

Tetrahedron Letters Vol. 50, No. 14, 2009

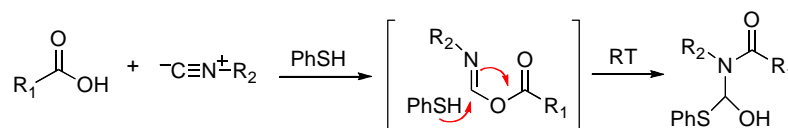
Contents

Communications

Thio-mediated two-component coupling reaction of carboxylic acids and isonitriles under mild conditions

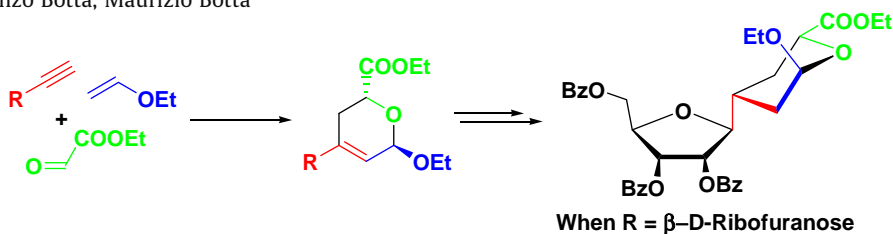
pp 1523–1525

Xiangyang Wu, Xuechen Li, Samuel J. Danishefsky*


One-pot multicomponent synthesis of 2,3-dihydropyrans: new access to furanose–pyranose 1,3-C–C-linked disaccharides

pp 1526–1528

Daniele Castagnolo, Lorenzo Botta, Maurizio Botta*

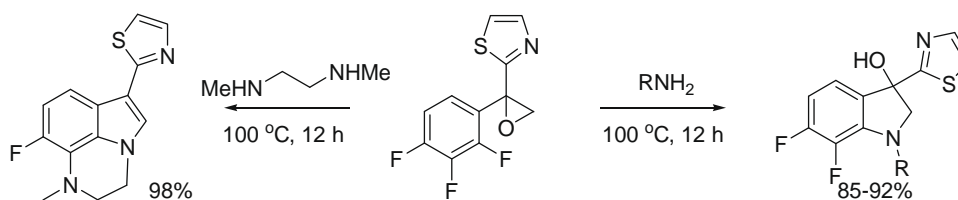


An efficient synthesis of 2,3-dihydropyrans starting from different terminal alkynes was developed. The 2,3-dihydropyrans were obtained in a few minutes through a microwave-assisted multicomponent enyne cross-metathesis/hetero-Diels–Alder reaction. Starting from C-ethynyl-ribofuranose, a new multicomponent approach to furanose–pyranose 1,3-C–C-linked disaccharides was also developed.

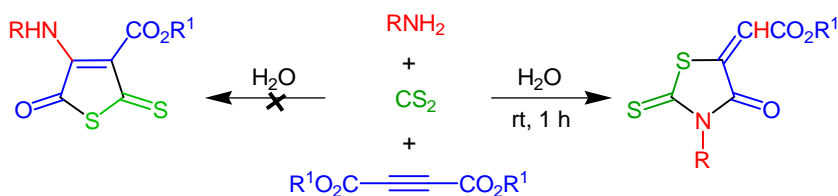
A facile synthesis of N,3-disubstituted indoles and 3-hydroxyl indolines via an intramolecular S_NAr of fluorinated amino alcohols

pp 1529–1532

Cheng-yi Chen*, Robert A. Reamer



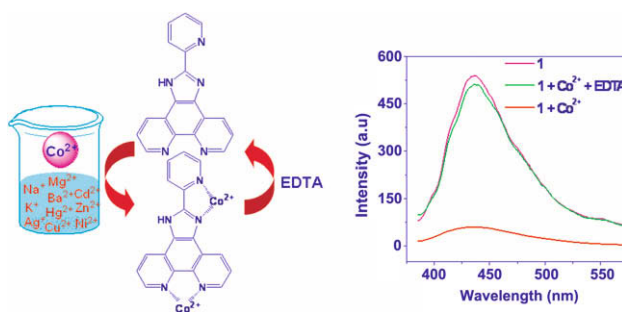
In this Letter, we describe a practical and highly versatile method for the preparation of N,3-disubstituted indoles and 3-hydroxyl indolines. This synthetic strategy relies on an epoxide opening followed by an intramolecular S_NAr of the resulting fluoroaryl amino alcohols. The reaction afforded 3-hydroxyl indolines when carried out at lower temperature for the derivatives bearing multi-fluorine substituents at the aromatic ring.

A simple and effective approach to the synthesis of rhodanine derivatives via three-component reactions in water pp 1533–1535
Abdolali Alizadeh ^{*}, Sadegh Rostamnia, Nasrin Zohreh, Reza Hosseinpour

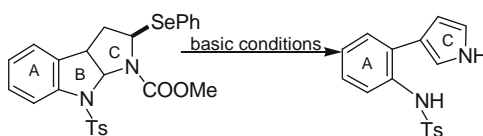
A facile and direct synthetic entry to rhodanine derivatives via the three-component coupling of carbon disulfide, primary amines, and acetylenic esters under neutral conditions in water is reported.

A new selective phenanthroline-based fluorescent chemosensor for Co²⁺

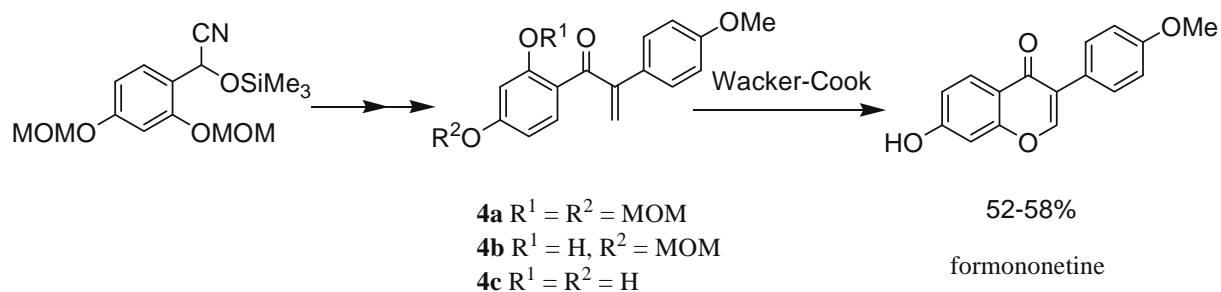
pp 1536–1538

Xiuli Wang ^{*}, Wenyan Zheng, Hongyan Lin, Guocheng Liu, Yongqiang Chen, Jiani Fang
A contribution to the elucidation of the biosynthesis of 3-chloro-4-(3'-chloro-2'-nitrophenyl)-1H-pyrrole (pyrrolnitrin)

pp 1539–1541

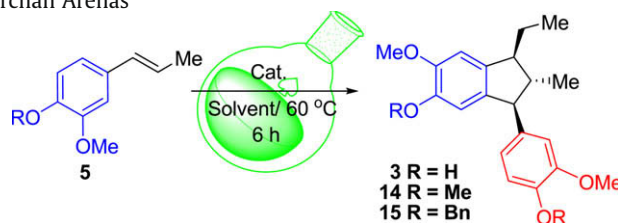
Ana Bertha Vázquez, Sylvain Bernès, Aurelio Ortíz, Leticia Quintero, Rosa L. Meza-León ^{*}
A Wacker–Cook synthesis of isoflavones: formononetine

pp 1542–1545

Evin H. Granados-Covarrubias, Luis A. Maldonado ^{*}

First green protocols for the large-scale preparation of γ -diisoeugenol and related dihydro(1*H*)indenes via formal [3+2] cycloaddition reactions pp 1546–1549

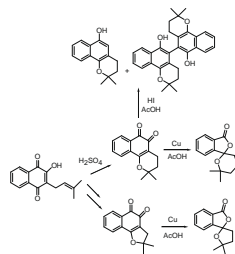
Vladimir V. Kouznetsov*, Diego R. Merchan Arenas



Trans-isoeugenol and related styrenes (*trans*-isohomogonol or *O*-benzylated isoeugenol), important components of the essential oil of various tropical plants, dimerize easily in the presence of catalytic amounts of $\text{BF}_3 \cdot \text{OEt}_2$ in poly(ethylene glycol) with $M_n = 400$ (PEG-400) or $\text{SiO}_2\text{-OSO}_3\text{H}$ in MeCN via formal [3+2] cycloaddition reaction to give respective natural products (diisoeugenol and its *O*-substituted analog) with the 1,2-*trans*-2,3-*trans*-configuration in excellent yields. γ -Diisoeugenol scale-up preparation has also been described.

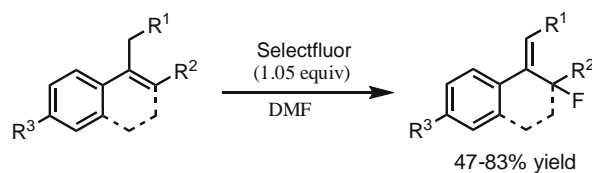
Unexpected transformation of quinones to spirolactones and to naturally occurring naphthalenic compounds pp 1550–1553

Eufrânio N. da Silva Júnior, Carlos A. de Simone, Adolfo C. B. de Souza, Cleverson N. Pinto, Tiago T. Guimarães, Maria do Carmo F. R. Pinto, Antônio V. Pinto*



Synthesis of aryl allylic fluorides by direct electrophilic fluorination of alkenes pp 1554–1556

Hai-Qing Luo, Teck-Peng Loh*

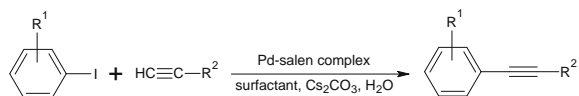


Aryl allylic fluorides were synthesized in 47–83% yields by using Selectfluor as the electrophilic reagent in DMF. The outcome of this reaction may be explained by electronic effects while the reactivity was controlled by the stabilization effect of the aryl group on the benzylic cationic intermediates.



Copper-free Sonogashira coupling reactions catalyzed by a water-soluble Pd–salen complex under aerobic conditions pp 1557–1559

Mohammad Bakherad*, Ali Keivanloo, Bahram Bahramian, Mahdiah Hashemi

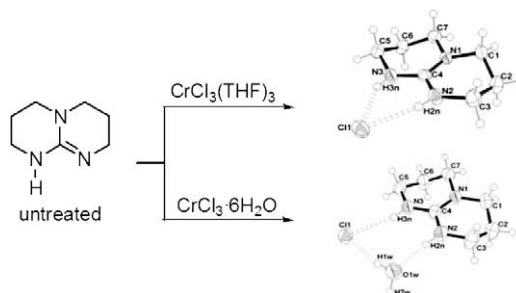


The water-soluble Pd–salen complex, palladium(II) *N,N'*-bis[5-(triphenylphosphonium)methyl]salicylidene]-1,2-ethanediamine chloride, is a highly active catalyst for the copper-free Sonogashira coupling of aryl iodides with terminal alkynes in water under aerobic conditions.

Selective formation of bicyclic guanidinium chloride complexes: implication of the bifunctionality of guanidines

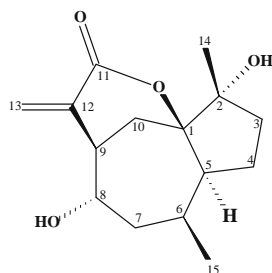
pp 1560–1562

Richmond Lee, Xiaozhi Lim, Tao Chen, Geok Kheng Tan, Choon-Hong Tan *, Kuo-Wei Huang *

**Isolation and structure determination of pulicazine, a new sesquiterpene lactone from the Tunisian *Pulicaria laciniata* (Coss. et Kral.) Thell.**

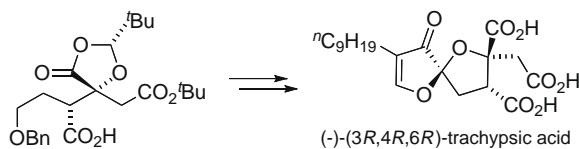
pp 1563–1565

Hatem Ghouila, Ahlem Beyaoui, Hichem Ben Jannet *, Besma Hamdi, Abdelhamid Ben Salah, Zine Mighri

**Enantioselective formal total synthesis of (–)-trachypsic acid**

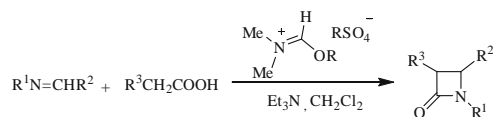
pp 1566–1567

Frederick Calo, Jeffery Richardson, Andrew J. P. White, Anthony G. M. Barrett *

**DMF-dimethyl sulfate as a new reagent for the synthesis of β-lactams**

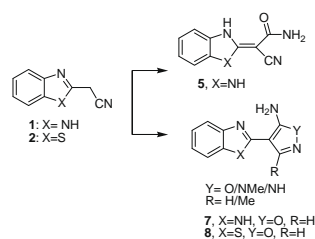
pp 1568–1570

Aliasghar Jarrahpour *, Maarof Zarei



Synthesis of novel biaryl 2-benzimidazoles and 2-benzothiazoles

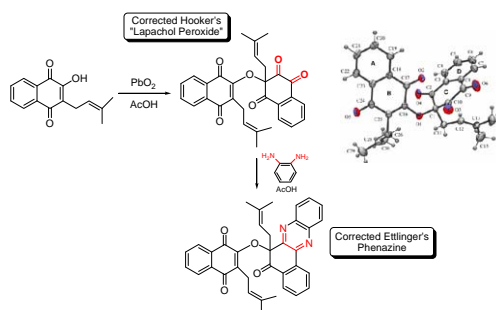
pp 1571–1574

Kanaka Pattabiraman*, Rita El-Khoury, Kriti Modi,
Lawrence R. McGee, David Chow

Herein, we describe the synthesis of the novel 4-(1*H*-benzo[*d*]imidazol-2-yl)isoxazol-5-amine (**7**) and 4-(1*H*-benzo[*d*]thiazol-2-yl)isoxazol-5-amine scaffolds (**8**). Initial attempts following literature procedures for the synthesis of similar compounds did not yield the desired product. Instead we obtained the ring-opened adduct 2-(1*H*-benzo[*d*]imidazol-2(3*H*)-ylidene)-2-cyanoacetamide (**5**). We were able to modify reaction conditions and successfully synthesize the desired product. We also describe a convenient one-pot microwave-assisted relay reaction for the synthesis of novel and reported 2-substituted benzimidazoles and benzothiazoles from inexpensive, commercially available reagents, 2-benzothiazole acetonitrile (**2**) and 2-benzimidazole acetonitrile (**1**). In all cases, good yields of products were obtained and reaction times were significantly reduced.

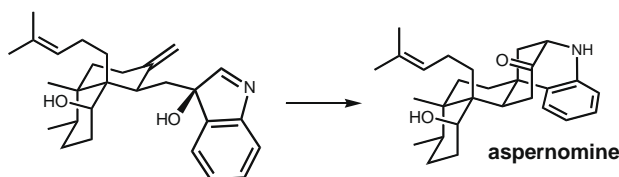
Hooker's 'lapachol peroxide' revisited

pp 1575–1577

Eufrânio N. da Silva Júnior, Maria C. F. R. Pinto, Kelly C. G. de Moura, Carlos A. de Simone, Claudia J. Nascimento,
Carlos Kleber Z. Andrade, Antônio V. Pinto***Carbocation rearrangements in aspernomine biosynthesis**

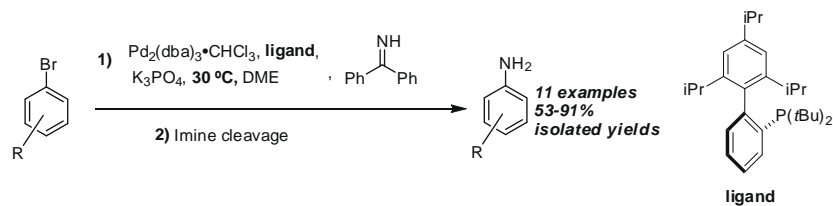
pp 1578–1581

Gregory A. Ho, Dustin H. Nouri, Dean J. Tantillo*

**Mild conditions for Pd-catalyzed conversion of aryl bromides to primary anilines using benzophenone imine**

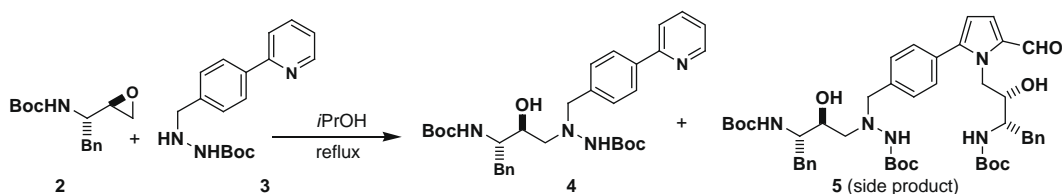
pp 1582–1585

Swapna Bhagwanth, George M. Adjabeng, Keith R. Hornberger*



A rare pyridine to pyrrole conversion leading to a side product in epoxide ring opening

pp 1586–1587

Charles Pathirana ^{*}, Rajesh Shukla, John Castoro, Douglas Weaver, Liam Byrne, Gaelle Pennarun-Thomas, Venkatapuram Palaniswamy

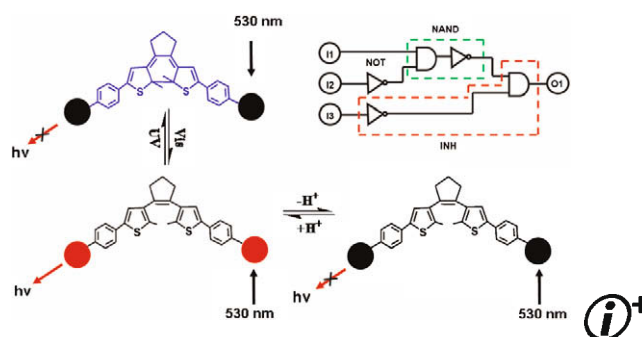
A minor side product resulting from a pyridine to pyrrole conversion was identified from an epoxide ring opening reaction.

Optic and proton dual-control of the fluorescence of Rhodamine based on photochromic diarylethene: mimicking the performance of an integrated logic gate

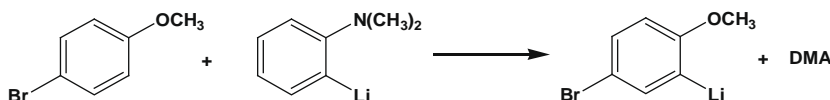
pp 1588–1592

Haiyan Zheng, Weidong Zhou, Mingjian Yuan, Xiaodong Yin, Zicheng Zuo, Canbin Ouyang, Huibiao Liu, Yuliang Li ^{*}, Daoben Zhu

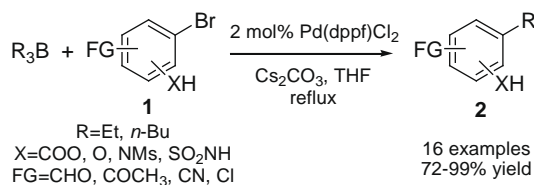
A proton and optic dual-responsive fluorescence switch dyad which contains Rhodamine and photochromic diarylethene has been designed and an integrated logic circuit at the molecular level has been proposed.

**Metalations utilizing aryllithiums; *ortho*-functionalization of *p*-bromoanisole (*p*BrA)**

pp 1593–1595

D. W. Slocum ^{*}, Troy L. Reece, Rebecca D. Sandlin, Thomas K. Reinscheld, Paul E. Whitley***B*-Alkyl Suzuki–Miyaura cross-coupling of tri-*n*-alkylboranes with arylbromides bearing acidic functions under mild non-aqueous conditions**

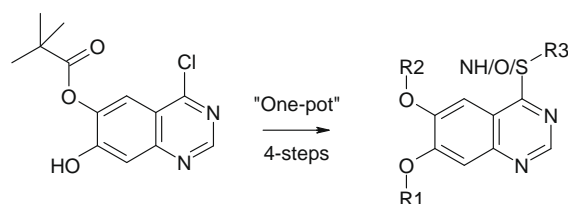
pp 1596–1599

Hui-Xia Sun, Zhi-Hua Sun ^{*}, Bing Wang ^{*}

Three-point variation of a gefinitib quinazoline core

pp 1600–1602

Craig S. Harris*, Laurent F. Hennequin, Olivier Willerval

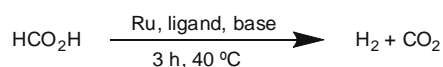


A versatile four-step process describing the controlled systematic variation of a key quinazoline core from one intermediate is highlighted.

**Improved hydrogen generation from formic acid**

pp 1603–1606

Henrik Junge, Albert Boddien, Francesca Capitta, Björn Loges, James R. Noyes, Serafino Gladiali, Matthias Beller*



The ruthenium-catalyzed generation of hydrogen from formic acid was investigated in the presence of amines and halide additives. While amidines and halide additives increase the production of hydrogen with $[\text{RuCl}_2(p\text{-cymene})]_2$, >330 mL hydrogen/h is generated in the presence of $[\text{RuCl}_2(\text{benzene})]_2/\text{dppe}$ and *N,N*-dimethyl-*n*-hexylamine.

First total synthesis of 11-selena steroids

pp 1607–1609

Malika Ibrahim-Ouali*

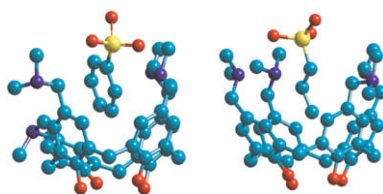


The first total synthesis of 11-selena steroids is described.

Inclusion of aromatic and aliphatic anions into a cationic water-soluble calix[4]arene at different pH values

pp 1610–1613

Carmelo Sgarlata, Carmela Bonaccorso, Fabio Giuseppe Gulino, Valeria Zito, Giuseppe Arena, Domenico Sciotto*



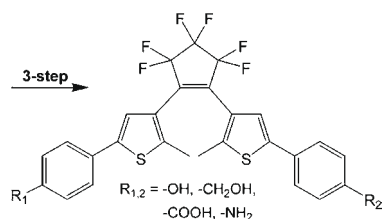
A cationic calix[4]arene derivative binds both aliphatic and aromatic, carboxylate and sulfonate anions in aqueous solution thanks to concerted electrostatic and hydrophobic interactions.



New fast synthesis route for symmetric and asymmetric phenyl-substituted photochromic dithienylethenes bearing functional groups such as alcohols, carboxylic acids, or amines

pp 1614–1617

Stephan Hermes, Giovanni Dassa, Giorgio Toso, Andrea Bianco, Chiara Bertarelli *, Giuseppe Zerbi

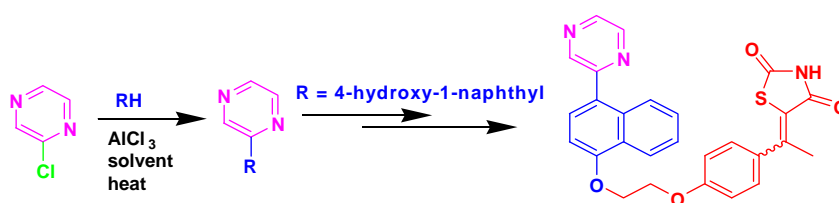


Products can be obtained by Suzuki coupling between photochromic dichlorides and commercial available boronic acids or pinacol esters.

A new synthesis of 2-(hetero)aryl-substituted pyrazines

pp 1618–1621

Arumugam Kodimuthali, B. Chandra Chary, Padala Lakshmi Prasunamba, Manojit Pal *



Efficient synthesis of pyrimidinone derivatives by ytterbium chloride catalyzed Biginelli-type reaction under solvent-free conditions

pp 1622–1624

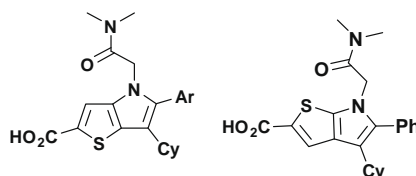
Huihui Zhang, Zhuqing Zhou, Zhigang Yao, Fan Xu *, Qi Shen *



Improved modular synthesis of thieno[3,2-b]pyrroles and thieno[2,3-b]pyrroles

pp 1625–1628

Savina Malancona *, Josè I. Martín Hernando, Barbara Attenni, Jesus M. Ontoria, Frank Narjes



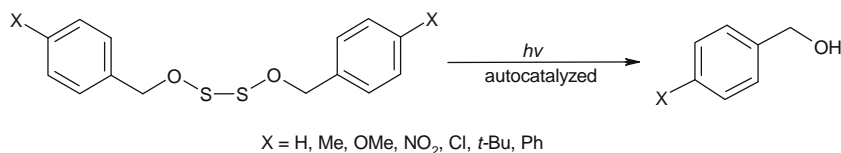
A convenient synthesis of densely functionalized thieno[3,2-b]pyrroles and thieno[2,3-b]pyrroles is described.



Photolytic, autocatalyzed decomposition of benzylic dialkoxy disulfides

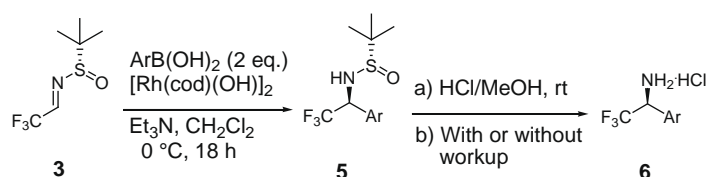
pp 1629–1632

DiAndra M. Rudzinski, Ronny Priefer *

**Rhodium-catalyzed diastereoselective 1,2-addition of arylboronic acids to chiral trifluoroethyl imine**

pp 1633–1635

Vouy Linh Truong *, Jennifer Y. Pfeiffer

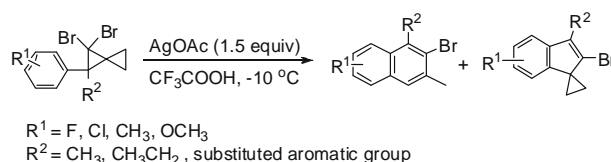


Rhodium-catalyzed 1,2-addition of arylboronic acids **4a–j** to chiral trifluoroethyl imine **3** afforded diastereomerically enriched sulfonamides **5a–j**. The chiral auxiliary of the sulfonamide products was readily removed under acidic methanolysis to provide the corresponding trifluoroethylamine analogs **6a–j**.

AgOAc-mediated rearrangement of *gem*-dibromospiropentanes in trifluoroacetic acid

pp 1636–1638

Lei Wu, Min Shi *

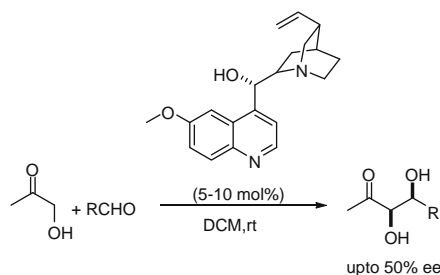


AgOAc-mediated intramolecular skeleton rearrangement reaction of *gem*-dibromospiropentanes produced the corresponding naphthalene and indene derivatives in moderate to good yields under mild conditions.

**Direct asymmetric aldol reaction of hydroxyacetone promoted by chiral tertiary amines**

pp 1639–1641

Joanna Paradowska, Maria Rogozińska, Jacek Mlynarski *

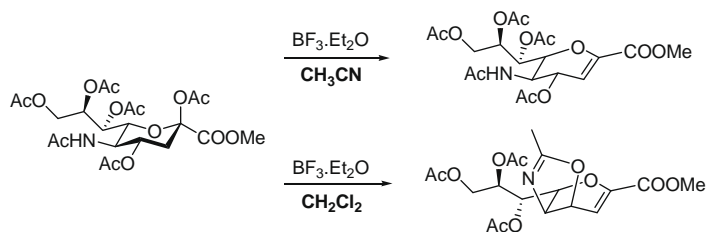


The tertiary amine-catalyzed direct asymmetric aldol reaction of hydroxyacetone with a variety of aromatic aldehydes is developed using 5–10 mol % of quinidine as the catalyst.

Selective synthesis of Neu5Ac2en and its oxazoline derivative using $\text{BF}_3 \cdot \text{Et}_2\text{O}$

pp 1642–1644

Goreti Ribeiro Morais, Rudi Santiago Oliveira, Robert A. Falconer *

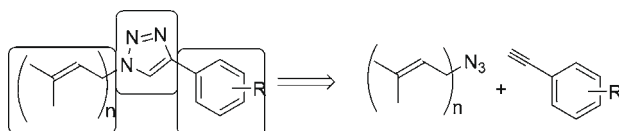


Application of the Lewis acid $\text{BF}_3 \cdot \text{Et}_2\text{O}$ to the selective synthesis of 5-acetamido-2,6-anhydro-3,5-dideoxy- β -glycero- β -galacto-non-2-enonic acid (Neu5Ac2en) and the related oxazoline, methyl 7,8,9-tri-*O*-acetyl-2,3,4,5-tetraacetoxy-2,3-didehydro-2,3-trideoxy-4',5'-dihydro-2'-methyloxazolo[5,4-*d*]- β -glycero- β -talo-non-2-enonate is described.

Synthesis of a polyprenyl-type library containing 1,4-disubstituted-1,2,3-triazoles with anti-biofilm activities against *Pseudoalteromonas* sp.

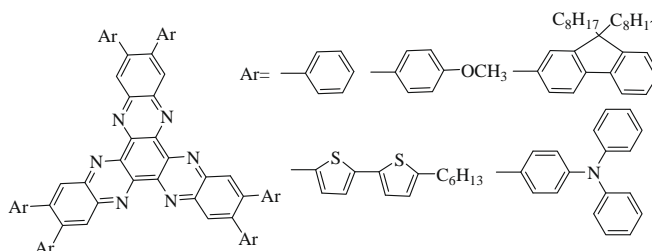
pp 1645–1648

Annie Praud-Tabaries, Linda Dombrowsky, Olivier Bottzek, Jean-Francois Briand, Yves Blache *

**Starburst substituted hexaazatriphenylene compounds: synthesis, photophysical and electrochemical properties**

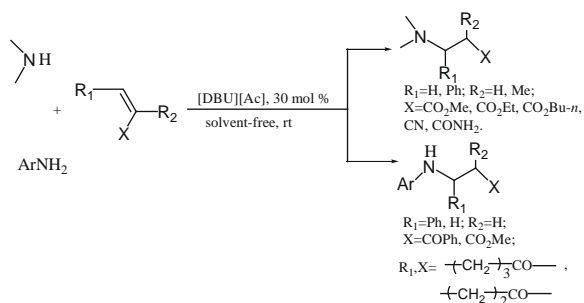
pp 1649–1652

Baoliang Gao *, Yueling Liu, Yanhou Geng, Yanxiang Cheng, Lixiang Wang *, Xiabin Jing, Fosong Wang


**Aza-Michael addition of aliphatic or aromatic amines to α,β -unsaturated compounds catalyzed by a DBU-derived ionic liquid under solvent-free conditions**

pp 1653–1657

An-Guo Ying, Luo Liu, Guo-Feng Wu, Gang Chen, Xin-Zhi Chen *, Wei-Dong Ye *



*Corresponding author

 Supplementary data available via ScienceDirect

Abstracted/indexed in: AGRICOLA, Beilstein, BIOSIS Previews, CAB Abstracts, Chemical Abstracts, Chemical Engineering and Biotechnology Abstracts, Current Biotechnology Abstracts, Current Contents: Life Sciences, Current Contents: Physical, Chemical and Earth Sciences, Current Contents Search, Derwent Drug File, Ei Compendex, EMBASE/Excerpta Medica, Medline, PASCAL, Research Alert, Science Citation Index, SciSearch. Also covered in the abstract and citation database SCOPUS[®]. Full text available on ScienceDirect[®]



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