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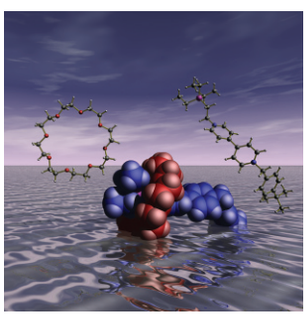
Organic & Biomolecular Chemistry

INDEXED IN MEDLINE

Incorporating Acta Chemica Scandinavica



Cover
See Norma Georges, Stephen J. Loeb, Jorge Tiburcio and James A. Wisner, pp. 2751–2756.
Both phosphonium and pyridinium groups can be incorporated into the recognition element of a linear axle and together with 24-crown-8 ether wheels used to make [2]rotaxanes.

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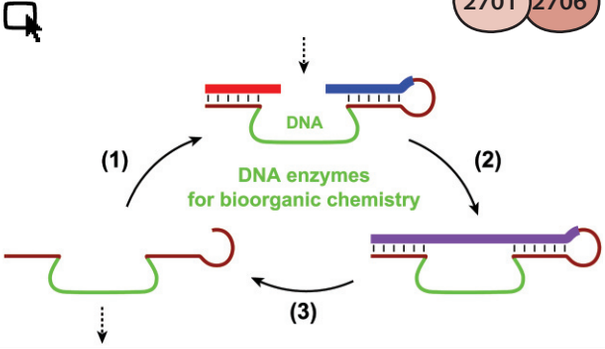
contents

EMERGING AREA

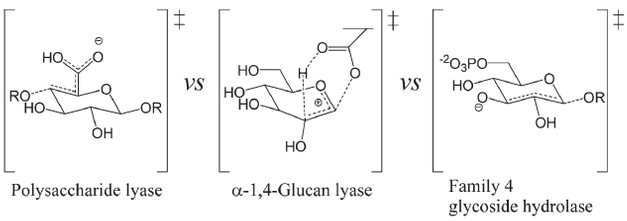


Deoxyribozymes: DNA catalysts for bioorganic chemistry

Scott K. Silverman

Deoxyribozymes are DNA catalysts with significant promise for applications in bioorganic chemistry.

PERSPECTIVE

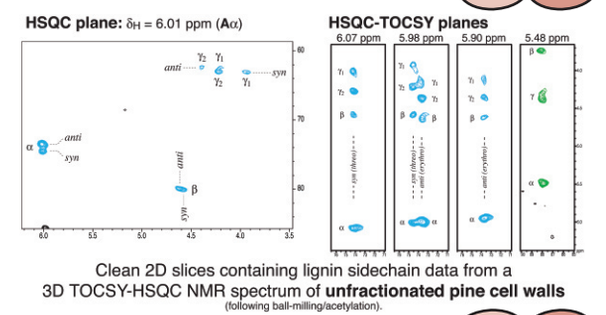


Nature's many mechanisms for the degradation of oligosaccharides

Vivian L. Y. Yip and Stephen G. Withers

In addition to classical oxocarbenium ion-like mechanisms, oligosaccharide cleavage can involve direct elimination or oxidation–elimination–addition–reduction sequences.

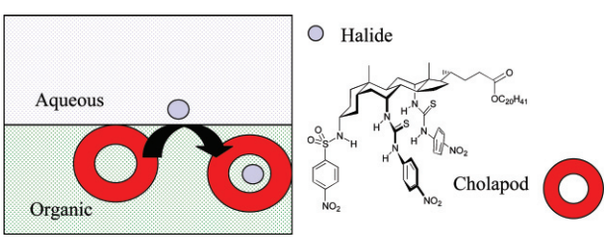
COMMUNICATIONS



Cryoprobe 3D NMR of acetylated ball-milled pine cell walls

John Ralph and Fachuang Lu

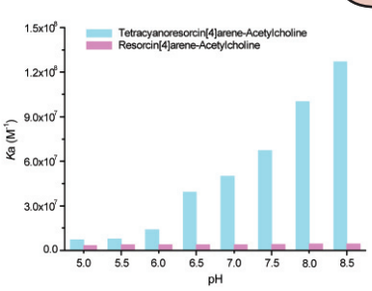
3D NMR of solubilized ball-milled pine cell walls reveals striking details of lignin units, right down to differentiating stereoisomers in the polymer.



Electrochemical quantification of high-affinity halide binding by a steroid-based receptor

Robert A. W. Dryfe, Simon S. Hill, Anthony P. Davis, Jean-Baptiste Joos and Edward P. L. Roberts

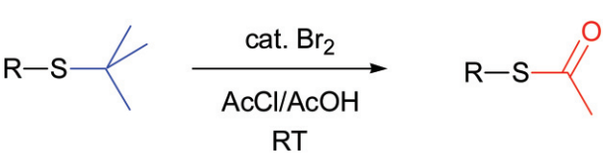
Liquid/liquid voltammetry has been used to quantify the strength of binding of halides to cholapod ligands, showing that the affinities for halide ions are very high and peak at chloride.



Tetracyanoresorcin[4]arene as a pH dependent artificial acetylcholine receptor

Song-De Tan, Wen-Hua Chen, Akiharu Satake, Bo Wang, Zun-Le Xu and Yoshiaki Kobuke

Tetracyanoresorcin[4]arene was synthesized to show highly pH dependent affinities for acetylcholine in the physiological pH region.

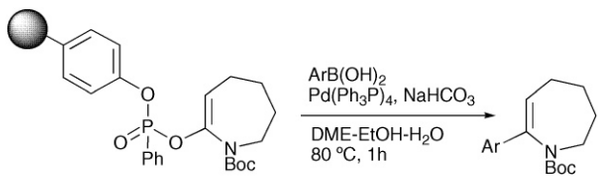


Bromine catalyzed conversion of *S-tert*-butyl groups into versatile and, for self-assembly processes accessible, acetyl-protected thiols

Alfred Błaszczyk, Mark Elbing and Marcel Mayor

Facile and efficient conversion of the robust and easy to introduce *tert*-butyl thiol group into a versatile *in situ* hydrolysable acetyl protected thiol.

COMMUNICATIONS

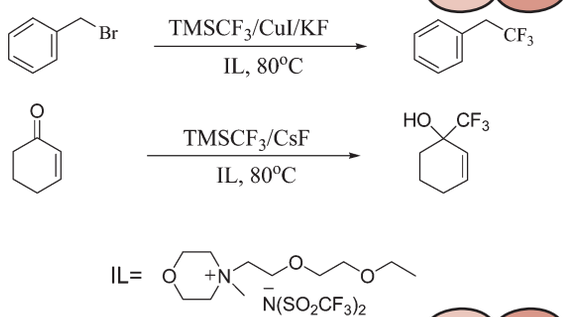


A simple solid phase diversity linker strategy using enol phosphonates

Ian B. Campbell, Jun Guo, Edward Jones and Patrick. G. Steel

Solid supported enol phosphonates are easily prepared and provide a stable, storable, diversity linker cleavable by simple Suzuki cross coupling reactions

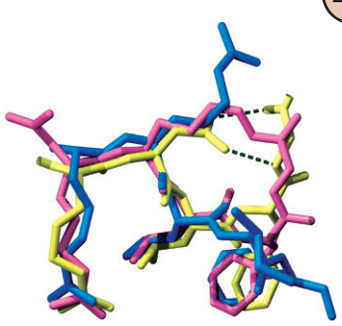
ARTICLES



The first Cu(I)-mediated nucleophilic trifluoromethylation reactions using (trifluoromethyl)trimethylsilane in ionic liquids

Jinwi Kim and Jean'ne M. Shreeve

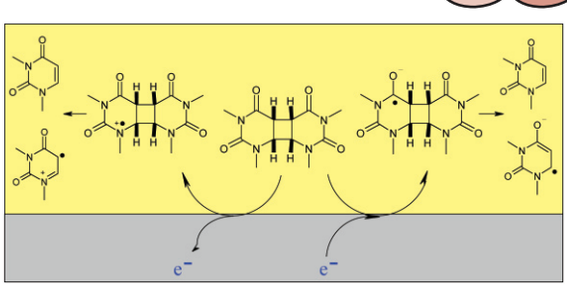
New thermally stable ionic liquids, including *N*-[2-(2-ethoxyethoxy)ethyl]-*N*-methylmorpholinium bis(trifluoromethanesulfonyl)amide (**6a**), are useful solvents for nucleophilic trifluoromethylation reactions.



Design, synthesis, biological activity and structural analysis of cyclic peptide inhibitors targeting the substrate recruitment site of cyclin-dependent kinase complexes

Martin J. I. Andrews, Campbell McInnes, George Kontopidis, Lorraine Innes, Angela Cowan, Andy Plater and Peter M. Fischer

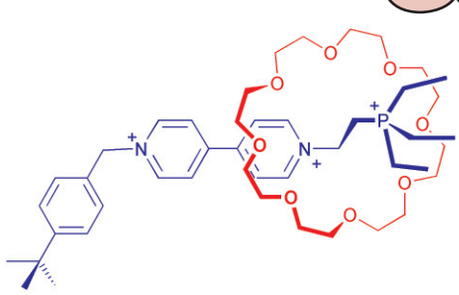
The design, synthesis and structural characterisation of a series of protein–protein interaction inhibitors are reported.



Dissociative electron transfer to and from pyrimidine cyclobutane dimers: An electrochemical study

Fabien Boussicault, Oliver Krüger, Marc Robert and Uta Wille

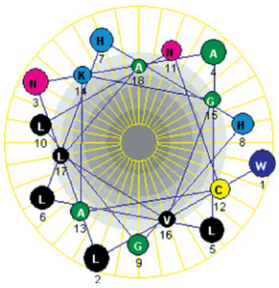
A mechanistic study of electrochemically induced splitting of pyrimidine cyclobutane dimers gives new insights in the enzymatic repair mechanism of DNA lesions.



[2]Rotaxanes containing pyridinium–phosphonium axles and 24-crown-8 ether wheels

Norma Georges, Stephen J. Loeb, Jorge Tiburcio and James A. Wisner

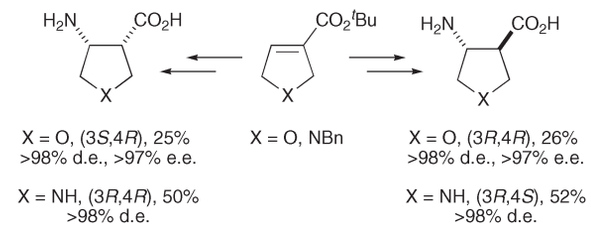
A triethylphosphonium group attached to a pyridinium ethane moiety is used as an axle for the self-assembly of [2]pseudorotaxanes and [2]rotaxanes utilising 24-crown-8 ether, benzo-24-crown-8 ether and naphtho-24-crown-8 ether.



Monomeric analogues of halocidin

Xavier Doisy, Dan Ifrah and Paul R. Hansen

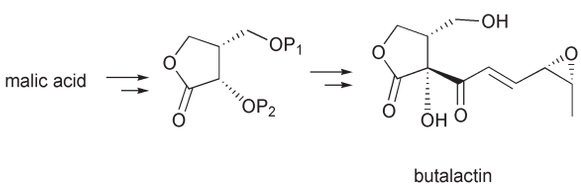
Synthesis, antibacterial and haemolytic activities of monomeric analogues of halocidin, an antimicrobial peptide isolated from *Halocynthia aurantium*, are described.



Asymmetric synthesis of the *cis*- and *trans*-stereoisomers of 4-aminopyrrolidine-3-carboxylic acid and 4-aminotetrahydrofuran-3-carboxylic acid

Mark E. Bunnage, Stephen G. Davies, Paul M. Roberts, Andrew D. Smith and Jonathan M. Withey

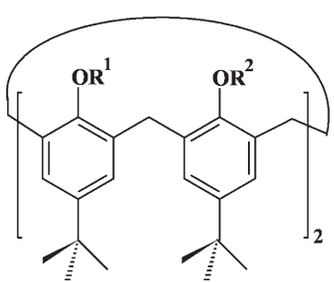
Diastereoselective conjugate addition of lithium (*S*)-*N*-benzyl-*N*-α-methylbenzylamide allows the efficient asymmetric synthesis of *cis*- and *trans*-4-aminopyrrolidine- and 4-aminotetrahydrofuran-3-carboxylic acids, giving the 4-aza and 4-oxa derivatives of cispentacin and transpentacin in >98% d.e. and >97% e.e.



Stereoselective synthesis and structure of butalactin and lactone II isolated from *Streptomyces* species

Toshihiko Ueki and Takamasa Kinoshita

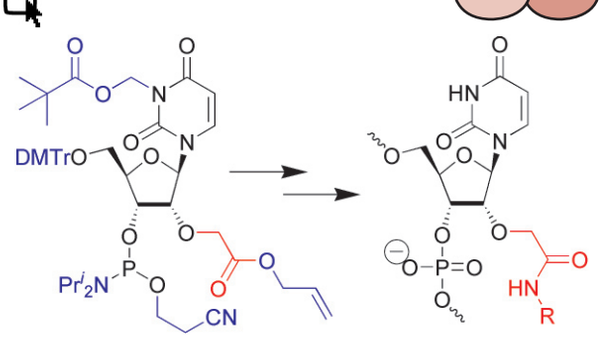
The stereoselective synthesis of butalactin and lactone II, two autoregulators with a wide range of biological activity, is described.



Synthesis and binding properties of calix[4]arenes with [2 + 2′] mixed ligating functional groups

Lassaad Baklouti, Jamila Cherif, Rym Abidi, Françoise Arnaud-Neu, Jack Harrowfield and Jacques Vicens

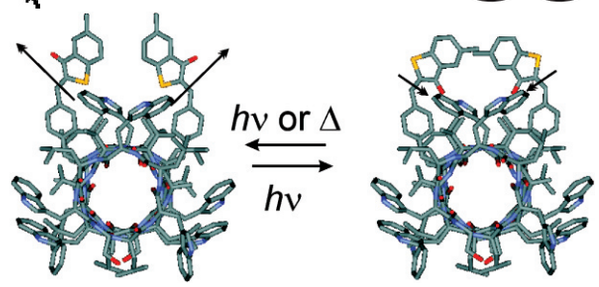
The formation of ML and/or ML_2 species depends on the ligand and the cation; the enthalpic and entropic factors have been assessed.



Oligonucleotides with 2′-*O*-carboxymethyl group: synthesis and 2′-conjugation *via* amide bond formation on solid phase

Anna Kachalova, Eugeny Zubin, Dmitry Stetsenko, Michael Gait and Tatiana Oretskaya

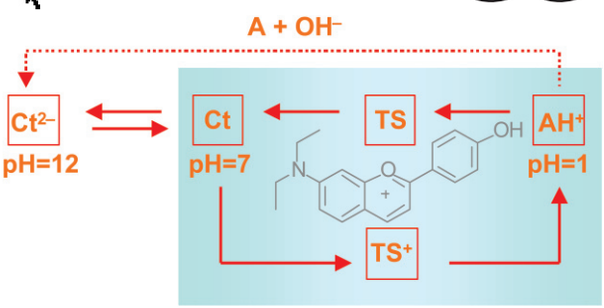
2′-*O*-Carboxymethyloligonucleotides synthesized by use of modified uridine phosphoramidite were conjugated on solid phase to a range of amines and peptides.



Photomodulation of ionic current through hemithioindigo-modified gramicidin channels

Tyler Lougheed, Vitali Borisenko, Thomas Hennig, Karola Rück-Braun and G. Andrew Woolley

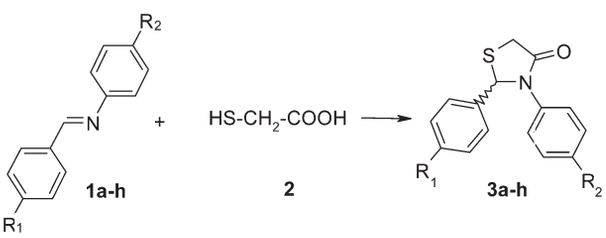
The hemithioindigo amino acid described can act as a functional switch in a biochemical context and can be used to produce predictable effects on function in a system for which the structure/function relationships are well understood.



Multistate properties of 7-(*N*,*N*-diethylamino)-4′-hydroxyflavylium. An example of an unidirectional reaction cycle driven by pH

Margarida C. Moncada, Damián Fernández, João C. Lima, A. Jorge Parola, Carlos Lodeiro, Filipe Folgosa, M. João Melo and Fernando Pina

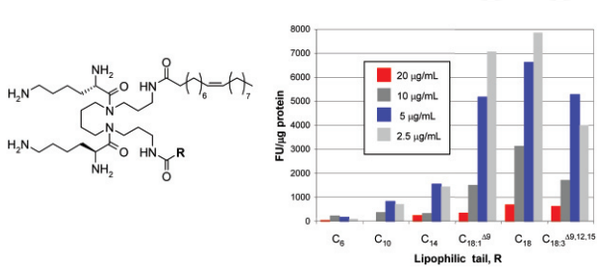
Insertion of an amino group in position 7 of the flavylium cation opens a new reaction channel that allows us to define an unidirectional pH driven reaction cycle.



Thiazolidin-4-one formation. Mechanistic and synthetic aspects of the reaction of imines and mercaptoacetic acid under microwave and conventional heating

Adele Bolognese, Gaetano Correale, Michele Manfra, Antonio Lavecchia, Ettore Novellino and Vincenzo Barone

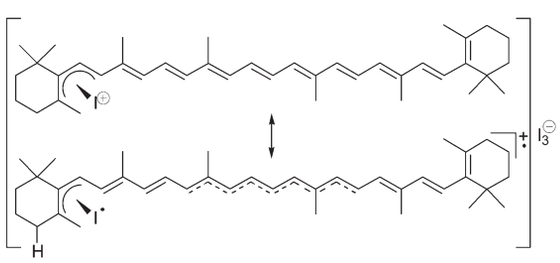
Two mechanisms for the title reaction are hypothesized on the basis of solvent effect and of the transient species detected by ^{1}H-NMR and predicted by DFT calculations.



Effect of chain length on transfection properties of spermine-based gemini surfactants

Mariano Castro, Derek Griffiths, Alpesh Patel, Nicola Pattrick, Chris Kitson and Mark Ladlow

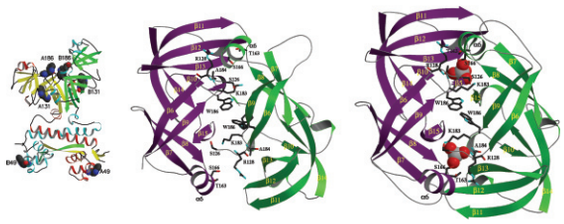
The preparation of a series of both symmetrical and unsymmetrical gemini surfactants is reported and their efficacies as non-viral vectors mediating gene transfection are contrasted and used to derive associated structure–activity relationships.



On the structure of carotenoid iodine complexes

Bjart Frode Lutnaes, Jostein Krane and Synnøve Liaaen-Jensen

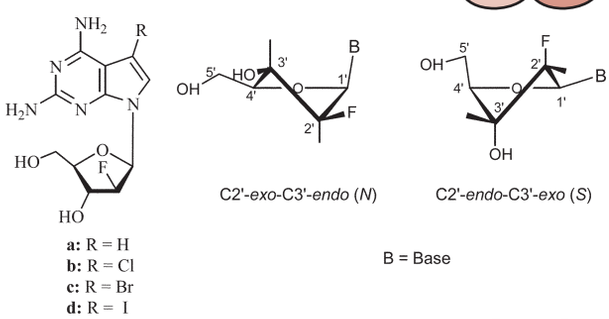
The reaction between β,β-carotene and iodine has been reinvestigated. Spectroscopic and chemical data are compatible with a π-complex with cationic/radical cationic properties.



Sensing of remote oxyanion binding at the DNA binding domain of the molybdate-dependent transcriptional regulator, ModE

David H. Boxer, Han Zhang, David G. Gourley, William N. Hunter, Sharon M. Kelly and Nicholas C. Price

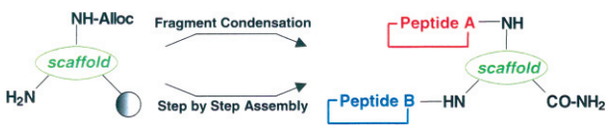
Linkage between the DNA-binding and molybdate-binding sites (some 55 Å apart) has been shown.



Halogenated 7-deazapurine nucleosides: stereoselective synthesis and conformation of 2′-deoxy-2′-fluoro-β-D-arabinonucleosides

Xiaohua Peng and Frank Seela

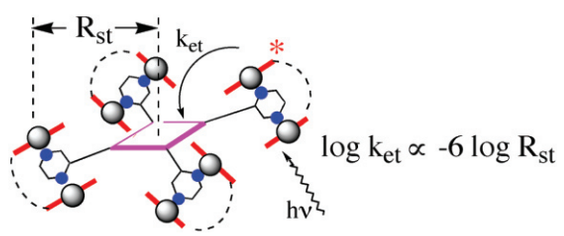
Stereoselective synthesis of **a**–**d**, and the influence of halogen substituents on the sugar conformation and nucleobase properties.



Loops on loops: generation of complex scaffolded peptides presenting multiple cyclic fragments

Raimo Franke, Christian Doll, Victor Wray and Jutta Eichler

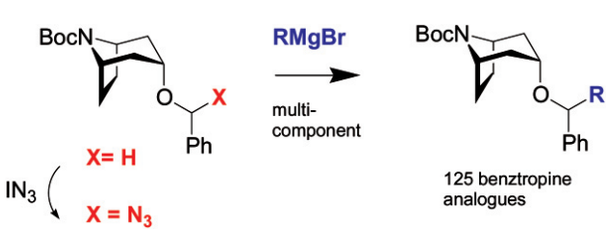
Scaffolded peptides presenting two different cyclic peptide fragments through a cyclic peptidomimetic scaffold in a site-selective fashion, were generated by stepwise solid phase synthesis, as well as fragment condensation.



Nonameric porphyrin assemblies – formation and intra-assembly energy transfer reactions

Ken Sasaki, Kenji Sugou, Koji Miyamoto, Jyun-ichi Hirai, Shigetaka Tsubouchi, Hiroshi Miyasaka, Akira Itaya and Yasuhisa Kuroda

The series of nonameric porphyrin assemblies show an effective antenna effect and successive energy transfer to the central free base porphyrin.



Combinatorial synthesis of benztropine libraries and their evaluation as monoamine transporter inhibitors

Hanne Pedersen, Steffen Sinning, Anne Bülow, Ove Wiborg, Lise Falborg and Mikael Bols

Radical azidonation and substitution of azide with multicomponent Grignard reagents are the key features of a new combinatorial synthesis method.

ARTICLES

ADDITIONS AND CORRECTIONS