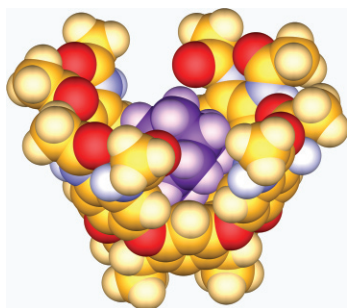


Organic & Biomolecular Chemistry

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Incorporating Acta Chemica Scandinavica

**Cover**

See Liam C. Palmer and Julius Rebek, Jr., pp. 3051–3059.
Exchange of guest (purple) requires unfolding of the cavitand host.

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Chemical Science

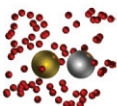
November 2004/Volume 1/Issue 11

www.rsc.org/chemicalscience

Drawing together the research highlights and news from all RSC publications, *Chemical Science* provides a 'snapshot' of the latest developments across the chemical sciences showcasing newsworthy articles, as well as the most significant advances.

3051

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Mechanical Bonding>10¹⁰ s**Reversible Encapsulation**10³–10⁻³ s**Diffusion Control**10⁻¹⁰ s

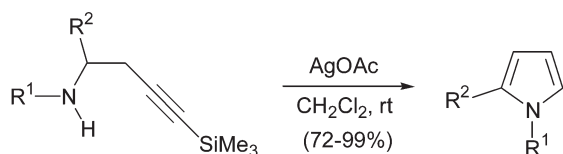
PERSPECTIVE

The ins and outs of molecular encapsulation

Liam C. Palmer and Julius Rebek, Jr.

A review of the mechanisms of guest exchange in molecular capsules—either by capsule dissociation or by flap opening.

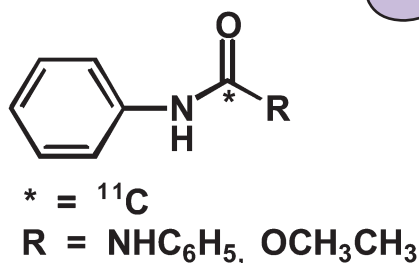
3060 3062

**A novel pyrrole synthesis**

Sameer Agarwal and Hans-Joachim Knölker

A two-step synthesis of pyrroles from *Schiff* bases is achieved by addition of a homopropargyl Grignard reagent and subsequent silver(I)-promoted oxidative cyclization.

3063 3066

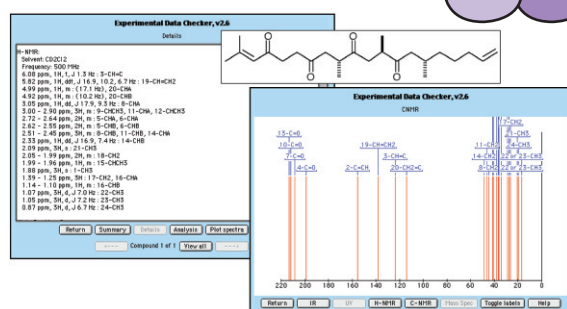
**Synthesis of ¹¹C-labelled *N,N'*-diphenylurea and ethyl phenylcarbamate by a rhodium-promoted carbonylation via [¹¹C]isocyanatobenzene using phenyl azide and [¹¹C]carbon monoxide**

Hisashi Doi, Julien Barletta, Masaaki Suzuki, Ryoji Noyori, Yasuyushi Watanabe and Bengt Långström

A new synthetic methodology for the ¹¹C-labelling of urea or carbamate mediated by a Rh(I) complex starting from phenyl azide and [¹¹C]carbon monoxide.

COMMENT

3067 3070

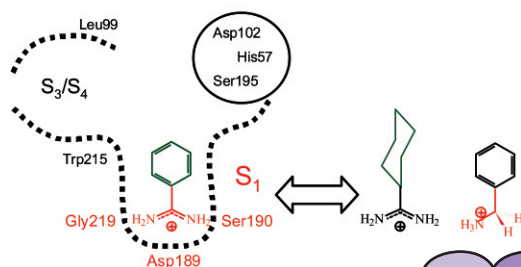
**Experimental data checker: better information for organic chemists**

S. E. Adams, J. M. Goodman, R. J. Kidd, A. D. McNaught, P. Murray-Rust, F. R. Norton, J. A. Townsend and C. A. Waudby

An experimental data checker has been developed that reads, analyses, and cross-correlates experimental information copied and pasted from authors' manuscripts and which will be useful for authors, referees, editors and readers of papers reporting new molecular information.

ARTICLES

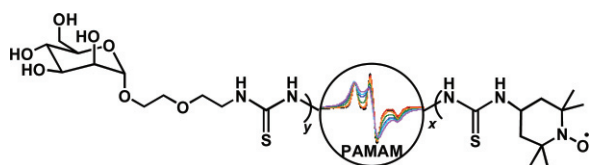
3071 3074

Trypsin**Probing the effect of the amidinium group and the phenyl ring on the thermodynamics of binding of benzamidinium chloride to trypsin**

Reinskje Talhout and Jan B. F. N. Engberts

Group contributions to the binding thermodynamics of benzamidinium chloride to trypsin have been investigated using isothermal titration calorimetry measurements.

3075 3079

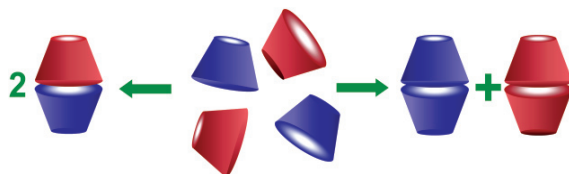
**EPR and affinity studies of mannose-TEMPO functionalized PAMAM dendrimers**

Lynn E. Samuelson, Karl B. Seby, Eric D. Walter, David J. Singel and Mary J. Cloninger

Mannose-TEMPO functionalized PAMAM dendrimers are highly effective tools for studying multivalent protein-carbohydrate interactions.



3080 3084

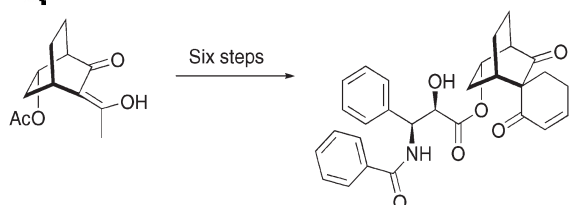
Preferred dimerization of tetra-tolyl- and tetra-tosylurea derivatives of flexible and rigidified calix[4]arenes

Yuliya Rudzevich, Myroslav O. Vysotsky, Volker Böhmer, Marcus S. Brody, Julius Rebek, Jr., Frank Broda and Iris Thondorf

Very subtle enthalpic and entropic contributions including solvent (and guest) govern the exclusive formation of homo- or heterodimers between tetra-tolyl- and tetra-tosylurea derivatives of flexible and rigidified calix[4]arenes in stoichiometric (1:1) mixtures.



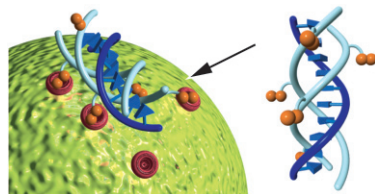
3085 3090

Spirobicyclo[2.2.2]octane derivatives: mimetics of baccatin III and paclitaxel (Taxol)

Fredrik Almqvist, Sophie Manner, Viveca Thornqvist, Ulf Berg, Margareta Wallin and Torbjörn Frejd

A new optically active spirobicyclic derivative mimicking paclitaxel was designed and synthesized.

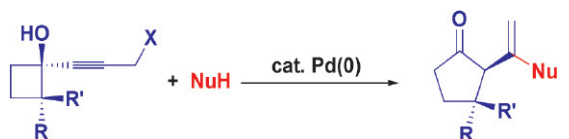
3091 3098

Schizophyllans carrying oligosaccharide appendages as potential candidates for cell-targeted antisense carrier

Teruaki Hasegawa, Tomohisa Fujisawa, Munenori Numata, Takahiro Matsumoto, Mariko Umeda, Ryouji Karinaga, Masami Mizu, Kazuya Koumoto, Taro Kimura, Shiro Okumura, Kazuo Sakurai and Seiji Shinkai

Schizophyllan (β -1,3-glucan) derivatives with β -lactoside appendages form stable macromolecular complexes with polynucleotides, show excellent affinity with lactoside-binding lectin and effectively mediate antisense uptake by hepatocytes.

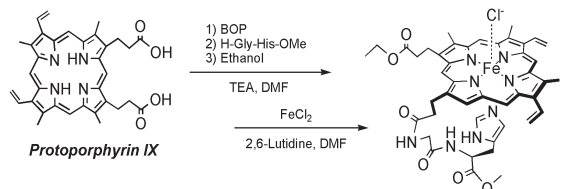
3099 3107

Palladium-catalysed cascade ring expansion reaction of cyclobutanols that have a propargylic moiety with nucleophiles

Masahiro Yoshida, Yuki Komatsuzaki, Hideo Nemoto and Masataka Ihara

Cascade ring rearrangement of four-membered ring systems containing various propargylic components by a palladium catalyst is described.

3108 3112

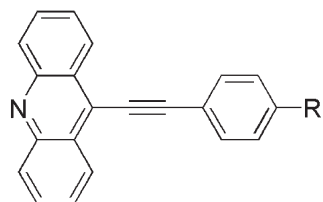
Synthesis of protoheme IX derivatives with a covalently linked proximal base and their human serum albumin hybrids as artificial hemoprotein

Akito Nakagawa, Naomi Ohmichi, Teruyuki Komatsu and Eishun Tsuchida

The protoheme IX derivatives with a covalently linked proximal base were synthesized through a one-pot reaction, and their albumin hybrids form an O_2 adduct in water.



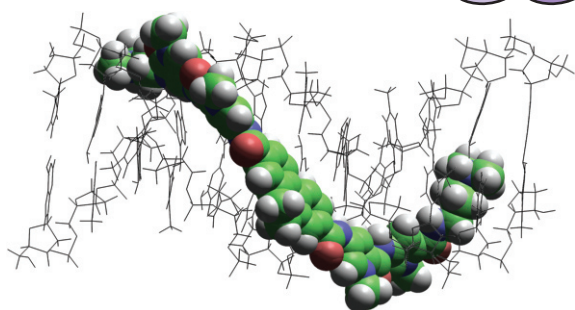
3113 3118

R = H, 1; Me, 2; OMe, 3; OⁱPr, 4; O-2-EH, 5; NMe₂, 6**Arylethynylacridines: electrochemiluminescence and photophysical properties**

Arumugasamy Elangovan, Hsing-Hua Chiu, Shu-Wen Yang and Tong-Ing Ho

Electrogenerated chemiluminescence of donor-substituted phenylethynylacridines are reported.

3119 3127

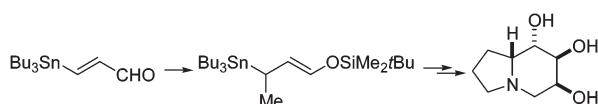
**Synthesis and antimicrobial activity of some netropsin analogues**

Abedawn I. Khalaf, Abdolrasoul H. Ebrahimabadi, Allan J. Drummond, Nahoum G. Anthony, Simon P. Mackay, Colin J. Suckling and Roger D. Waigh

Nine novel lexitropsins were synthesized by linking two netropsin-like moieties through three different dicarboxylic acids. Some of the compounds showed significant inhibitory effects on the growth of the microorganisms tested.



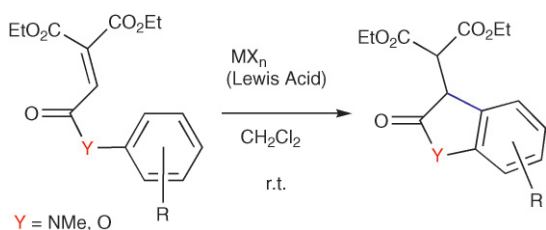
3128 3133

**Preparation of γ -siloxyallyltributylstannanes and their use in the synthesis of (\pm)-1-deoxy-6,8a-di-*epi*-castanospermine**

Floris Chevallier, Erwan Le Grogne, Isabelle Beaudet, Florian Fliegel, Michel Evain and Jean-Paul Quintard

 (\pm) -1-Deoxy-6,8a-di-*epi*-castanospermine was obtained from *N*-allylsuccinimide using the highly stereoselective reaction of a γ -siloxyallylstannane on the corresponding iminium salt.

3134 3138



Y = NMe, O

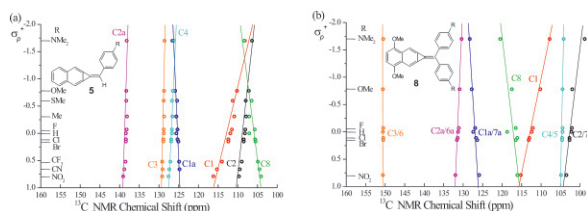
A Lewis acid-promoted cyclization of ethenetricarboxylate derivative aromatic compounds. Novel syntheses of oxindoles and benzofuranones via Friedel-Crafts intramolecular Michael addition

Shoko Yamazaki, Satoshi Morikawa, Yuko Iwata, Machiko Yamamoto and Kaori Kuramoto

A novel Lewis acid-promoted cyclization of ethenetricarboxylate derivative aromatic compounds gave oxindole and benzofuran derivatives in high yields.



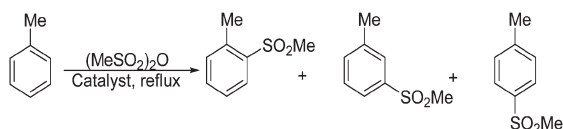
3139 3149

**Synthetic protocols, molecular polarity, and ^{13}C NMR correlations for 1-aryl- and 1-diarylmethylidene-1H-cyclopropa[b]naphthalenes**

Brian Halton and Gareth M. Dixon

Alkylidene-cyclopropene synthesis has been refined into five distinct Peterson olefination protocols to give three classes of derivatives whose dipole moments are recorded and for which linear correlations of δ_{C} with Hammett σ_{p}^+ constants are found.

3150 3154

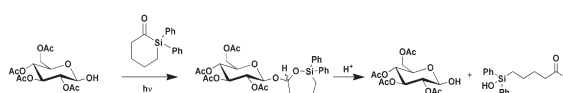


Study of regioselective methanesulfonylation of simple aromatics with methanesulfonic anhydride in the presence of zeolite catalysts

Keith Smith, Gordon M. Ewart, Gamal A. El-Hiti and Kenneth R. Randles

Zeolite Na β offers the possibility of very high *para*-selectivity (97%) in the methanesulfonylation of toluene, but in low yield (15%). Alternatively, reasonable *para*-selectivity can be achieved in quite good yield by use of other exchanged forms of zeolite β .

3155 3161

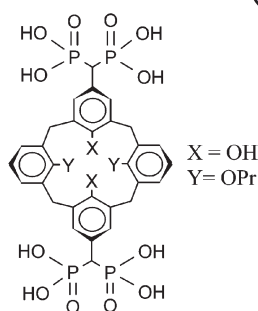


Facile photochemical synthesis of mixed siloxyacetal glycosides as potential pH-sensitized prodrugs for selective treatment of solid tumors

Serge A. Svarovsky, Marc B. Taraban and Joseph J. Barchi, Jr.

Photochemical reactions of a variety of acylsilanes with peracetylated free glycosides yielded novel siloxyacetal glycosides in high yields with the potential to serve as pH-activated prodrugs for the treatment of tumours.

3162 3166

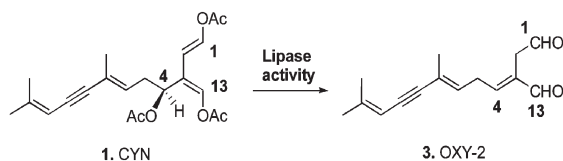


Calix[4]arene methylenebisphosphonic acids as calf intestine alkaline phosphatase inhibitors

Andriy I. Vovk, Vitaly I. Kalchenko, Sergey A. Cherenok, Valery P. Kukhar, Oxana V. Muzychka and Myron O. Lozynsky

Novel efficient inhibitors of alkaline phosphatase have been obtained and studied.

3167 3171

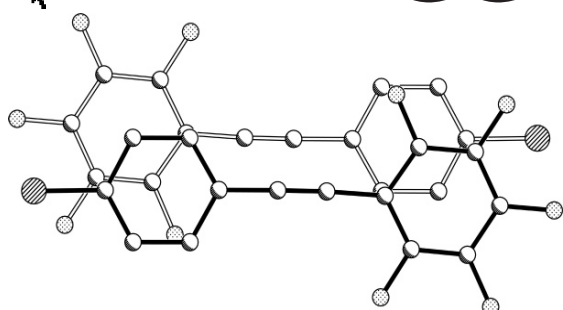


Lipase-mediated production of defensive toxins in the marine mollusc *Oxyrops olivacea*

Adele Cutignano, Valentina Notti, Giuliana d'Ippolito, Anna Domènec Coll, Guido Cimino and Angelo Fontana

An enzymatic mechanism leading to oxytoxins from caulerpenyne is described.

3172 3178



The synthesis and crystal structures of halogenated tolan p -X-C₆H₄-C≡C-C₆F₅ and p -X-C₆F₄-C≡C-C₆H₅ (X = F, Cl, Br, I)

Jonathan C. Collings, Jacquelyn M. Burke, Philip S. Smith, Andrei S. Batsanov, Judith A. K. Howard and Todd B. Marder

In p -X-C₆H₄-C≡C-C₆F₅ [X = I (1), Br (2), Cl (3), F (4)] and p -X-C₆F₄-C≡C-C₆H₅ [X = I (5), Br (6)], molecular packing is characterized by arene-perfluoroarene interactions (3), halogen-halogen interactions (isomorphous 1, 2), or neither (isomorphous 5, 6).