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Organic & Biomolecular Chemistry

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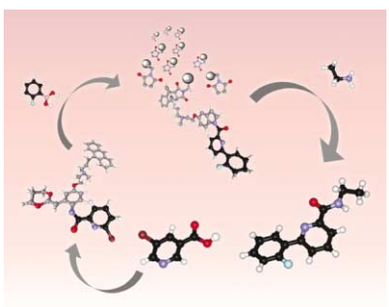
Incorporating Acta Chemica Scandinavica



Cover
See Xin Li, Chris Abell, Miles S. Congreve, Brian H. Warrington and Mark Ladlow, pp. 989–998. The use of a bifunctional, phase-switching protecting group for the parallel solution phase synthesis of carboxamides.

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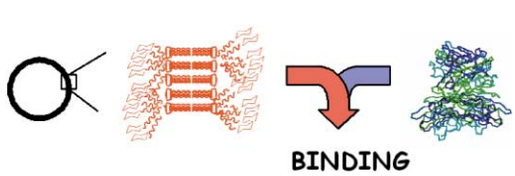
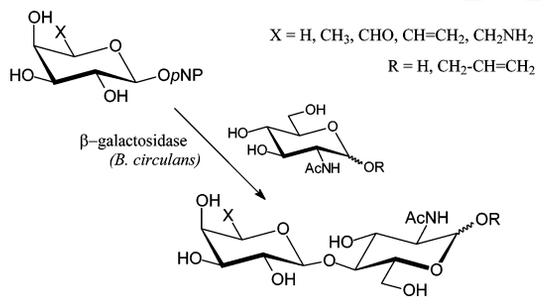
COMMUNICATIONS



Multivalent binding of galactosylated cyclodextrin vesicles to lectin

Antonino Mazzaglia, Damien Forde, Domenico Garozzo, Paola Malvagna, Bart Jan Ravoo and Raphael Darcy

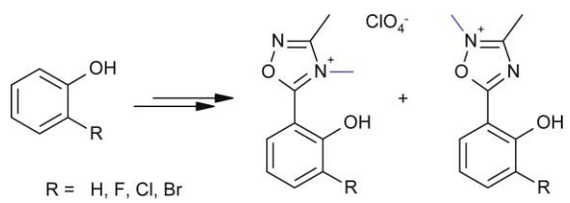
Novel amphiphilic cyclodextrins labelled with glycosyl groups form nanoparticles and vesicles for the recognition of carbohydrate-binding cell receptors.



Formation of LacNAc mimetics employing novel donor substrates for enzymatic β1→4 galactosylation

Saskia Weingarten and Joachim Thiem

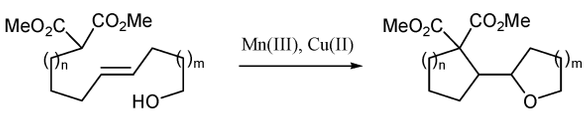
In examining C-6 modified 4-nitrophenyl β-D-galactopyranosides as donor structures the β-galactosidase (*Bacillus circulans*) revealed an unexpectedly broad substrate specificity which allowed successful syntheses of various disaccharide components.



A short and efficient preparation of methyl-[1,2,4]-oxadiazolium derivatives with plant-inducing activity

Markus R. Dobler

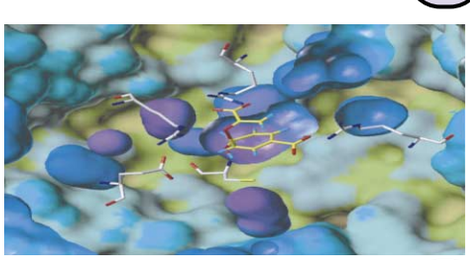
We have developed an efficient synthetic method leading to a structurally diverse array of salicylic acid and oxadiazolium derivatives.



Manganese(III) acetate mediated synthesis of oxygen heterocycles. Influence of copper(II) salts on product distribution

David G. Hulcoop, Helen M. Sheldrake and Jonathan W. Burton

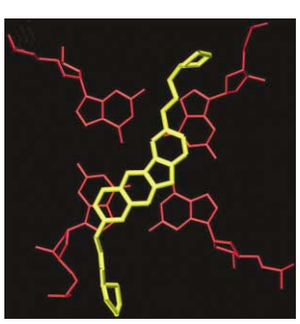
Exposure of unsaturated malonates bearing pendant alcohols to manganese(III) acetate and a copper(II) salt gives rise to the formation of carbocycles linked to oxygen heterocycles. The use of copper(II) salts bearing poorly coordinating anions has a profound influence on the product distribution.



Transition state stabilization and substrate strain in enzyme catalysis: *ab initio* QM/MM modelling of the chorismate mutase reaction

Kara E. Ranaghan, Lars Ridder, Borys Szefczyk, W. Andrzej Sokalski, Johannes C. Hermann and Adrian J. Mulholland

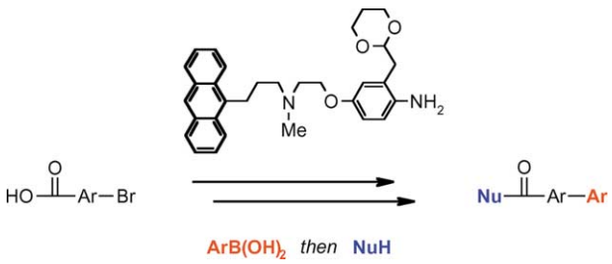
High-level modelling of Claisen rearrangement in *B. subtilis* chorismate mutase shows significant TS stabilization by the enzyme, compared to solution.



Synthesis and evaluation of analogues of 10*H*-indolo-[3,2-*b*]quinoline as G-quadruplex stabilising ligands and potential inhibitors of the enzyme telomerase

Bérangère Guyen, Christoph M. Schultes, Pascale Hazel, John Mann and Stephen Neidle

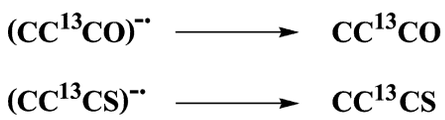
A new class of quindoline analogues with substituents at the 2- and 7-positions have been synthesised and shown to stabilise an intramolecular G-quadruplex DNA against increases in temperature. The compounds shown exhibit modest inhibitory activity against telomerase.



A novel phase-switching protecting group for multi-step parallel solution phase synthesis

Xin Li, Chris Abell, Miles S. Congreve, Brian H. Warrington and Mark Ladlow

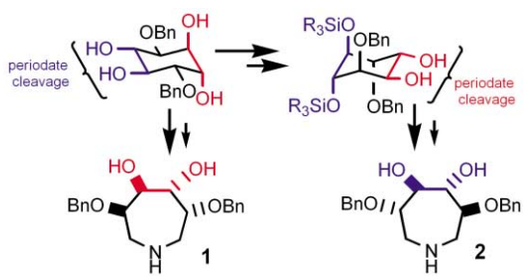
A novel protecting group that incorporates functionalities to facilitate compound purification by enabling solid-phase extraction in either an irreversible, or pH dependent reversible manner is presented, and its use in parallel synthesis is exemplified.



Do the interstellar molecules CCCO and CCCS rearrange when energised?

Khoa Minh Tran, Andrew M. McAnoy and John H. Bowie

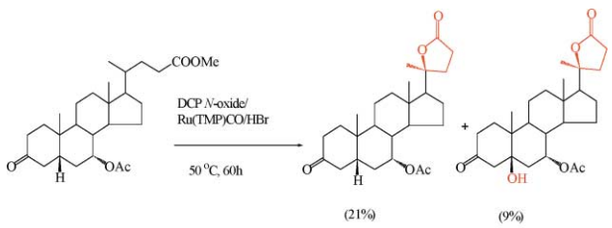
The neutrals CCCO and CCCS can be made by one-electron vertical oxidation of the anion precursors $(CCCO)^{-\bullet}$ and $(CCCS)^{-\bullet}$. The majority are stable for at least a microsecond.



Conformation inversion of an inositol derivative by use of silyl ethers: a modified route to 3,6-di-*O*-substituted-L-*ido*-tetrahydroxyazepane derivatives

Gavin F. Painter, Andrew Falshaw and Herbert Wong

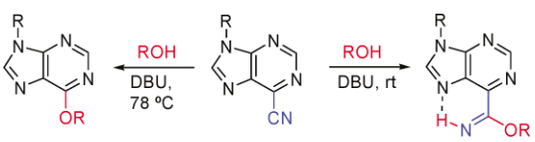
Silyl substitution on an inositol ring causes ring inversion, allowing an otherwise unreactive *trans*-diaxial diol to react with periodate.



The remote-oxyfunctionalization of unactivated carbons in (5β)-3-oxobile acids by 2,6-dichloropyridine *N*-oxide catalyzed by ruthenium–porphyrin and HBr: a direct lactonization at C-20

Shoujiro Ogawa, Takashi Iida, Takaaki Goto, Nariyasu Mano, Junichi Goto and Toshio Nambara

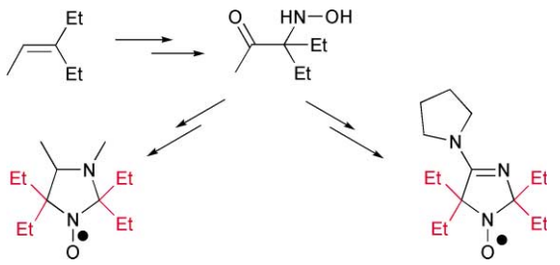
A direct, one-step lactonization of the unactivated carbon at C-20 in 3-oxobile acid methyl ester-acetylates was attained by the title oxidant system.



Efficient conversion of 6-cyanopurines into 6-alkoxyformimidoylpurines

M. Alice Carvalho, Teresa M. Esteves, M. Fernanda Proença and Brian L. Booth

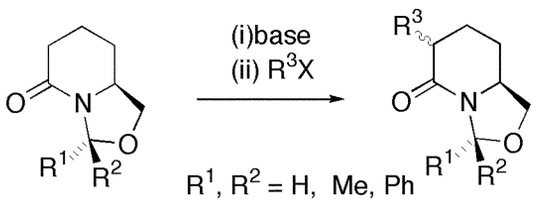
6-Cyanopurines were selectively converted into 6-alkoxy or 6-alkoxyformimidoylpurines. The reaction of 6-alkoxyformimidoylpurines with methylamine led to 6-amidinopurines in excellent yield.



Synthesis of the tetraethyl substituted pH-sensitive nitroxides of imidazole series with enhanced stability towards reduction

Igor A. Kirilyuk, Andrey A. Bobko, Igor A. Grigor'ev and Valery V. Khramtsov

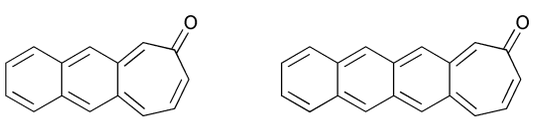
The pH-sensitive spin probes of a 2,2,5,5-tetraethylimidazole series are much more stable in blood and in ascorbate solutions than their 2,2,5,5-tetramethyl analogs.



Enantiopure bicyclic piperidinones: stereoselectivity in lactam enolate alkylations

Andrew G. Brewster, Simon Broady, Catherine E. Davies (née Mills), Thomas D. Heightman, Stephen A. Hermitage, Mark Hughes, Mark G. Moloney and Gordon Woods

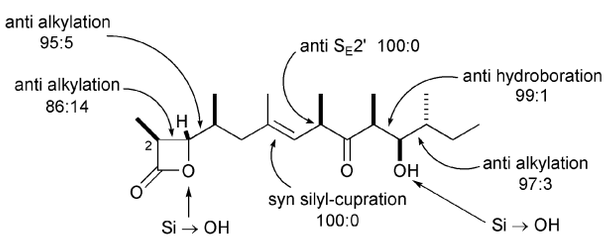
The synthesis and alkylation of [4.3.0]-bicyclic lactams, derived from 6-oxopipecolic acid, have been investigated.



π-Extended *o*-quinoidal tropone derivatives: experimental and theoretical studies of naphtho[2,3-*c*]tropone and anthro[2,3-*c*]-tropone

Masakazu Ohkita, Kieko Sano, Takanori Suzuki, Takashi Tsuji, Tadatake Sato and Hiroyuki Niino

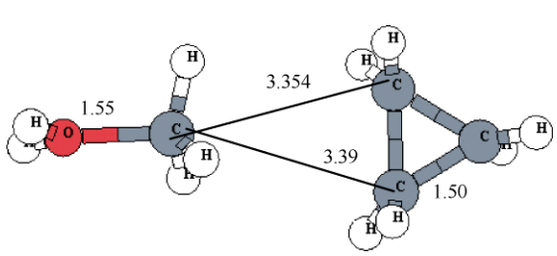
π-Extended *o*-quinoidal naphtho[2,3-*c*]tropone has been generated photochemically under matrix isolation conditions and characterized.



Stereocontrol in organic synthesis using silicon-containing compounds. Studies directed towards the synthesis of ebelactone A

Sarah C. Archibald, David J. Barden, Jérôme F. Y. Bazin, Ian Fleming, Colin F. Foster, Ajay K. Mandal, Amit K. Mandal, David Parker, Ken Takaki, Anne C. Ware, Anne R. B. Williams and Anna B. Zwicky

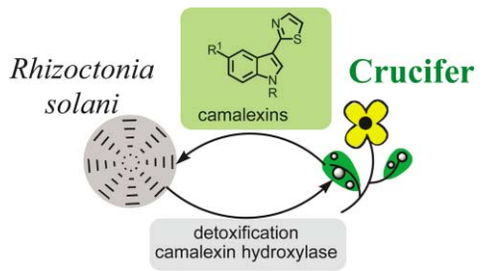
A silyl group controlled all the relative stereochemistry in the assembly of three components designed for a synthesis of ebelactone A, but the configuration at C-2 was inadvertently inverted at a later stage.



Relative reactivity of three and four membered rings – the absence of charge effect

Joel L. Wolk, Milon Sprecher, Harold Basch and Shmaryahu Hoz

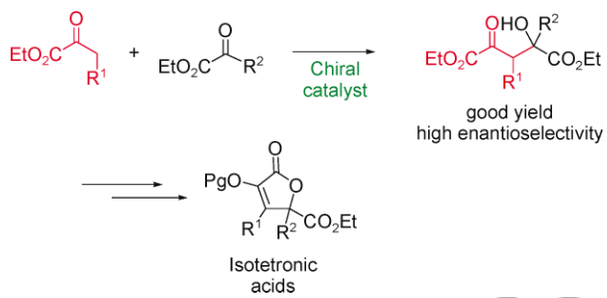
Breaking one bond alleviates strain from half of the carbons in cyclobutane but two thirds of the carbons in cyclopropane.



Designer phytoalexins: probing camalexin detoxification pathways in the phytopathogen *Rhizoctonia solani*

M. Soledade C. Pedras and Jun Liu

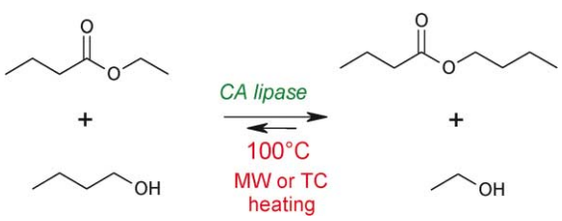
Detoxification *via* oxidation of the indole moiety of camalexins is predominant in the transformation of camalexin and 5-methylcamalexin, whereas detoxification of 1-methylcamalexin and 5-fluorocamalexin involves reaction at the thiazole ring. From a plant's perspective, 1-methylcamalexin appears to be a more effective antifungal defence than camalexin.



Direct catalytic asymmetric aldol reactions of pyruvates: scope and mechanism

Nicholas Gathergood, Karsten Juhl, Thomas B. Poulsen, Karl Thordrup and Karl Anker Jørgensen

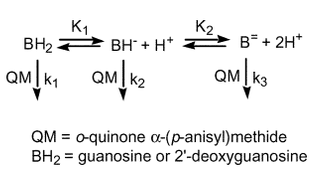
The direct aldol reaction of 2-ketoesters catalyzed by chiral bisoxazoline copper(II) complexes has been investigated.



Stability improvement of immobilized *Candida antarctica* lipase B in an organic medium under microwave radiation

Barbara Réjasse, Sylvain Lamare, Marie-Dominique Legoy and Thierry Besson

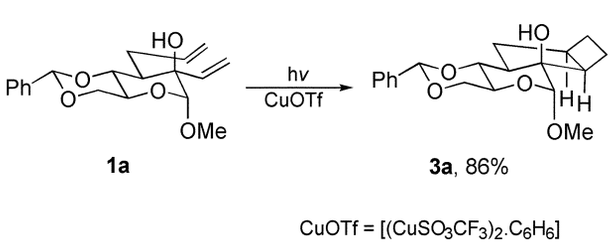
Enhancement of enzymatic stability has been observed when microwave heating (MW) was used rather than thermal classical heating (TC), especially in a more polar solvent.



Alkylation of guanosine and 2′-deoxyguanosine by *o*-quinone α-(*p*-anisyl)methide in aqueous solution

Yvonne Chiang and A. Jerry Kresge

o-Quinone α-(*p*-anisyl)methide is a potent guanosine and 2′-deoxyguanosine alkylator.

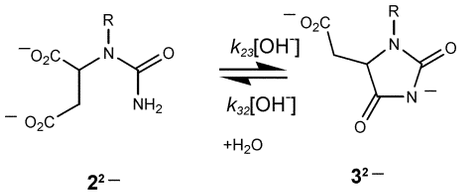


The synthesis of fused and spiro annulated carbohydrate structures using copper(I) catalysed intramolecular photoannulation of glucose derivatives

David J. Holt, William D. Barker, Subrata Ghosh and Paul R. Jenkins

Intramolecular [2 + 2] photoannulation catalysed by copper(I) triflate has been applied to a series of carbohydrate derivatives obtained from glucose.

ARTICLES



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