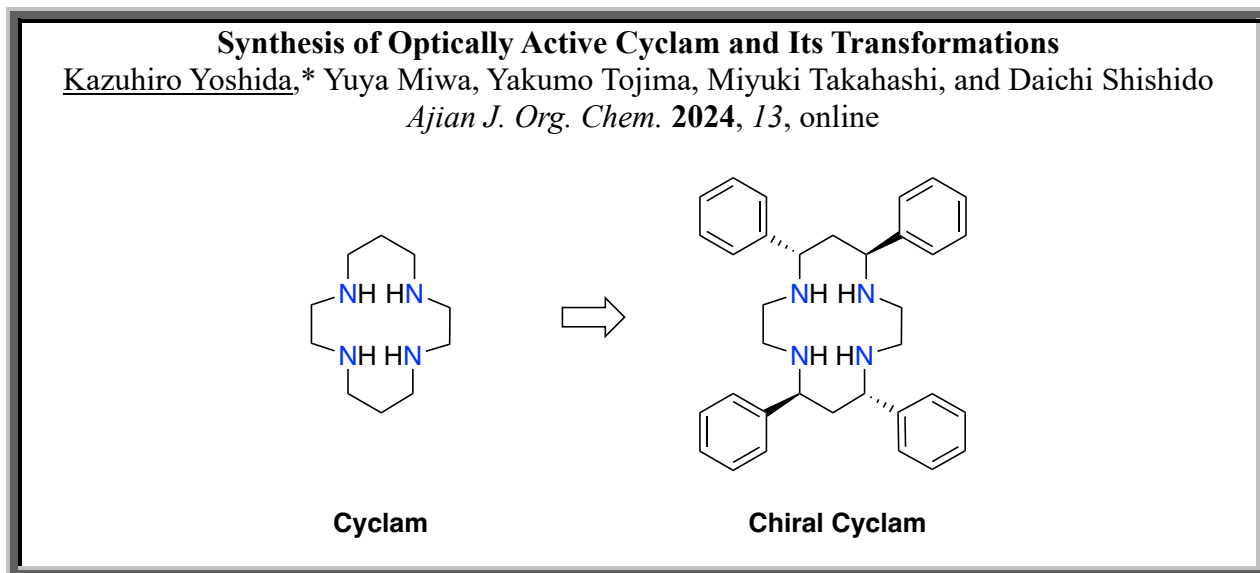
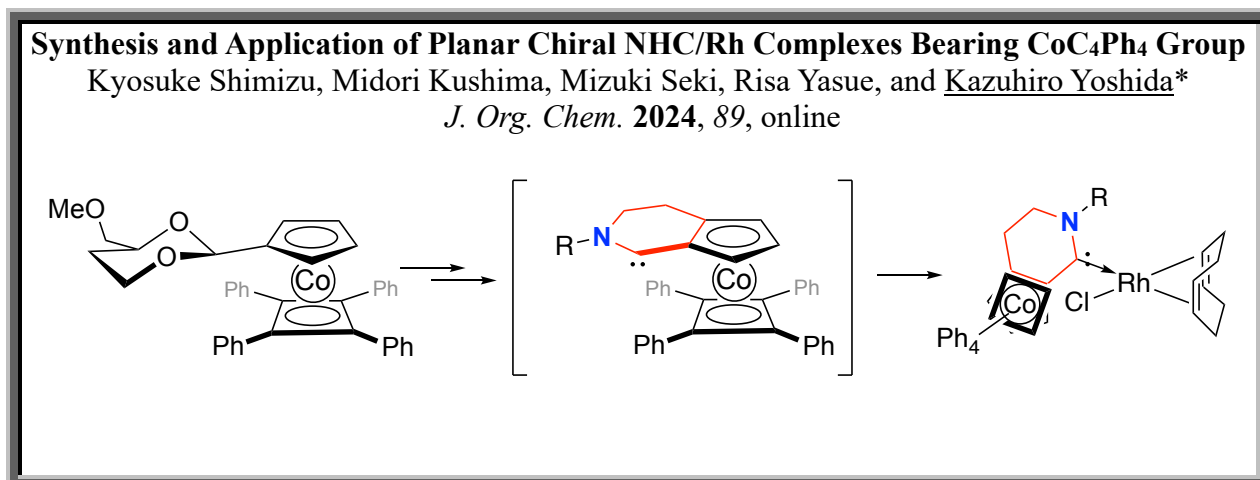


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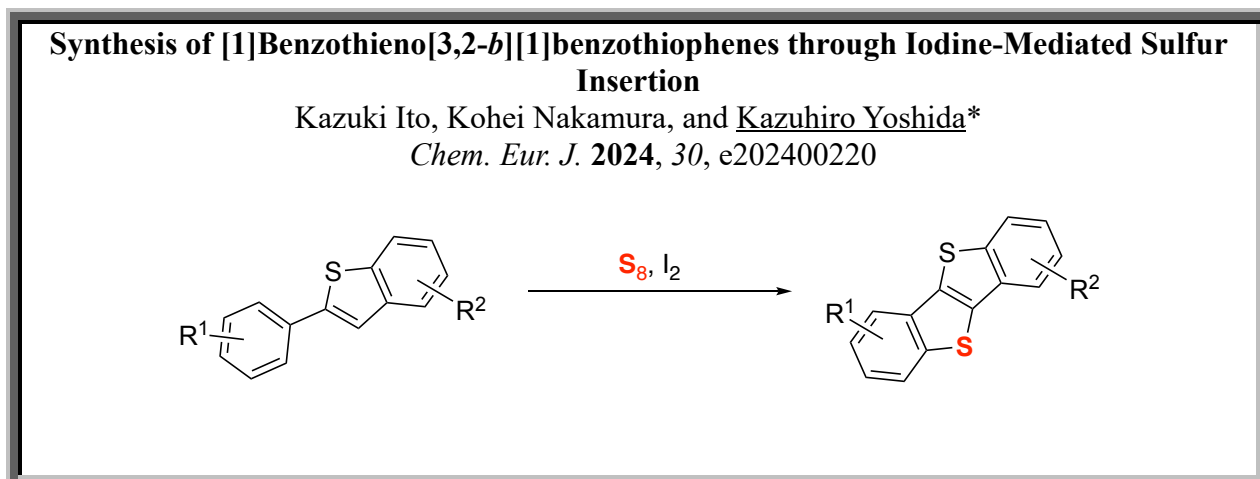
92



91



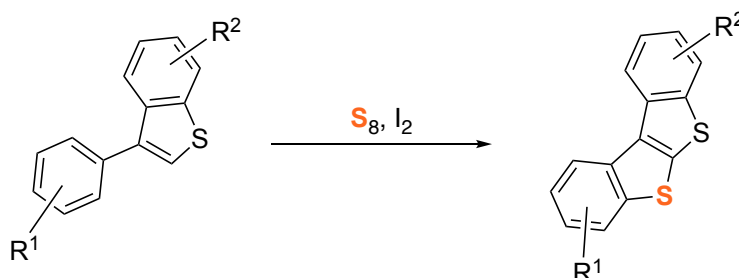
90



### Synthesis of [1]Benzothieno[2,3-*b*][1]benzothiophenes from 3-Arylbenzo[*b*]thiophenes through Iodine-Mediated Sulfur Insertion Reaction

Kazuki Ito, Shuta Sakai, and Kazuhiro Yoshida\*

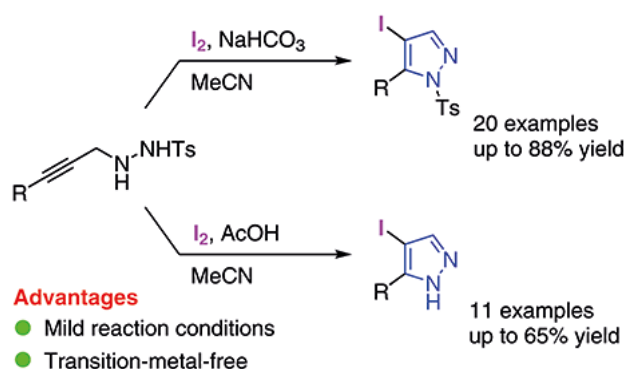
*J. Org. Chem.* **2023**, *88*, 14797-14802



### Facile One-Pot Preparation of 5-Substituted 4-Iodo-1-tosylpyrazoles from *N*-Propargyl-*N'*-tosylhydrazines through Iodocyclization

Aya Saito, Kazuhiro Yoshida, and Hideo Togo\*

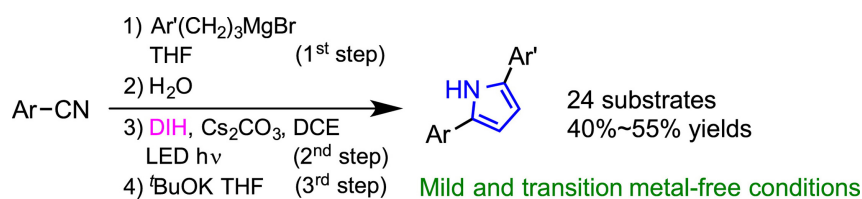
*Synthesis* **2022**, *54*, 3114-3124



### Novel Preparation of 2,5-Diarylpyrroles from Aromatic Nitriles with 3-Arylpropylmagnesium Bromides, 1,3-Diiodo-5,5-dimethylhydantoin, and *t*BuOK

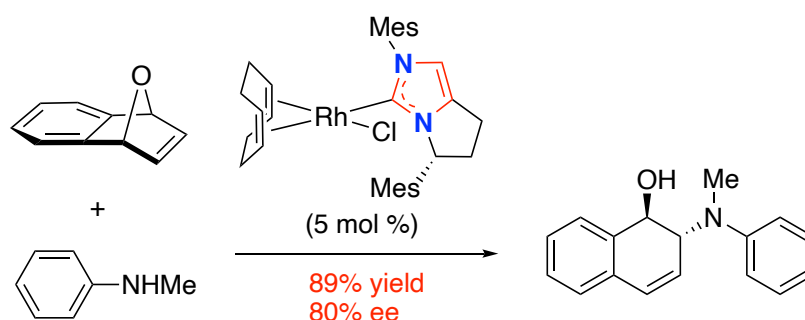
Momoko Nakamura, Kazuhiro Yoshida, and Hideo Togo\*

*Tetrahedron* **2022**, *111*, 132709



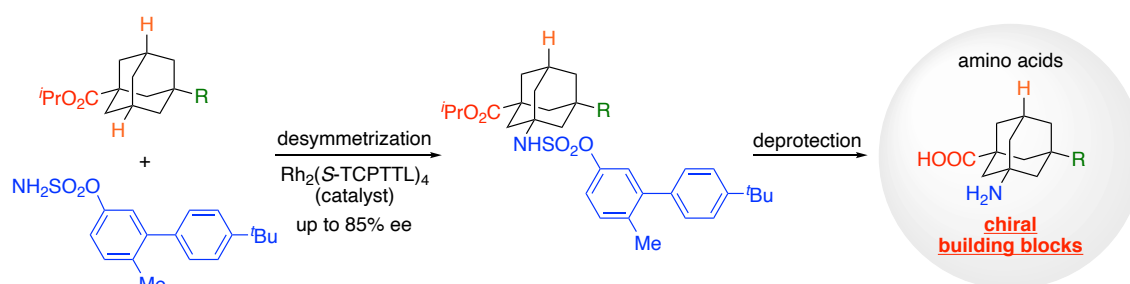
### Chiral Bicyclic NHC/Rh Complexes and Their Application to Catalytic Asymmetric Ring-Opening Reaction of Oxabenzonorbornadienes with Amines

Mizuki Seki and Kazuhiro Yoshida\*  
*J. Org. Chem.* **2022**, *88*, 14797-14802



### Enantioselective Desymmetrization of 1,3-Disubstituted Adamantane Derivatives via Rhodium-Catalyzed C–H Bond Amination: Access to Optically Active Amino Acids Containing Adamantane Core

Risa Yasue and Kazuhiro Yoshida\*  
*Adv. Synth. Catal.* **2021**, *363*, 1662-1671

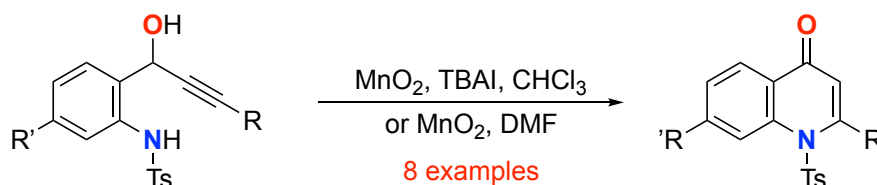


### Oxidative Cyclization of *o*-(1-Hydroxy-2-alkynyl)-*N*-tosylanilides for Synthesis of 4-Quinolones

Jun-ichi Ueda, Yuuki Enomoto, Mizuki Seki, Takuma Konishi, Masamichi Ogasawara,\* and Kazuhiro Yoshida\*

*J. Org. Chem.* **2020**, *85*, 6420-6428

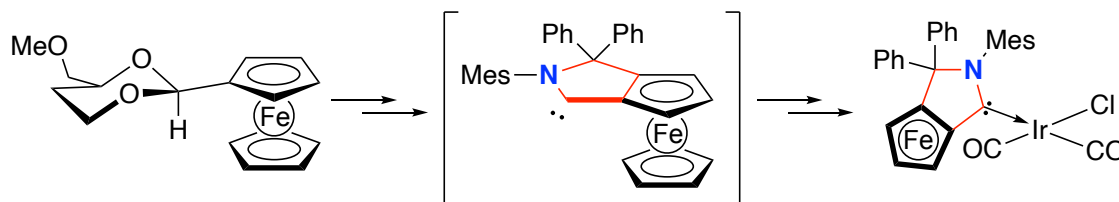
*Intramolecular Hydroamination/Cyclization*



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### Development of Planar Chiral Five-membered Cyclic (Amino)(ferrocenylene)carbene Ligand and Its Iridium Dicarbonyl Complex

Waka Takagaki, Risa Yasue, and Kazuhiro Yoshida\*  
*Bull. Chem. Soc. Jpn.* **2020**, *92*, 200-204

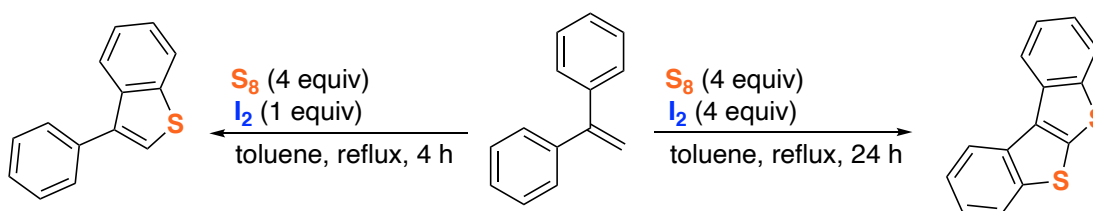


Tolman electronic parameter (TEP) = 2048  $\text{cm}^{-1}$

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### Synthesis of [1]Benzothiopheno[2,3-*b*][1]benzothiophene Derivatives through Iodine-mediated Sulfuration Reaction of 1,1-Diarylethylenes

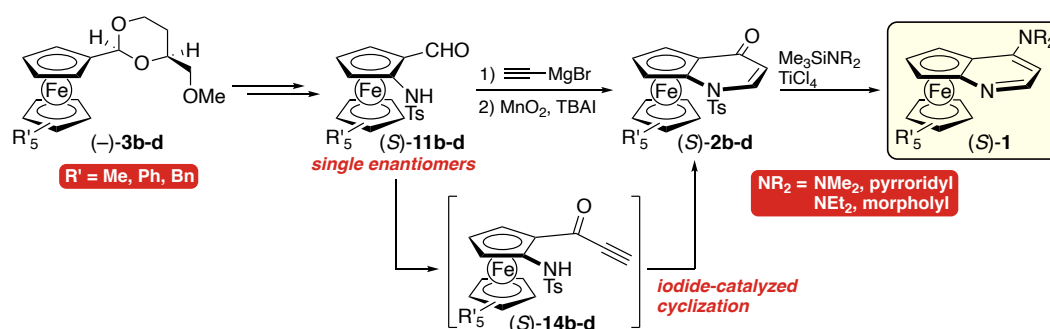
Shuta Sakai, Kazuki Sato, and Kazuhiro Yoshida\*  
*Tetrahedron Lett.* **2020**, *61*, 151476



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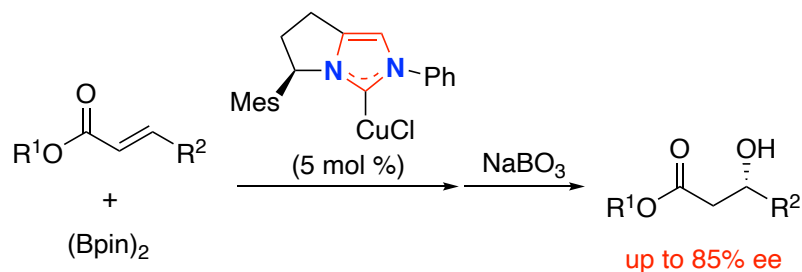
### Versatile and Enantioselective Preparation of Planar-Chiral Metallocene-Fused 4-Dialkylaminopyridines and Their Application in Asymmetric Organocatalysis

Kazuhiro Yoshida,\* Qiang Liu, Risa Yasue, Shiro Wada, Ryosuke Kimura, Takuma Konishi, and Masamichi Ogasawara\*  
*ACS Catal.* **2020**, *10*, 292-301



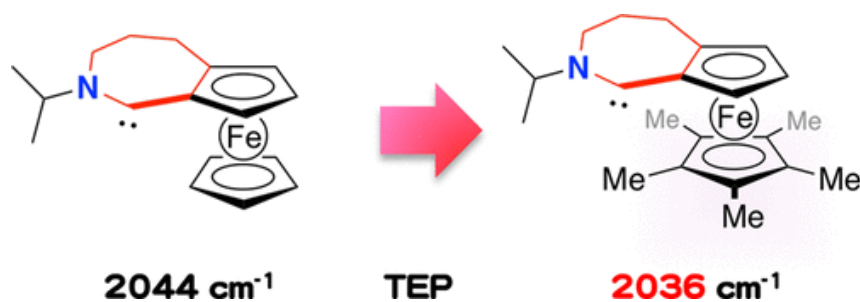
### Chiral Bicyclic NHC/Cu Complexes for Catalytic Asymmetric Borylation of $\alpha,\beta$ -Unsaturated Esters

Yuya Miwa, Takumi Kamimura, Kiyooki Sato, Daichi Shishido, and Kazuhiro Yoshida\*  
*J. Org. Chem.* **2019**, *84*, 14291-14296



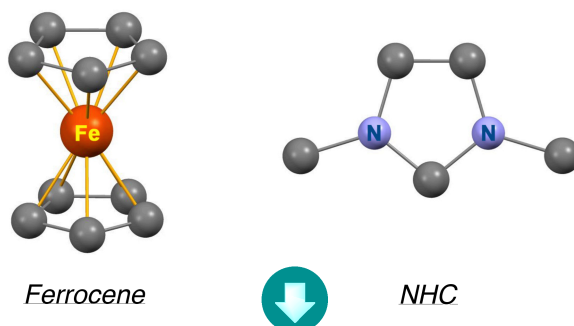
### Synthesis and Application of Planar Chiral Cyclic (Amino)(ferrocenyl)carbene Ligands Bearing FeCp\* Group

Risa Yasue and Kazuhiro Yoshida\*  
*Organometallics* **2019**, *38*, 2211-2217



### Planar-Chiral Ferrocene-Based N-Heterocyclic Carbene Ligands

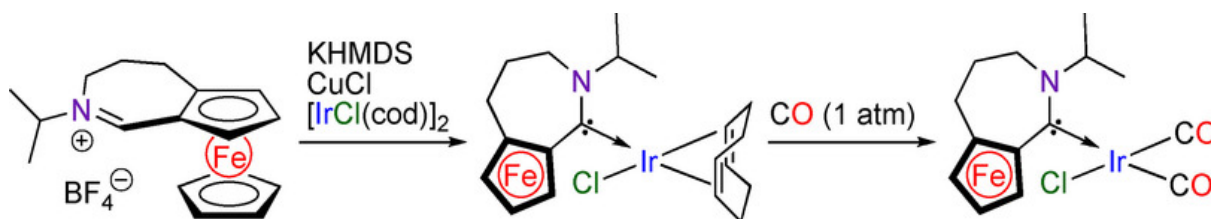
Kazuhiro Yoshida\* and Risa Yasue  
*Chem. Eur. J.* **2018**, *24*, 18575-18586



**Planar-chiral Ferrocene-based NHC**

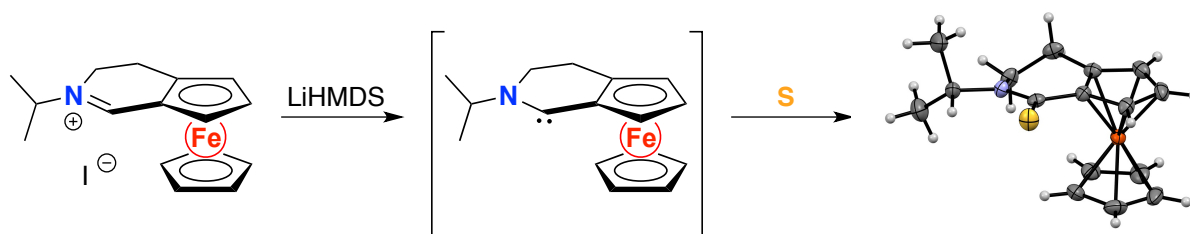
### Coordination Behavior of a Planar Chiral Cyclic (Amino)(Ferrocenyl)Carbene Ligand in Iridium Complexes

Yuta Shikata, Risa Yasue, and Kazuhiro Yoshida\*  
*Chem. Eur. J.* **2017**, *23*, 16806-16812



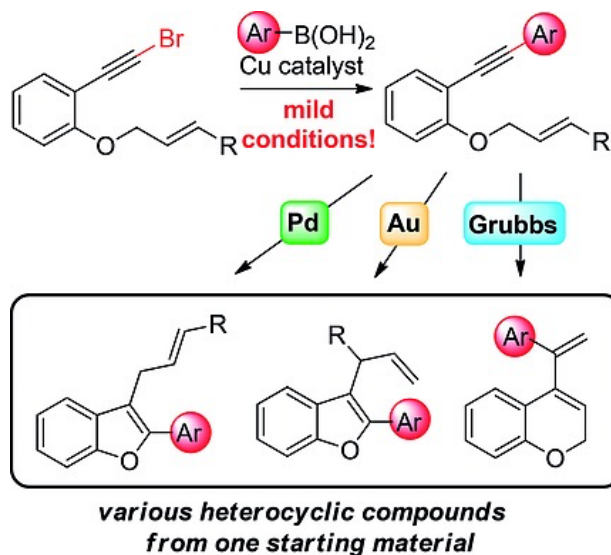
### A Planar Chiral Six-Membered Cyclic (Amino)(Ferrocenyl)Carbene and Its Sulfur Adduct

Risa Yasue, Masaru Miyauchi, and Kazuhiro Yoshida\*  
*Tetrahedron: Asymmetry* **2017**, *28*, 824-829



### Synthesis of *o*-Allyloxy(ethynyl)benzene Derivatives by Cu-Catalyzed Suzuki–Miyaura-Type Reaction and Their Transformations into Heterocyclic Compounds

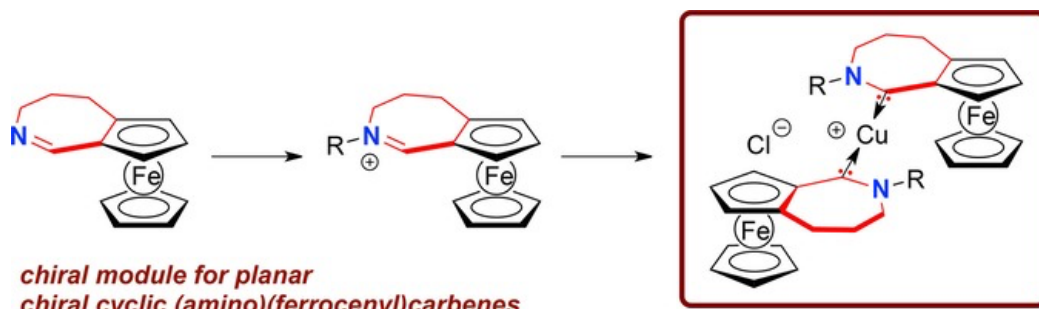
Kohei Watanabe, Takashi Mino,\* Eri Ishikawa, Miyu Okano, Tatsuya Ikematsu, Yasushi Yoshida, Masami Sakamoto, Kazuki Sato, and Kazuhiro Yoshida  
*Eur. J. Org. Chem.* **2017**, 2359-2368



### Planar Chiral Cyclic (Amino)(ferrocenyl)carbene as Ligand for Transition Metals

Risa Yasue, Masaru Miyauchi, and Kazuhiro Yoshida\*

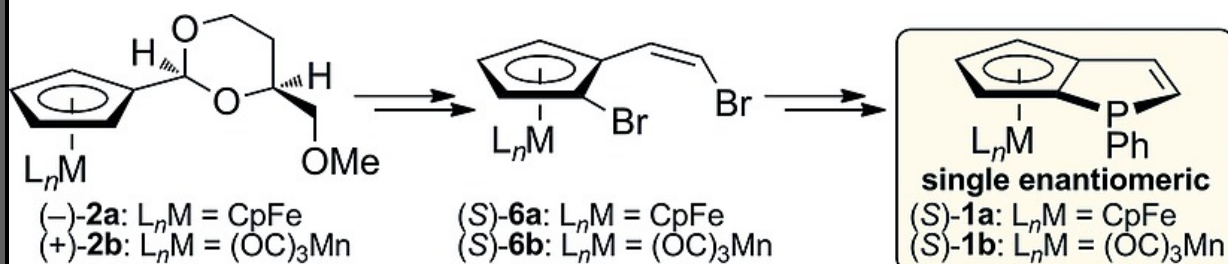
*Adv. Synth. Catal.* **2017**, 359, 255-259



### Enantioselective Synthesis of Ferrocene- or Cymantrene-Fused Planar-Chiral Phospholes

Hao Hu, Wei-Yi Wu, Tamotsu Takahashi, Kazuhiro Yoshida, and Masamichi Ogasawara\*

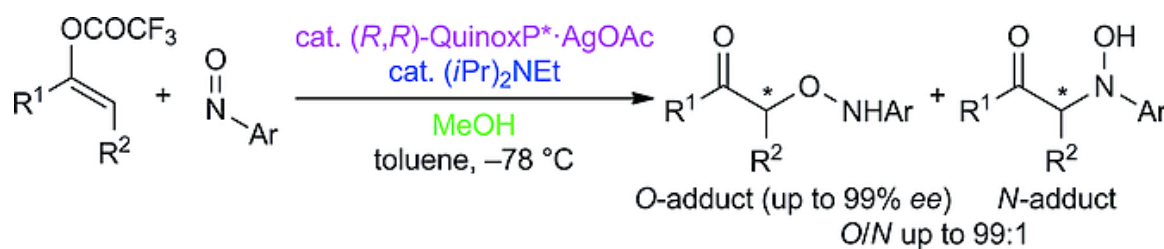
*Eur. J. Inorg. Chem.* **2017**, 325-329



### Enantioselective Nitroso Aldol Reaction Catalyzed by Chiral Phosphine-Silver Complex

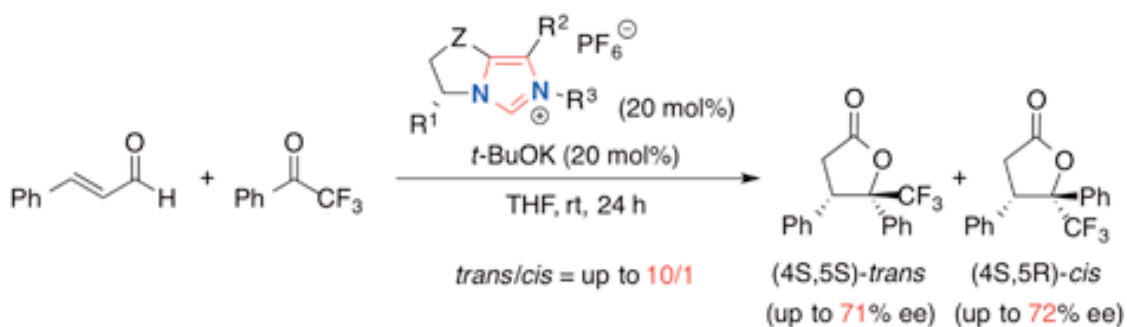
Akira Yanagisawa,\* Yuqin Lin, Akihiro Takeishi, and Kazuhiro Yoshida

*Eur. J. Org. Chem.* **2016**, 5355-5359



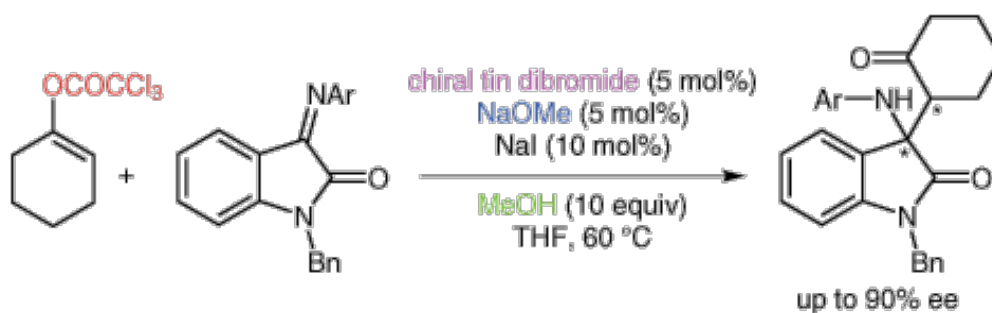
### Enantio- and Diastereoselective Cross-Annulation of Enal and Ketone with New Chiral Bicyclic *N*-Heterocyclic Carbene Catalysts

Momo Hasegawa, Kazuhiro Yoshida,\* and Akira Yanagisawa\*  
*Chem. Lett.* **2016**, 45 294-296



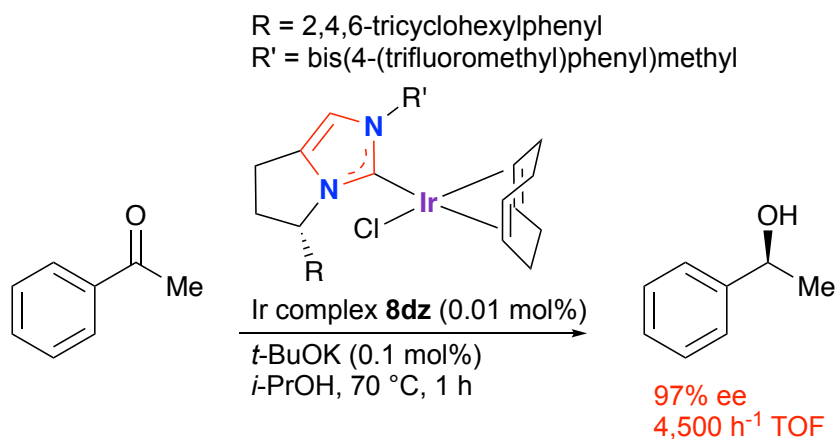
### Catalytic Enantioselective Synthesis of Chiral 3-Amino-2-oxindoles by a Mannich Approach

Akira Yanagisawa,\* Naoyuki Kushihara, Takuya Sugita, Moe Horiguchi, Kazuki Ida, and Kazuhiro Yoshida  
*Synlett* **2015**, 26 2541-2546



### Chiral Bicyclic NHC/Ir Complexes for Catalytic Asymmetric Transfer Hydrogenation of Ketones

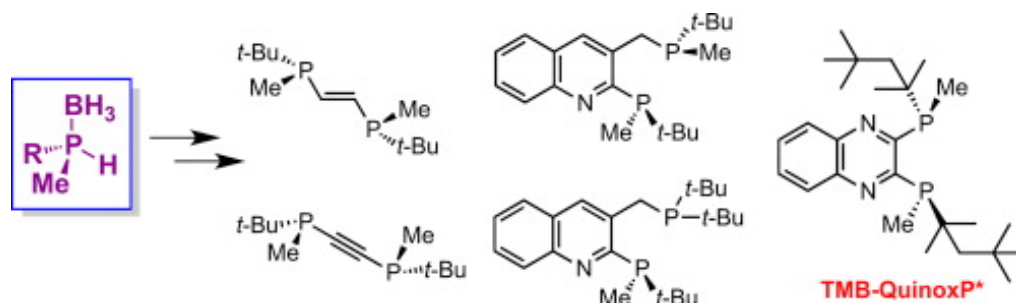
Kazuhiro Yoshida,\* Takumi Kamimura, Hiroshi Kuwabara, and Akira Yanagisawa\*  
*Chem. Commun.* **2015**, 51, 15442-15445





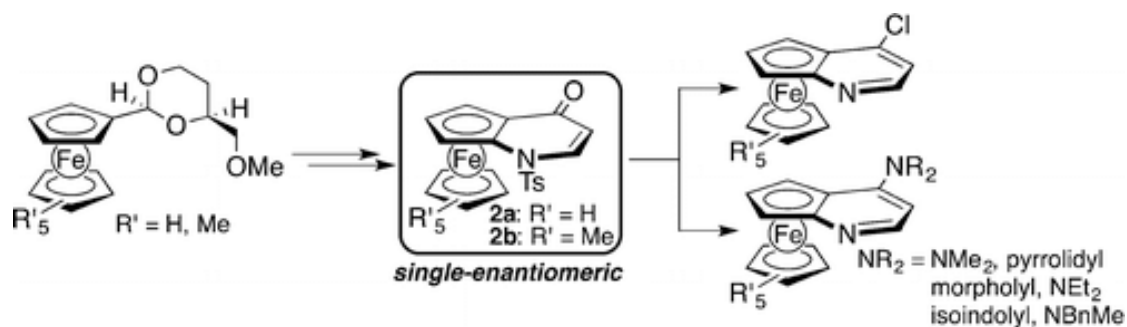
### Utilization of Optically Active Secondary Phosphine–Boranes: Synthesis of P-chiral Diphosphines and Their Enantioinduction Ability in Rhodium-catalyzed Asymmetric Hydrogenation

Tsuneo Imamoto,\* Yumi Horiuchi, Eri Hamanishi, Satoshi Takeshita, Ken Tamura, Masashi Sugiya, and Kazuhiro Yoshida  
*Tetrahedron* **2015**, *71*, 6471-6480



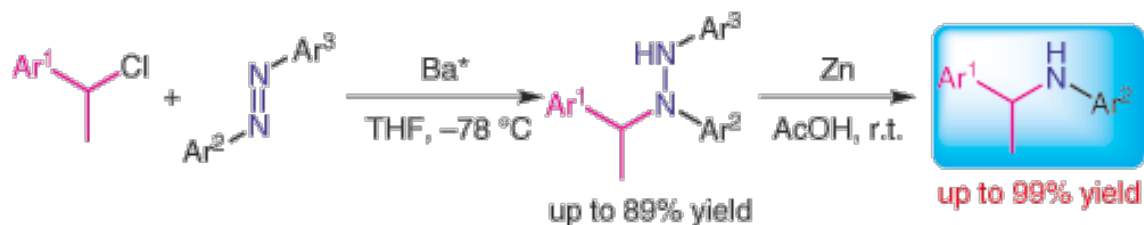
### Enantioselective Synthesis of Planar-Chiral Ferrocene-Fused 4-Pyridones and Their Application in Construction of Pyridine-Based Organocatalyst Library

Masamichi Ogasawara,\* Shiro Wada, Erika Isshiki, Takumi Kamimura, Akira Yanagisawa,\* Tamotsu Takahashi,\* and Kazuhiro Yoshida\*  
*Org. Lett.* **2015**, *17*, 2286-2289



### Reactive Barium-Promoted Benzylation of Diaryl Azo Compounds

Akira Yanagisawa,\* Toshiki Sawae, Seiya Yamafuji, Toshihiko Heima, and Kazuhiro Yoshida  
*Synlett* **2015**, *26* 1073-1076

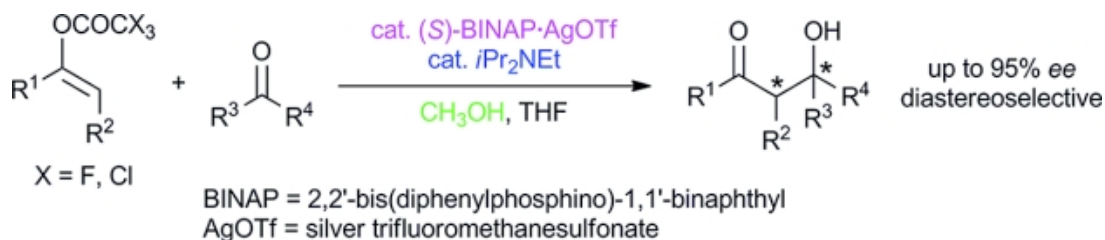


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### Asymmetric Aldol Reaction Catalyzed by a Chiral Phosphine–Silver Complex

Akira Yanagisawa,\* Ryoji Miyake, and Kazuhiro Yoshida

*Eur. J. Org. Chem* **2014**, 4248-4253

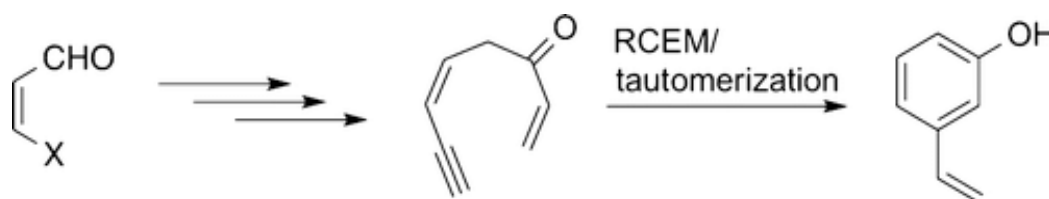


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### Synthesis of Substituted Styrenes and 3-Vinylphenols Using Ruthenium-Catalyzed Ring-Closing Enyne Metathesis

Kazuhiro Yoshida,\* Kana Nishii, Yuto Kano, Shiro Wada, and Akira Yanagisawa\*

*J. Org. Chem* **2014**, 79, 4231-4239

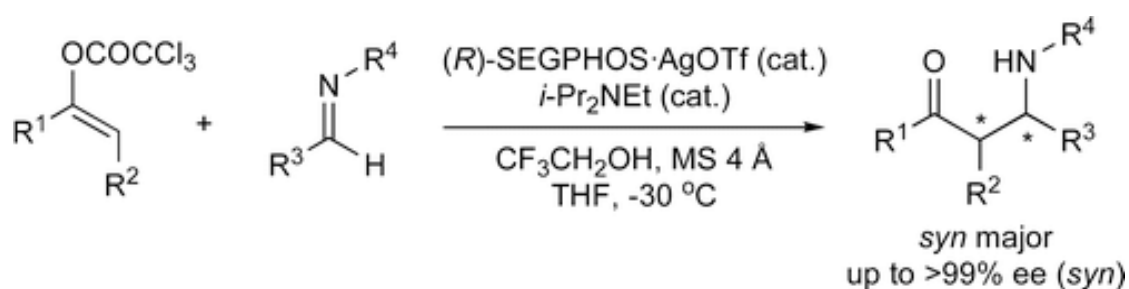


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### Catalytic Enantioselective Mannich-Type Reaction via a Chiral Silver Enolate

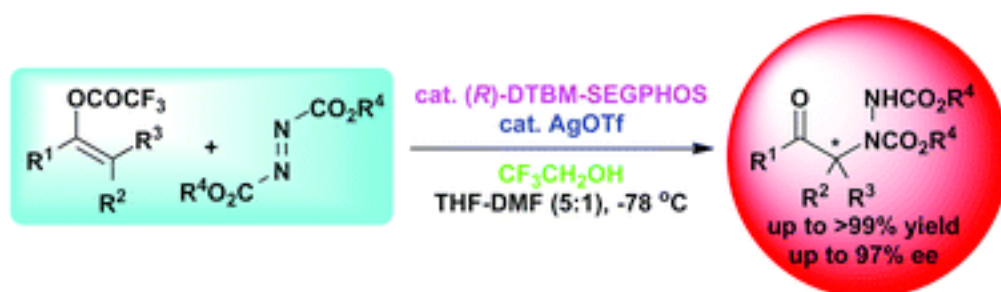
Akira Yanagisawa,\* Yuqin Lin, Ryoji Miyake, and Kazuhiro Yoshida

*Org. Lett.* **2014**, 16, 86-89



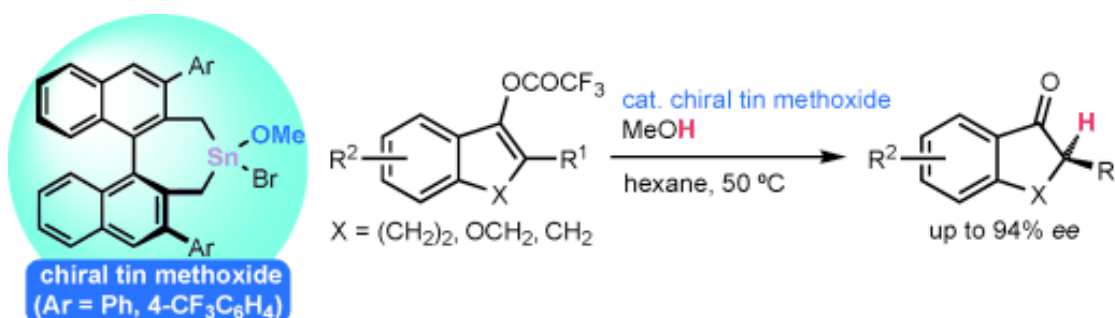
### Asymmetric $\alpha$ -Amination Reaction of Alkenyl Trifluoroacetates Catalyzed by Chiral Phosphine-Silver Complex

Akira Yanagisawa,\* Ryoji Miyake, and Kazuhiro Yoshida  
*Org. Biomol. Chem.* **2014**, *12*, 1935-1941



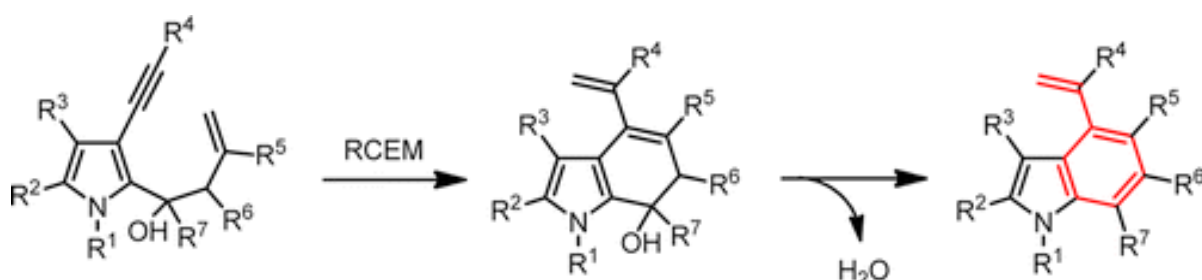
### Enantioselective Protonation of Alkenyl Trifluoroacetates Catalyzed by Chiral Tin Methoxide: A New Entry to Optically Active Ketones

Akira Yanagisawa,\* Takuya Sugita, and Kazuhiro Yoshida  
*Chem. Eur. J.* **2013**, *19*, 16200-16203



### Synthesis of 4-Vinylindoles Using Ruthenium-Catalyzed Ring-Closing Enyne Metathesis

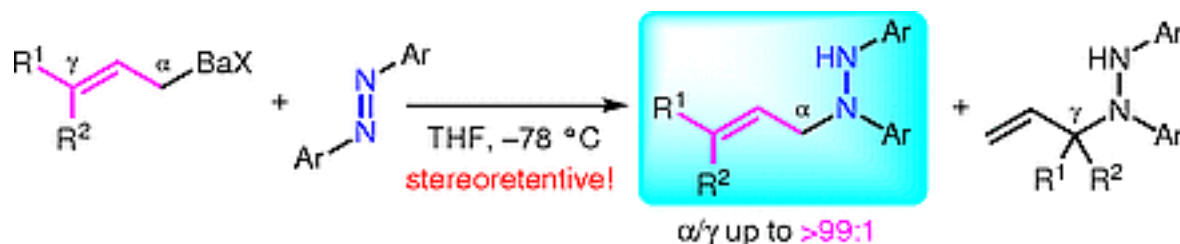
Kazushi Hayashi, Kazuhiro Yoshida,\* and Akira Yanagisawa\*  
*J. Org. Chem.* **2013**, *78*, 3464-3469



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 **$\alpha$ -Selective Allylation of Azo Compounds Using Allylic Barium Reagents**

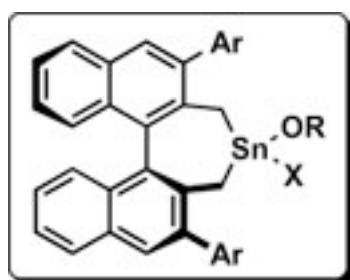
Akira Yanagisawa,\* Takuya Jitsukawa, and Kazuhiro Yoshida

*Synlett* **2013**, 24, 635-639

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**Development of Asymmetric Reactions Catalyzed by Chiral Organotin-Alkoxide Reagents**

Akira Yanagisawa\* and Kazuhiro Yoshida

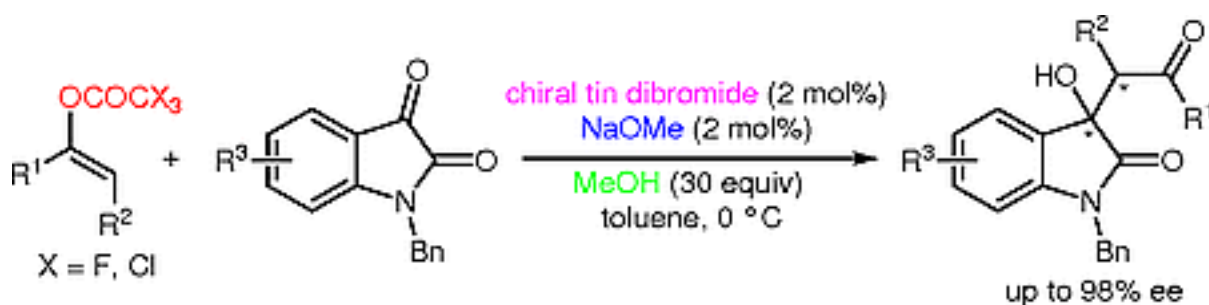
*Chem. Rec.* **2013**, 13, 117-127chiral tin catalyst  
(R = Me, Et; X = Br, I)

**Aldol reaction**  
**Mannich-type reaction**  
**Cycloaddition reaction**  
**N-Nitroso aldol reaction, etc.**

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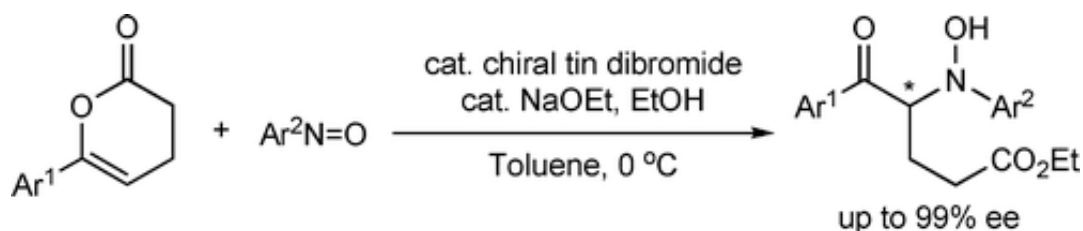
**Catalytic Enantioselective Synthesis of Chiral Isatin Derivatives by an Aldol Approach**

Akira Yanagisawa,\* Naoyuki Kushihara, Takuya Sugita, and Kazuhiro Yoshida

*Synlett.* **2012**, 1783-1788

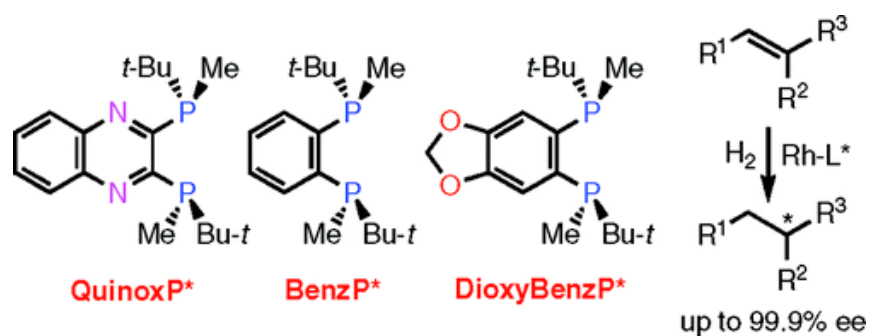
56

**Catalytic Enantioselective *N*-Nitroso Aldol Reaction of  $\gamma,\delta$ -Unsaturated  $\delta$ -Lactones**  
Akira Yanagisawa,\* Takeo Fujinami, Yu Oyokawa, Takuya Sugita, and Kazuhiro Yoshida  
*Org. Lett.* **2012**, *14*, 2434-2437



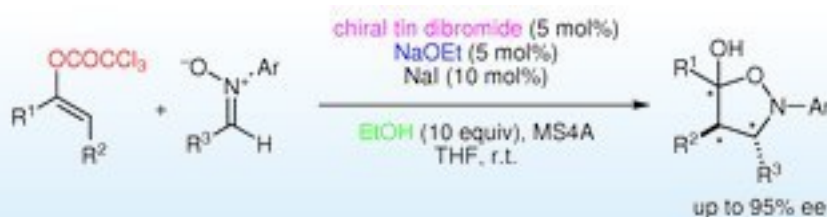
55

**Rigid P-Chiral Phosphine Ligands with *tert*-Butylmethylphosphino Groups for Rhodium-Catalyzed Asymmetric Hydrogenation of Functionalized Alkenes**  
Tsuneo Imamoto,\* Ken Tamura, Zhenfeng Zhang, Yumi Horiuchi, Masashi Sugiya, Kazuhiro Yoshida, Akira Yanagisawa, and Ilya D. Gridnev\*  
*J. Am. Chem. Soc.* **2012**, *134*, 1754-1769



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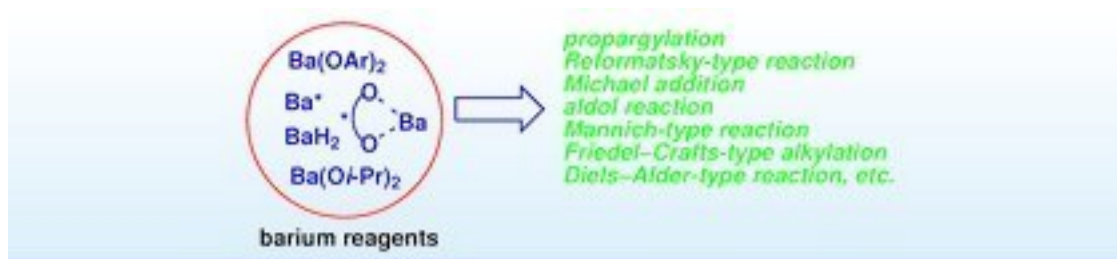
**Catalytic Asymmetric Cycloaddition Reaction of Alkenyl Trichloroacetates with Nitrones**  
Akira Yanagisawa,\* Atsuto Izumiseki, Takuya Sugita, Naoyuki Kushihara, and Kazuhiro Yoshida  
*Synlett.* **2012**, 107-112



### Recent Advances in Selective Reactions Promoted by Barium Reagents

Akira Yanagisawa\* and Kazuhiro Yoshida

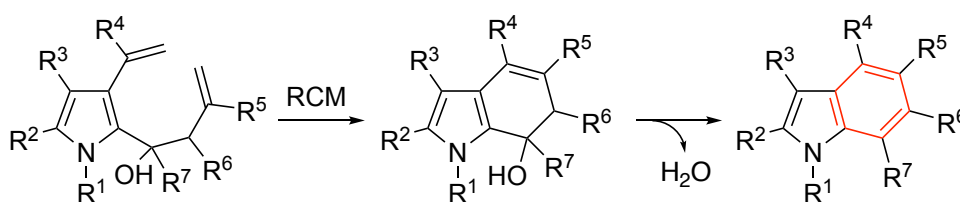
*Synlett.* **2011**, 2929-2938



### Construction of Carbocyclic Ring of Indoles Using Ruthenium-Catalyzed Ring-Closing Olefin Metathesis

Kazuhiro Yoshida,\* Kazushi Hayashi, and Akira Yanagisawa\*

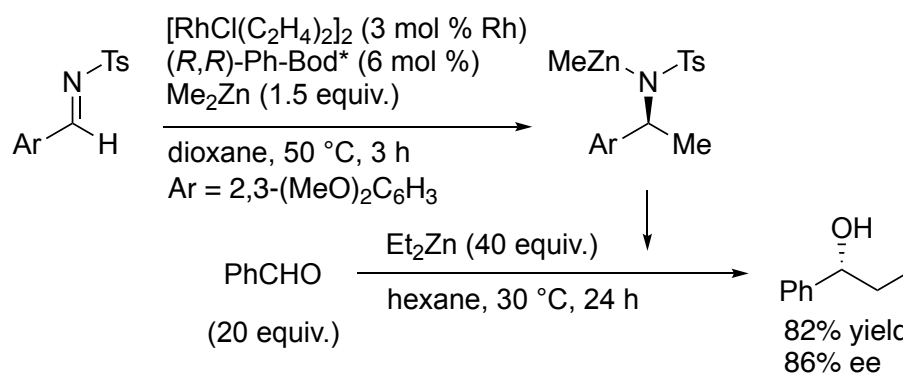
*Org. Lett.* **2011**, *13*, 4762-4765



### Asymmetric Addition of Diethylzinc to Aldehydes Catalyzed by New Zinc-amides Prepared by a Rhodium-catalyzed Asymmetric Addition

Kazuhiro Yoshida,\* Naohisa Akashi, and Akira Yanagisawa\*

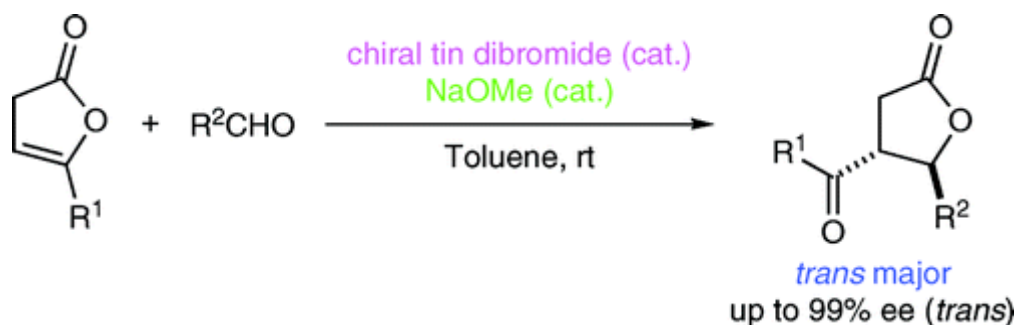
*Tetrahedron: Asymmetry* **2011**, *22*, 1225-1230



### Catalytic Enantioselective Synthesis of Chiral $\gamma$ -Butyrolactones

Akira Yanagisawa,\* Naoyuki Kushihara, and Kazuhiro Yoshida

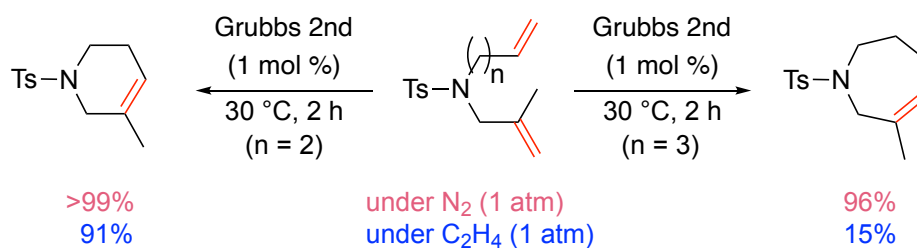
*Org. Lett.* **2011**, *13*, 1576-1578



### Ring Size-Selective Ring-Closing Olefin Metathesis: Taking Advantage of the Deleterious Effect of Ethylene Gas

Kazuhiro Yoshida,\* Yuto Kano, Hidetoshi Takahashi, and Akira Yanagisawa\*

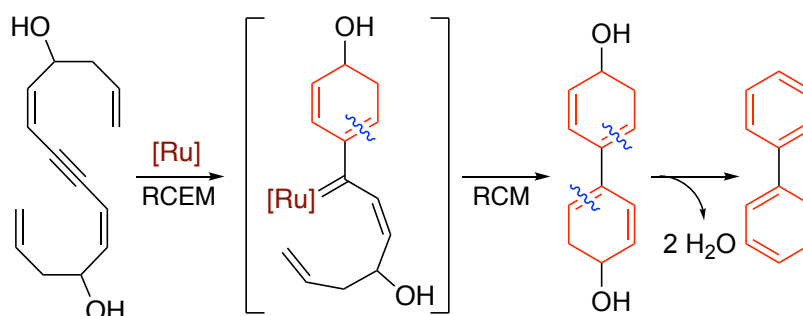
*Adv. Synth. Catal.* **2011**, *353*, 1229-1233



### Synthesis of Biaryl Compounds Using Tandem Ruthenium-Catalyzed Ring-Closing Metathesis

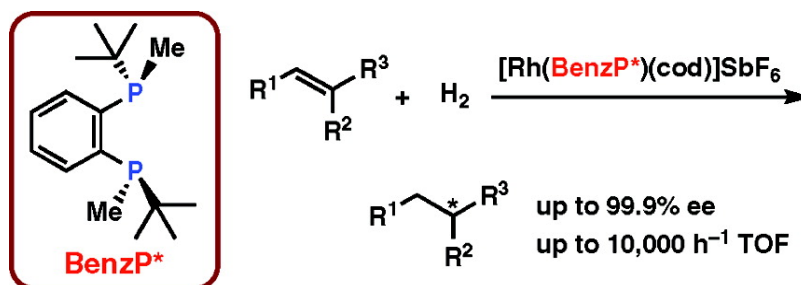
Kazuhiro Yoshida,\* Hiroaki Shida, Hidetoshi Takahashi, and Akira Yanagisawa\*

*Chem. Eur. J.* **2011**, *17*, 344-349



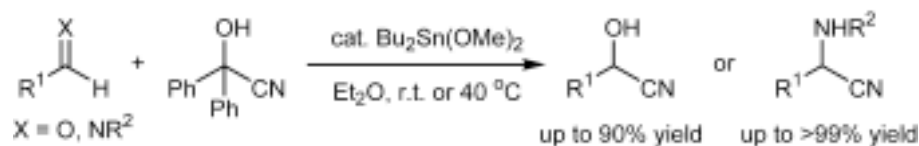
### Enantiopure 1,2-Bis(tert-butylmethylphosphino)benzene as a Highly Efficient Ligand in Rhodium-Catalyzed Asymmetric Hydrogenation

Ken Tamura, Masashi Sugiya, Kazuhiro Yoshida, Akira Yanagisawa, and Tsuneo Imamoto\*  
*Org. Lett.* **2010**, *12*, 4400-4403



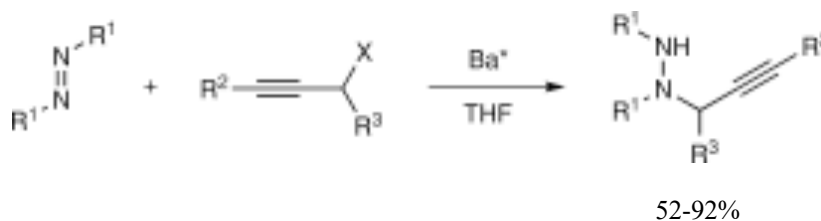
### Dibutyltin Dimethoxide-Catalyzed Cyano Transfer to Aldehydes and Imines

Akira Yanagisawa,\* Takuya Matsumoto, Naoyuki Kushihara, and Kazuhiro Yoshida  
*Adv. Synth. Catal.* **2010**, *352*, 2918-2922



### Selective Propargylation of Azo Compounds with Barium Reagents

Akira Yanagisawa,\* Takanori Koide, and Kazuhiro Yoshida  
*Synlett.* **2010**, 1515-1518

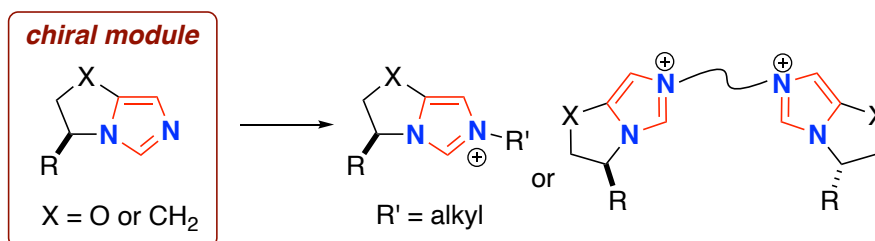




### Bicyclic Imidazoles for Modular Synthesis of Chiral Imidazolium Salts

Kazuhiro Yoshida,\* Shingo Horiuchi, Tomoko Takeichi, Hiroaki Shida, Tsuneo Imamoto, and Akira Yanagisawa\*

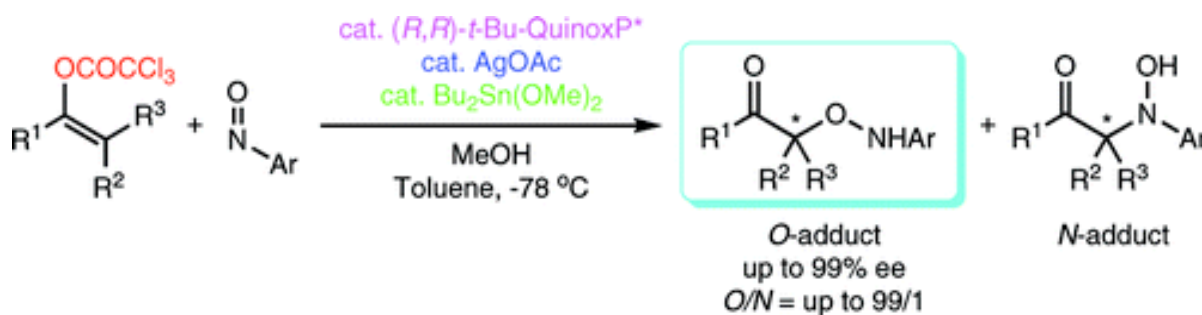
*Org. Lett.* **2010**, *12*, 1764-1767



### Enantioselective Nitroso Aldol Reaction Catalyzed by QuinoxP\*·Silver(I) Complex and Tin Methoxide

Akira Yanagisawa,\* Satoshi Takeshita, Youhei Izumi, and Kazuhiro Yoshida

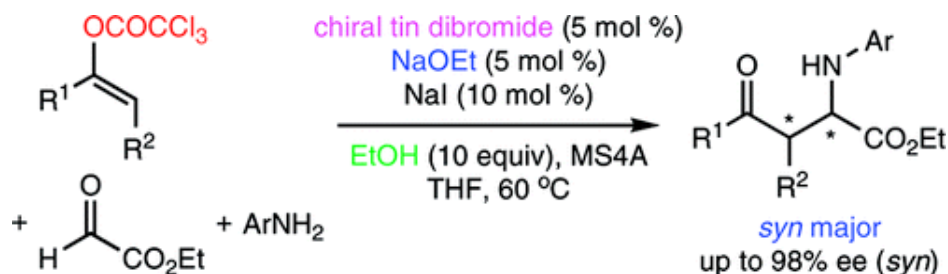
*J. Am. Chem. Soc.* **2010**, *132*, 5328-5329



### Catalytic Asymmetric Three-Component Mannich-Type Reaction of Alkenyl Trichloroacetates

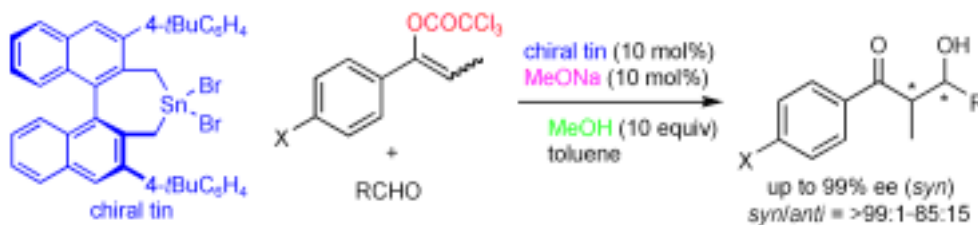
Atsuto Izumiseki, Kazuhiro Yoshida, and Akira Yanagisawa\*

*Org. Lett.* **2009**, *11*, 5310-5313



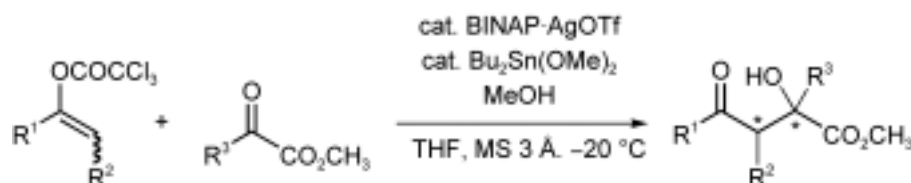
### Methanol-Assisted Catalysis by Chiral Tin Methoxides: An Alternative Asymmetric Aldol Process

Akira Yanagisawa,\* Tomoya Satou, Atsuto Izumiseki, Youichi Tanaka, Masahiko Miyagi, Takayoshi Arai, and Kazuhiro Yoshida  
*Chem. Eur. J.* **2009**, *15*, 11450-11453



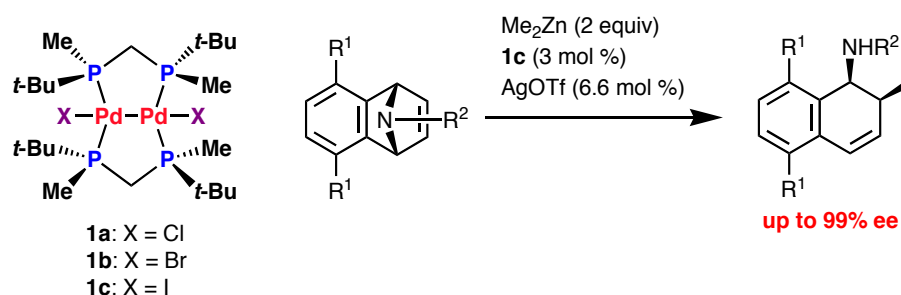
### Asymmetric Aldol Reaction of Ketones with Alkenyl Trichloroacetates Catalyzed by Dibutyltin Dimethoxide and BINAP·Silver(I) Complex: Construction of a Chiral Tertiary Carbon Center

Akira Yanagisawa,\* Yuuki Terajima, Kazuma Sugita, and Kazuhiro Yoshida  
*Adv. Synth. Catal.* **2009**, *351*, 1757-1762



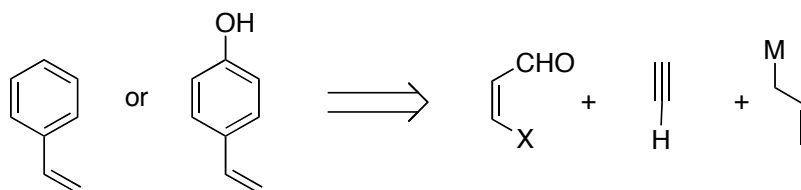
### Optically Active Dinuclear Palladium Complexes Containing a Pd–Pd Bond: Preparation and Enantioinduction Ability in Asymmetric Ring Opening Reactions

Tomokazu Ogura, Kazuhiro Yoshida, Akira Yanagisawa, and Tsuneo Imamoto\*  
*Org. Lett.* **2009**, *11*, 2245-2248



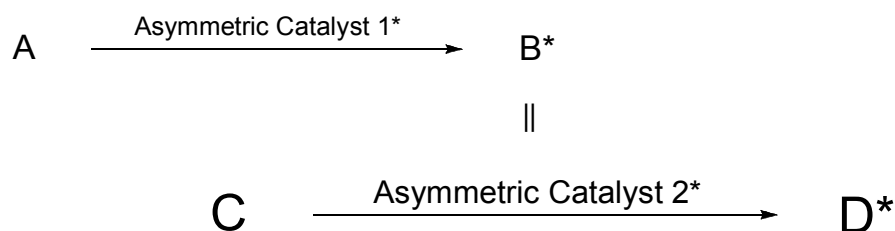
**Synthesis of Carbocyclic Aromatic Compounds Using Ruthenium-Catalyzed Ring-Closing Enyne Metathesis**

Hidetoshi Takahashi, Kazuhiro Yoshida,\* and Akira Yanagisawa\*  
*J. Org. Chem.* **2009**, *74*, 3632-3640



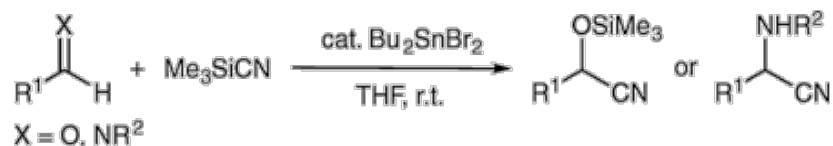
**Rapid Screening for Asymmetric Catalysts: the Efficient Connection of Two Different Catalytic Asymmetric Reactions**

Kazuhiro Yoshida,\* Takeharu Toyoshima, Naohisa Akashi, Tsuneo Imamoto, and Akira Yanagisawa\*  
*Chem. Commun.* **2009**, 2923-2925



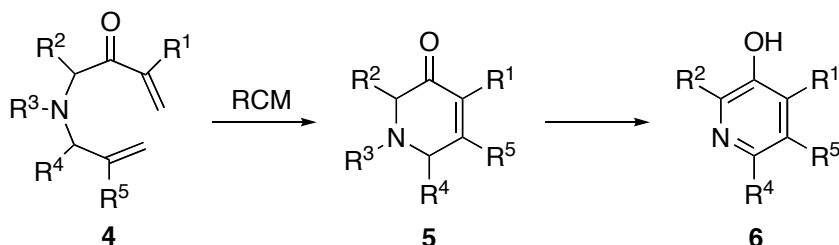
**Dibutyltin Dibromide-catalyzed Trimethylsilylcyanation of Aldehydes and Imines**

Akira Yanagisawa,\* Takuya Matsumoto, Takayoshi Arai, and Kazuhiro Yoshida  
*Chem. Lett.* **2009**, *38*, 336-337



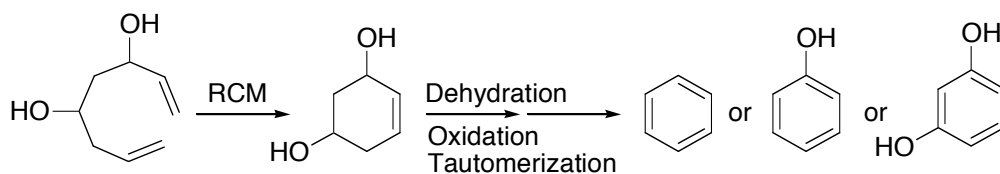
### Synthesis of 3-Hydroxypyridines Using Ruthenium-Catalyzed Ring-Closing Olefin Metathesis

Kazuhiro Yoshida,\* Fumihiro Kawagoe, Kazushi Hayashi, Shingo Horiuchi, Tsuneo Imamoto,\* and Akira Yanagisawa\*  
*Org. Lett.* **2009**, *11*, 515-518



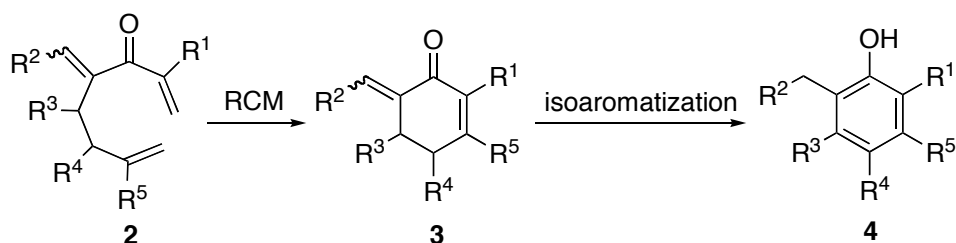
### Synthesis of Aromatic Compounds Using Combinations of Ring-Closing Olefin Metathesis, Dehydration, Oxidation, and Tautomerization

Kazuhiro Yoshida,\* Takeharu Toyoshima, and Tsuneo Imamoto\*  
*Bull. Chem. Soc. Jpn.* **2008**, *81*, 1512-1517



### Synthesis of Substituted Phenols by Using the Ring-Closing Metathesis/Isoaromatization Approach

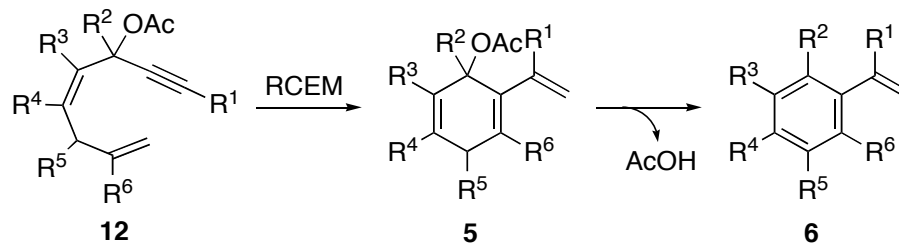
Kazuhiro Yoshida,\* Rintaro Narui, and Tsuneo Imamoto\*  
*Chem. Eur. J.* **2008**, *14*, 9706-9713



### Synthesis of Styrenes Using Ruthenium-Catalyzed Ring-Closing Enyne Metathesis

Kazuhiro Yoshida,\* Yuka Shishikura, Hidetoshi Takahashi, and Tsuneo Imamoto\*

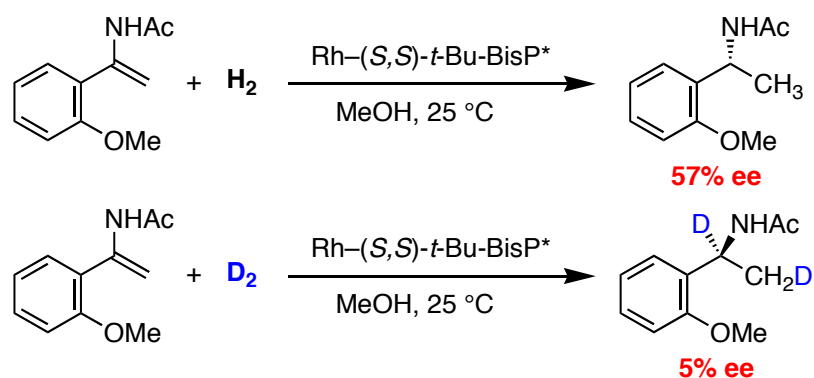
*Org. Lett.* **2008**, *10*, 2777-2780



### Marked Deuterium Isotopic Effects on the Enantioselectivity in Rhodium-Catalyzed Asymmetric Hydrogenation of Enamides

Tsuneo Imamoto,\* Takuma Itoh, Kazuhiro Yoshida, and Ilya D. Gridnev\*

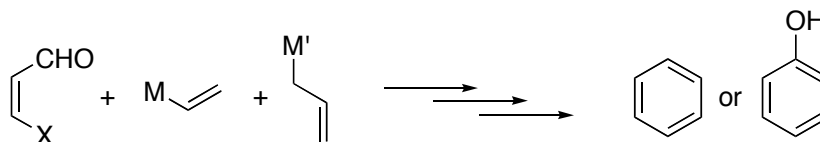
*Chem. Asian J.* **2008**, *3*, 1636-1641



### Synthesis of Substituted Benzenes and Phenols via Ring-Closing Olefin Metathesis

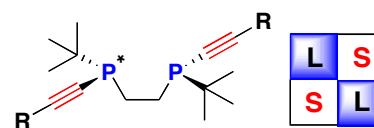
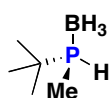
Kazuhiro Yoshida,\* Hidetoshi Takahashi, and Tsuneo Imamoto\*

*Chem. Eur. J.* **2008**, *14*, 8246-8261



### Synthesis and Enantioselectivity of P-Chiral Phosphine Ligands Possessing Alkynyl Groups

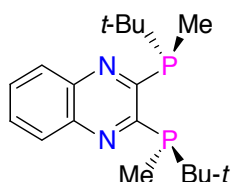
Tsuneo Imamoto,\* Youichi Saitoh, Aya Koide, Tomokazu Ogura, and Kazuhiro Yoshida  
*Angw. Chem. Int. Ed.* **2007**, *46*, 8636-8639



R = Ph, *t*Bu, *i*Pr<sub>3</sub>Si, H, Me

### *t*-Bu-QuinoxP\* Ligand: Applications in Asymmetric Pd-Catalyzed Allylic Substitution and Ru-Catalyzed Hydrogenation

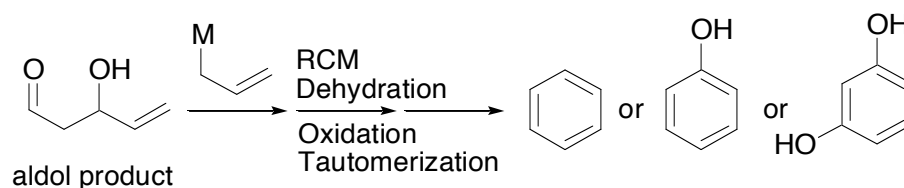
Tsuneo Imamoto,\* Miwako Nishimura, Aya Koide, and Kazuhiro Yoshida  
*J. Org. Chem.* **2007**, *72*, 7413-7416



- Pd-catalyzed allylic substitution:  
up to **98.7% ee**
- Ru-catalyzed hydrogenation:  
up to **99.9% ee**

### Efficient Synthetic Routes to Aromatic Compounds Using Ring-Closing Olefin Metathesis Followed by Dehydration, Oxidation, and Tautomerization

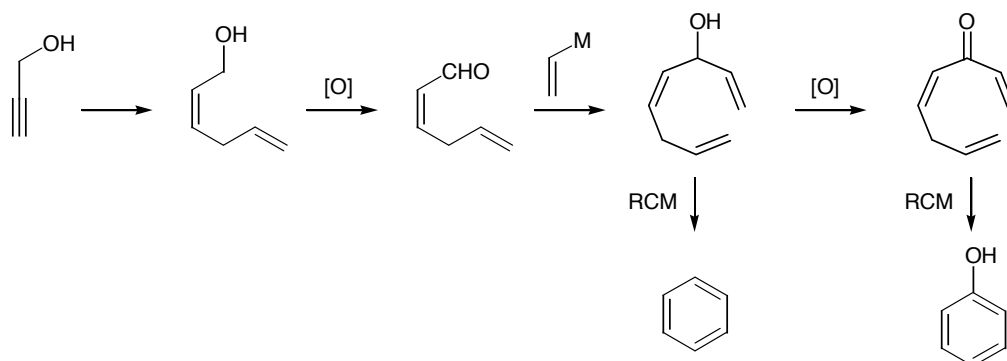
Kazuhiro Yoshida,\* Takeharu Toyoshima, and  
 Tsuneo Imamoto\*  
*Chem. Commun.* **2007**, 3774-3776



### An Efficient Route to Benzene and Phenol Derivatives via Ring-Closing Olefin Metathesis

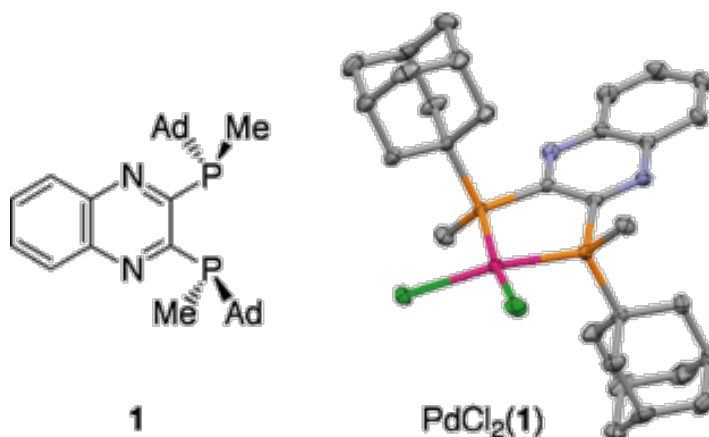
Kazuhiro Yoshida,\* Shingo Horiuchi, Noriyuki Iwadate, Fumihiro Kawagoe, and Tsuneo Imamoto\*

*Synlett* **2007**, 1561-1564



### Air-stable P-Chiral Bidentate Phosphine Ligand with (1-Adamantyl)methylphosphino Group

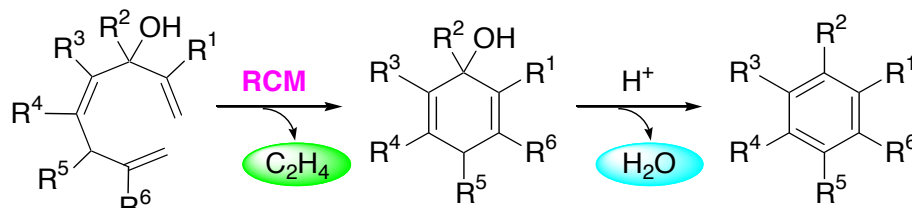
Tsuneo Imamoto,\* Atsushi Kumada, and Kazuhiro Yoshida  
*Chem. Lett.* **2007**, 36, 500-501



### Ring-Closing Olefin Metathesis for the Synthesis of Benzene Derivatives

Kazuhiro Yoshida,\* Fumihiro Kawagoe, Noriyuki Iwadate, Hidetoshi Takahashi, and Tsuneo Imamoto\*

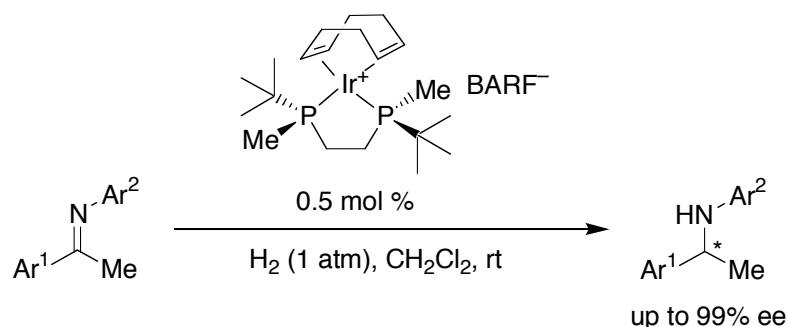
*Chem. Asian J.* **2006**, 1, 611-613



up to >99% yield (two steps)

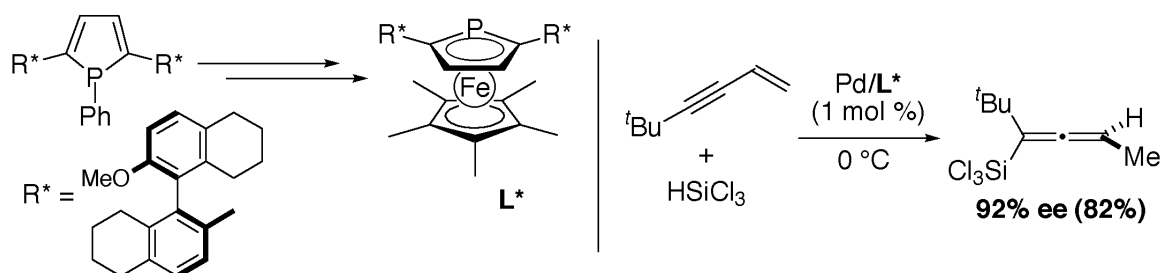
### Enantioselective Hydrogenation of Acyclic Aromatic *N*-Aryl Imines Catalyzed by an Iridium Complex of (*S,S*)-1,2-Bis(*tert*-butylmethylphosphino)ethane

Tsuneo Imamoto,\* Noriyuki Iwadate, and Kazuhiro Yoshida  
*Org. Lett.* **2006**, *8*, 2289-2292



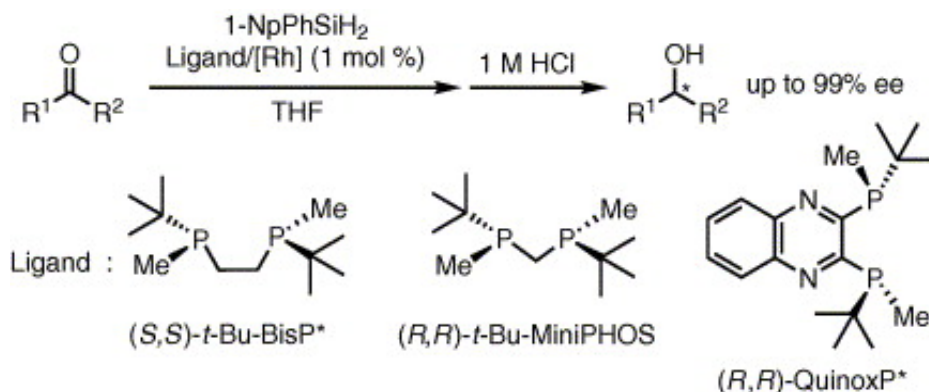
### Synthesis of 2,5-Bis(binaphthyl)phospholes and Phosphametalocene Derivatives and Their Application in Pd-Catalyzed Asymmetric Hydrosilylation

Masamichi Ogasawara,\* Azumi Ito, Kazuhiro Yoshida, and Tamio Hayashi\*  
*Organometallics* **2006**, *25*, 2715-2718



### Highly Enantioselective Hydrosilylation of Simple Ketones Catalyzed by Rhodium Complexes of P-Chiral Diposphine Ligands Bearing *tert*-Butylmethylphosphino Groups

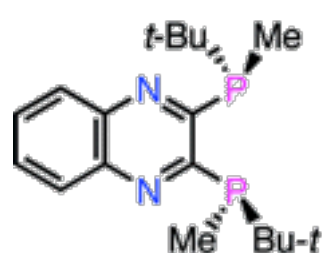
Tsuneo Imamoto,\* Takuma Itoh, Yoshinori Yamanoi, Rintaro Narui, and Kazuhiro Yoshida  
*Tetrahedron: Asymmetry* **2006**, *17*, 560-565





### An Air-Stable P-Chiral Phosphine Ligand for Highly Enantioselective Transition-Metal-Catalyzed Reactions

Tsuneo Imamoto,\* Keitaro Sugita, and Kazuhiro Yoshida  
*J. Am. Chem. Soc.* **2005**, *127*, 11934-11935



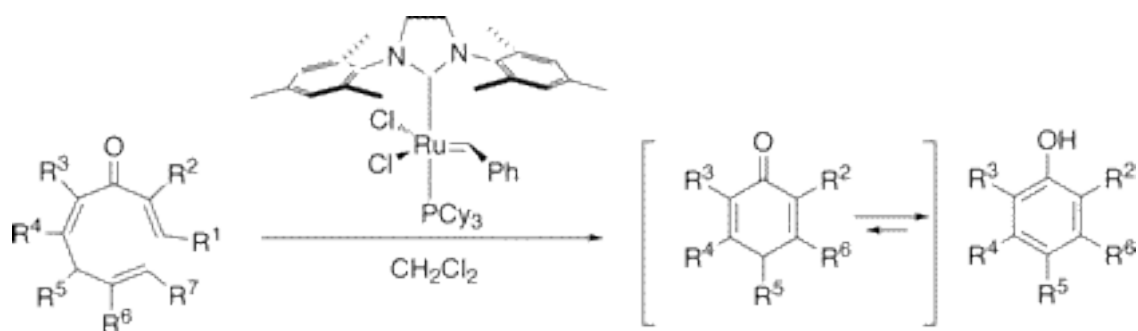
■ Rh-catalyzed hydrogenation:  
 up to **99.9% ee**

■ Rh-catalyzed 1,4-addition:  
 up to **99.4% ee**

■ Pd-catalyzed alkylative ring opening:  
 up to **97.6% ee**

### A New Synthetic Approach to Phenol Derivatives: Use of Ring-Closing Olefin Metathesis

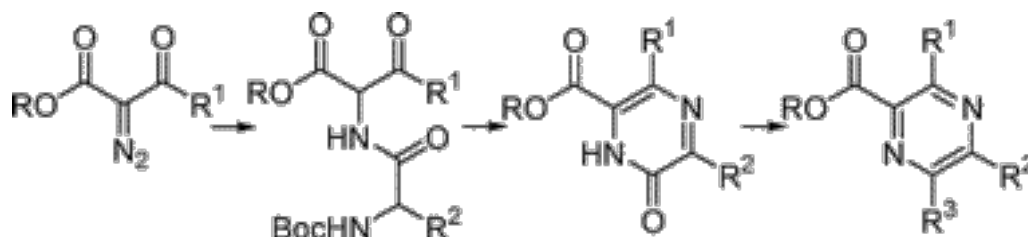
Kazuhiro Yoshida\* and Tsuneo Imamoto\*  
*J. Am. Chem. Soc.* **2005**, *127*, 10470-10471



### N-H Insertion Reactions of Boc-Amino Acid Amides: Solution- and Solid-Phase Synthesis of Pyrazinones and Pyrazines

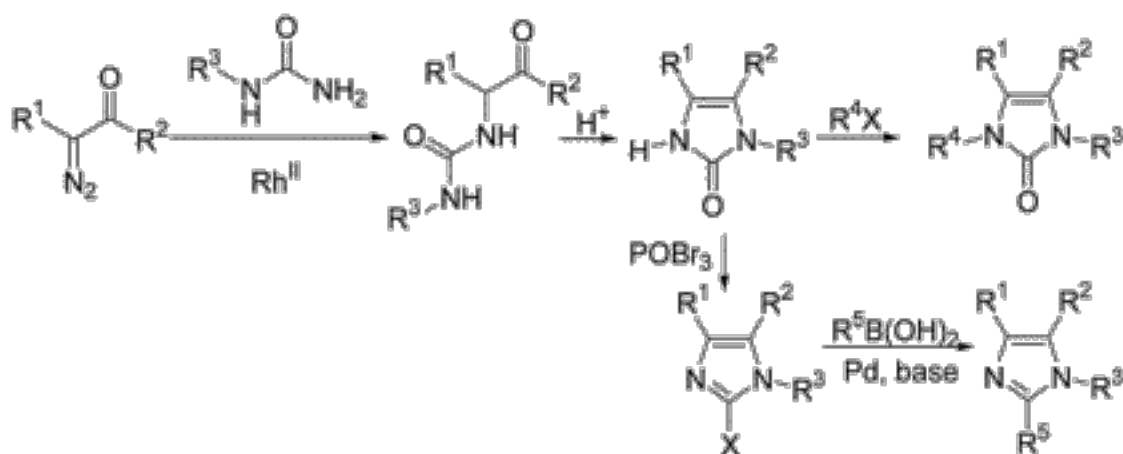
Hana Matsushita, Sang-Hyeup Lee, Kazuhiro Yoshida, Bruce Clapham,\* Guido Koch, Jürg Zimmermann, and Kim D. Janda\*

*Org. Lett.* **2004**, *6*, 4627-4629



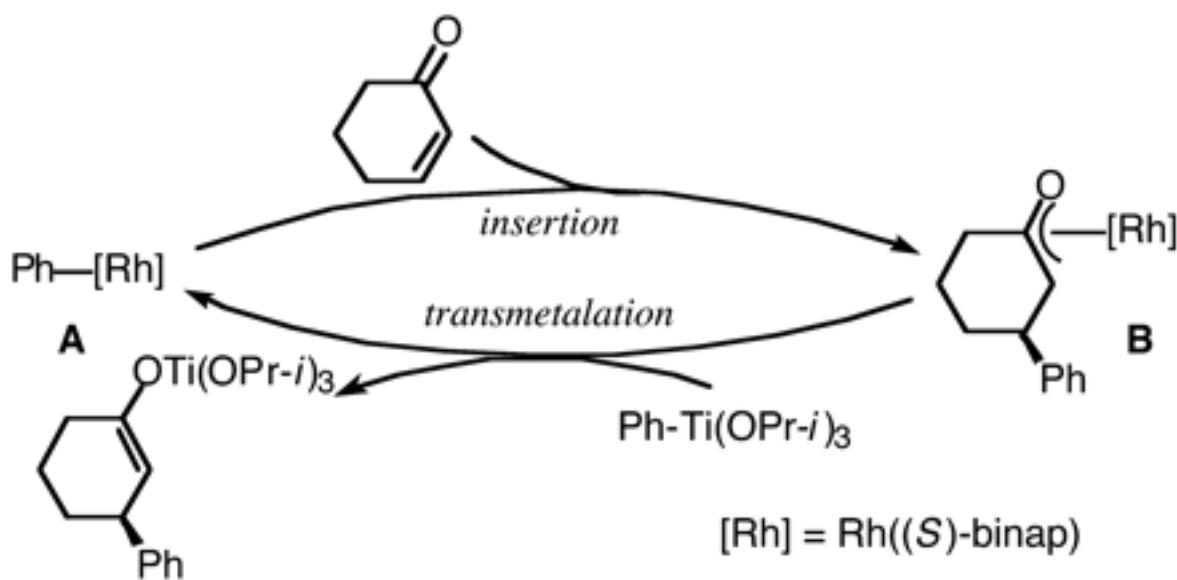
**N-H Insertion Reactions of Primary Ureas: The Synthesis of Highly Substituted Imidazolones and Imidazoles from Diazocarbonyls**

Sang-Hyeup Lee, Kazuhiro Yoshida, Hana Matsushita, Bruce Clapham,\* Guido Koch, Jürg Zimmermann, and Kim D. Janda\*  
*J. Org. Chem.* **2004**, *69*, 8829-8835



**Mechanistic Studies on the Catalytic Cycle of Rhodium-Catalyzed Asymmetric 1,4-Addition of Aryltitanate Reagents to  $\alpha,\beta$ -Unsaturated Ketones**

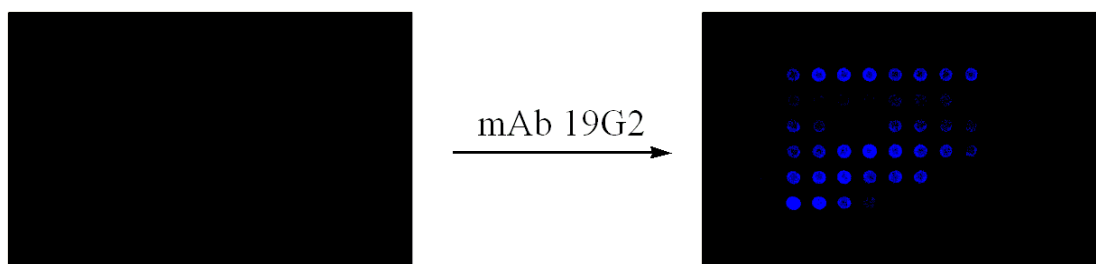
Norihito Tokunaga, Kazuhiro Yoshida, and Tamio Hayashi\*  
*Proc. Natl. Acad. Sci. USA* **2004**, *101*, 5445-5449



### High-Throughput Screening by Using a Blue-Fluorescent Antibody Sensor: Evaluation of Cinchona Alkaloids in the Phase-Transfer Catalysis of Asymmetric Alkylation

Masayuki Matsushita,\* Kazuhiro Yoshida, Noboru Yamamoto, Peter Wirsching, Richard A. Lerner, and Kim D. Janda\*

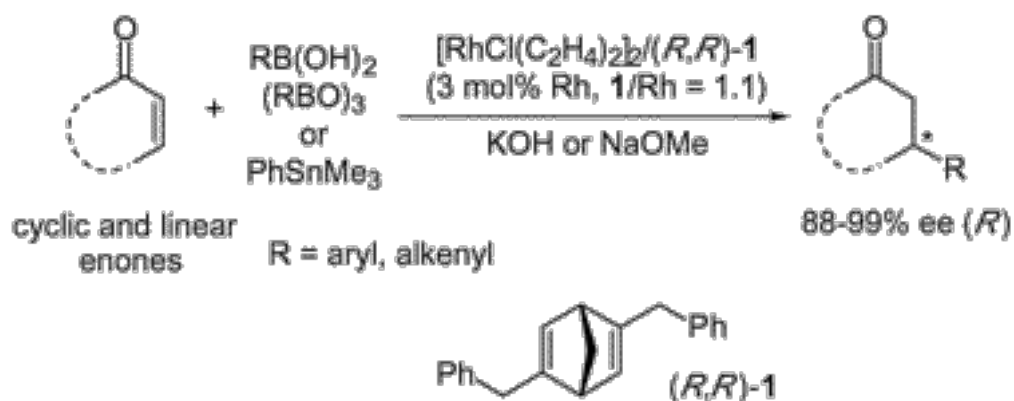
*Angew. Chem. Int. Ed.* **2003**, *42*, 5984-5987



### A Chiral Chelating Diene as a New Type of Chiral Ligand for Transition Metal Catalysts: Its Preparation and Use for the Rhodium-Catalyzed Asymmetric 1,4-Addition

Tamio Hayashi,\* Kazuhito Ueyama, Norihito Tokunaga, and Kazuhiro Yoshida

*J. Am. Chem. Soc.* **2003**, *125*, 11508-11509

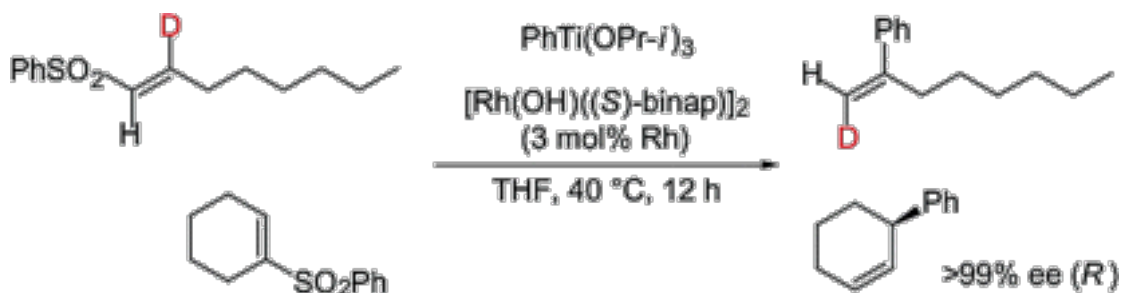


13

**A New *cis*-Substitution of Alkenyl Sulfones with Aryltitanium Reagents Catalyzed by Rhodium: Mechanistic Studies and Catalytic Asymmetric Synthesis of Allylarenes**

Kazuhiro Yoshida and Tamio Hayashi\*

*J. Am. Chem. Soc.* **2003**, *125*, 2872-2873

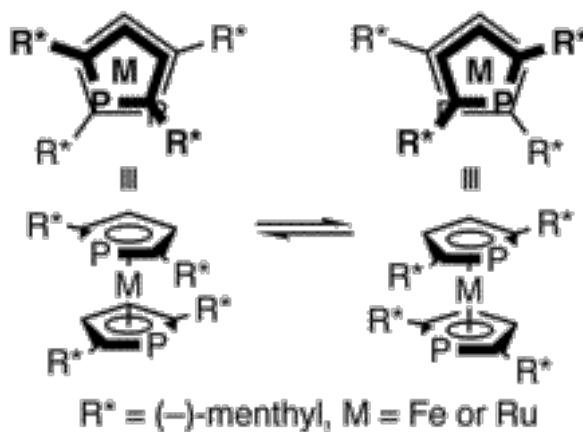


12

**Induction of Atropisomeric Chirality on Heavily Substituted Phosphametalloenes**

Masamichi Ogasawara,\* Kazuhiro Yoshida, and Tamio Hayashi\*

*Organometallics* **2003**, *22*, 1783-1786

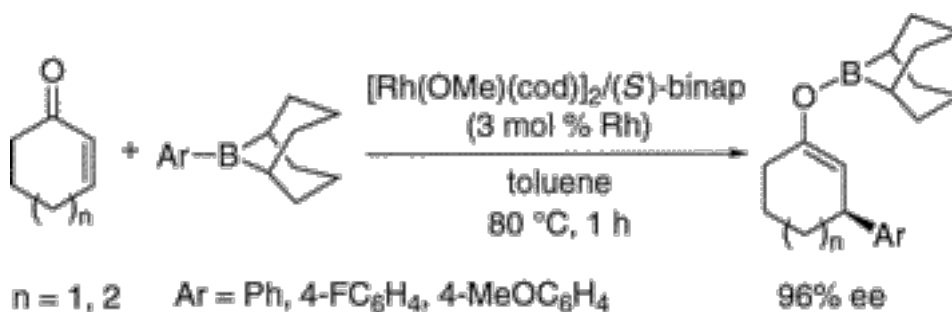


11

**Generation of Chiral Boron Enolates by Rhodium-Catalyzed Asymmetric 1,4-Addition of 9-Aryl-9-borabicyclo[3.3.1]nonanes (*B*-Ar-9BBN) to  $\alpha,\beta$ -Unsaturated Ketones**

Kazuhiro Yoshida, Masamichi Ogasawara, and Tamio Hayashi\*

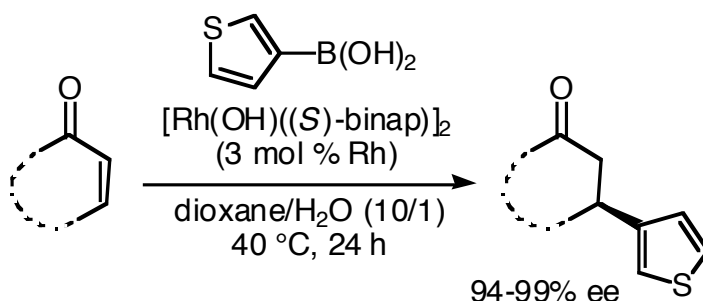
*J. Org. Chem.* **2003**, *68*, 1901-1905



**Rhodium-Catalyzed Asymmetric 1,4-Addition of 3-Thiopheneboronic Acid to  $\alpha,\beta$ -Unsaturated Carbonyl Compounds**

Kazuhiro Yoshida and Tamio Hayashi\*

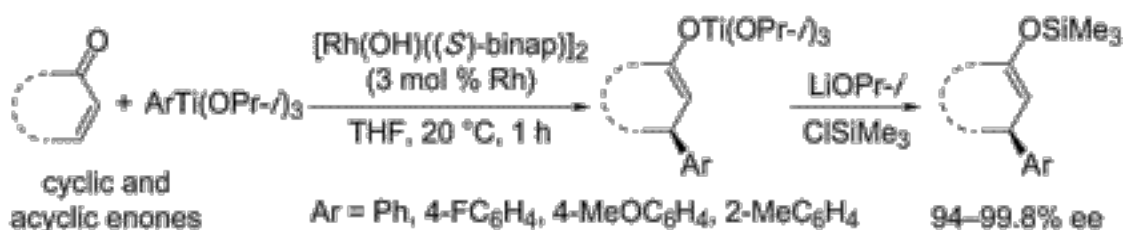
*Heterocycles* **2003**, *59*, 605-611



**Rhodium-Catalyzed Asymmetric 1,4-Addition of Aryltitanium Reagents Generating Chiral Titanium Enolates: Isolation as Silyl Enol Ethers**

Tamio Hayashi,\* Norihito Tokunaga, Kazuhiro Yoshida, and Jin Wook Han

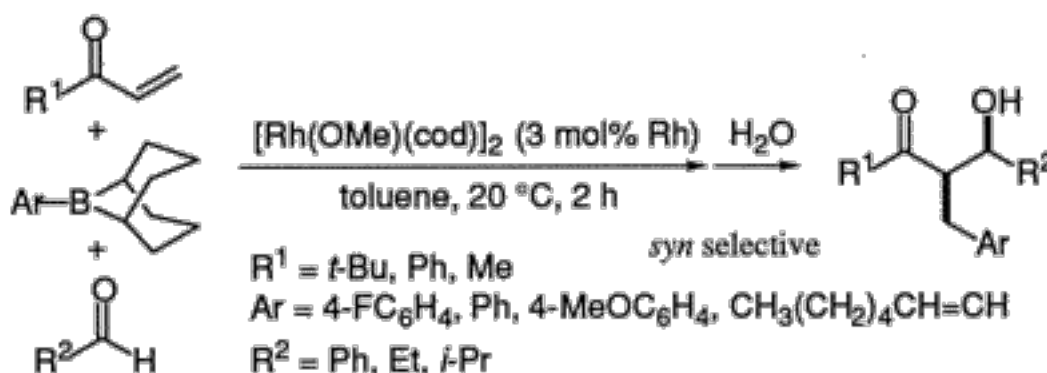
*J. Am. Chem. Soc.* **2002**, *124*, 12102-12103



**A New Type of Catalytic Tandem 1,4-Addition-Aldol Reaction Which Proceeds through an (Oxa- $\pi$ -allyl)rhodium Intermediate**

Kazuhiro Yoshida, Masamichi Ogasawara, and Tamio Hayashi\*

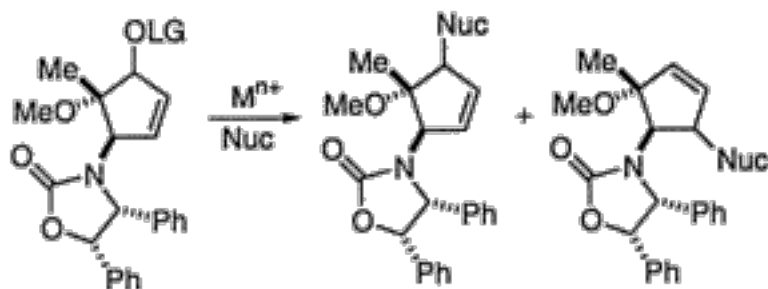
*J. Am. Chem. Soc.* **2002**, *124*, 10984-10985



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### Effect of Adjacent Chiral Tertiary and Quaternary Centers on the Metal-Catalyzed Allylic Substitution Reaction

Holly L. Sebahar, Kazuhiro Yoshida, and Louis S. Hegedus\*  
*J. Org. Chem.* **2002**, *67*, 3788-3795



6

### Synthesis and Characterization of 1,1'-Diphosphaferrocenes

Masamichi Ogasawara,\* Takashi Nagano, Kazuhiro Yoshida, and Tamio Hayashi\*  
*Organometallics* **2002**, *21*, 3062-3065

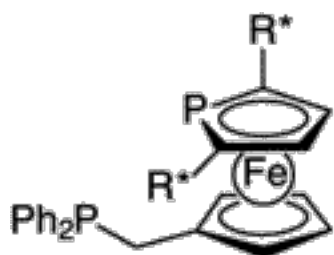


R = cyclohexyl or (-)-menthyl

5

### A Novel Chiral Phosphino-Phosphaferrocene: Its Coordination Behavior and Application to Palladium-Catalyzed Asymmetric Allylic Alkylation

Masamichi Ogasawara, Kazuhiro Yoshida, and Tamio Hayashi\*  
*Organometallics* **2001**, *20*, 3913-3917



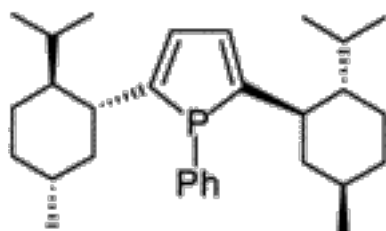
R\* = (-)-menthyl

4

**Synthesis and Characterization of a Novel Chiral Phosphole and Its Derivatives**

Masamichi Ogasawara, Kazuhiro Yoshida, and Tamio Hayashi\*

*Organometallics* **2001**, *20*, 1014-1019

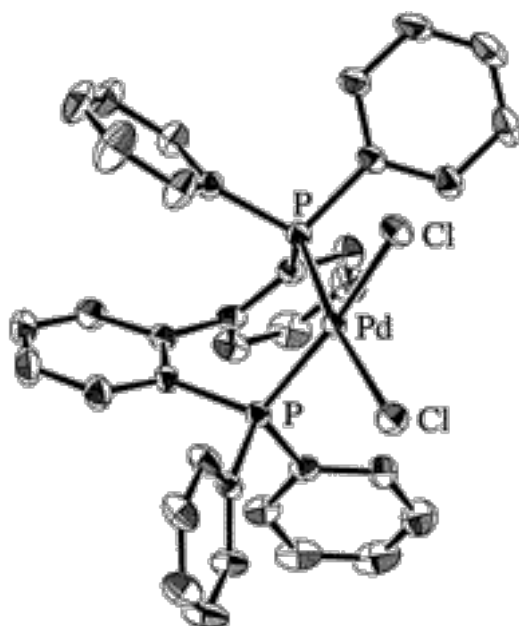


3

**2,2'-Bis(diphenylphosphino)-1,1'-biphenyl: New Entry of Bidentate Triarylphosphine Ligand to Transition Metal Catalysts**

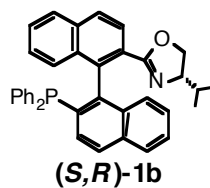
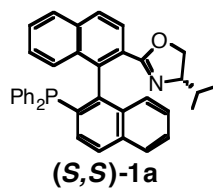
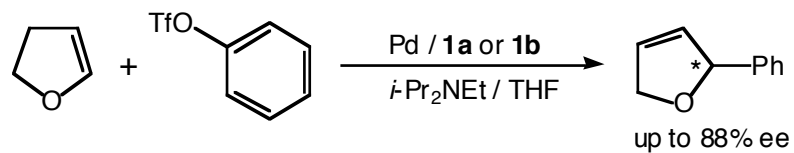
Masamichi Ogasawara, Kazuhiro Yoshida, and Tamio Hayashi\*

*Organometallics* **2000**, *19*, 1567-1571



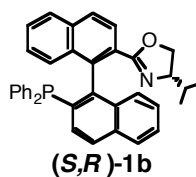
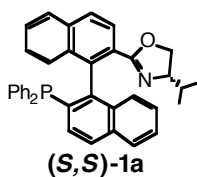
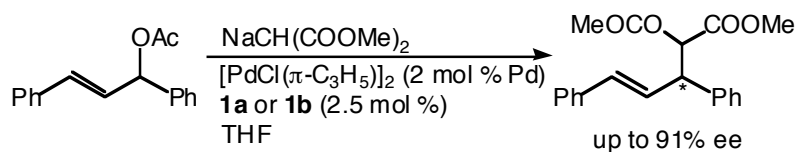
### Novel Palladium Chiral Phosphino-Oxazoline Complexes: Crystal Structure Studies and Application to Asymmetric Heck Reaction

Masamichi Ogasawara, Kazuhiro Yoshida, and Tamio Hayashi\*  
*Heterocycles* **2000**, *52*, 195-201



### Synthesis and Application of Novel Chiral Phosphino-Oxazoline Ligands with 1,1'-Binaphthyl Skeleton

Masamichi Ogasawara, Kazuhiro Yoshida, Hiroaki Kamei, Kazuhiko Kato, Yasuhiro Uozumi, and Tamio Hayashi\*  
*Tetrahedron: Asymmetry* **1998**, *9*, 1779-1787



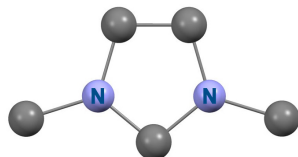
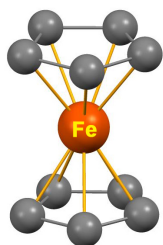


## REVIEWS and ACCOUNTS

6

### N-Heterocyclic Carbene Ligands Having Planar Chiral Ferrocene Structure

Kazuhiro Yoshida\* and Risa Yasue  
*J. Synth. Org. Chem.* **2020**, 78, 28-40

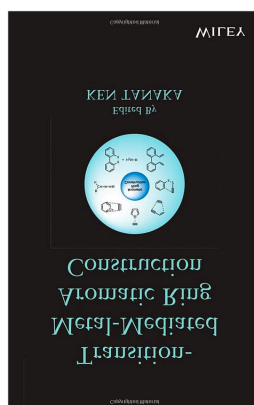


**Planar-chiral  
Ferrocene-based  
NHC**

5

### Metathesis Reactions

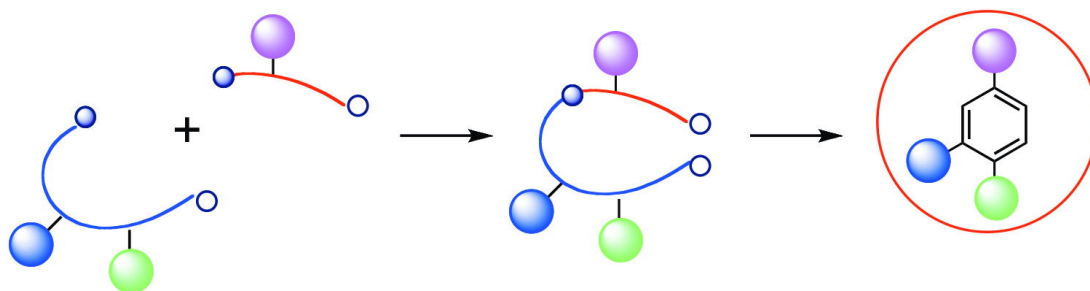
Kazuhiro Yoshida\*  
*Transition-Metal-Mediated Aromatic Ring Construction* (2013), 721-742



4

### Synthesis of Substituted Aromatic Compounds Using Ruthenium-Catalyzed Ring-Closing Metathesis

Kazuhiro Yoshida,\* Tsuneo Imamoto,\* and Akira Yanagisawa\*  
*J. Synth. Org. Chem.* **2009**, 67, 876-888

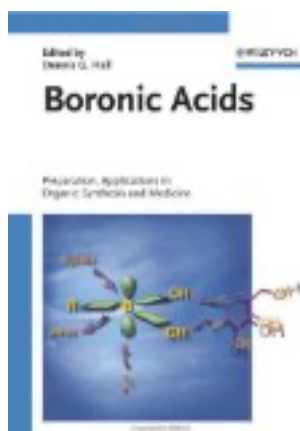


3

### Rhodium-Catalyzed Additions of Boronic Acids to Carbonyls and Alkenes

Kazuhiro Yoshida and Tamio Hayashi

Boronic Acids: Preparation and Applications in Organic Synthesis and Medicine (2005),  
171-203

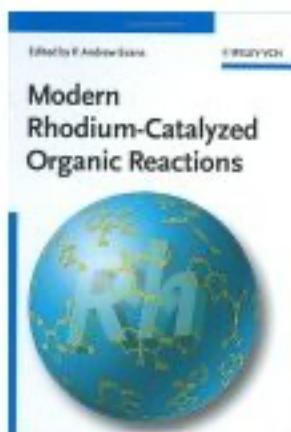


2

### Rhodium(I)-Catalyzed Asymmetric Addition of Organometallic Reagents to Electron-Deficient Olefins

Kazuhiro Yoshida and Tamio Hayashi

Modern Rhodium-Catalyzed Organic Reactions (2005), 55-77



1

### 1,4-Addition of Aryl and Alkenyl Metal Reagents Using Rhodium Catalyst

Kazuhiro Yoshida and Tamio Hayashi

Gendai Kagaku Zokan (2005), 43 (Saishin Yuki Gosei Kagaku, 2005), 136-147



