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Organic & Biomolecular Chemistry

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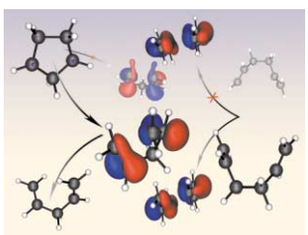
Incorporating Acta Chemica Scandinavica



Cover
See Barry K. Carpenter, pp. 103–109.
Ab initio electronic-structure calculations have shown that the stereoselectivities of two seemingly unrelated reactions – the Cope rearrangement of 1,5-hexadiene and the ring opening of bicyclo[2.1.0]pentane – are controlled by very similar orbital interactions in their transition states. Molecular structures and orbitals were created with MacMolPlt: B. M. Bode and M. S. Gordon, *J. Mol. Graphics Mod.*, 1998, **16**, 133.

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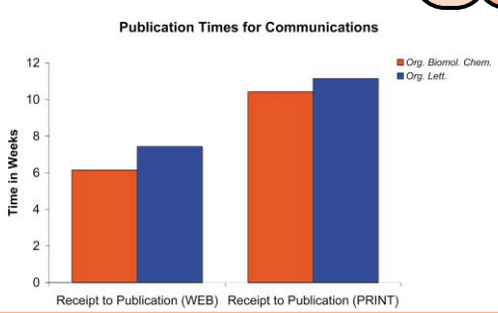
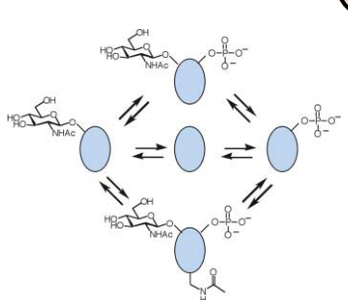
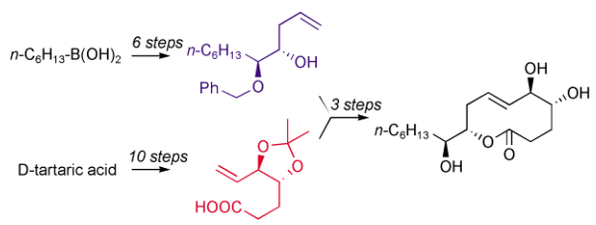
EDITORIAL



EMERGING AREA

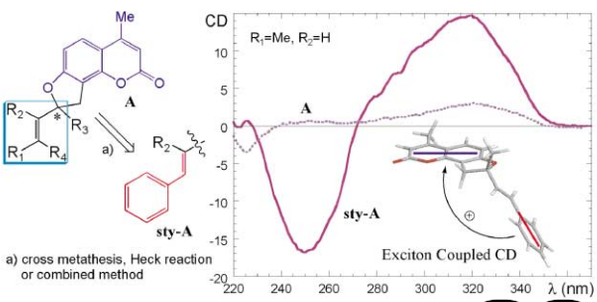




Total synthesis of (−)-microcarpalide, a novel microfilament disrupting metabolite

Paolo Davoli, Alberto Spaggiari, Luca Castagnetti and Fabio Prati

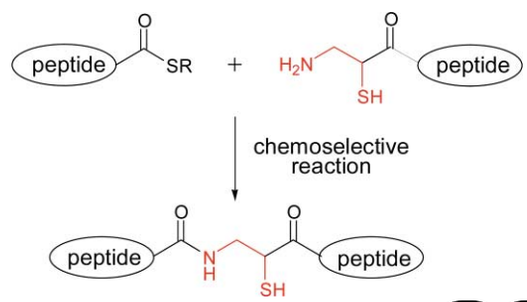
The total synthesis of (−)-microcarpalide was accomplished through stereoselective homologation of boronic esters and RCM as the key steps.



Absolute stereochemistry of dihydrofuroangelicins bearing C-8 substituted double bonds: a combined chemical/exciton chirality protocol

Katsunori Tanaka, Gennaro Pescitelli, Lorenzo Di Bari, Tom L. Xiao, Koji Nakanishi, Daniel W. Armstrong and Nina Berova

A variety of the substituted C=C double bonds of synthetic dihydrofuroangelicins were converted into a styrenoid chromophore and their absolute configurations were assigned by non-empirical CD analysis.

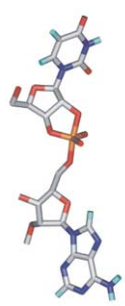


New isocysteine building blocks and chemoselective peptide ligation

Christian Dose and Oliver Seitz

Novel isocysteine building blocks enabled the solid-phase synthesis of isocysteinyl peptides suitable for fragment ligations in water.

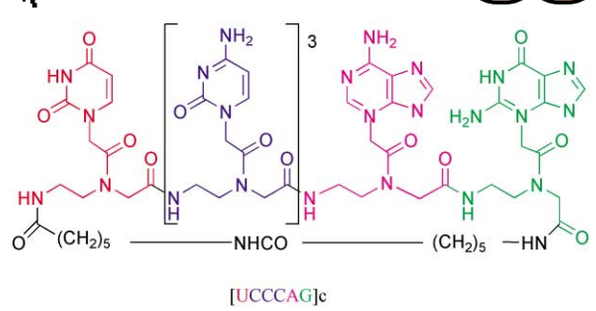
The use of new isocysteine building blocks provided access to isocysteinyl peptides that enable chemoselective ligation of unprotected peptide fragments in water.



Stabilisation of the transition state of phosphodiester bond cleavage within linear single-stranded oligoribonucleotides

Ulla Kaukinen, Harri Lönnberg and Mikael Peräkylä

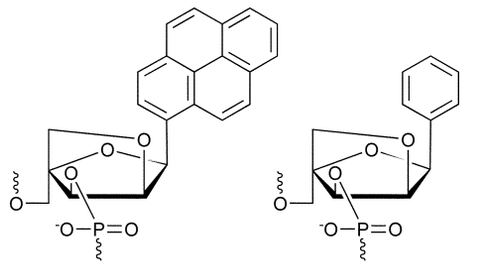
Within linear single-stranded oligoribonucleotides, the TS of phosphodiester bond cleavage is stabilised by the enhanced stacking of bases.



Cyclic PNA-based compound directed against HIV-1 TAR RNA: modelling, liquid-phase synthesis and TAR binding

Geoffrey Depecker, Nadia Patino, Christophe Di Giorgio, Raphael Terreux, Daniel Cabrol-Bass, Christian Bailly, Anne-Marie Aubertin and Roger Condom

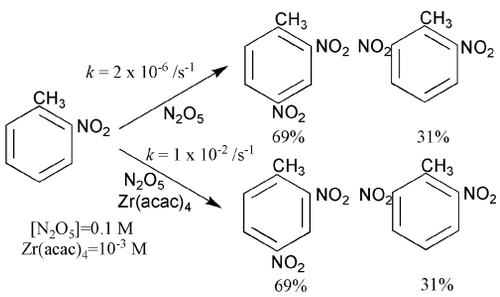
A cyclic molecule including a hexameric PNA sequence has been designed and synthesized in order to target the TAR RNA loop of HIV-1 through the formation of a “kissing complex”.



Oligodeoxynucleotides containing α-L-*ribo* configured LNA-type *C*-aryl nucleotides

Raunak, B. Ravindra Babu, Mads D. Sørensen, Virinder S. Parmar, Niels H. Harrit and Jesper Wengel

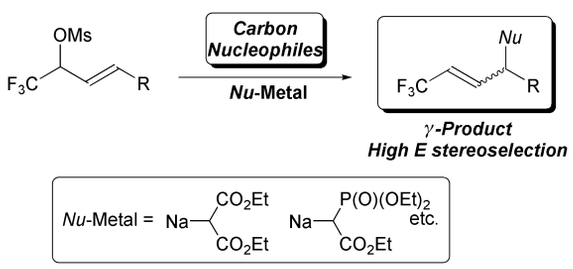
Synthesis of phenyl and pyrenyl derivatives of α-L-LNA-type *C*-aryl nucleosides has been accomplished as has their efficient incorporation into 9-mer DNA and α-L-LNA strands. Fluorescence measurements indicated intercalation of the pyrenyl moiety into the nucleobase stack of the duplexes.



Atom-efficient electrophilic aromatic nitration by dinitrogen pentoxide catalysed by zirconium(IV) 2,4-pentanedionate

Adrian J. Hill, Ross W. Millar and John P. B. Sandall

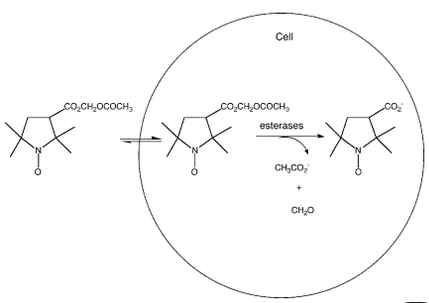
A 5000 fold increase in rate constant is observed on addition of 1 mol% of catalyst.



The fluorine-containing π-allylmetal complex. The transition metal-catalyzed allylic substitution reaction of fluorinated allyl mesylates with various carbon nucleophiles

Tsutomu Konno, Tsuyoshi Takehana, Takashi Ishihara and Hiroki Yamanaka

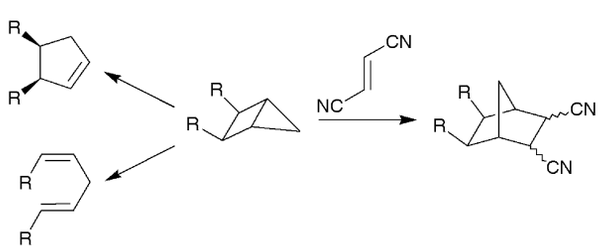
The reaction proceeded with high regioselectivity to give the γ-fluoroalkylated products in excellent yields.



Esterase-assisted accumulation of 3-carboxy-2,2,5,5-tetramethyl-1-pyrrolidinyloxyl into lymphocytes

Joseph P. Y. Kao and Gerald M. Rosen

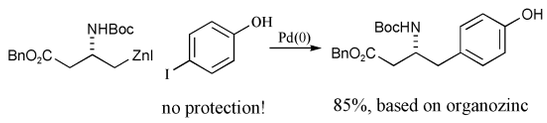
The results presented here indicate that it should be feasible to use the labile ester approach to load spin traps into living cells to detect intracellularly generated HO•.



Understanding the puzzling chemistry of bicyclo[2.1.0]pentane

Barry K. Carpenter

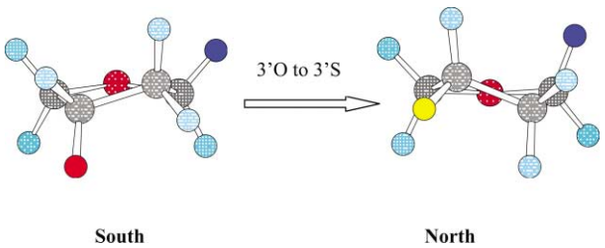
CASPT2 calculations are used to investigate unimolecular and bimolecular reactions of bicyclo[2.1.0]pentane.



Direct synthesis of unprotected phenols using palladium-catalysed cross coupling reactions of functionalised organozinc reagents

Richard F. W. Jackson, Ian Rilatt and P. John Murray

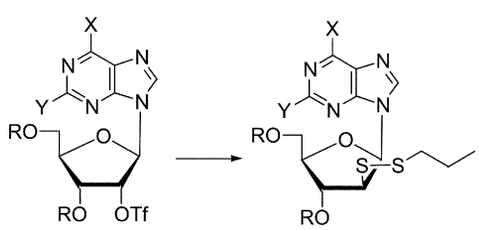
Coupling of functionalised organozinc reagents with unprotected iodophenols proceeds in moderate to excellent yields.



NMR and UV studies of 3′-*S*-phosphorothiolate modified DNA in a DNA : RNA hybrid dodecamer duplex; implications for antisense drug design

Andrew P. G. Beevers, Kevin J. Fettes, Ghalia Sabbagh, Fatima K. Murad, John R. P. Arnold, Richard Cosstick and Julie Fisher

NMR and UV melting studies of 3′-*S*-phosphorothiolate-modified nucleic acids provide insight into the cause of transmission of the north/south equilibrium shift.

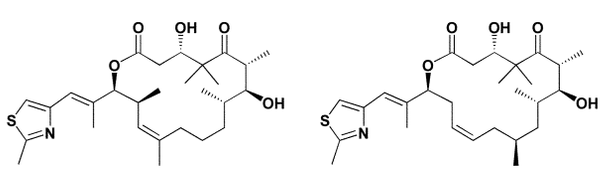


X = NH_2, Cl, OCH_3; **Y** = H, NH_2

Synthesis and cytotoxicity of 9-(2-deoxy-2-alkyldithio-β-D-arabinofuranosyl)purine nucleosides which are stable precursors to potential mechanistic probes of ribonucleotide reductases

Stanislaw F. Wnuk, Elzbieta Lewandowska, Dania R. Companioni, Pedro I. Garcia Jr and John A. Secrist III

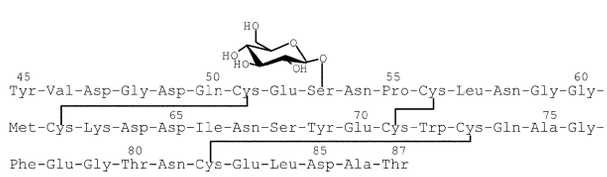
A series of 2′-thionucleosides, as potential inhibitors of ribonucleotide reductases, has been synthesized.



Conformation–activity relationships in polyketide natural products. Towards the biologically active conformation of epothilone

Richard E. Taylor, Yue Chen, Gabriel M. Galvin and Praveen K. Pabba

The conformation–activity relationships for the biologically active polyketide, epothilone, have been determined, and are shown to be an important complement to structure–activity data.

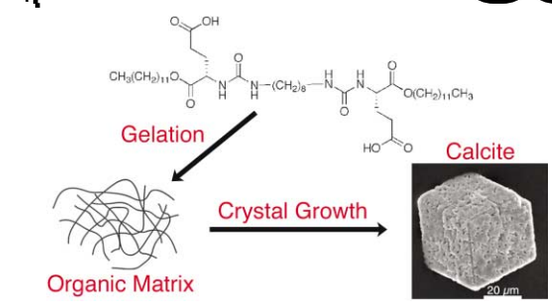


Application of Fmoc-amino acid carrying an unmasked carbohydrate to the synthesis of the epidermal growth factor-like domain of bovine blood coagulation factor IX

Toshio Takemura, Hironobu Hojo, Yoshiaki Nakahara, Takeshi Ishimizu and Sumihiro Hase

The EGF-like domain of the bovine factor IX carrying glucose was synthesized by the Fmoc solid-phase method. The introduction was accomplished by Fmoc-Ser carrying an unmasked glucose by the DCC–HOBt method.

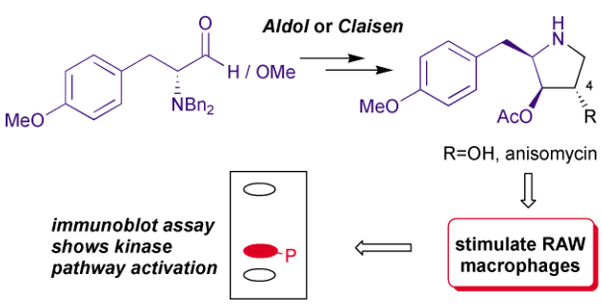
ARTICLES



An organic hydrogel as a matrix for the growth of calcite crystals

Lara A. Estroff, Lia Addadi, Steve Weiner and Andrew D. Hamilton

A self-assembling organic hydrogel was used as an organic matrix to alter the growth of calcite ($CaCO_3$).



Synthetic anisomycin analogues activating the JNK/SAPK1 and p38/SAPK2 pathways

Edward M. Rosser, Simon Morton, Kate S. Ashton, Philip Cohen and Alison N. Hulme

An efficient synthesis of C(4)H and C(4)Me analogues of anisomycin, and assessment of their activation of the stress activated protein kinase (SAPK) pathways in RAW macrophages has been demonstrated.

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