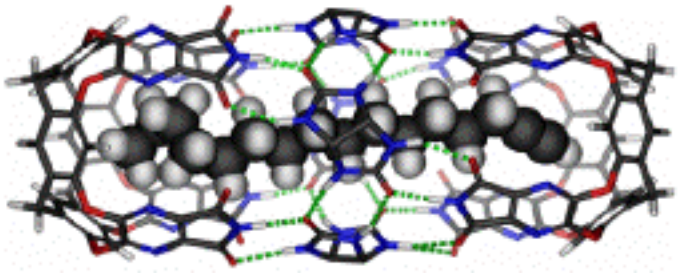
■ **Celebration of Professor Ryoji Noyori**

■ REVIEWS

■ COMMUNICATIONS

169 **Reversible Encapsulation of Terminal Alkenes and Alkynes**

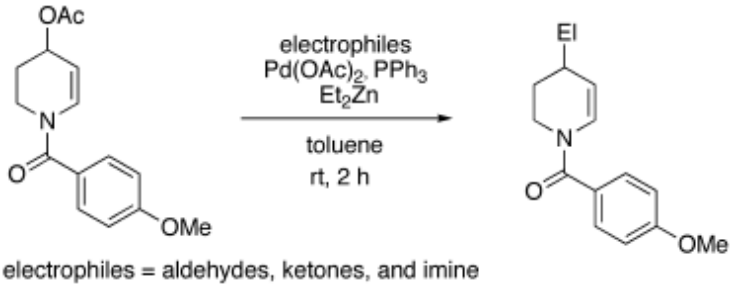
Dariush Ajami and Julius Rebek Jr.*



Self-Assembly Molecular Recognition Molecular Encapsulation Coiled Alkyl Hydrogen Bonding

177 **Regioselective Introduction of Electrophiles into Piperidine Derivatives at the 4-Position**

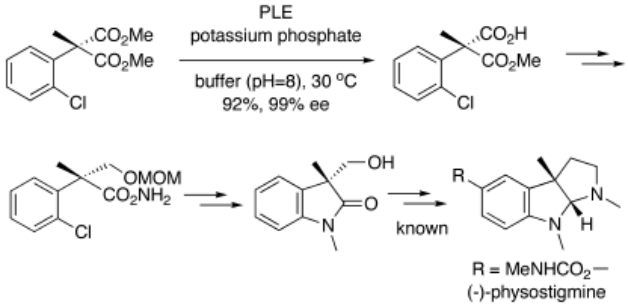
Osamu Onomura,* Noriyuki Fujimura, Takahisa Oda, Yoshihiro Matsumura, and Yosuke Demizu



4-Substituted Piperidine Electrophilic Substitution Regioselective Diastereoselective Enantioselective

183 **Formal Total Synthesis of (—)-Physostigmine**

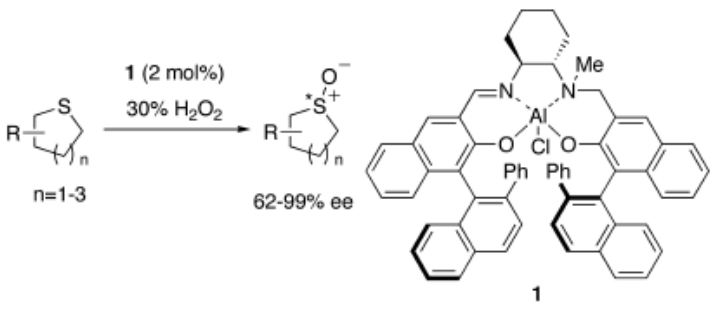
Kaori Asakawa, Naoyoshi Noguchi, and Masahisa Nakada*



Formal Total Synthesis (-)-Physostigmine Asymmetric Hydrolysis Pig Liver Esterase Aryl Amidation

191 **Asymmetric Oxidation of Cyclic Sulfides Catalyzed by an Aluminum(salalen) Complex as the Catalyst**

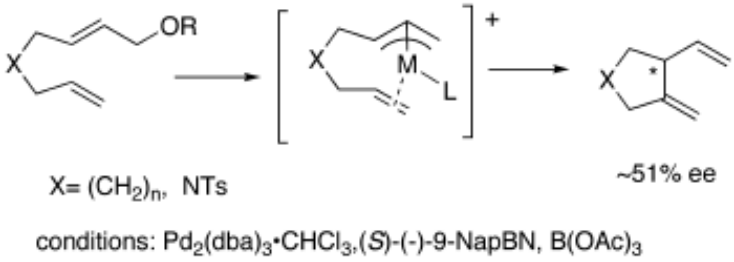
Kazuhiro Matsumoto, Tetsufumi Yamaguchi, and Tsutomu Katsuki*



Asymmetric Synthesis Oxidation Sulfoxide Aluminum Hydrogen Peroxide

197 **Palladium-Catalyzed Asymmetric Intramolecular Metallo-Ene Reaction Using Monodentate Phosphines, 9-PBN and 9-NapBN**

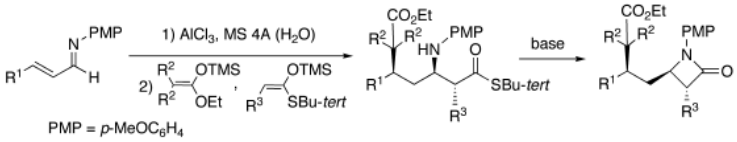
Osamu Hara, Hiroshi Fujino, Kazuishi Makino, and Yasumasa Hamada*



Palladium-Catalyzed Metallo-Ene Reaction Monodentate Phosphine Ligand Asymmetric Synthesis Palladium Cyclization

203 **Regioselective Double Nucleophilic Addition Reaction Leading to the Synthesis of β-Lactams**

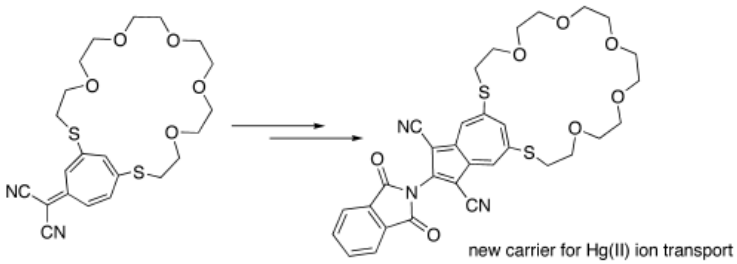
Atsushi Takahashi, Shiho Kawai, Iwao Hachiya, and Makoto Shimizu*



Double Nucleophilic Addition α,β-Unsaturated Imine β-Lactam 2-Arylcarbapenem Ketene Silyl Acetal

209 **Synthesis and Mercurophilic Properties of Dithiocrown Ethers Having an Azulene Pendant**

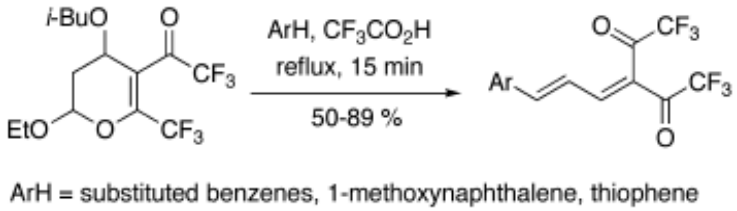
Kanji Kubo,* Akira Mori,* Tatsuya Nishimura, and Nobuo Kato



Heptafulvene Azulene Liquid Membrane Dithiocrown Ether Mercury(II) Ion Selectivity

215 **One Step Introduction of 4,4-Bis(trifluoroacetyl)-1,3-butadiene System to Aromatic Rings Using Fluorine-Containing 3,4-Dihydro-2*H*-pyrans. A Facile Synthetic Method for 1,1,1,5,5,5-Hexafluoro-3-[(*E*)-3-arylallylidene]pentane-2,4-diones**

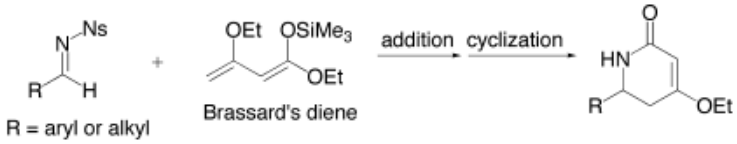
Norio Ota, Etsuji Okada,* Atsushi Sonoda, Nobuyuki Muro, Dai Shibata, and Maurice Médebielle



Dihydropyran Pyrylium 1-Aryl-4,4-bis(trifluoroacetyl)-1,3-butadiene Electrocyclic Ring Opening Carbon-Carbon Bond Formation

221 **A New Synthesis of Dihydropyridin-2-ones from Brassard's Diene and Imines**

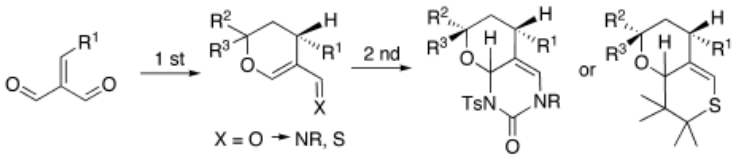
Teruaki Mukaiyama,* Yuji Maruyama, and Takayuki Kitazawa



Brassard's Diene Dihydropyridin-2-one *N*-Nosylimine Addition Reaction

227 **Diene-Transmissive Hetero-Diels-Alder Cycloaddition Using Cross-Conjugated Dioxatrienes: A Novel Synthesis of Tetrahydropyran-Fused Aza- and Thia-heterocycles**

Takao Saito,* Satoru Kobayashi, Takashi Otani, Hideoki Iwanami, and Takayuki Soda

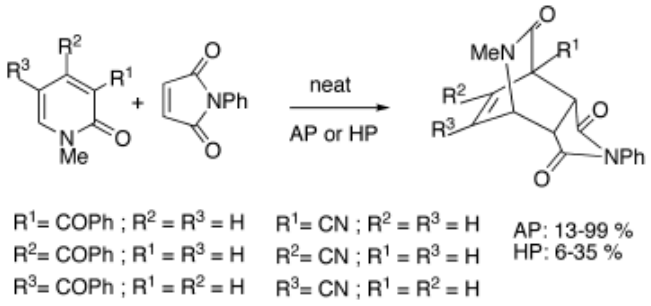


Diene-Transmissive and Hetero-Diels-Alder Reactions Tandem Reaction Cross-Conjugated Diene Pyran-Fused Heterocycle

■ PAPERS

267 **Cycloaddition of 2-Pyridones Having an Electron-Withdrawing Group**

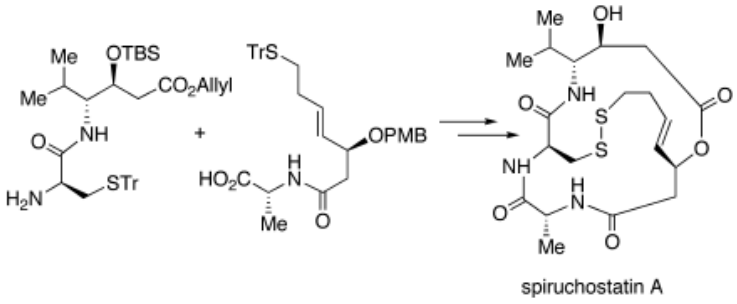
Masato Hoshino, Hisao Matsuzaki, and Reiko Fujita*



4-Cyano-1-methyl-2-pyridone 4-Benzoyl-1-methyl-2-pyridone Cycloaddition MO Calculation *N*-Phenylmaleimide

275 **Total Synthesis of Spiruchostatin A — A Potent Histone Deacetylase Inhibitor**

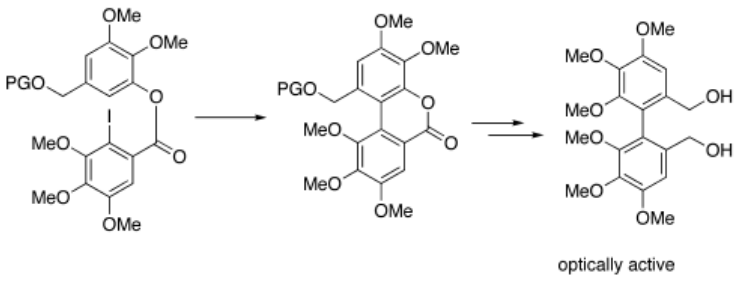
Toshiya Takizawa, Kazuhiro Watanabe, Koichi Narita, Kyosuke Kudo, Takamasa Oguchi, Hideki Abe, and Tadashi Katoh*



Spiruchostatin A Histone Deacetylase Inhibitor Total Synthesis Macrolactonization Shiina Reagent

291 **Synthesis of Highly Oxygenated Biphenyl Derivative in an Optically Active Form through Palladium-Mediated Intramolecular Biaryl Coupling Reaction**

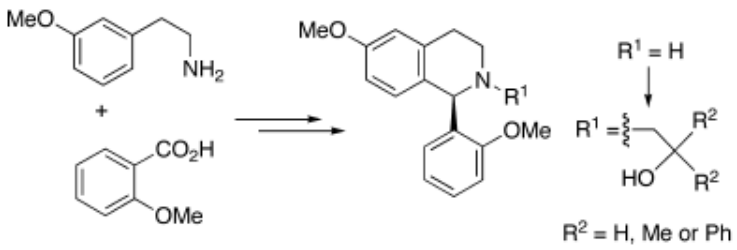
Hitoshi Abe,* Masatsugu Arai, Keisuke Nishioka, Tatsuya Kida, Kazuma Shioe, Yasuo Takeuchi, and Takashi Harayama*



Palladium Axial Chirality Lactone Enantioselective Reduction Biaryl

305 **Synthesis of Chiral Tetrahydroisoquinoline-Derived β-Amino Alcohols and Their Application to Asymmetric Reaction**

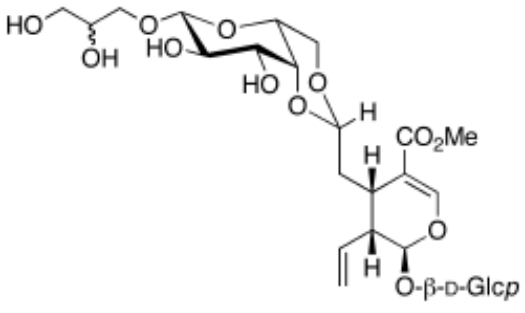
Yoshiyuki Hari, Masaki Sakuma, Ayako Miyakawa, Keiichiro Hatano, and Toyohiko Aoyama*



Amino Alcohol Chiral Ligand Diethylzinc Enantioselective Addition Tetrahydroisoquinoline

313 **Macropyllanosides A - D, Secoiridoid Glycosides from *Hydrangea macrophylla* subsp. *serrata***

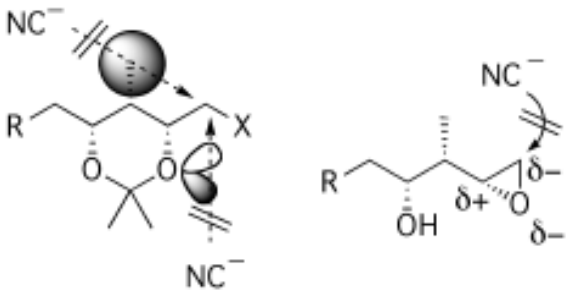
Masao Kikuchi,* Rie Kakuda, and Yasunori Yaoita



Macropyllanoside Secoiridoid Glycoside Terpenoid *Hydrangea macrophylla* subsp. *serrata* Saxifragaceae

321 **Study of Synthetic Routes for the Spiroketal Fragment in Calyculin A Based on Conformational Analysis**

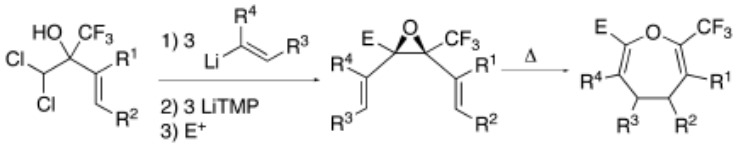
Takatoshi Matsumoto,* Mototsugu Kabeya, Eiichi Morishita, and Takayuki Shioiri



Spiroketal Fragment Calyculin A Symmetrical Tetraol Equivalent Addition of the C_1-Unit Conformational Analysis

329 **Stereoselective Preparation and Cope Rearrangement of 2-CF_3-*cis*-2,3-bis(alkenyl)-oxiranes: A Facile Route to 2-CF_3-Substituted Oxacycles**

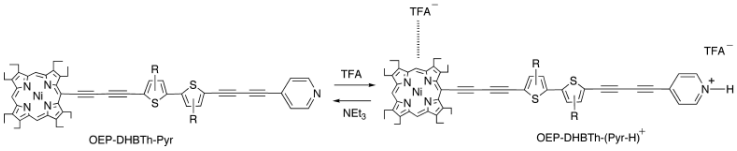
Masaki Shimizu,* Takuya Fujimoto, Xinyu Liu, Youhei Takeda, and Tamejiro Hiyama*



Fluorine Oxepine Oxepane Cope Rearrangement Oxirane

353 **The Octaethylporphyrin-Dihexylbithiophene Derivatives Combined with Pyridine and Pyrimidine Rings. Their Syntheses and Proton-Mediated and Heat-Driven Spectral Changes**

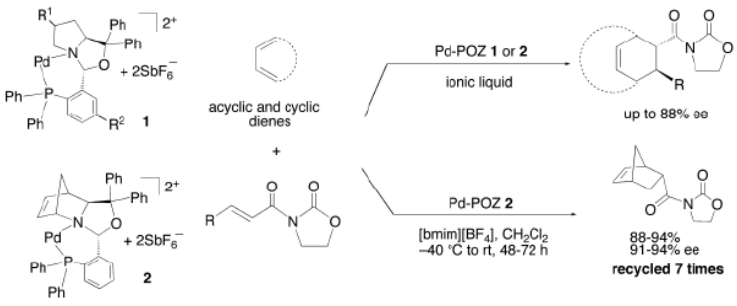
Hiroyuki Higuchi,* Naoto Hayashi, Takuya Matsukihira, Takanori Kawakami, Toru Takizawa, Junji Saito, Keiko Miyabayashi, and Mikio Miyake



Octaethylporphyrin Pyridine Protonation Spectral Change

381 **Chiral Cationic Pd-Phosphinooxazolidine Catalysts for a Highly Efficient Asymmetric Diels-Alder Reaction in Ionic Liquids**

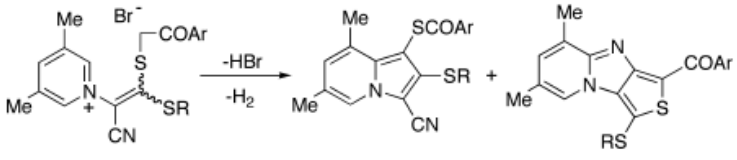
Hiroto Nakano,* Yasuhiro Nishiuchi, Kouichi Takahashi, Reiko Fujita, Koji Uwai, and Mitsuhiro Takeshita*



Phosphinooxazolidine Reuse Catalytic Asymmetric Reaction Chiral Catalyst

391 **Preparation of New Nitrogen-Bridged Heterocycles. 63. Unexpected Formation of Thieno[3',4':4,5]imidazo[1,2-*a*]pyridines**

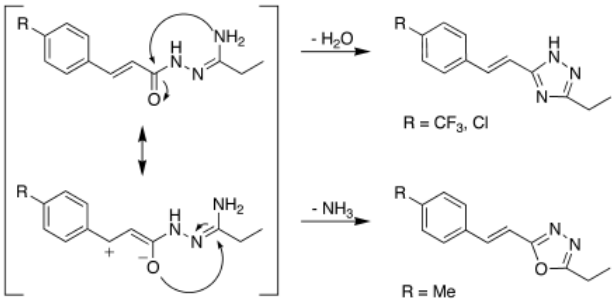
Akikazu Kakehi,* Hiroyuki Suga, Atsushi Izumita, and Takashi Abe



Thieno[3',4':4,5]imidazo[1,2-*a*]pyridine Indolizine Pyridinium Salt Synthesis X-Ray Analysis

401 **Synthesis of 1,2,4-Trisubstituted Imidazoles and 1,3,5-Trisubstituted 1,2,4-Triazoles**

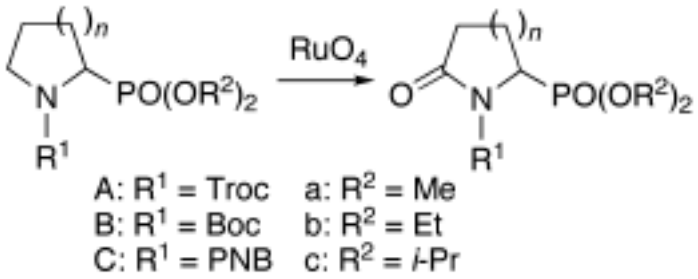
Corinne Baumgartner, Lukas Brändli, and François Diederich*



Trisubstituted Imidazole Trisubstituted Triazole Oxadiazole Enzyme Inhibitor Ligand Scaffold

429 **Ruthenium Tetroxide Oxidation of *N*-Acyl Cyclic Amine-2-phosphonic Acid Diesters**

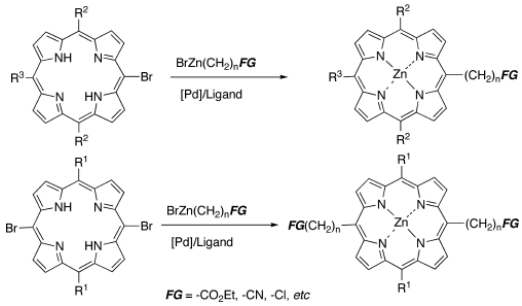
Mamoru Kaname, Hironori Mashige, Shigeyuki Yoshifuji, and Haruki Sashida*



Ruthenium Tetroxide Oxidation Aminophosphonic Acid α-Amonophosphonic Acid Diester ω-Amino-ω-phosphonocarboxylic Acid

439 **A Facil and Efficient Synthesis of Mono- and Bis-functionalized *meso*-Substituted Porphyrins *via* Palladium-Catalyzed Negishi Cross-Coupling**

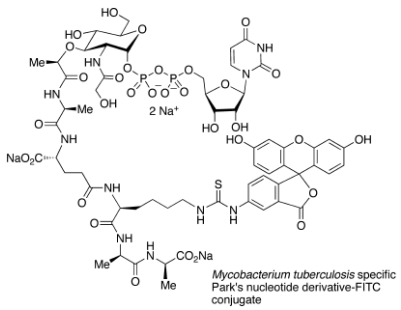
Toshikatsu Takanami, Miku Yotsukura, Wakaba Inoue, Naoyuki Inoue, Fumio Hino, and Kohji Suda*



Porphyrin Negishi Cross-Coupling Alkylzinc Reagent Bromoporphyrin Palladium

455 **Synthetic Studies on *Mycobacterium tuberculosis* Specific Fluorescent Park's Nucleotide Probe**

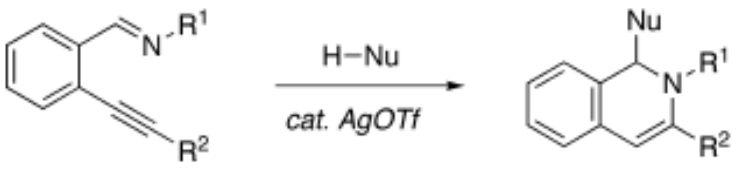
Kai Li and Michio Kurosu*



Park's Nucleotide *Mycobacterium tuberculosis* MraY Solid-Phase Organic Synthesis Total Synthesis

471 **Silver-Catalyzed Synthesis of 1,2-Dihydroisoquinolines through Direct Addition of Carbon Pronucleophiles to *ortho*-Alkynylaryl Aldimines**

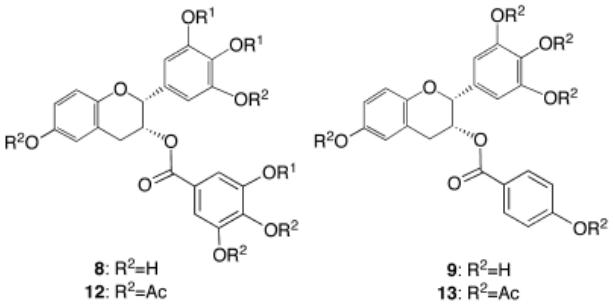
Naoki Asao,* Salprima Yudha S., Tsutomu Nogami, and Yoshinori Yamamoto



1,2-Dihydroisoquinoline Direct Addition Silver Catalyst *Ortho*-Alkynyl-Arylaldimine Pronucleophile

485 **Enantioselective Synthesis and Proteasome Inhibition of A-Ring Analogs of (-)-*Epi*-gallocatechin Gallate (EGCG), the Active Ingredient of Green Tea Extract**

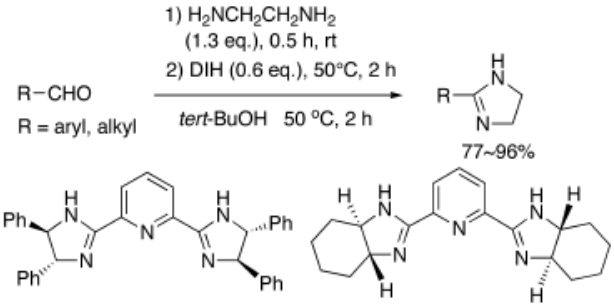
Kumi Osanai, Vesna Milacic, Q. Ping Dou, and Tak Hang Chan*



Green Tea Catechin Epigallocatechin Gallate (EGCG) Proteasome EGCG Analog

507 **Efficient Preparation of 2-Imidazolines from Aldehydes and Ethylenediamines with 1,3-Diiodo-5,5-dimethylhydantoin**

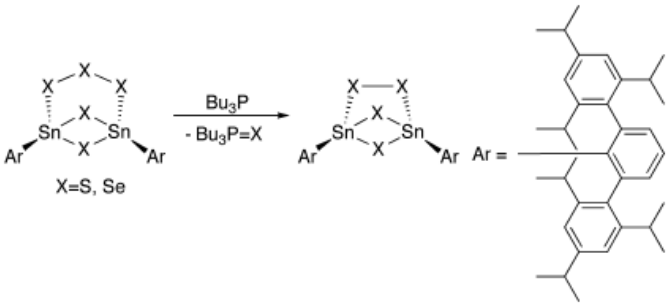
Shogo Takahashi and Hideo Togo*



2-Imidazoline Aldehyde 1,3-Diiodo-5,5-dimethylhydantoin Ethylenediamine Chiral Liand

515 **Dechalcogenation of Pentachalcogenadistanna-bicyclo[3.1.1]heptanes**

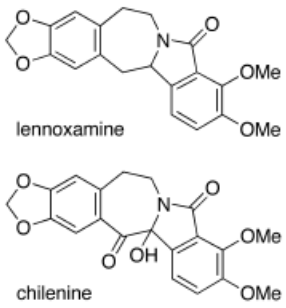
Masaichi Saito,* Hizuru Hashimoto, and Tomoyuki Tajima



Dechalcogenation Tributylphosphine Tetrachalcogenadistannabicylo[2.1.1]hexane X-Ray Analysis

521 **Total Synthesis of Isoindolobenzazepine Alkaloids, Lennoxamine and Chilenine, Based on Palladium-Catalyzed Reduction of Alkenyl Phosphates**

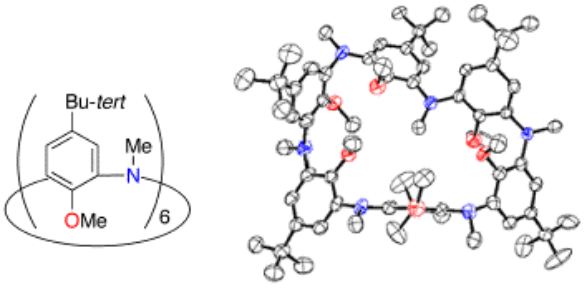
Haruhiko Fuwa* and Makoto Sasaki*



Lennoxamine Chilenine Isoindolobenzazepine Alkaloid Alkenyl Phosphate Palladium-Catalyzed Reaction

541 **Synthesis, Molecular Structure, and Oxidation Behavior of Exhaustively Methylated Azacalix-[6]arene**

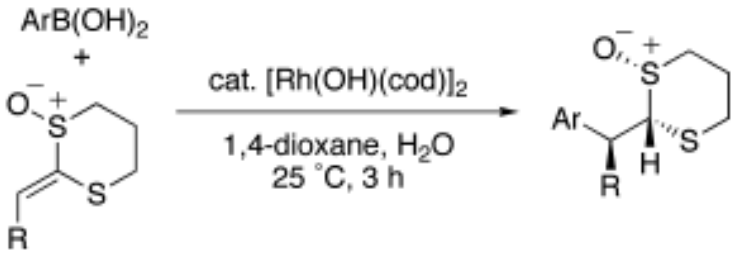
Koichi Ishibashi, Hirohito Tsue,* Hiroki Takahashi, Satoshi Tokita, Kazuhiro Matsui, and Rui Tamura



Azacalixarene High-Spin State Cation Radical

679 **2-Alkylidene-1,3-dithiane Monoxides as Activated Alkenes in Rhodium-Catalyzed Addition Reaction of Arylboronic Acids**

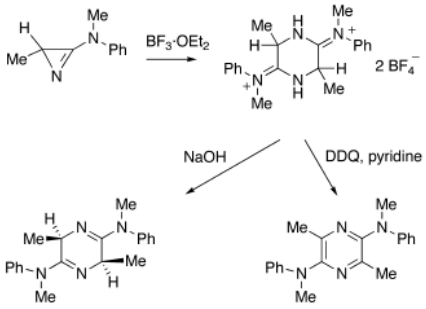
Suguru Yoshida, Hideki Yorimitsu,* and Koichiro Oshima*



Rhodium Addition Arylboronic Acid 2-Alkylidene-1,3-dithiane 1-Oxide Sulfur

689 **Synthesis of 2,5-Diaminopyrazine Derivatives *via* Dimerization of 2*H*-Azirin-3-amines**

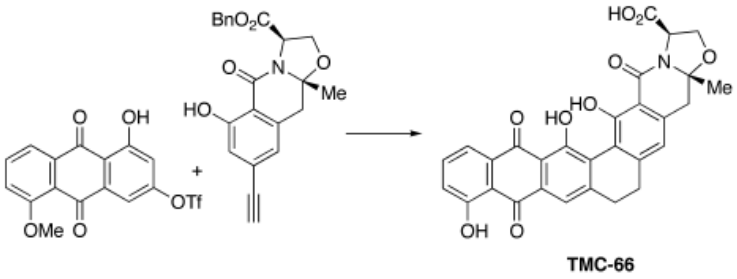
Maged K. G. Mekhael, Anthony Linden, and Heinz Heimgartner*



2*H*-Azirin-3-amine Pyrazine Derivative Lewis Acid Catalysis Dimerization X-Ray Crystallography

699 **Total Synthesis of an Endothelin Converting Enzyme Inhibitor, TMC-66**

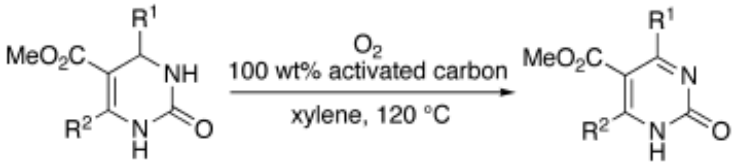
Seijiro Hosokawa,* Hitoshi Fumiyama, Hisato Fukuda, Tomohiro Fukuda, Masashi Seki, and Kuniaki Tatsuta*



TMC-66 Total Synthesis Endothelin Converting Enzyme Oxazolidine Oxidative Coupling

715 **Oxidative Conversion of Functionalized 3,4-Dihydopyrimidin-2(1*H*)-ones to the Corresponding Pyrimidin-2(1*H*)-ones Using Activated Carbon-Molecular Oxygen System**

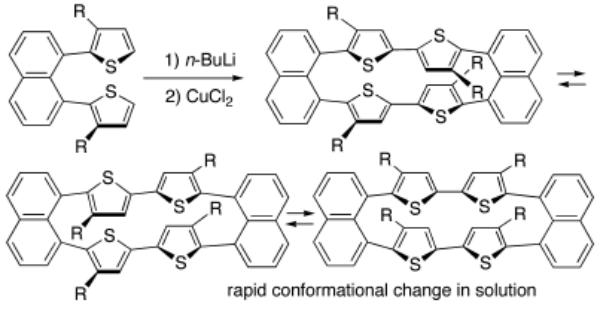
Ken-ichi Okunaga, Yukiko Nomura, Kenjiro Kawamura, Natsuki Nakamichi, Kazuo Eda, and Masahiko Hayashi*



Oxidation Pyrimidin-2(1*H*)-one Biginelli Reaction 3,4-Dihydropyridin-2(1*H*)-one Activated Carbon

727 **Syntheses, Structures, and Properties of Bithiophenophanes Bridged at 1,8-Positions of Naphthalenes**

Kazumi Nakao, Tomohiko Nishiuchi, and Masahiko Iyoda*

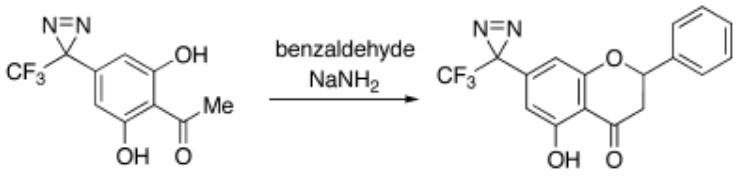


Copper-Catalyzed Coupling Cyclophane 2,2'-Bithiophene π-π Interaction Fluorescence

■ NOTES

811 **Synthesis of Diazirine Possessing an Acetophenone Derivative as a Valuable Intermediate for a Flavonoid Photoaffinity Probe**

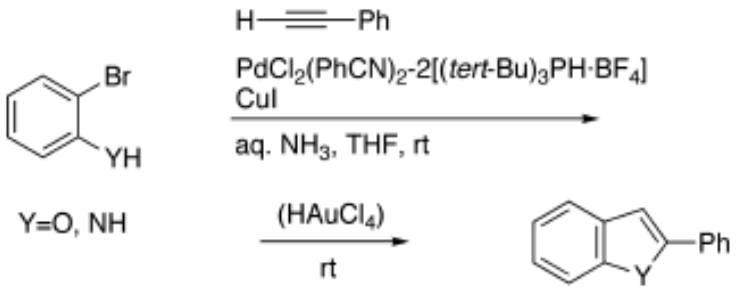
Takumi Furuta,* Mitsuru Ueda, Yasuo Hirooka, Kiyoshi Tanaka, and Toshiyuki Kan*



Flavonoid Probe Molecule Diazirine Photoaffinity Labeling Friedel-Crafts Acylation

819 **Effect of the Use of Bulky Alkylphosphines in the Sonogashira Coupling with Aqueous Ammonia**

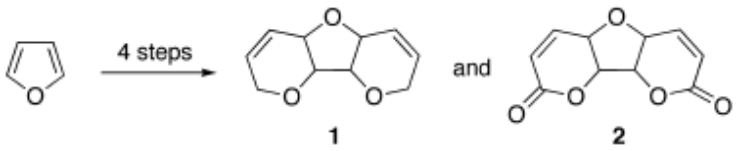
Sachio Fukuoka, Tetsuro Naito, Hiroki Sekiguchi, Takashi Somete, and Atsunori Mori*



Sonogashira Coupling Indole Benzofuran Bulky Phosphine One-Pot Synthesis

827 **A Straightforward Synthesis of Pyran-[2',3':4,5]furo[3,2-*b*]pyran from Furan**

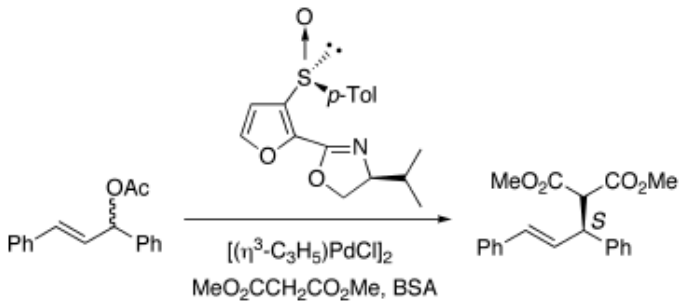
Ana Aljarilla and Joaquín Plumet*



Metathesis Reaction Furan Fused Tricyclic Ether Furo[3,2-*b*]pyran Diels-Alder Reaction

833 **Synthesis of Chiral (Sulfinyl)furyloxazoline Ligands and Its Application to Enantioselective Palladium-Catalyzed Allylic Alkylation**

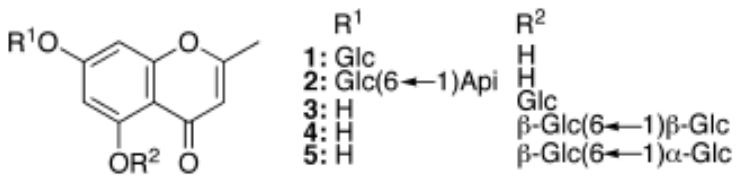
Yusuke Bunya, Takaaki Sengoku, Yoko Imamura, and Yoshitsugu Arai*



Asymmetric Substitution Chiral Ligand Palladium Catalyst Chiral Sulfoxide Furan

845 **Staphylosides A and B: Two New Chromone Diglucosides from Leaves of *Staphylea bumalda* DC.**

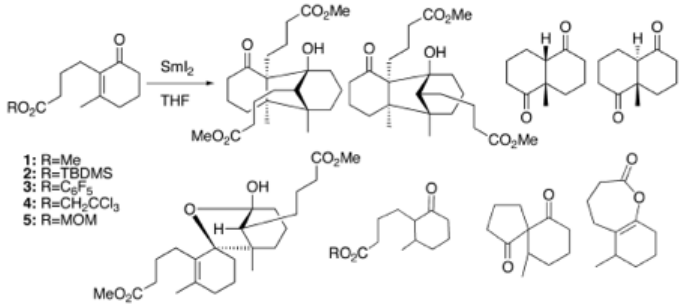
Etsuko Sueyoshi, Qian Yu, Katsuyoshi Matsunami, and Hideaki Otsuka*



Staphylea bumalda Staphylaceae Chromone Staphyloside Isomatoside

851 **Carbon-Carbon Bond Formation between Enone and Ester Carbonyl Group Induced by Samarium Diiodide**

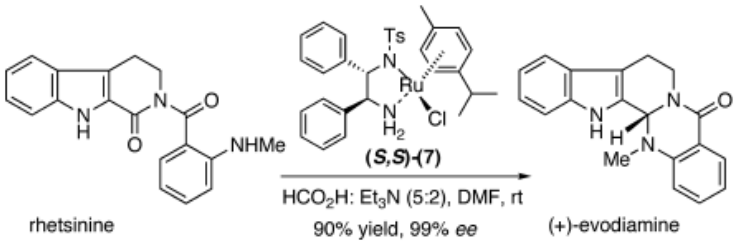
Masakazu Sono,* Takayuki Mizutani, Masayo Nozaki, Shigeru Takaoka, and Motoo Tori*



Samarium Diiodide Reduction Cyclization Radical Dimer

861 **Straightforward Asymmetric Total Synthesis of (+)-Evodiamine, a Major Indole Alkaloid in Herbal Medicine "Wu Zhu Yu"**

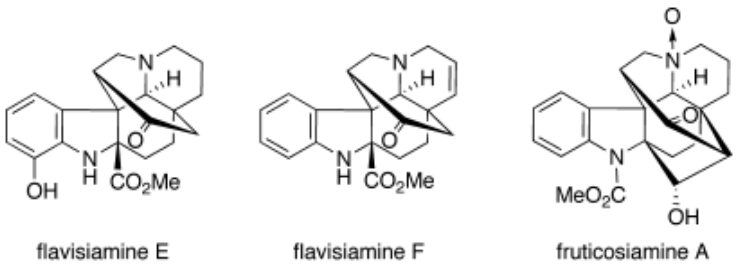
Atsushi Nakayama, Noriyuki Kogure, Mariko Kitajima, and Hiromitsu Takayama*



Indole Alkaloid Asymmetric Synthesis Evodiamine Evodia Ruthenium

867 **Flavisiamines E-F and Fruticosiamine A, New Methyl Chanofruticosinate- and Aspidofractinine-Type Indole Alkaloids, from Two Species of *Kopsia***

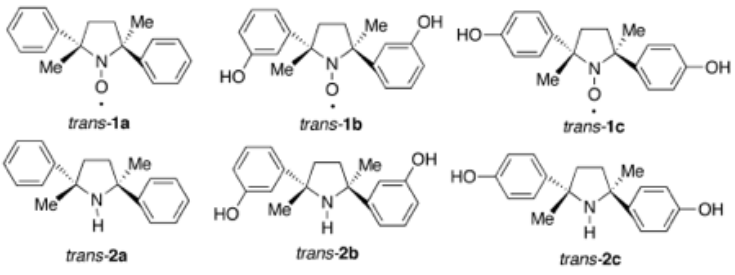
Mitsuhiro Sekiguchi, Yusuke Hirasawa, Kazumasa Zaima, Teh Chin Hoe, Kit-Lam Chan, and Hiroshi Morita*



Kopsia fravida Flavisiamines E - G *Kopsia fruticosa* Fruticosiamine A

875 **Enantiomeric Resolution of Racemic C_2-Symmetric *trans*-2,5-Dimethyl-2,5-diphenylpyrrolidine and *trans*-2,5-Dimethyl-2,5-bis(3-hydroxyphenyl)-pyrrolidine by a Diastereomer Method**

Yoshiaki Uchida, Yoichi Nakayama, Katsuaki Suzuki, Shigeaki Oki, Masahiro Horiguchi, Hirohito Tsue, and Rui Tamura*



Nitroxide Radical Optical Resolution Tartaric Acid Chiral Pyrrolidine