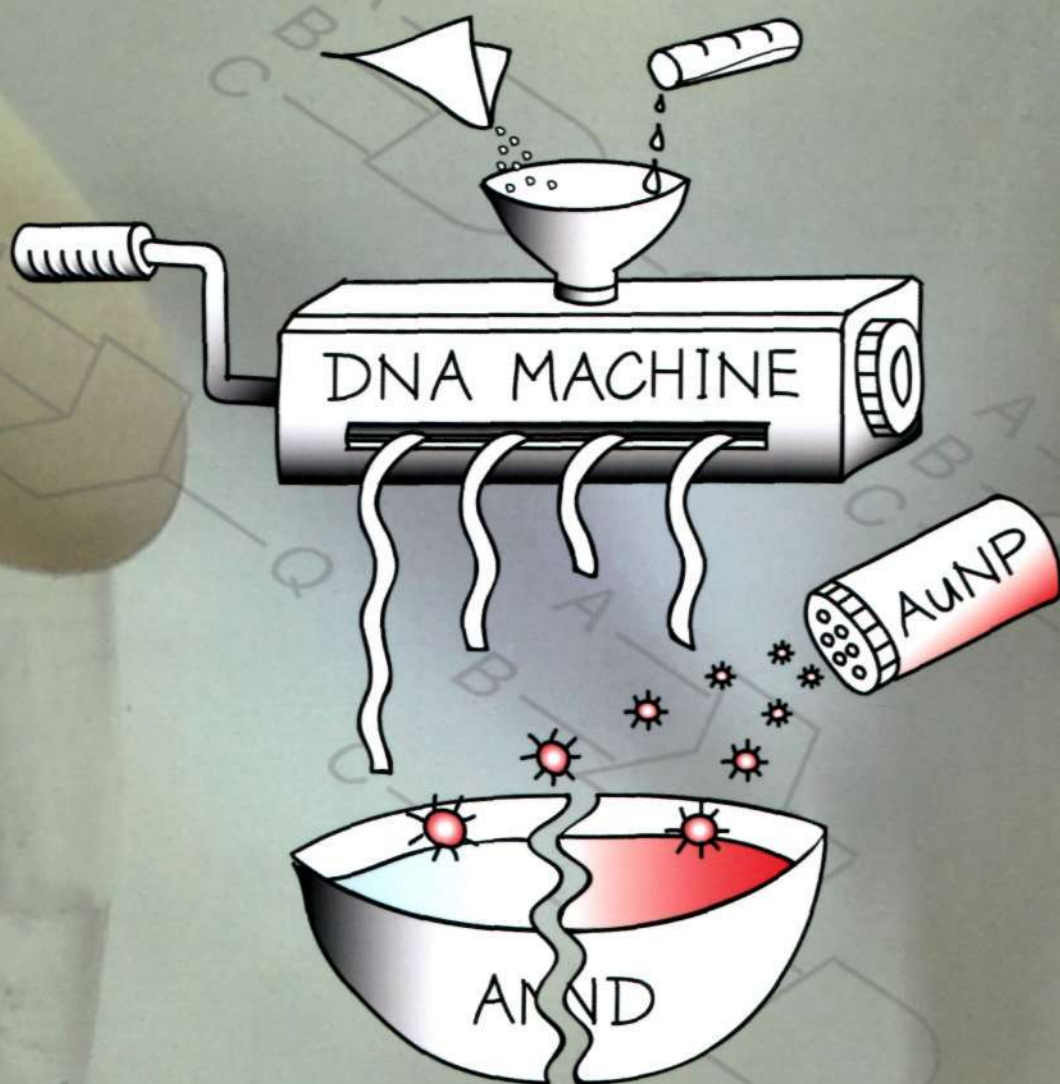


Organic & Biomolecular Chemistry

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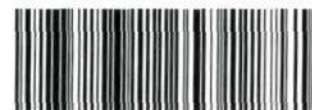
ISSN 1477-0520

COMMUNICATION

Atsushi Ogawa and Yukiko Susaki

Multiple-input and visible-output logic gates using signal-converting DNA machines and gold nanoparticle aggregation

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Organic & Biomolecular Chemistry

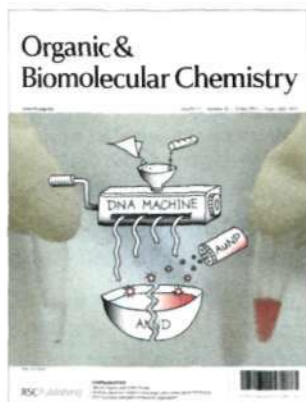
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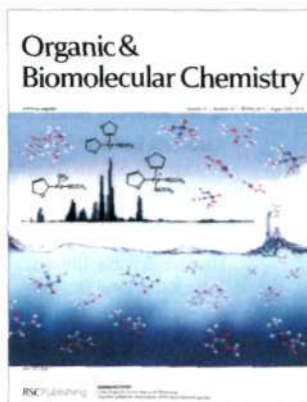
IN THIS ISSUE

ISSN 1477-0520 CODEN OBCRAK 11(20) 3263–3410 (2013)



Cover
See Atsushi Ogawa and Yukiko Susaki, pp. 3272–3276.

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Inside cover
See Carlos Roque D. Correia, Marcos N. Eberlin *et al.*, pp. 3277–3281.

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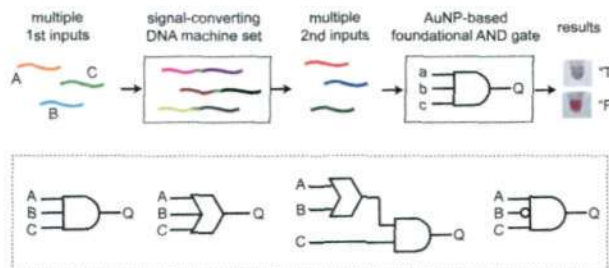
COMMUNICATIONS

3272

Multiple-input and visible-output logic gates using signal-converting DNA machines and gold nanoparticle aggregation

Atsushi Ogawa* and Yukiko Susaki

A facile method for constructing multiple-input and visible-output logic gates has been established.

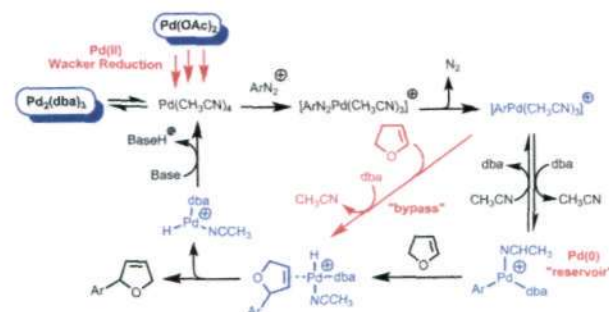


3277

“Dba-free” palladium intermediates of the Heck–Matsuda reaction

Angelo H. L. Machado, Humberto M. S. Milagre, Livia S. Eberlin, Adão A. Sabino, Carlos Roque D. Correia* and Marcos N. Eberlin*

The “dba-free” Heck–Matsuda reaction was investigated via direct ESI-MS(/MS) monitoring.

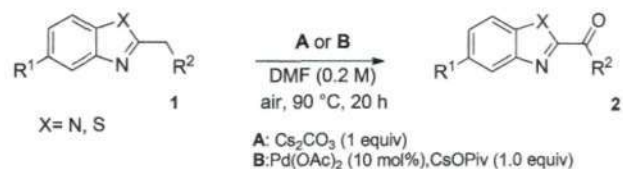


3282

Metal-free aerobic oxidation of benzazole derivatives

Aurélie Dos Santos, Laurent El Kaïm* and Laurence Grimaud*

2-Benzyl benzothiazoles and benzimidazoles are easily oxidized under air and basic conditions to give the corresponding ketones in good yields. The use of palladium acetate as a catalyst has little effect and even gives, in some cases, much lower yields.

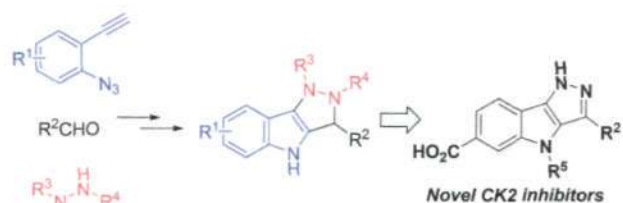


3288

Diversity-oriented synthesis of pyrazolo[4,3-*b*]-indoles by gold-catalysed three-component annulation: application to the development of a new class of CK2 inhibitors

Zengye Hou, Shinya Oishi, Yamato Suzuki, Tatsuhide Kure, Isao Nakanishi, Akira Hirasawa, Gozoh Tsujimoto, Hiroaki Ohno* and Nobutaka Fujii*

Diversity-oriented synthesis of pyrazolo[4,3-*b*]indoles was developed using a gold-catalysed three-component annulation for the development of novel CK2 inhibitors.

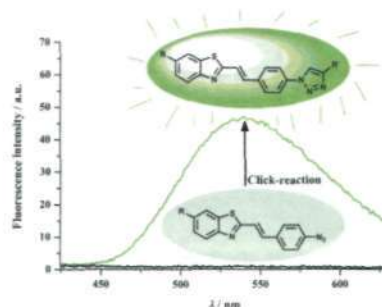


3297

A new family of bioorthogonally applicable fluorogenic labels

András Herner, Ivana Nikić, Mihály Kállay, Edward A. Lemke and Péter Kele*

Synthetic procedures for the construction of fluorogenic azido-labels were developed.



3307

Development of an *in situ* culture-free screening test for the rapid detection of *Staphylococcus aureus* within healthcare environments

Alex Sinclair,* Lauren E. Mulcahy, Lynsey Geldeard, Samerah Malik, Mark D. Fielder* and Adam Le Gresley*

This article reports the development of a novel fluorometric indicator LGX **3**, which undergoes a rapid cleavage when exposed to coagulase positive *Staphylococcus aureus* (SA) bacteria (including methicillin sensitive *Staphylococcus aureus* (MSSA) and methicillin resistant *Staphylococcus aureus* (MRSA) bacteria), promoting the release of rhodamine **1**.

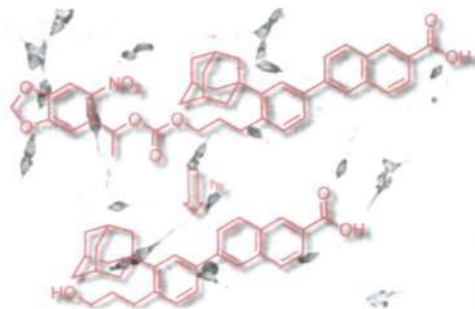


3314

Caged retinoids as photoinducible activators: implications for cell differentiation and neurite outgrowth

Johannes Hoecker, Raphael Liffert, Patrick Burch, Robin Wehlauch and Karl Gademann*

Aiming to control neurite formation and navigate the axonal growth by an extrinsic guidance, we report on the design, synthesis and biological evaluation of caged retinoids.

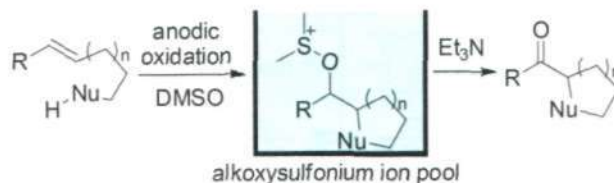


3322

Integration of electrooxidative cyclization and chemical oxidation via alkoxyulfonium ions. Synthesis of exocyclic ketones from alkenes with cyclization

Yosuke Ashikari, Toshiki Nokami and Jun-ichi Yoshida*

Electrooxidative cyclization of alkenes in the presence of DMSO followed by Swern–Moffatt type oxidation gave exocyclic ketones.

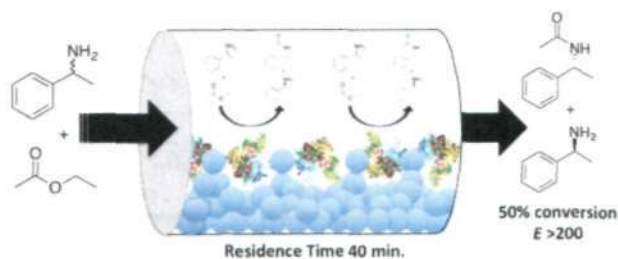


3332

Ethyl acetate as an acyl donor in the continuous flow kinetic resolution of (±)-1-phenylethylamine catalyzed by lipases

Amanda S. de Miranda, Leandro S. M. Miranda and Rodrigo O. M. A. de Souza*

The synthesis of chiral amines is still a challenge for organic synthesis since optically pure amines are of great importance for the pharmaceutical and agrochemical industries.

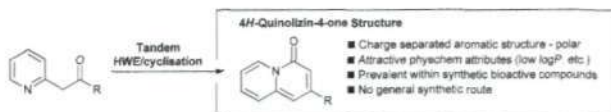


3337

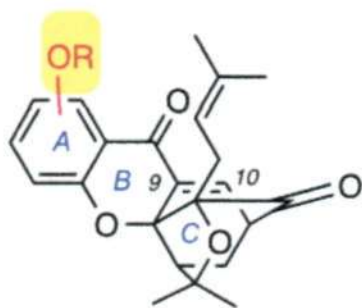
Synthesis of functionalised 4H-quinolizin-4-ones via tandem Horner–Wadsworth–Emmons olefination/cyclisation

Calum W. Muir, Alan R. Kennedy, Joanna M. Redmond and Allan J. B. Watson*

4H-Quinolizin-4-ones are emerging as key pharmacophores for a range of biological targets. A tandem Horner–Wadsworth–Emmons olefination/cyclisation method has been developed to allow facile access to functionalised 4H-quinolizin-4-ones.



3341

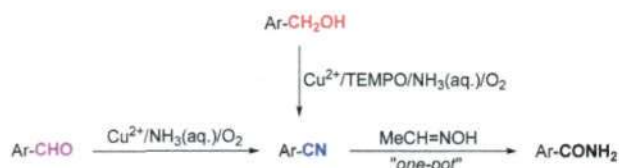


A-ring oxygenation modulates the chemistry and bioactivity of caged *Garcinia* xanthenes

Kristyna M. Elbel, Gianni Guizzunti, Maria A. Theodoraki, Jing Xu, Ayse Batova, Marianna Dakanali and Emmanuel A. Theodorakis*

Functionalization at the A-ring regulates the selective formation of the C-ring cage and the electrophilicity of the C₁₀ enone.

3349



Copper-catalyzed aerobic oxidative synthesis of aryl nitriles from benzylic alcohols and aqueous ammonia

Chuanzhou Tao,* Feng Liu, Youmin Zhu, Weiwei Liu and Zhiling Cao

Copper-catalyzed aerobic oxidative synthesis of aryl nitriles.

3355

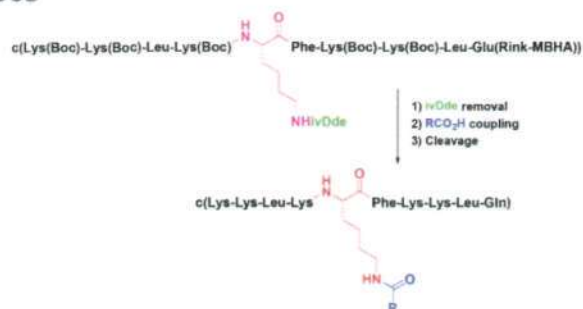


Total synthesis and revision of the absolute configuration of seimatopolide B

Chada Raji Reddy,* Uredi Dilipkumar, Motatipally Damoder Reddy and Nagavaram Narsimha Rao

The enantioselective total synthesis of both enantiomers of seimatopolide B has been accomplished from readily available starting materials. These results suggest the revision of the absolute configuration of the natural product as 3*S*, 6*R*, 9*R*.

3365



A convenient solid-phase strategy for the synthesis of antimicrobial cyclic lipopeptides

Sílvia Vilà, Esther Badosa, Emilio Montesinos, Lidia Feliu* and Marta Planas*

Cyclolipopeptides were synthesized on solid-phase through acylation of a cyclic peptidyl resin and the best sequence displayed high antimicrobial activity and low hemolysis.

3375

Acridine-based macrocyclic fluorescent sensors: self-assembly behavior characterized by crystal structures and a tunable bathochromic-shift in emission induced by H_2PO_4^- via adjusting the ring size and rigidity

Dawei Zhang, Xiaozhi Jiang, Haiqiang Yang, Alexandre Martinez,* Meiyuan Feng, Zhiyun Dong and Guohua Gao*

Acridine-based macrocyclic sensors exhibited a tunable H_2PO_4^- -induced bathochromic shift in emission.

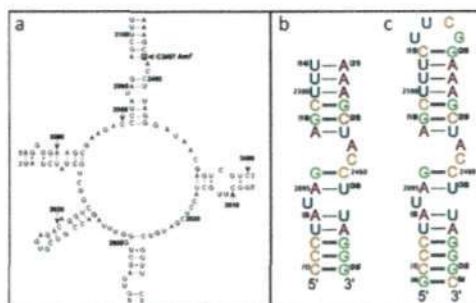


3382

NMR characterisation of a highly conserved secondary structural RNA motif of *Halobacterium halobium* 23S rRNA

John King, Christos Shammis, Misbah Nareen, Moreno Lelli and Vasudevan Ramesh*

The highly conserved 29-mer RNA motif corresponding to the *peptidyl transferase* central circle region of the domain V of *Halobacterium halobium* 23S rRNA has been characterised by multidimensional NMR spectroscopy.

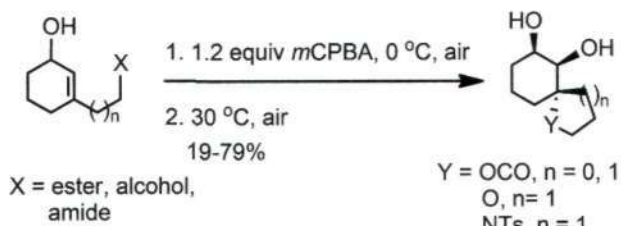


3393

Diastereoselective synthesis of vicinal *cis*-dihydroxyheterospirocycles by one-pot epoxidation/spirocyclization of C(3)-functionalized cyclohex-2-en-1-ols

Ming-Chang P. Yeh,* Chia-Jung Liang, Cheng-Yuan Liu, Ya-fon Shih, I-Chen Lee, Hsiang-Fang Liu and Jeng-Long Wang*

The epoxidation/cyclization of C(3)-functionalized cyclohex-2-en-1-ols provides a convenient method for the synthesis of vicinal *cis*-dihydroxyheterospirocycles.



3400

N,N-Diisopropyl-*N*-phosphonyl imines lead to efficient asymmetric synthesis of aziridine-2-carboxylic esters

Padmanabha V. Kattamuri, Yiwen Xiong, Yi Pan* and Guigen Li*

The *N,N*-diisopropyl-*N*-phosphonyl imine-based asymmetric aza-Darzens reaction was achieved through slow addition of pre-cooled imine solution into a β -bromo lithium enolate mixture in the presence of 4 Å molecular sieves at $-78\text{ }^\circ\text{C}$, which was found to be crucial for the outcomes.

