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REVIEW ARTICLE
Lei Yu, Qing Xu *et al.*
Heterocycles from methylenecyclopropanes

Organic & Biomolecular Chemistry

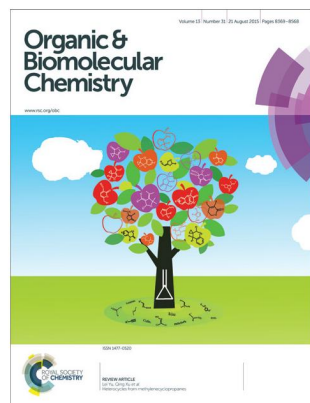
An international journal of synthetic, physical and biomolecular organic chemistry

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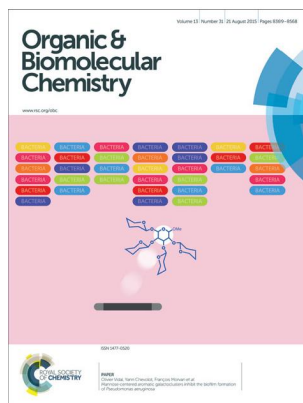
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Cover

See Lei Yu, Qing Xu *et al.*, pp. 8379–8392.

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Inside cover

See Olivier Vidal, Yann Chevolut, François Morvan *et al.*, pp. 8433–8444.

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REVIEWS

8379

Heterocycles from methylenecyclopropanes

Lei Yu,* Mingxuan Liu, Fenglin Chen and Qing Xu*

The construction of heterocycles from MCPs affords more opportunities for the quick synthesis of elaborately substituted products. This review aims to summarize the novel organic reactions of MCPs to produce heterocycles published in recent years, which have provided specific and powerful tools for organic synthesis.

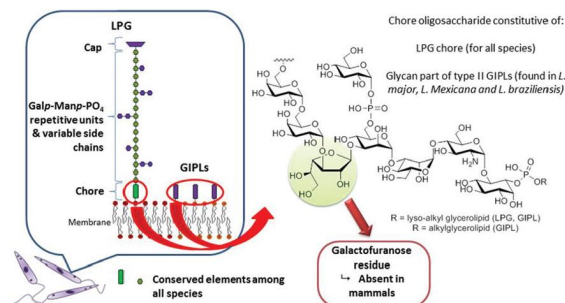


8393

Leishmania cell wall as a potent target for antiparasitic drugs. A focus on the glycoconjugates

Yari Cabezas, Laurent Legentil, Florence Robert-Gangneux, Franck Daligault, Sorya Belaz, Caroline Nugier-Chauvin, Sylvain Tranchimand, Charles Tellier,* Jean-Pierre Gangneux* and Vincent Ferri eres*

The basic structure of membrane glycoconjugates in *Leishmania* still inspires therapeutic drugs fighting against this parasite.



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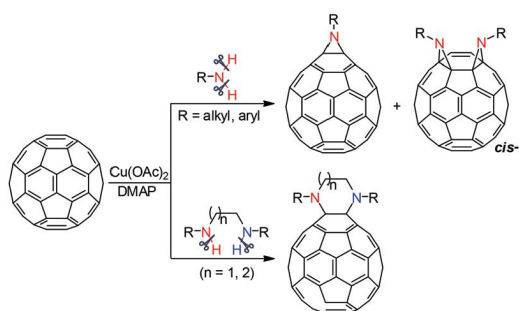
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8405

Cu(OAc)₂-promoted reaction of [60]fullerene with primary amines or diamines

Xin-Wei Lu, Meng-Lei Xing, Chun-Bao Miao, Jia-Xing Li, Xiao-Qiang Sun* and Hai-Tao Yang*

The Cu(OAc)₂-mediated oxidative dehydrogenative addition of easily available primary amines to C₆₀ allows the concise preparation of aziridinofullerenes. Moreover, the Cu(OAc)₂-promoted reaction of C₆₀ with diamines affords C₆₀-fused cyclic 1,2-diaminated fullerenes.

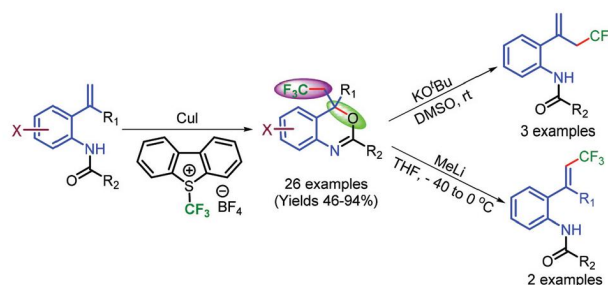


8411

Copper-catalyzed trifluoromethylation of alkenes: synthesis of trifluoromethylated benzoxazines

Sadhan Jana, Athira Ashokan, Shailesh Kumar, Ajay Verma and Sangit Kumar*

A ligand and base free copper catalyzed method has been developed for the construction of trifluoromethylated benzoxazines by using Umemoto's reagent.

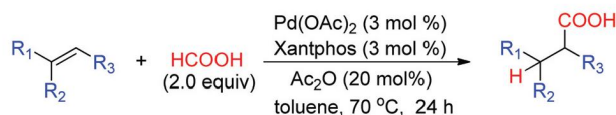


8416

An atom-economic approach to carboxylic acids via Pd-catalyzed direct addition of formic acid to olefins with acetic anhydride as a co-catalyst

Yang Wang, Wenlong Ren and Yian Shi*

An effective Pd-catalyzed hydrocarboxylation of olefins using formic acid with acetic anhydride as a co-catalyst is described.

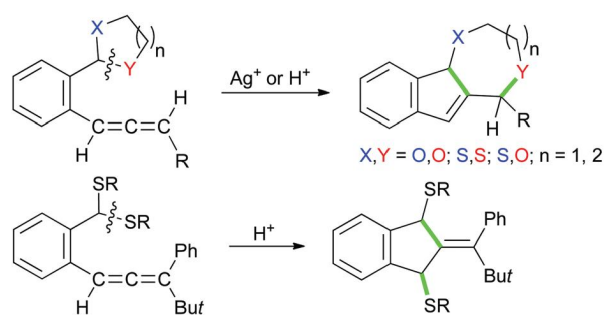


8420

Acid-promoted cycloisomerizations of phenylallenes bearing acetalic functions at the *ortho* position: a stereocontrolled entry to indeno-fused dioxepanes, dioxocanes and thioanalogues

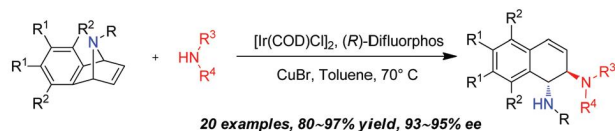
Marta Marin-Luna, Angel Vidal,* Delia Bautista, Raul-Angel Orenes and Mateo Alajarin*

Two different approaches convert *ortho* acetal-substituted phenylallenes into several classes of indeno-fused heterocycles.



COMMUNICATIONS

8425

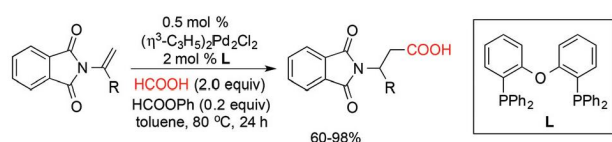


Iridium/copper-cocatalyzed asymmetric ring opening reaction of azabenzonornadienes with amines

Chaoyuan Zeng, Fan Yang, Jingchao Chen, Jun Wang* and Baomin Fan*

Chiral *trans*-vicinal diamines were synthesized via an asymmetric ring opening reaction of azabenzonornadienes with amines.

8429



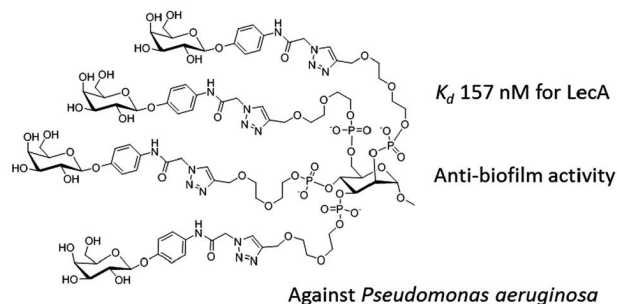
A facile approach to β -amino acid derivatives via palladium-catalyzed hydrocarboxylation of enimides with formic acid

Jie Dai, Wenlong Ren, Haining Wang and Yian Shi*

An effective Pd(0)-catalyzed hydrocarboxylation of enimides with formic acid in the presence of a catalytic amount of HCOOPh is described.

PAPERS

8433

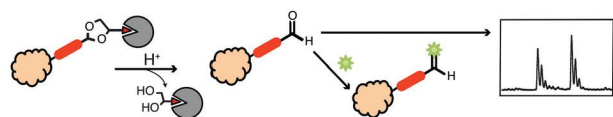


Mannose-centered aromatic galactoclusters inhibit the biofilm formation of *Pseudomonas aeruginosa*

Caroline Ligeour, Olivier Vidal,* Lucie Dupin, Francesca Casoni, Emilie Gillon, Albert Meyer, Sébastien Vidal, Gérard Vergoten, Jean-Marie Lacroix, Eliane Souteyrand, Anne Imbert, Jean-Jacques Vasseur, Yann Chevolut* and François Morvan*

Two galactosylated glycoclusters show high affinity for LecA from *Pseudomonas aeruginosa* and anti-biofilm activity.

8445



Cyclic acetals as cleavable linkers for affinity capture

Siyeon Lee, Wei Wang, Younjoo Lee and Nicole S. Sampson*

A cyclic acetal moiety is an acid-sensitive linker for affinity capture and which provides an aldehyde for further elaboration.

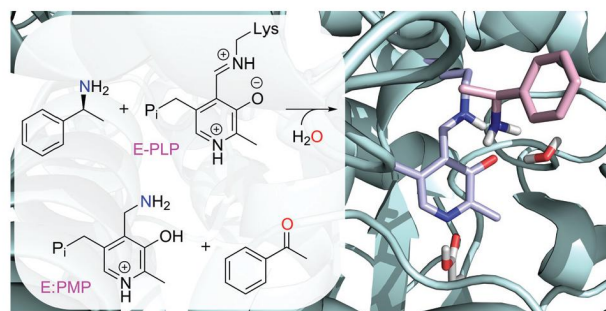
PAPERS

8453

A quantum chemical study of the ω -transaminase reaction mechanism

Karim Engelmark Cassimjee, Bianca Manta and Fahmi Himo*

The detailed half-transamination mechanism of *Chromobacterium violaceum* ω -transaminase is investigated by means of density functional theory calculations.

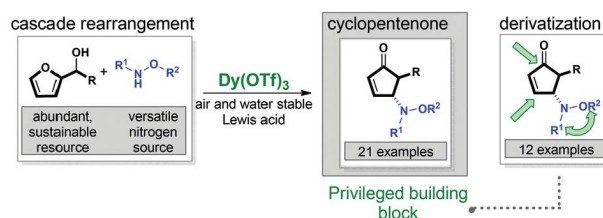


8465

Cascade rearrangement of furylcarbinols with hydroxylamines: practical access to densely functionalized cyclopentane derivatives

Gesine K. Veits, Donald R. Wenz, Leoni I. Palmer, André H. St. Amant, Jason E. Hein and Javier Read de Alaniz*

The aza-Piancatelli rearrangement with hydroxylamines to 4-aminocyclopentenones is described. Subsequent transformations highlight the versatility of the cyclopentene scaffold and the value of the hydroxylamine in this transformation.

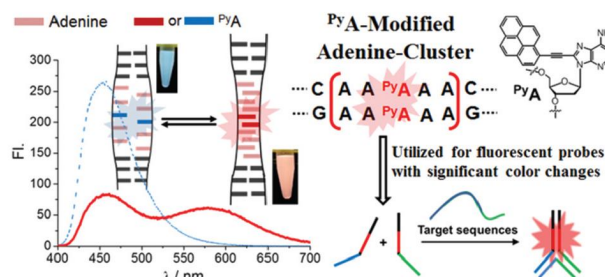


8470

Photophysical and structural investigation of a PyA-modified adenine cluster: its potential use for fluorescent DNA probes exhibiting distinct emission color changes

Ki Tae Kim, Wooseok Heo, Taiha Joo* and Byeang Hyeon Kim*

A PyA-modified adenine cluster, exhibiting a large Stokes shift based on interstrand stacking interactions of adenines, was investigated and exploited as signaling parts of fluorescent DNA probes.

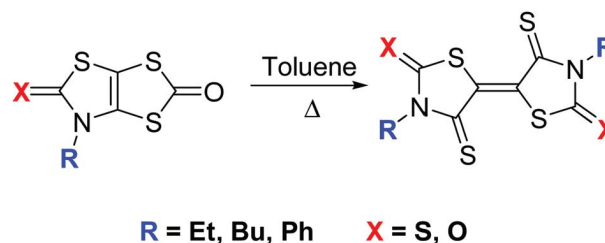


8479

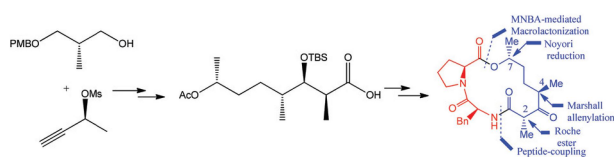
Efficient routes towards a series of 5,5'-bithiazolidinylidenes as π -electron acceptors

Y. Le Gal, D. Ameline, N. Bellec, A. Vacher, T. Roisnel, V. Dorcet, O. Jeannin and D. Lorcy*

Among different approaches, the thermal treatment of the fused bicycle involving a dithiole-2-one ring is the most efficient one and opens access to a variety of π -conjugated electron acceptors.



8487

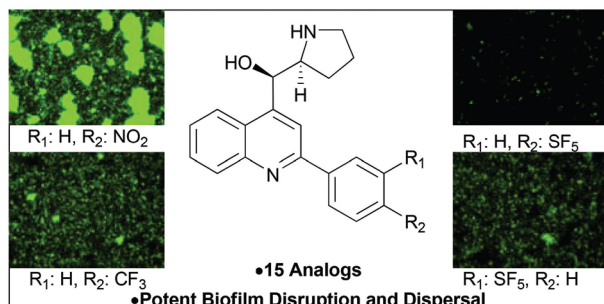


Concise diastereoselective synthesis of calcaripeptide C via asymmetric transfer hydrogenation/Pd-induced chiral allenylzinc as a key reaction

Gullapalli Kumaraswamy,* Vykunthapu Narayanarao and Ragam Raju

The synthesis of the cyclodepsipeptide calcaripeptide C was accomplished with an overall yield of 10.7% by a catalytic asymmetric transfer hydrogenation (ATH) together with Marshall's allenylation as pivotal reactions.

8495

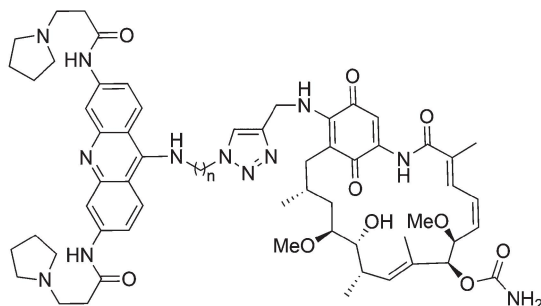


Optimized quinoline amino alcohols as disruptors and dispersal agents of *Vibrio cholerae* biofilms

Brian León, F. P. Jake Haeckl and Roger G. Linington*

The biofilm state is an integral part of the lifecycle of many bacterial pathogens, but no treatments currently exist that directly impact biofilm formation or persistence. Here we report the development of a quinoline amino alcohol scaffold with both biofilm inhibitory and biofilm dispersal activities against the human pathogen *Vibrio cholerae*.

8500

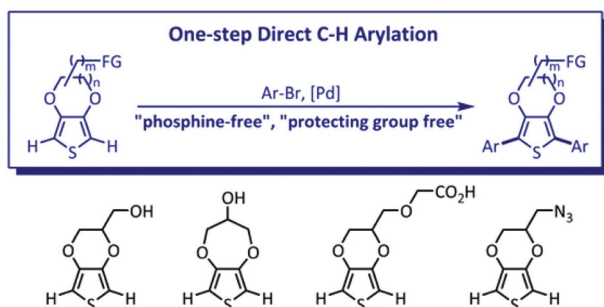


Synthesis and biological evaluation of hybrid acridine-HSP90 ligand conjugates as telomerase inhibitors

S. Roe, M. Gunaratnam, C. Spiteri, P. Sharma, R. D. Alharthy, S. Neidle and J. E. Moses*

The synthesis and biological evaluation of a series of bifunctional acridine-HSP90 inhibitor ligands as telomerase inhibitors is herein described.

8505



Palladium-catalyzed direct C–H arylations of dioxothiophenes bearing reactive functional groups: a step-economical approach for functional π -conjugated oligoarenes

Ching-Yuan Liu, Hui Chong, Hsing-An Lin, Yoshiro Yamashita, Bin Zhang, Kuo-wei Huang, Daizuke Hashizume and Hsiao-hua Yu*

A phosphine-free C–H arylation of dioxothiophenes bearing unprotected functional groups affords oligoarenes with good yields.

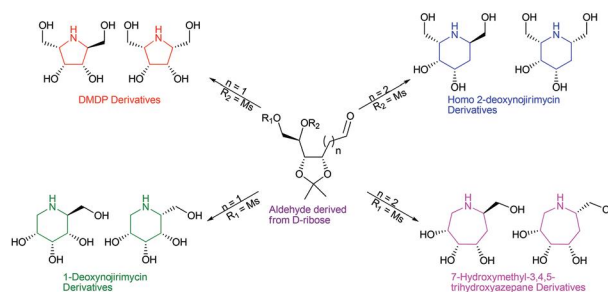
PAPERS

8512

Divergent synthesis of various iminocyclitols from D-ribose

Ramu Petakamsetty, Vipin Kumar Jain, Pankaj Kumar Majhi and Ramesh Ramapanicker*

A very efficient route to the diastereoselective synthesis of polyhydroxy pyrrolidines, piperidines and azepanes from an aldehyde derivative of ribose is reported.

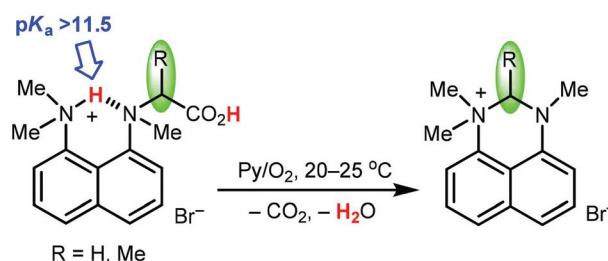


8524

The first proton sponge-based amino acids: synthesis, acid–base properties and some reactivity

Valery A. Ozeryanskii,* Anastasia Yu. Gorbacheva, Alexander F. Pozharskii, Marina P. Vlasenko, Alexander Yu. Tereznikov and Margarita S. Chernov'yants

The first hybrid bases constructed from 1,8-bis(dimethylamino)naphthalene and glycine or alanine residues were synthesised and structurally characterised and unusual channels of their reactivity revealed.

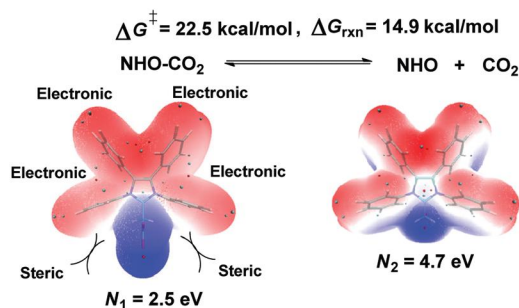


8533

A theoretical investigation of substituent effects on the stability and reactivity of N-heterocyclic olefin carboxylates

Liang Dong, Jun Wen* and Weiyi Li*

Introduction of four phenyl groups at C-position and N-position not only favors decarboxylation but also ensures NHO as a strong nucleophile.

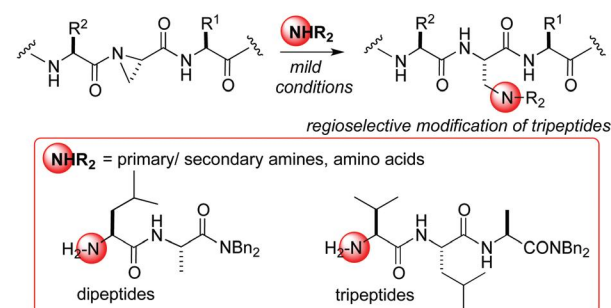


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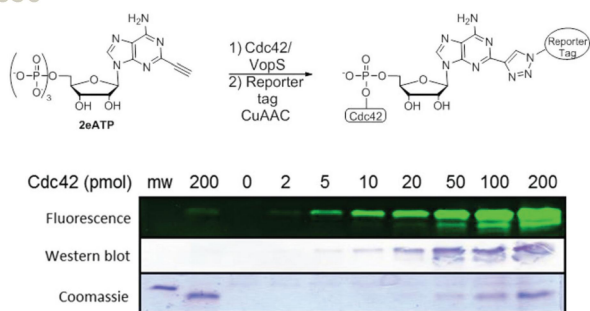
Aziridine electrophiles in the functionalisation of peptide chains with amine nucleophiles

Anatol P. Spork and Timothy J. Donohoe*

We describe herein the synthesis of aziridine-containing amino acids embedded within tripeptide structures.



8550

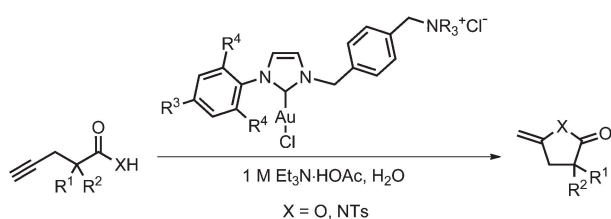


Synthesis and evaluation of 2-ethynyl-adenosine-5'-triphosphate as a chemical reporter for protein AMPylation

Christa Creech, Mukul Kanaujia and Corey P. Causey*

2-Ethynyl-adenosine-5'-triphosphate is a chemical reporter for AMPylation that enables visualization of modified protein substrates.

8556

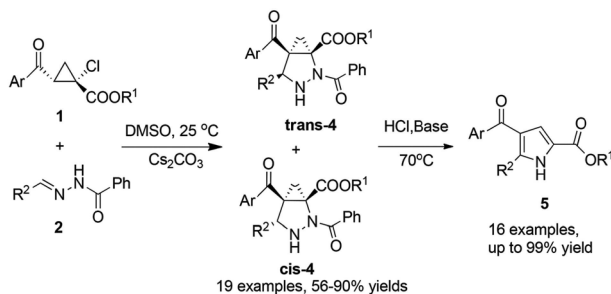


Smaller, faster, better: modular synthesis of unsymmetrical ammonium salt-tagged NHC-gold(i) complexes and their application as recyclable catalysts in water

Katrin Belger and Norbert Krause*

Facile access towards unsymmetrical ammonium salt-tagged NHC-gold(i) complexes is described, and their application as recyclable catalysts in cyclization reactions of acetylenic carboxylic acids and amides in aqueous media is demonstrated.

8561



Formation and aromatization of strained bicyclic pyrazolidines via tandem reaction of alkyl 2-aryl-1-chlorocyclopropanecarboxylates with acylhydrazones

Zhimei Huang, Junhao Hu and Yuefa Gong*

The formation and aromatization of strained bicyclic pyrazolidines.