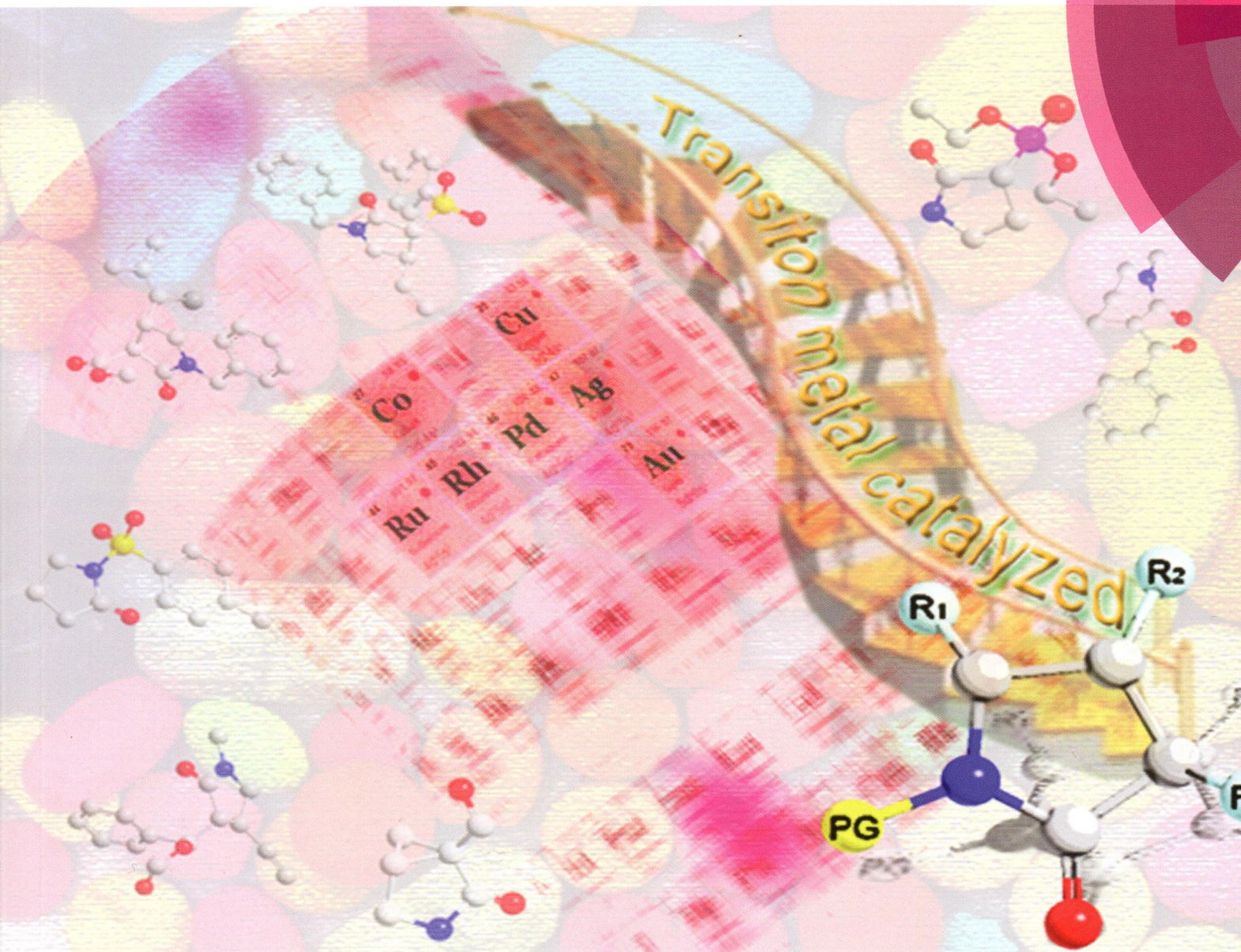


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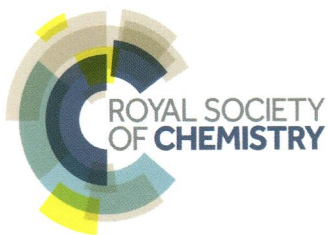
Volume 12 | Number 12 | 28 March 2014 | Pages 1825–1996

# Organic & Biomolecular Chemistry

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REVIEW ARTICLE

Long-Wu Ye, Fabien Gagosz *et al.*

Recent progress towards transition metal-catalyzed synthesis of  $\gamma$ -lactams

# Organic & Biomolecular Chemistry

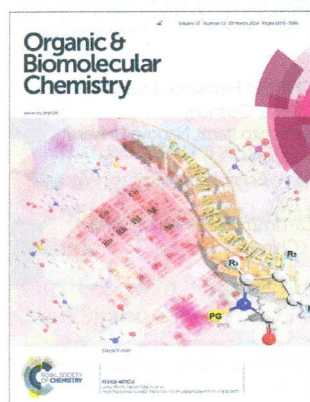
An international journal of synthetic, physical and biomolecular organic chemistry

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## IN THIS ISSUE

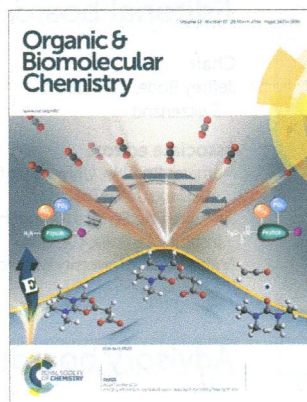
ISSN 1477-0520 CODEN OBCRAK 12(12) 1825–1996 (2014)



### Cover

See Long-Wu Ye,  
Fabien Gagosz *et al.*,  
pp. 1833–1845.

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2014, **12**, 1833.



### Inside cover

See Assaf Friedler *et al.*,  
pp. 1879–1884.

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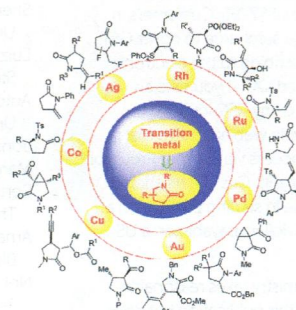
## REVIEWS

1833

### Recent progress towards transition metal-catalyzed synthesis of $\gamma$ -lactams

Long-Wu Ye,\* Chao Shu and Fabien Gagosz\*

The scope of transition metal-catalyzed synthesis of functionalized  $\gamma$ -lactams has broadened tremendously in the last decade (see the picture). These metal-catalyzed processes are reviewed by highlighting their specificity and applicability, and the mechanistic rationale is presented where possible.

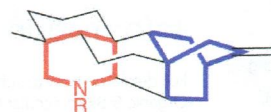


1846

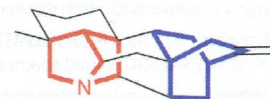
### Synthetic strategies toward hetidine and hetisine-type diterpenoid alkaloids

Amy M. Hamlin, Jessica K. Kisunzu and  
Richmond Sarpong\*

An analysis of various approaches toward hetidine and hetisine-type diterpenoid alkaloids is presented in this review.



hetidine-type



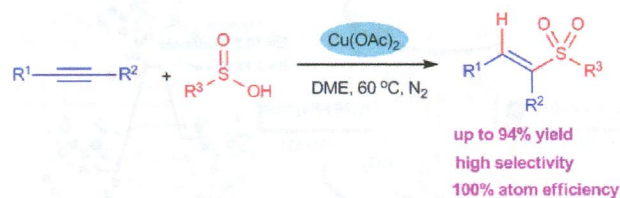
hetisine-type

1861

### Copper-catalyzed highly selective direct hydrosulfonylation of alkynes with arylsulfonic acids leading to vinyl sulfones

Wei Wei, Jinli Li, Daoshan Yang, Jiangwei Wen, Yueting Jiao, Jinmao You and Hua Wang\*

Copper-catalyzed direct hydrosulfonylation of alkynes with arylsulfonic acids for the synthesis of (*E*)-vinyl sulfones has been developed with 100% atom efficiency.

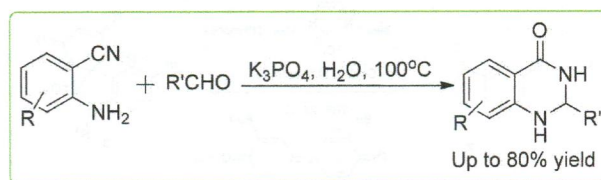


1865

### Base mediated synthesis of 2-aryl-2,3-dihydroquinazolin-4(1*H*)-ones from 2-aminobenzonitriles and aromatic aldehydes in water

Xiao-Feng Wu,\* Stefan Oschatz, Axel Block, Anke Spannenberg and Peter Langer\*

An interesting and convenient procedure to obtain 2,3-dihydroquinazolin-4(1*H*)-ones in good yields has been developed. Subsequent oxidation to quinazolinones was realized as well.

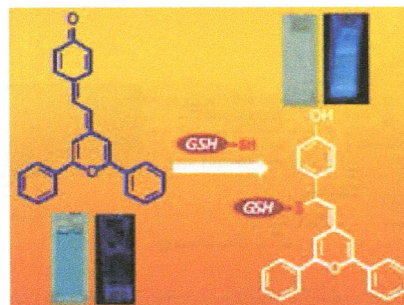


1871

### A surfactant-assisted probe for the chromo-fluorogenic selective recognition of GSH in water

Alessandro Agostini, Inmaculada Campos, Michele Milani, Sameh Elsayed, Lluís Pascual, Ramón Martínez-Mañez,\* Maurizio Licchelli\* and Félix Sancenón

Chromo-fluorogenic detection of GSH *versus* cysteine in water was accomplished using a pyrylium-stilbene derivative and CTAB micelles.

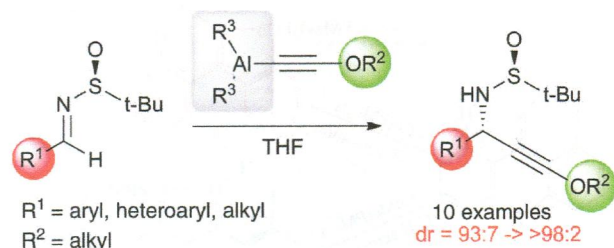


1875

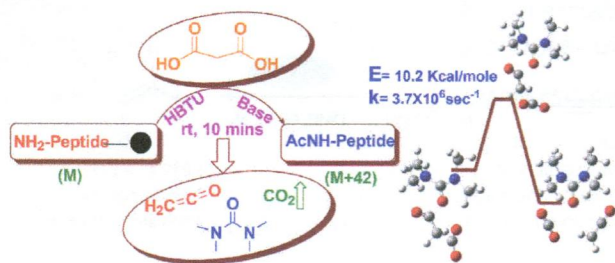
### Highly diastereoselective addition of alkoxyethynyl aluminium reagents to *N*-*tert*-butylsulfinyl aldimines

Charlie Verrier, Sébastien Carret and Jean-François Poisson\*

The diastereoselective addition of aluminium alkoxyacetylides, readily prepared from dichloroenol ethers, to Ellman's sulfinylimines is reported.



1879

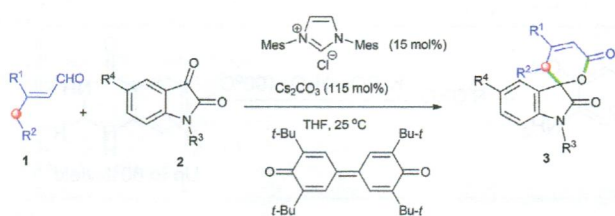


### A highly efficient *in situ* N-acetylation approach for solid phase synthesis

Koushik Chandra, Tapta Kanchan Roy, Johnny N. Naoum, Chaim Gilon, R. Benny Gerber and Assaf Friedler\*

*In situ* peptide acetylation.

1885

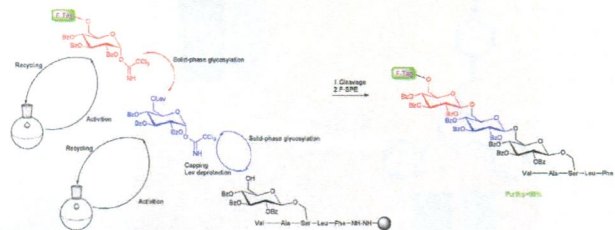


### NHC-catalyzed oxidative $\gamma$ -addition of $\alpha,\beta$ -unsaturated aldehydes to isatins: a high-efficiency synthesis of spirocyclic oxindole-dihydropyranones

Rui Liu, Chenxia Yu, Zhaoxin Xiao, Tuanjie Li, Xiangshan Wang, Yuanwei Xie and Changsheng Yao\*

An efficient assembly of the spirocyclic oxindole-dihydropyranone scaffold via the N-heterocyclic carbene (NHC)-catalyzed oxidative  $\gamma$ -functionalization of  $\alpha$ -enal bearing  $\gamma$ -H with isatin derivatives was developed.

1892

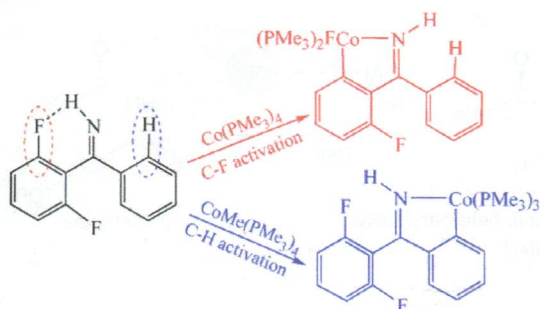


### A new approach for the synthesis of O-glycopeptides through a combination of solid-phase glycosylation and fluororous tagging chemistry (SHGPFT)

Bo Liu, Fa Zhang, Yan Zhang and Gang Liu\*

A new and efficient hybrid approach has been developed for the synthesis and purification of O-linked glycopeptides with high purity.

1897



### Computational rationalization of the selective C-H and C-F activations of fluoroaromatic imines and ketones by cobalt complexes

Jingjing Li, Dongju Zhang,\* Hongjian Sun and Xiaoyan Li\*

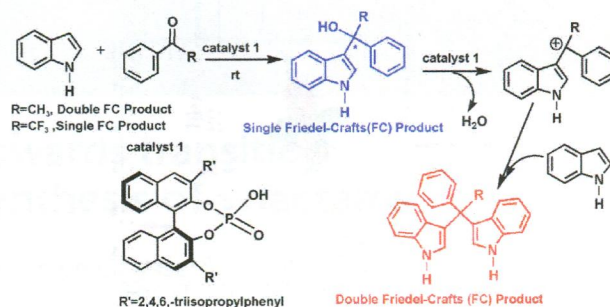
The selective C-H and C-F activations of fluoroaromatic imines and ketones by cobalt complexes have been rationalized well by performing DFT calculations.

1908

### A density functional study of chiral phosphoric acid-catalyzed direct arylation of trifluoromethyl ketone and diarylation of methyl ketone: reaction mechanism and the important role of the CF<sub>3</sub> group

Aiping Fu,\* Wei Meng, Hongliang Li, Jing Nie and Jun-An Ma\*

The detailed mechanism of chiral phosphoric acid-catalyzed arylation and diarylation reactions between acetophenone or trifluoroacetophenone and indole has been investigated by DFT methods.

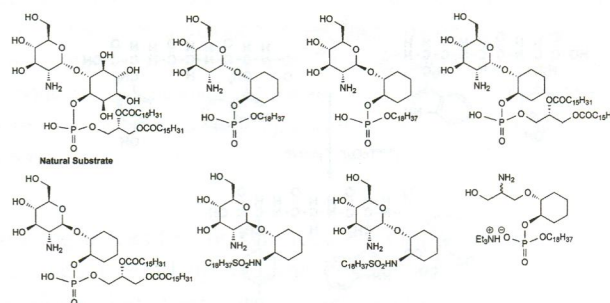


1919

### Probing the substrate specificity of *Trypanosoma brucei* GlcNAc-PI de-*N*-acetylase with synthetic substrate analogues

Amy S. Capes, Arthur Crossman, Michael D. Urbaniak, Sophie H. Gilbert, Michael A. J. Ferguson\* and Ian H. Gilbert\*

A series of substrate analogues of GlcNAc-PI de-*N*-acetylase were tested as substrates and inhibitors of the *Trypanosoma brucei* enzyme.

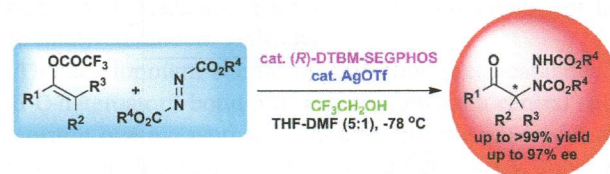


1935

### Asymmetric $\alpha$ -amination reaction of alkenyl trifluoroacetates catalyzed by a chiral phosphine-silver complex

Akira Yanagisawa,\* Ryoji Miyake and Kazuhiro Yoshida

The chiral silver-catalyzed asymmetric  $\alpha$ -amination of alkenyl trifluoroacetates with dialkyl azodicarboxylates affords the nonracemic  $\alpha$ -hydrazino ketones in high enantioselectivities.

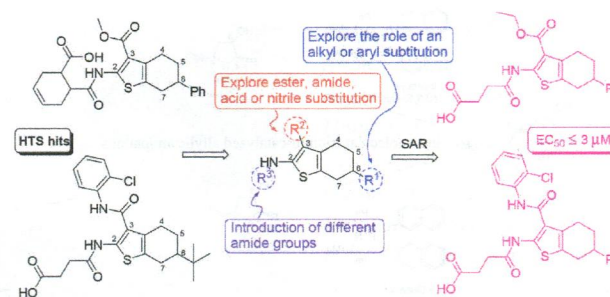


1942

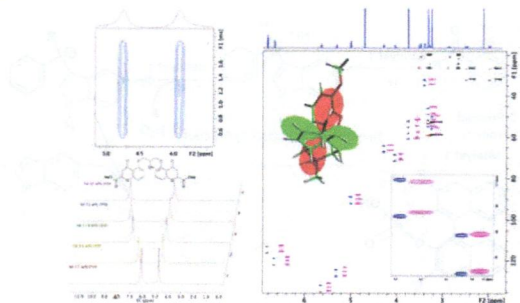
### Syntheses and biological evaluation of 2-amino-3-acyl-tetrahydrobenzothiophene derivatives; antibacterial agents with antivirulence activity

Hung The Dang, Erik Chorell, Hanna Uvell, Jerome S. Pinkner, Scott J. Hultgren and Fredrik Almqvist\*

The synthesis, SAR and effects of 2-amino-3-acyl-tetrahydrobenzothiophene derivatives on pilus assembly in *E. coli* have been described.



1957

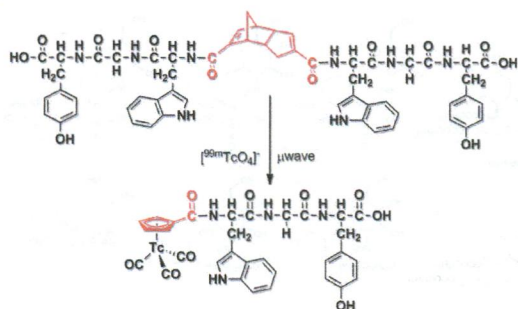


### Disodium cromoglycate: exploiting its properties as a NMR weak-aligning medium for small organic molecules

Eduardo Troche-Pesqueira, María-Magdalena Cid\* and Armando Navarro-Vázquez\*

Disodium cromoglycate (cromolyn) is an easy-to-prepare water-compatible NMR weak aligning medium for small molecules.

1966

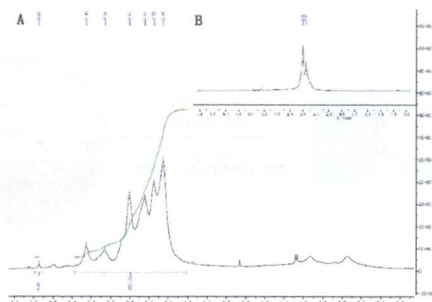


### Synthesis of tripeptide derivatized cyclopentadienyl complexes of technetium and rhenium as radiopharmaceutical probes

Qaisar Nadeem, Daniel Can, Yunjun Shen, Michael Felber, Zaid Mahmood and Roger Alberto\*

We describe the syntheses of half-sandwich complexes of the type  $[(\eta^5\text{-Cp}(\text{CONH-R}))\text{M}(\text{CO})_3]$  with  $\text{M} = \text{Re}$  or  $^{99\text{m}}\text{Tc}$ .

1975

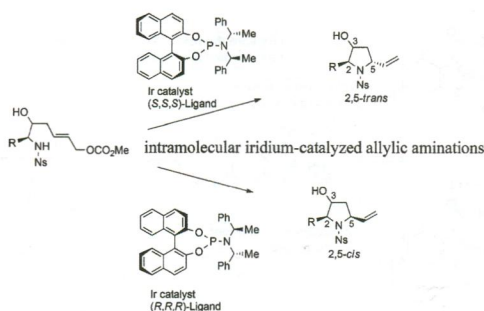


### Amphiphilic polyethylenimine (PEI) as highly efficient non-viral gene carrier

Xibo Yan, Yue Zhang, Hongbo Zhang, Peng George Wang, Xiaogang Chu and Xin Wang\*

Efficient and safe gene vectors are important for gene therapy.

1983



### Asymmetric synthesis of 2,5-disubstituted 3-hydroxypyrrolidines based on stereodivergent intramolecular iridium-catalyzed allylic aminations

Yoshihiro Natori, Shunsuke Kikuchi, Takahiro Kondo, Yukako Saito, Yuichi Yoshimura and Hiroki Takahata\*

An intramolecular iridium-catalyzed allylic cyclization of (*E*)-allylic methyl carbonates by an exchange in both enantiomers of the (*S,S,S*)-ligand or the (*R,R,R*)-ligand afforded the 2,5-*trans/cis* pyrrolidine derivatives.