■ CELEBRATION OF PROFESSOR DR. MASAKATSU SHIBASAKI

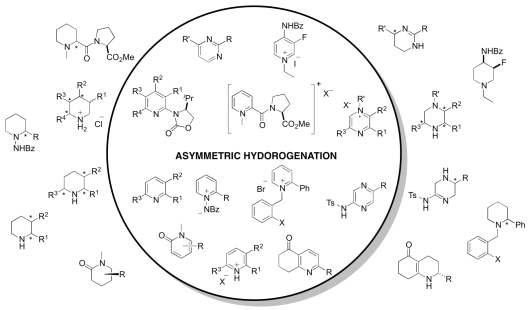
■ CURRICULUM VITAE

■ PUBLICATIONS

9 **Publication List by Masakatsu Shibasaki**
Masakatsu Shibasaki*

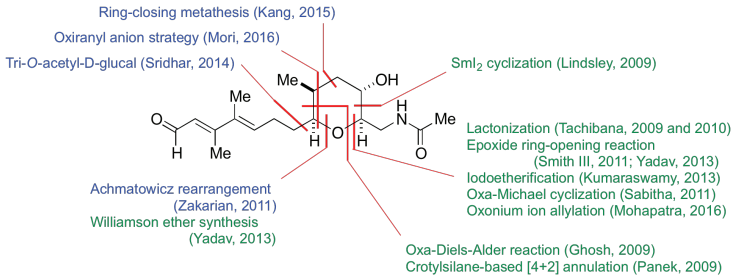
■ REVIEWS

63 **Asymmetric Hydrogenation of Six-Membered Monocyclic *N*-Heteroaromatic Compounds**
Atsuhiro Iimuro, Kosuke Higashida, Haruki Nagae, and Kazushi Mashima*



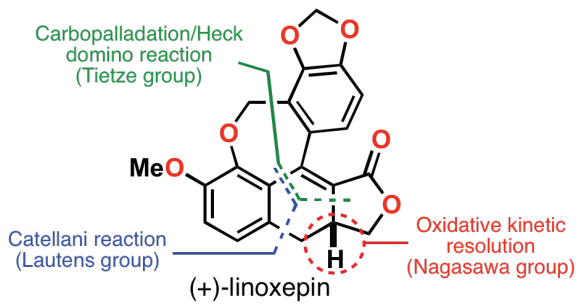
Asymmetric Hydrogenation *N*-Heteroaromatic Compound Chiral Cyclic Amine

81 **Strategies for Brevisamide Synthesis, Based on the Method for Constructing the Tetrahydropyranyl Core**
Takeo Sakai and Yuji Mori*



Brevisamide Total Synthesis Tetrahydropyran Cyclic Ether *Karenia brevis*

116 **Total Synthesis of (+)-Linoxepin**
Minami Odagi,* Kota Furukori, Yoshiharu Yamamoto, and Kazuo Nagasawa*

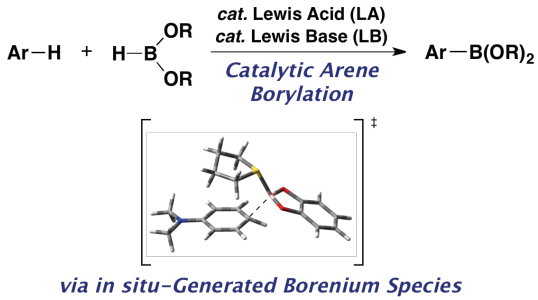


Linoxepin Total Synthesis Domino Reaction Catellani Reaction Oxidative Kinetic Resolution

■ COMMUNICATIONS

158 **Catalytic Aromatic Borylation *via in situ*-Generated Borenium Species**

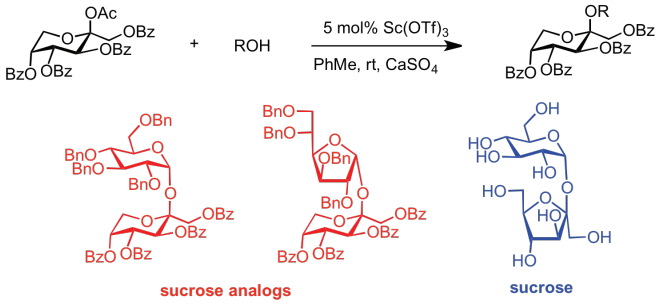
Fumiya Kitani, Ryo Takita,* Tatsushi Imahori, and Masanobu Uchiyama*



Catalytic Direct Borylation Reaction Borenium Cation Arylboron Compound

167 **Efficient D-Fructopyranosylation Method Catalyzed by Scandium Triflate and Preparation of New Sucrose Analogs**

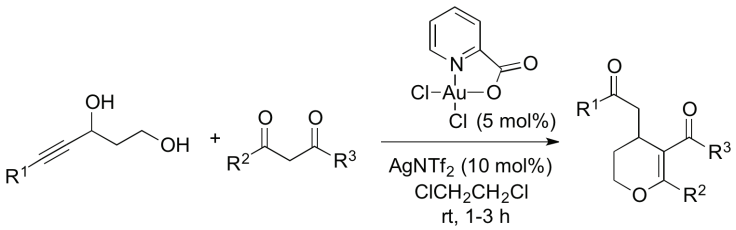
Takashi Yamanoi,* Takanori Saitoh, Yoshiki Oda, Noriko Misawa, Mikio Watanabe, Junko Ishikawa, and Akihiko Koizumi



Fructopyranosylation Reaction Non-Reducing Disaccharide Sucrose Analog Fructofuranosylation Reaction Scandium Triflate

172 **Gold(III)-Catalyzed Synthesis of 2,3,4-Trisubstituted Dihydropyrans from Propargylic Alcohols with 1,3-Dicarbonyl Compounds**

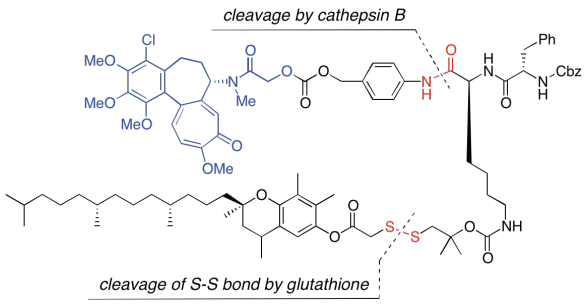
Nobuyoshi Morita,* Kazuki Oguro, Saori Takahashi, Midori Kawahara, Shintaro Ban, Yoshimitsu Hashimoto, and Osamu Tamura*



Gold Catalyst Tandem Reaction Dihydropyran Propargylic Alcohol

181 **Design and Synthesis of 4-Chlorocolchicine-Derived Prodrug Capable of Forming Nanoparticles by Self-Assembly**

Mariko Kitajima, Akihiro Morita, Shimpei Endo, Noriyuki Kogure, Kenjirou Higashi, Kunikazu Moribe, and Hiromitsu Takayama*

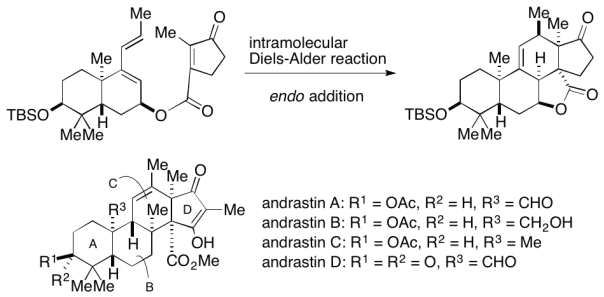


Alkaloid Colchicine Prodrug Synthesis Nanoparticle

■ **PAPERS**

187 **Synthetic Study towards Construction of Potential Scaffold of Antitumor Agents Andrastins**

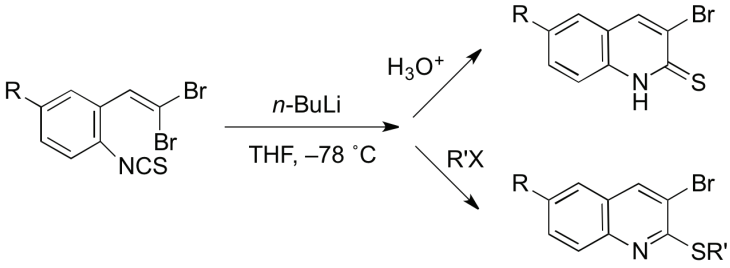
Shuqiang Yin, Kenji Sugimoto, Hideo Nemoto, and Yuji Matsuya*



Intramolecular Diels-Alder Reaction *cis*-Hydrindane Andrastin

200 **Synthesis of 3-Bromoquinoline-2(1*H*)-thiones and 2-(Alkylsulfanyl)-3-bromoquinolines Based on the Reaction of 2-(2,2-Dibromoethenyl)phenyl Isothiocyanates with Butyllithium**

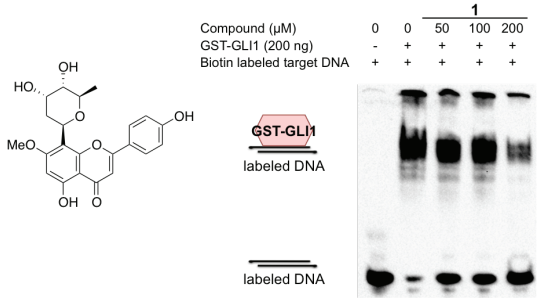
Kazuhiro Kobayashi,* Ippei Nozawa, and Takashi Nogi



Quinoline-2(1*H*)-thiones 2-Sulfanylquinoline Vinyllithium Bromine/Lithium Exchange Thieno[2,3-*b*]quinoline

210 **Isolation and Evaluation of Hedgehog Inhibitors from Christmas Grass (*Themeda arguens*)**

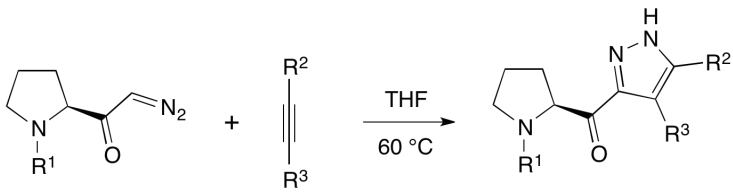
Tatsuro Yoneyama, Midori A. Arai,* Takashi Koyano, Thaworn Kowithayakorn, and Masami Ishibashi*



Natural Product Hedgehog Signaling Pathway Inhibitor *Themeda arguens* Flavonoid C-Glucoside

223 **[3+2] Cycloadditions of *N*-Protected '(*S*)-Diazoproline' with Selected Acetylenes**

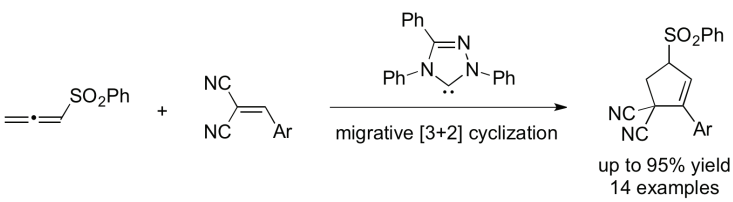
Grzegorz Mlostoń,* Paulina Pipiak, and Heinz Heimgartner*



(*S*)-Diazoproline [3+2] Cycloaddition Reaction Acetylene Carboxylate Ethynylphosphonate Pyrazole

232 ***N*-Heterocyclic Carbene-Promoted [3+2] Cycloaddition of Allenyl Sulfone and Arylidenemalononitriles**

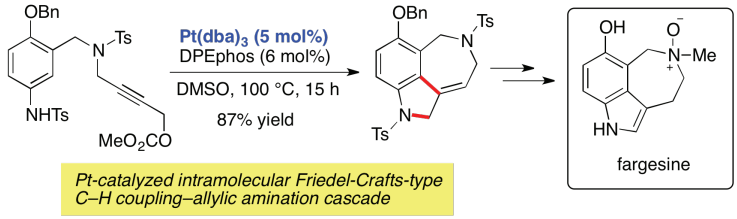
Satoru Kuwano,* Toshinobu Masuda, Koki Yamaguchi, and Takayoshi Arai



N-Heterocyclic Carbene [3+2] Cycloaddition Reaction Allenyl Sulfone Arylidenemalononitrile Migration

243 **Total Synthesis of Fargesine Using a Platinum-Catalyzed Intramolecular Friedel-Crafts-Type C–H Coupling–Allylic Amination Cascade**

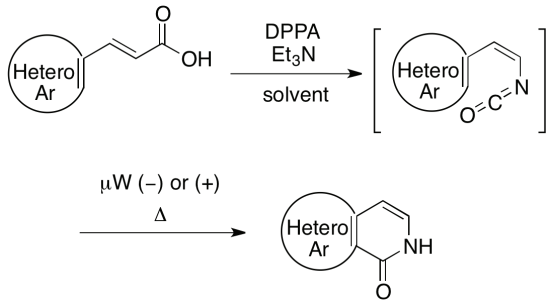
Yuito Tanaka, Yuta Suzuki, Yasumasa Hamada, and Tetsuhiro Nemoto*



Alkaloid Cascade Reaction Platinum Catalyst Total Synthesis

251 **One-Pot Synthesis of Fused 2-Pyridones from Heteroarylacrylic Acid via Curtius Rearrangement and Microwave-Assisted Thermal Electrocyclization**

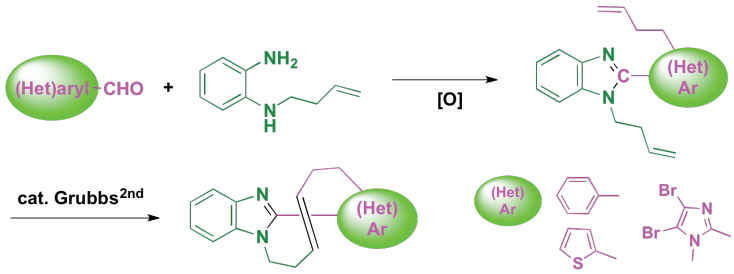
Takashi Nishiyama, Noriyuki Hatae, Kaori Hayashi, Manami Obata, Kimiko Taninaka, Masahiro Yamane, Shota Oda, Takumi Abe, Minoru Ishikura, Satoshi Hibino, and Tominari Choshi*



Thermal Electrocyclization Reaction Microwave Irradiation 2-Azahexatriene Fused Pyridine One-Pot Reaction

268 **Synthesis of Unsymmetrical Heterobiaryls with Winding Vine-Shaped Molecular Asymmetry through a Condensation Pathway**

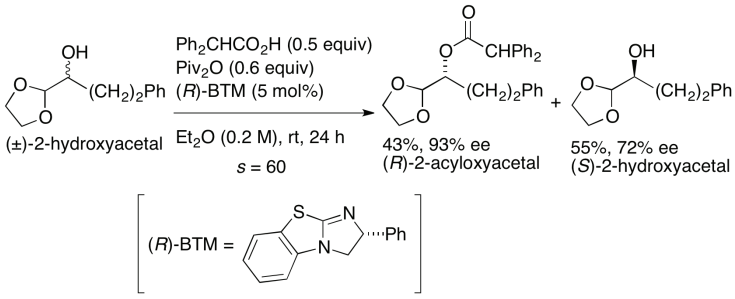
Atsunori Mori,* Daichi Matsuoka, Shiomi Ashida, Ryo Inoue, Kazuki Maruhashi, Yoichi Okayama, Guan Hong Jin, and Kentaro Okano



Winding Vine-Shaped Molecule Heterobiaryl Ring-Closing Metathesis Condensation Reaction Molecular Asymmetry

277 **Kinetic Resolution of Racemic 2-Hydroxyacetals by Asymmetric Esterification Using a Mixed Anhydride Protocol**

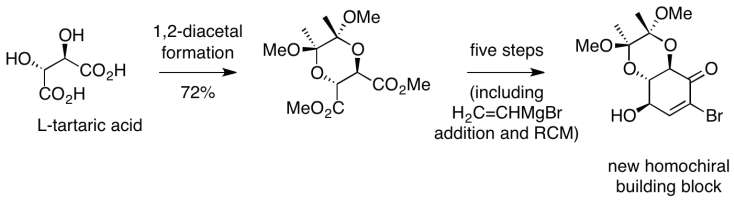
Kenya Nakata,* Eri Tokumaru, Takahiro Saitoh, Takayoshi Nakahara, Keisuke Ono, Takatsugu Murata, and Isamu Shiina*



Kinetic Resolution Asymmetric Esterification Mixed Anhydride Cyclic Acetal Chiral Heterocyclic Molecule

290 **The Synthesis of Polyfunctionalized, Cyclohexene-Based Chirons from Tartaric Acid**

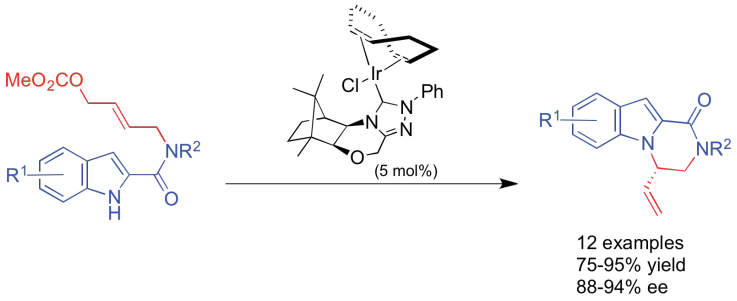
Joshua N. Buckler, Brett D. Schwartz, and Martin G. Banwell*



1,2-Diacetal 1,4-Dioxane Ring-Closing Metathesis Tartaric Acid

304 **Synthesis of Enantioenriched Indolopiperazinones *via* Iridium(I) *N*-Heterocyclic Carbene Complex Catalyzed Asymmetric Intramolecular Allylic Amination Reaction**

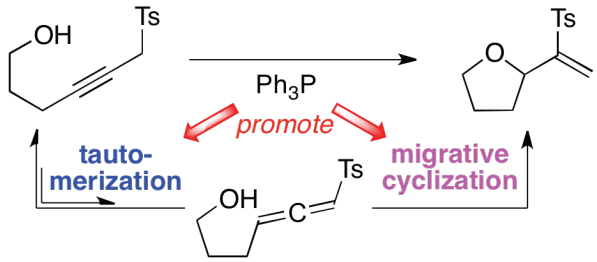
Ke-Yin Ye, Ke-Jia Wu, Guo-Tai Li, Li-Xin Dai, and Shu-Li You*



Asymmetric Catalysis

314 **Phosphine-Promoted Migrative Cyclization of Sulfonylalkynol and Sulfonylalkynamide for the Synthesis of Oxa- and Azacycles**

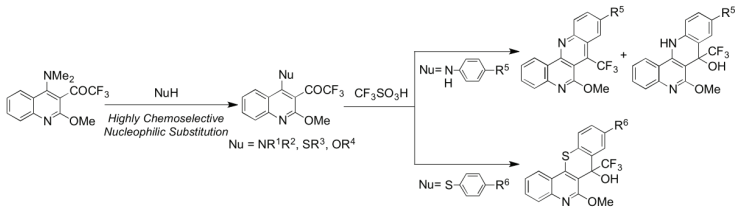
Yinli Wang, Raphaël Oriez, Shougun Ou, Yasunori Miyakawa, Yousuke Yamaoka, Kiyosei Takasu, and Ken-ichi Yamada*



Phosphine-Promoted Reaction Sulfonyl Migration Cyclization Reaction Umpolung

322 **Efficient Synthesis of Fluorine-Containing Dibenzo[*b*,*h*]-[1,6]naphthyridines and Thiochromeno[3,2-*c*]quinolines Using Highly Chemoselective Nucleophilic Substitution Reaction of 4-Dimethylamino-2-methoxy-3-trifluoroacetylquinoline**

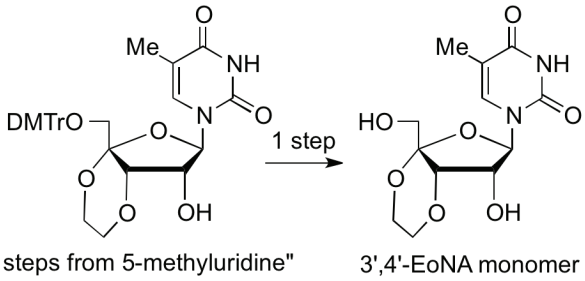
Etsuji Okada,* Mizuki Hatakenaka, Yoshinori Takezawa, and Keisuke Iwakuni



Dibenzo[*b*,*h*][1,6]naphthyridine Thiochromeno[3,2-*c*]quinoline 4-Aminoquinoline Fluorine-Containing Heterocycle

342 **Synthesis of the 5-Methyluridine Monomer of 3'-*O*,4'-*C*-Ethyleneoxy-Bridged Nucleic Acid**

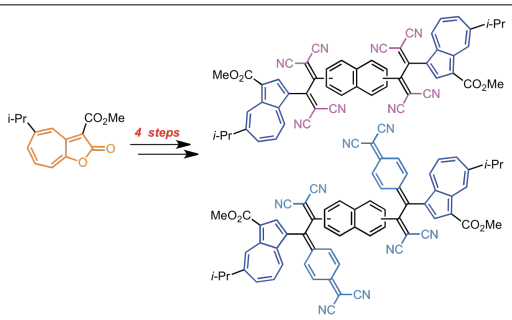
Takashi Osawa, Masakazu Dohi, Yuka Hitomi, Yuta Ito, Satoshi Obika,* and Yoshiyuki Hari*



3',4'-Bridged Nucleic Acid 3',4'-EoNA 2',5'-Linkage Modified Nucleoside

353 **Synthesis and Electrochemical Properties of Azulene-Substituted Tetracyanobutadiene and Dicyanoquino-dimethane Chromophores Connected with Naphthalene Cores**

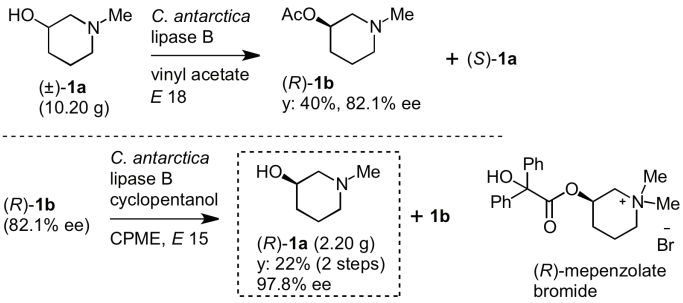
Taku Shoji,* Mitsuhisa Maruyama, Akifumi Maruyama, Daichi Nagai, Miwa Tanaka, Ryuta Sekiguchi, Shunji Ito, and Tetsuo Okujima



Azulene Naphthalene 2*H*-Cyclohepta[*b*]furan-2-one Cycloaddition Reaction Electrochemisty

370 **Preparation of (*R*)-3-Hydroxy-*N*-methylpiperidine, a Synthetic Key Intermediate of (*R*)-Mepenzolate, Based on the Lipase-Catalyzed Resolution of the Racemic Form**

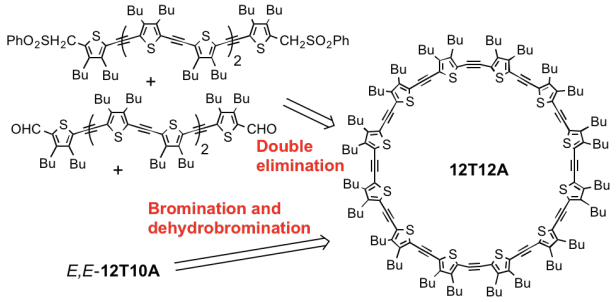
Yasunobu Yamashita, Kengo Hanaya, Mitsuru Shoji, and Takeshi Sugai*



Piperidine Derivative Mepenzolate Lipase Secondary Alcohol Kinetic Resolution

380 **π-Expanded Cyclic Oligothiophene 12-Mers as Semishape-Persistent Macrocycles**

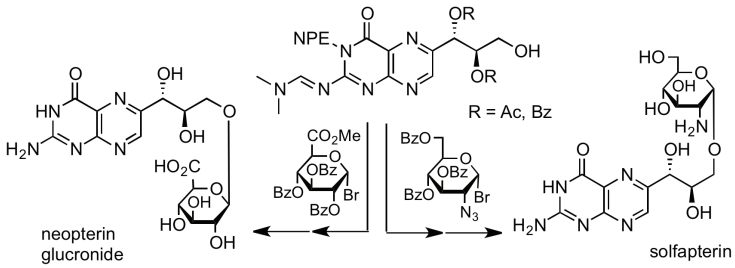
Mika Imamura, Hideyuki Shimizu, Jun Yamakawa, Hiroyuki Otani, Tohru Nishinaga, and Masahiko Iyoda*



Macrocyclic Oligothiophene McMurry Coupling Reaction Cyclo(thienylene-ethynylene) Nanostructure

390 **Efficient Total Syntheses of Natural Neopterin Glycosides: Neopterin Glucronide and Solfapterin**

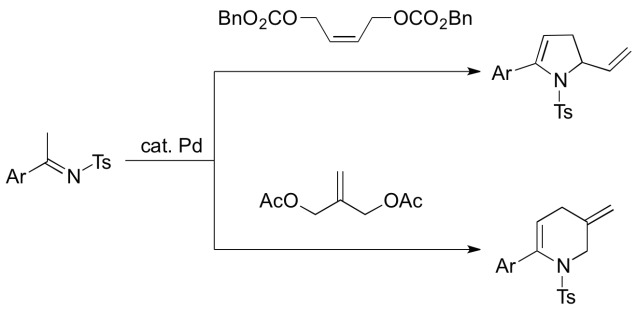
Tadashi Hanaya,* Katsuya Iwasaki, Kaori Saeki, and Takafumi Hattori



Pterin Glycoside Neopterin Glucronide Solfapterin Glycosidation Reaction Pteridine

410 **Syntheses of 2-Vinyl-2,3-dihydropyrroles and 3-Methylene-1,2,3,4-tetrahydropyridines by Palladium-Catalyzed Cyclization of *N*-Tosyl Imines with Allylic Diesters**

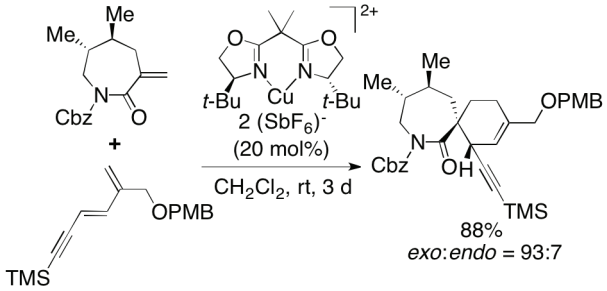
Masahiro Yoshida,* Kouki Kinoshita, and Kosuke Namba



Cyclization Reaction Palladium Catalyst Allylic Diester Dihydropyrrole Tetrahydropyridine

422 **Concise Formation of Spirocyclic Compounds for Marine Phycotoxins**

Jun Ishihara,* Shingo Tojo, Takuya Makino, Hiroshi Sekiya, Akiko Tanabe, Mitsutaka Shiraishi, Akio Murai, and Susumi Hatakeyama*

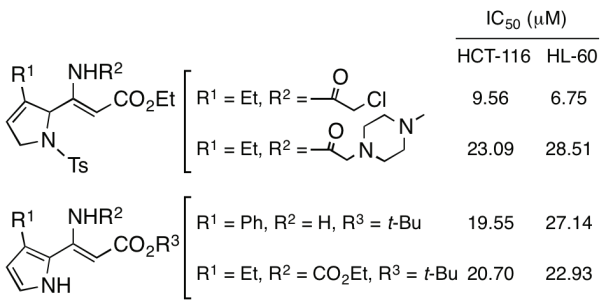


Diels-Alder Reaction Spirocyclic Compound Marine Natural Product

■ SHORT PAPERS

557 **Synthesis of β-Dihydropyrrolyl and β-Pyrrolyl Acrylates and Their Antiproliferative Activity against HCT-116 and HL-60 Cells**

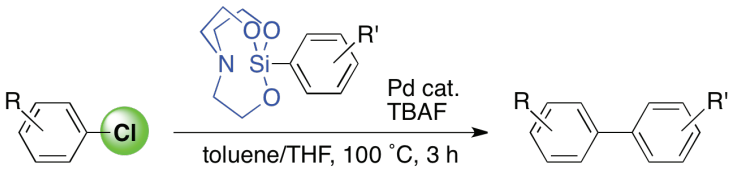
Noriyuki Hatae,* Yoko Sakai, Kohei Yorozu, Chiaki Okada, Mitsuhiro Yoshimatsu, and Teruki Yoshimura*



β-Dihydropyrrolyl α,β-Unsaturated Ester β-Pyrrolyl α,β-Unsaturated Ester Antitumor Activity Cytotoxicity Cell Cycle Arrest

568 **Palladium-Catalyzed Cross-Coupling of Aryl Chlorides with Arylsilatranes**

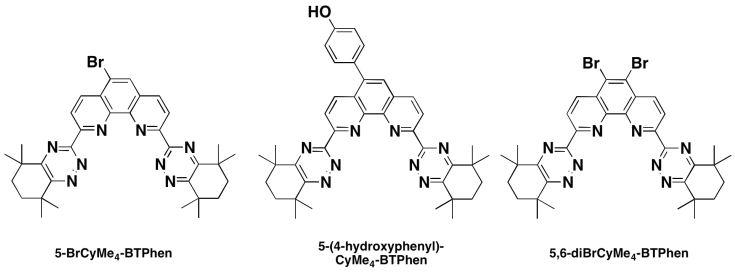
Yutaro Yamamoto, Alexandre Baralle, Anaïs Godefroy, Kei Murakami, Hideki Yorimitsu,* and Atsuhiro Osuka



Silatrane Cross-Coupling Reaction Biaryl

575 **Effective Separation of Am(III) from Cm(III) Using Modified BTPhen Ligands**

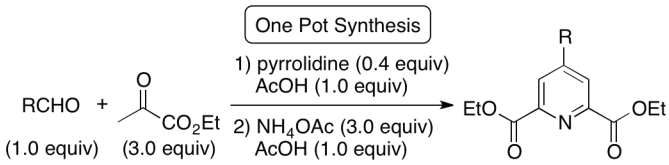
Ashfaq Afsar, Alyn C. Edwards, Andreas Geist, Laurence M. Harwood,* Michael J. Hudson, James Westwood, and Roger C. Whitehead



Actinide Lanthanide Extraction CyMe4-BTPhen Electronic Modulation

587 **Synthesis of 4-Substituted-Pyridine-2,6-dicarboxylic Acid Derivatives from Pyruvates and Aldehydes in One Pot**

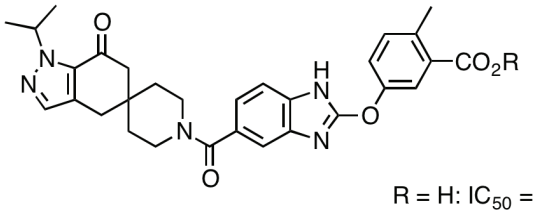
Pandurang V. Chouthaiwale, Sébastien Lapointe, and Fujie Tanaka*



One-Pot Synthesis Organocatalysis Pyridine Pyruvate Synthetic Method

595 **Structural Development Studies of Pyrazoloketone-Derived Acetyl-CoA Carboxylase Inhibitors**

Shogo Okazaki, Taki Sakai, Minoru Ishikawa, Yuichi Hashimoto, and Takao Yamaguchi*



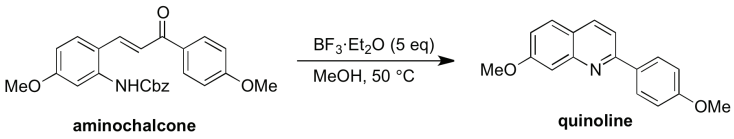
Inhibitors of acetyl-CoA carboxylase 2

R = H: IC_{50} = 8.8 μM
R = Me: IC_{50} = 1.3 μM

Multi-Target Compound Polypharmacology Acetyl-CoA Carboxylase AMP-Activated Protein Kinase

608 **2-Arylquinoline Synthesis from Cbz-Protected 2-Aminochalcone Mediated by BF_3•Et_2O**

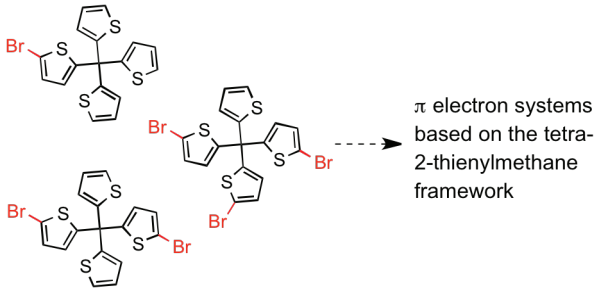
Tomohiro Maegawa,* Misa Nogata, Takaya Honda, Akira Nakamura, and Yasuyoshi Miki*



Quinoline Aminochalcone Dubamine Cyclization Reaction

615 **Syntheses of Partially Brominated Derivatives of Tetra-2-thienylmethane for Three-Dimensionally Extended π-Electron Systems**

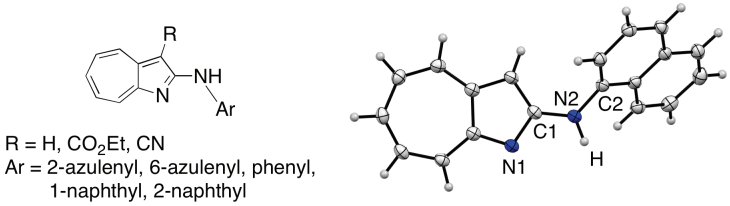
Kouzou Matsumoto,* Takeshi Suzuki, Yasukazu Hirao, Hiroyuki Kurata, and Takashi Kubo*



Tetra-2-thienylmethane Dendrimer

624 **Synthesis of 2-Arylamino-1-azaazulenes**

Satoru Tsukada,* Makoto Nakazawa, Yuya Okada, Keito Ohtsu, Noritaka Abe, and Takahiro Gunji



Azaazulene Azulene Crystal Structure Buchwald-Hartwig Cross Coupling Reaction

Contributors To This Issue