-*ortho* alkylation included

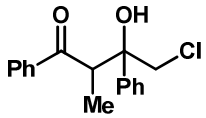
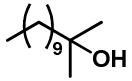
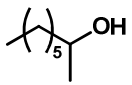
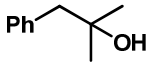
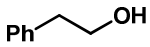
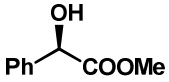
Angew. Chem. Int. Ed. 2000



Highly Efficient and Versatile Acylation of Alcohols and $Bi(OTf)_3$

Otera, J.; Orita, A.; Tanahashi, C.; Kakuda, A. *Angew. Chem. Int. Ed.* **2000**, *39(16)*, 2877 - 2879

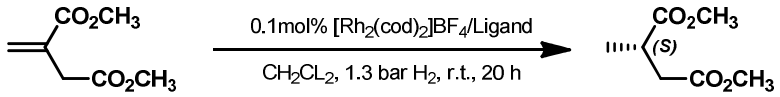


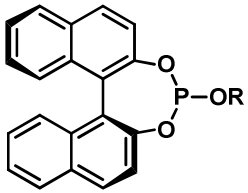
Entry	Alcohol	Anhydride / equiv	Mol% cat.	Time [h]	Yield [%]
1		Ac_2O / 10	3.0	1	96[a]
2		Ac_2O / 10	0.5	7	95[b]
3		$(PhCO)_2O$ / 0.5 $(t\text{-BuCO})_2O$ / 3.0	3.0 3.0	8 4	2[c] 99
4		$(PhCO)_2O$ / 5.0	3.0	48	0[c]
5		$(PhCO)_2O$ / 1.5	3.0	24	90[c]
6	1-adamatol	$(t\text{-BuCO})_2O$ / 1.5	3.0	4	94
7		$(t\text{-BuCO})_2O$ / 1.5	3.0	4	97

[a] MeCN used as solvent; [b] THF used as solvent; [c] determined by GC

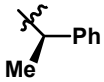
Highly enantioselective Rh-Catalyzed Hydrogenation Reactions based on Chiral Monophosphite Ligands

Reetz, M.T.; Mehler, G. *Angew. Chem. Int. Ed.* **2000**, *39(21)*, 3889 - 3890

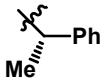




Ligand



(*R*)-2-(1-phenylethyl)

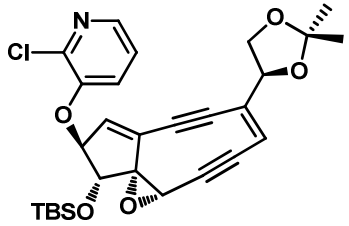


(*S*)-2-(1-phenylethyl)

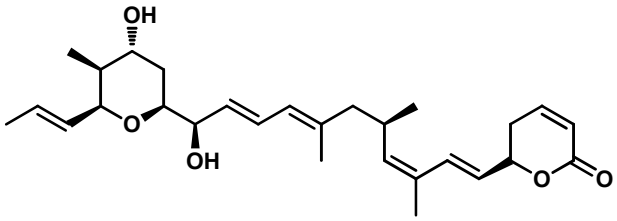
Entry	R	Rh : Ligand	Mol% Rh	Conversion [%]	*ee* [%]
1	Me	1 : 1	0.1	100	89.2
2	*i*-Pr	1 : 1	0.1	100	97.6
3	Ph	1 : 1	0.1	100	96.6
4	*o*-Br-Ph	1 : 1	0.1	100	89.8
5	2,6-(Me)2-Ph	1 : 1	0.1	78	39.2
6	2,6-(Ph)2-Ph	1 : 1	0.1	8	28.6
7	(*R*)-2-(1-phenylethyl)	1 : 1	0.1	100	99.2
8	(*S*)-2-(1-phenylethyl)	1 : 1	0.1	100	98.2
9	(*R*)-2-(1-phenylethyl)	1 : 1	0.04	100	99.4
10	(*R*)-2-(1-phenylethyl)	1 : 1	0.02	100	99.4
11	(*R*)-2-(1-phenylethyl)	1 : 1	0.01	49	96.2
12	(*R*)-2-(1-phenylethyl)	1 : 2	0.1	100	99.6
13	(*R*)-2-(1-phenylethyl)	1 : 4	0.1	100	99.5
14	(*R/S*)-2-(1-phenylethyl)	1 : 1	0.1	100	98.8

Angew. Chem. Int. Ed. 2000

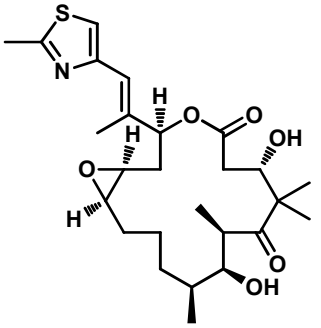
Syntheses not covered



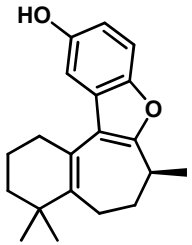
Kredaricin Core
Myers, A. G.; Goldberg, S. D.
Angew. Chem. Int. Ed. **2000**, *39(15)*, 2732 - 2735



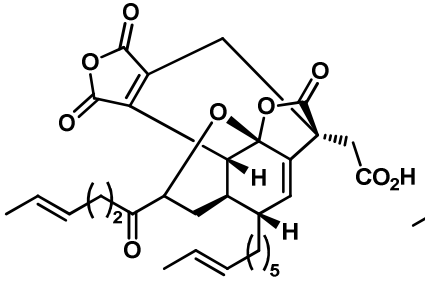
(+)-Ratjadone
Kalesse, M.; Christmann, M.; Bhatt, U.; Quitschalle, E. C.;
Angew. Chem. Int. Ed. **2000**, *39(23)*, 4364 - 4366

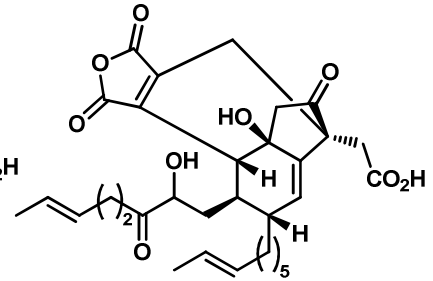


Epithilone B
Shibasaki, M.; Sawada, D.;
Angew. Chem. Int. Ed. **2000**, *39(1)*, 209 - 213

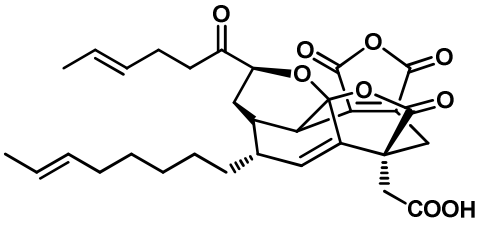


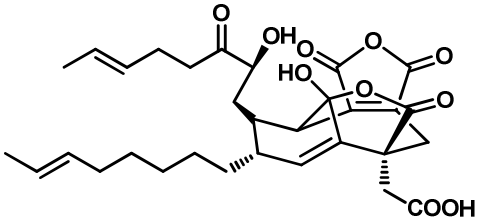
Frondosin B
Danishefsky, S. J.; Inoue, M.; Frontier, A. J.
Angew. Chem. Int. Ed. **2000**, *39(4)*, 761 - 764





CP-263,114 and CP-225,917
Danishefsky, S. J.; Tan, Q.;
Angew. Chem. Int. Ed. 2000, 39(24), 4509 - 4511





(-)-CP-263.114 (Phorimide B) and (+)-CP-225,917 (Phorimide A)
Nicolau, K. C.; Jung, J.-K.; Yoon, W. H.; He, Y.; Zong, Y.-L., Baran, P. S.
Angew. Chem. Int. Ed. **2000**, *39(10)*, 1829 - 1832