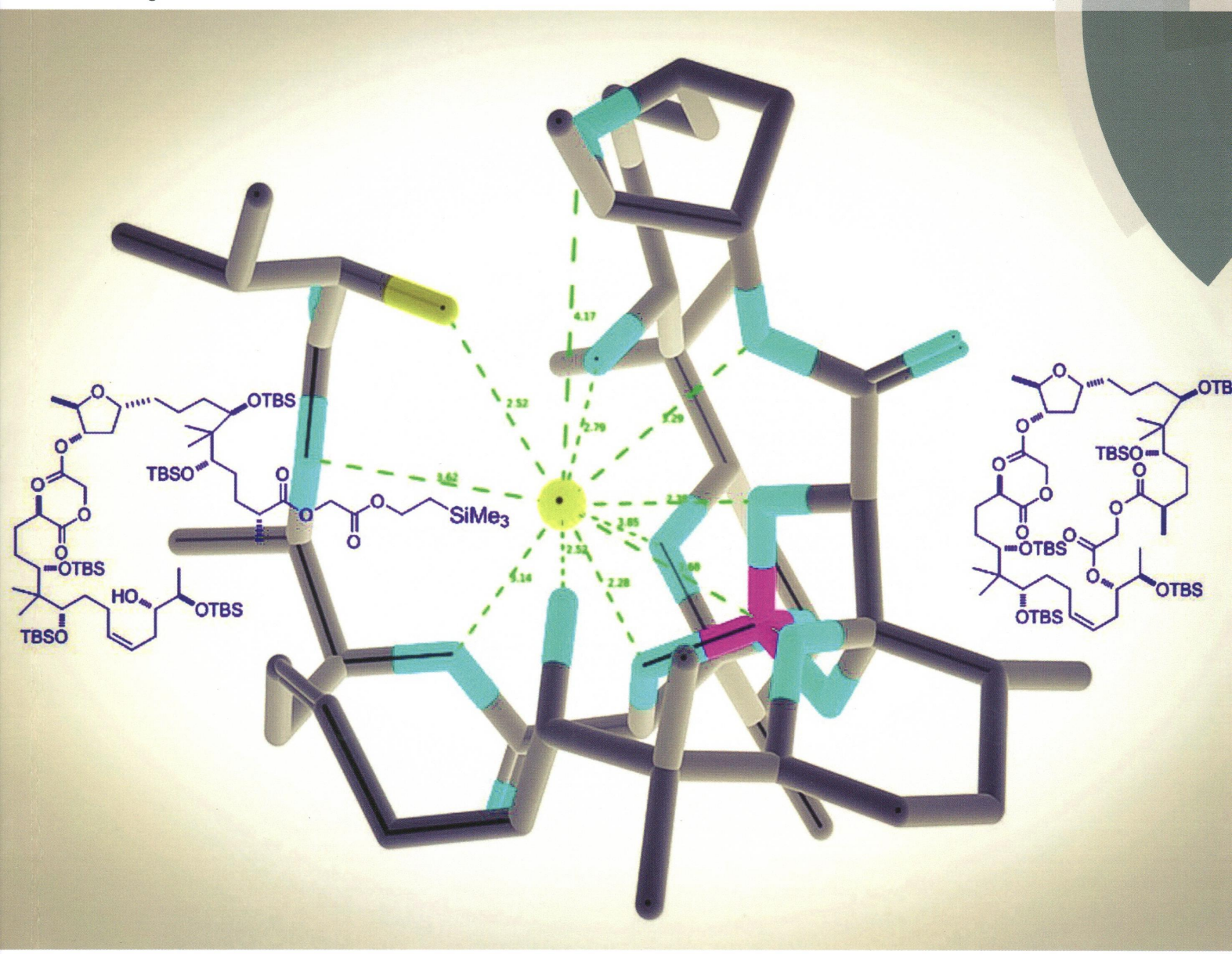
Volume 12 | Number 45 | 7 December 2014 | Pages 9035–9280

Organic & Biomolecular Chemistry

www.rsc.org/obc



ISSN 1477-0520

ROYAL SOCIETY OF CHEMISTRY

PAPER
James D. White *et al.*
Total synthesis of macrodiolide ionophores aplasmomycin A and boromycin *via* double ring contraction

Organic & Biomolecular Chemistry

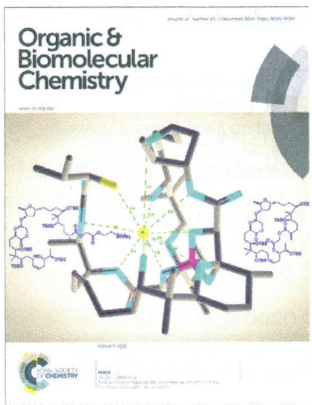
An international journal of synthetic, physical and biomolecular organic chemistry

www.rsc.org/obc

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

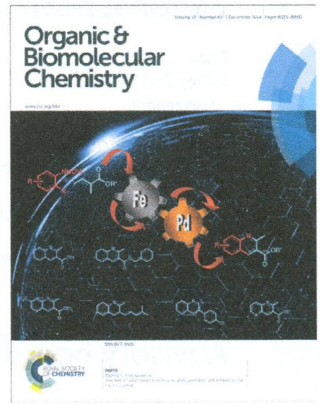
IN THIS ISSUE

ISSN 1477-0520 CODEN OBCRAK 12(45) 9035–9280 (2014)



Cover
See James D. White *et al.*, pp. 9116–9132.

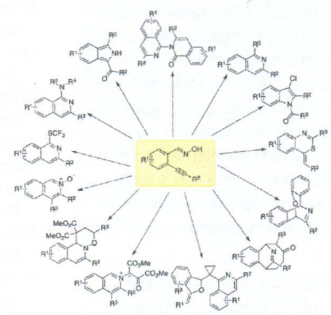
Image reproduced by permission of James D. White from *Org. Biomol. Chem.*, 2014, **12**, 9116, and prepared with the assistance of Shuneize E. Slater (University of Mississippi).

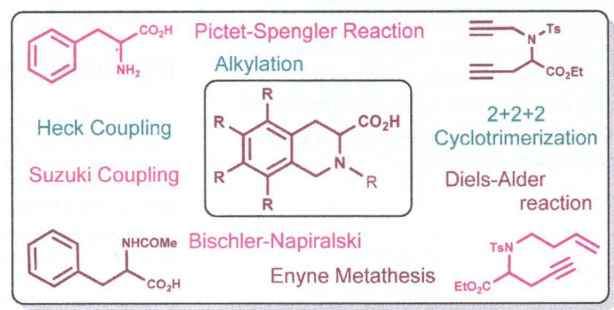


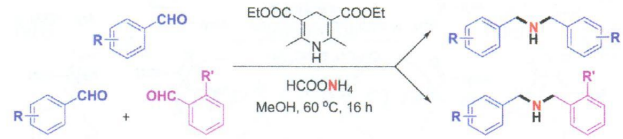
Inside cover
See Radhey S. Srivastava *et al.*, pp. 9133–9138.

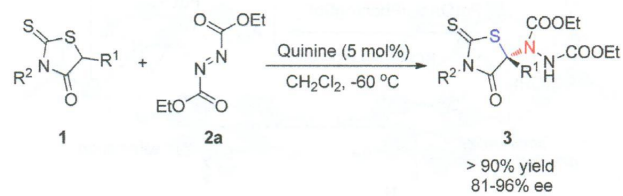
Image reproduced by permission of Radhey S. Srivastava from *Org. Biomol. Chem.*, 2014, **12**, 9133.

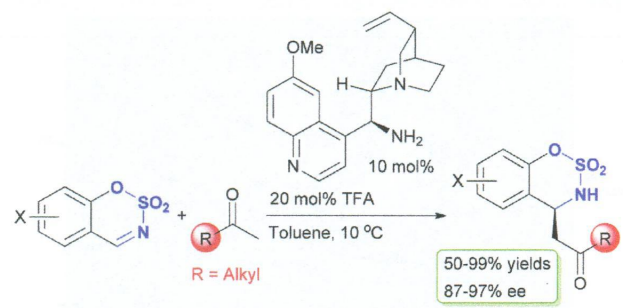
REVIEWS

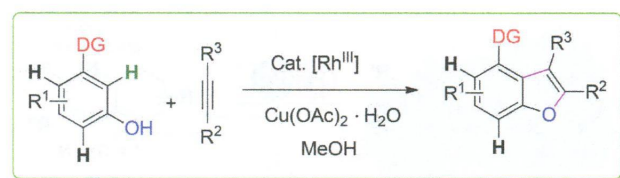






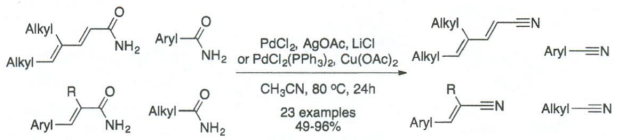






COMMUNICATIONS

9109

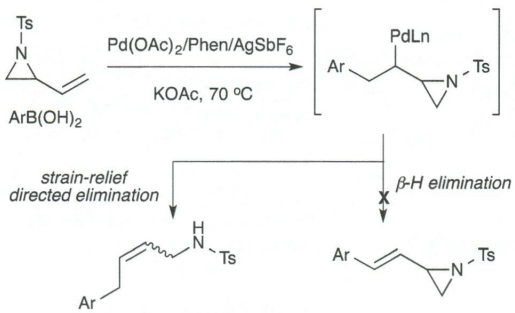


Synthesis of nitriles *via* palladium-catalyzed water shuffling from amides to acetonitrile

Wandi Zhang, Christopher W. Haskins, Yang Yang and Mingji Dai*

Palladium-catalyzed synthesis of nitriles from amides has been described.

9113



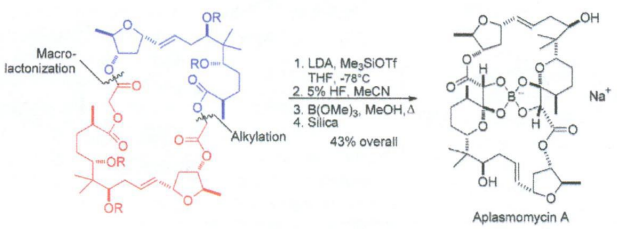
Unusual (*Z*)-selective palladium(II)-catalysed addition of aryl boronic acids to vinylaziridines

JieXiang Yin, Theresa Mekelburg and Christopher Hyland*

The palladium(II)-catalysed addition of arylboronic acids to vinylaziridines has been developed. This reaction proceeds *via* an insertion/ring-opening process to provide (*E*)-allylsulfonamides. This stereoselectivity is complimentary to existing methods that typically proceed *via* an S_N2' mechanism to yield (*Z*)-allylic systems.

PAPERS

9116

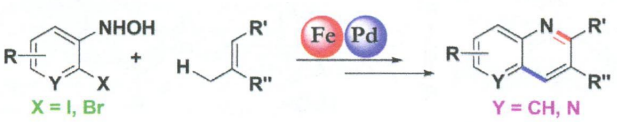


Total synthesis of macrodiolide ionophores aplasmomycin A and boromycin *via* double ring contraction

Mitchell A. Avery, Satish C. Choudhry, Om Prakash Dhingra, Brian D. Gray, Myung-chol Kang, Shen-chun Kuo, Thalathani R. Vedananda, James D. White* and Alan J. Whittle

Aplasmomycin A was synthesized by double ring contraction of a 34-membered dilactone; boromycin was synthesized using the same strategy.

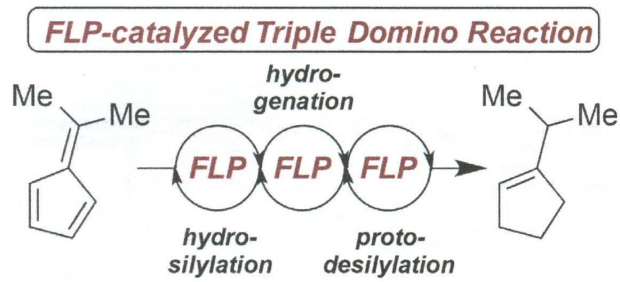
9133

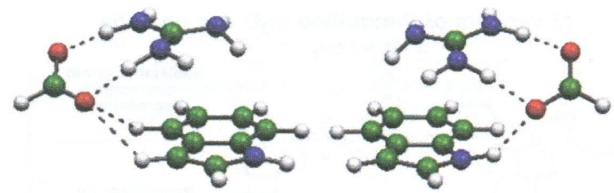


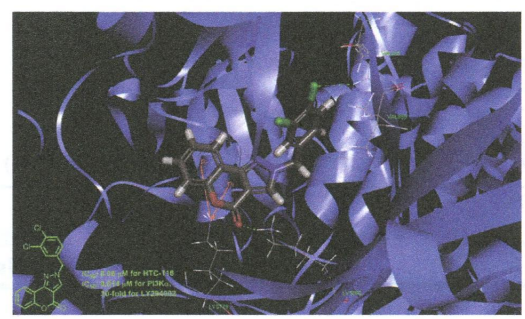
Synthesis of substituted quinolines *via* allylic amination and intramolecular Heck-coupling

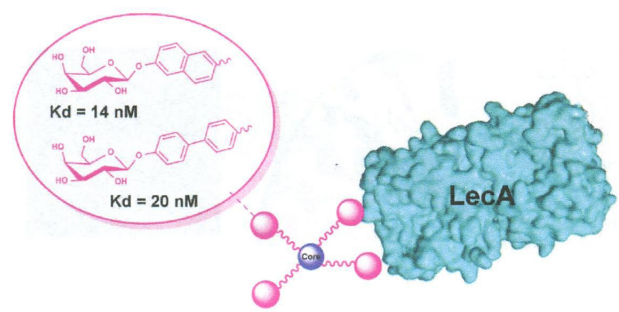
Siva Murru, Brandon McGough and Radhey S. Srivastava*

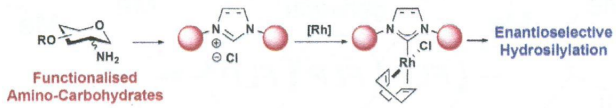
New catalytic approach to access substituted quinolines and naphthyridines *via* allylic C–H amination followed by intramolecular Heck-coupling and aerobic dehydrogenation.







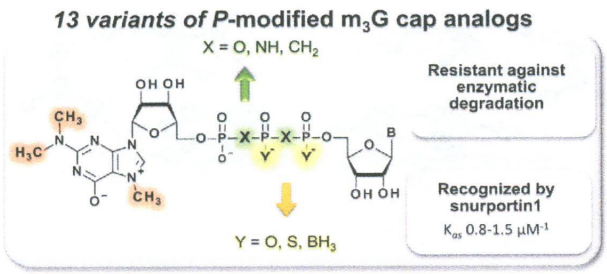




Carbohydrate-based N-heterocyclic carbenes for enantioselective catalysis

Alexander S. Henderson, John F. Bower* and M. Carmen Galan*

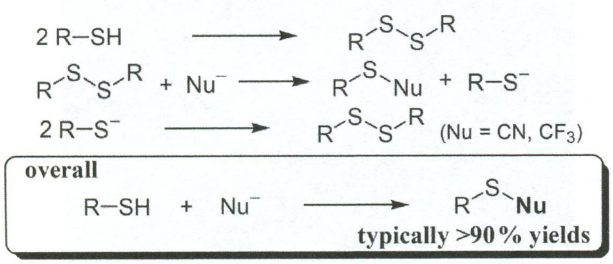
Versatile syntheses of C2-linked and C_2-symmetric carbohydrate-based NHC·HCls from functionalised amino-carbohydrate derivatives are reported. The corresponding Rh complexes were evaluated in asymmetric hydrosilylation of ketones.



Towards novel efficient and stable nuclear import signals: synthesis and properties of trimethylguanosine cap analogs modified within the 5′,5′-triphosphate bridge

Malgorzata Zytek, Joanna Kowalska, Maciej Lukaszewicz, Blazej A. Wojtczak, Joanna Zuberek, Aleksandra Ferenc-Mrozek, Edward Darzynkiewicz, Anna Niedzwiecka and Jacek Jemielity*

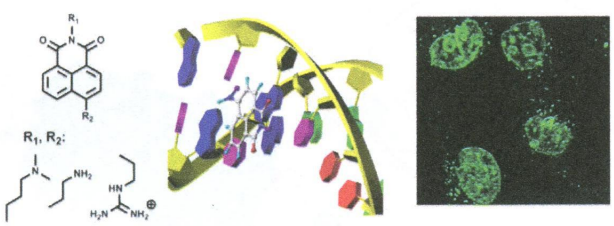
A study of methylenebisphosphonate, imidodiphosphate, phosphorothioate and boranophosphate TMG cap analogs.



Oxidative nucleophilic strategy for synthesis of thiocyanates and trifluoromethyl sulfides from thiols

Kazuya Yamaguchi, Konomi Sakagami, Yumi Miyamoto, Xiongjie Jin and Noritaka Mizuno*

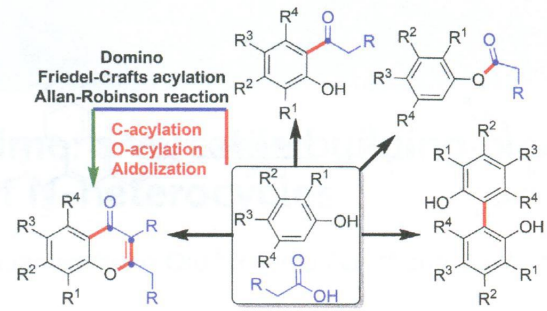
In the presence of a 2 × 2 manganese oxide-based octahedral molecular sieve (OMS-2) and potassium fluoride (KF), various thiocyanates and trifluoromethyl sulfides could be synthesized from thiols in almost quantitative yields.

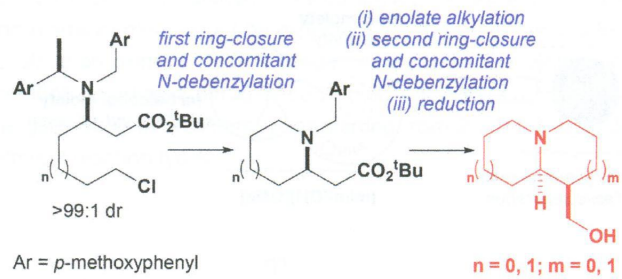


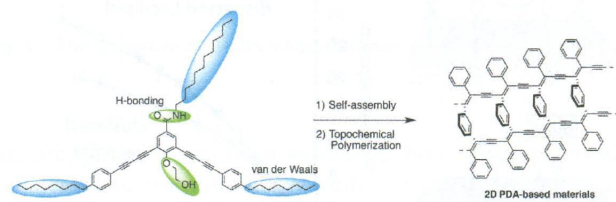
Effects of side chains on DNA binding, cell permeability, nuclear localization and cytotoxicity of 4-aminonaphthalimides

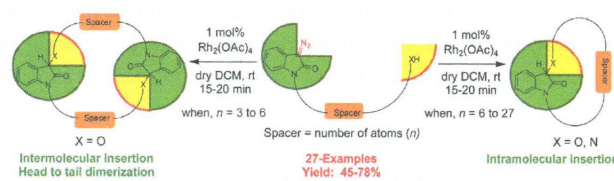
Jin Zhou, Ang Chang, Linlin Wang, Ying Liu, Xiangjun Liu and Dihua Shangguan*

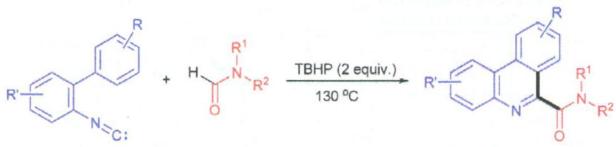
The guanidinoethyl group increases DNA binding, and decreases the cell permeability and cytotoxity; the dimethylaminopropyl group enhances the cell permeability and cytotoxity.







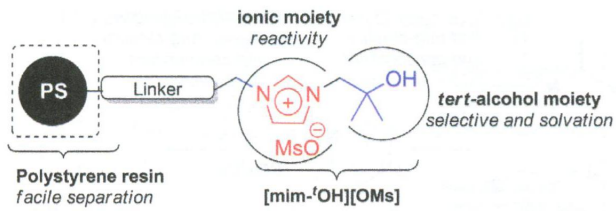




TBHP-promoted sequential carboxamidation and aromatisation of aryl isonitriles with formamides

Xiaomei Feng, Hui Zhu, Lei Wang, Yan Jiang, Jiang Cheng and Jin-Tao Yu*

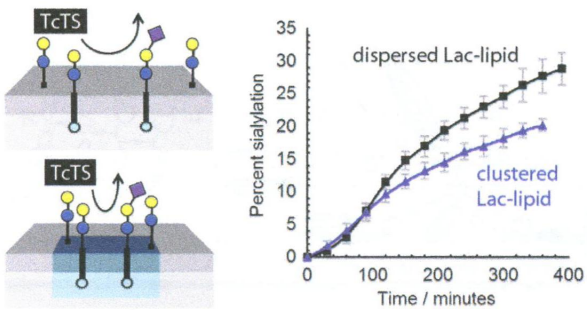
The *tert*-butyl hydroperoxide (TBHP)-promoted sequential carboxamidation and aromatisation of isonitriles with formamides was developed. This reaction involved the addition of formamide radicals to isonitriles and sequential C–C bond formation by intramolecular aromatic cyclisation.



One molecule of ionic liquid and *tert*-alcohol on a polystyrene-support as catalysts for efficient nucleophilic substitution including fluorination

Sandip S. Shinde* and Sunil N. Patil

The *tert*-alcohol and ionic liquid solvents in one molecule [mim-ᵗOH][OMs] was immobilized on polystyrene and reported to be a highly efficient catalyst in aliphatic nucleophilic substitution using alkali metal salts.



Sialylation of lactosyl lipids in membrane microdomains by *T. cruzi trans*-sialidase

Gavin T. Noble, Faye L. Craven, Maria Dolores Segarra-Maset, Juana Elizabeth Reyes Martínez, Robert Šardzík, Sabine L. Flitsch* and Simon J. Webb*

Soluble *T. cruzi trans*-sialidase transformed a synthetic lactosyl glycolipid in microdomains more slowly than the same substrate dispersed across the bilayer surface, producing phospholipid vesicles with a Neu5Ac(α2-3)Gal(β1-4)Glc "glycocalyx".