

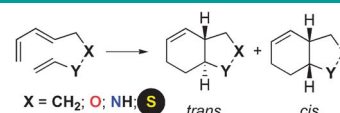


### Diels–Alder Reactions

M. N. Paddon-Row,\* A. I. Longshaw, A. C. Willis, M. S. Sherburn\*

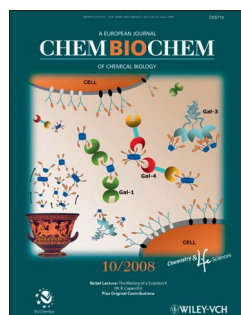
#### On the Effect of Tether Composition on *cis/trans* Selectivity in Intramolecular Diels–Alder Reactions

**Is stereoselectivity at the end of its tether?** The influence of tether composition upon stereoselectivity in the intramolecular Diels–Alder reaction is explored computationally and experimentally. The stereochemical outcomes of known reactions are explained and predictions are made for newly designed tethers.



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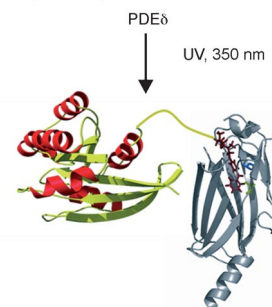
### Photoactivation

M. Alexander, M. Gerauer, M. Pechlivanis, B. Popkova, R. Dvorsky, L. Brunsveld, H. Waldmann,\* J. Kuhlmann

#### Mapping the Isoprenoid Binding Pocket of PDE $\delta$ by a Semisynthetic, Photoactivatable N-Ras Lipoprotein

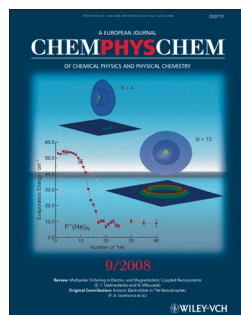
**Trapping the light fantastic:** Phosphodiesterase  $\delta$  (PDE $\delta$ ) is thought to deliver prenylated proteins to endomembranes. We used a semisynthetic photoactivatable N-Ras lipoprotein to map the critical residues of PDE $\delta$  that take part in this interaction.

N-Ras (wt 1–181)-MIC-aca-GCMGLPC-GerBP<sup>+</sup>



ChemBioChem

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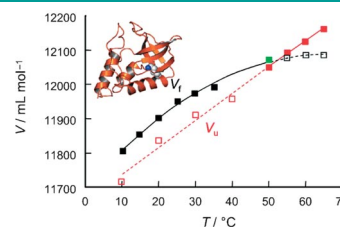


### Protein Hydration

L. Mitra, J.-B. Rouget, B. Garcia-Moreno,\* C. A. Royer,\* R. Winter\*

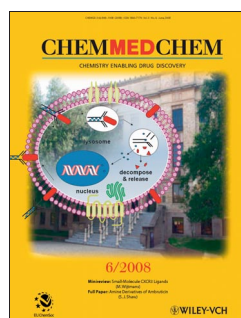
#### Towards a Quantitative Understanding of Protein Hydration and Volumetric Properties

**Using pressure perturbation calorimetry** the expansion coefficients of variants of SNase are determined and used to calculate quantitatively the temperature dependent volumetric and hydration properties of the folded and unfolded states of the protein (see figure). We present the first experimental plot of the volume of both the folded and unfolded states of a protein.



ChemPhysChem

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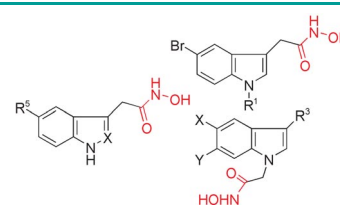


### Antibiotics

S. Petit, Y. Duroc, V. Larue, C. Giglione, C. Léon, C. Soulama, A. Denis, F. Dardel, T. Meinnel, I. Artaud\*

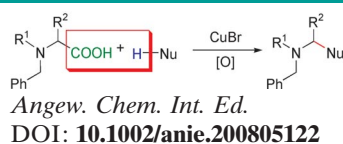
#### Structure–Activity Relationship Analysis of the Peptide Deformylase Inhibitor 5-Bromo-1H-indole-3-acetohydroxamic Acid

**SAR by NMR.** A series of indole compounds derived from 5-bromo-1H-indole-3-acetohydroxamic acid were synthesized. Their inhibitory activities were evaluated against purified peptide deformylases (PDFs), and their antibacterial activities against *B. subtilis*, *E. coli* (wild-type and *tolC*), and a variety of pathogens were also determined. The potency of the best inhibitors was related to the NMR footprints of the respective acids with <sup>15</sup>N-labeled *E. coli* Ni-PDF.



ChemMedChem

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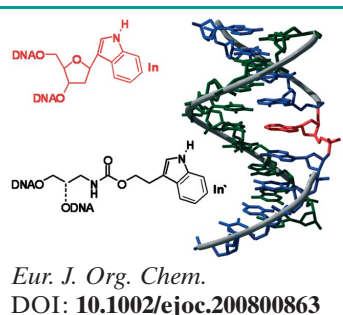


## C–C Coupling

H.-P. Bi, L. Zhao, Y.-M. Liang,\* C.-J. Li\*

### The Copper-Catalyzed Decarboxylative Coupling of the $sp^3$ -Hybridized Carbon Atoms of $\alpha$ -Amino Acids

**Joined at the Cs:** A novel intermolecular decarboxylative  $C_{sp^3}$ – $C_{sp^3}$ ,  $C_{sp^3}$ – $C_{sp^2}$ , and  $C_{sp^3}$ – $C_{sp}$  coupling catalyzed by CuBr and using  $\alpha$ -amino acids as starting materials was developed (see scheme). Various functionalized nitrogen-containing compounds were obtained by this method.

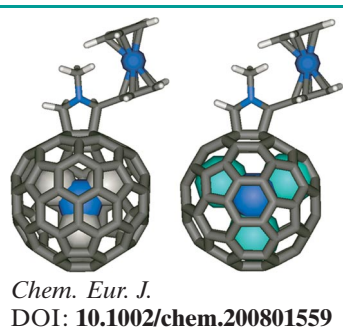
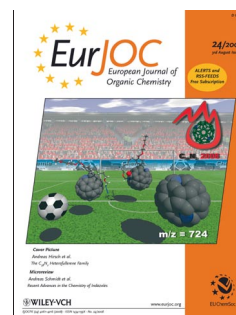


## Artificial DNA Bases

J. Barbaric, C. Wanninger-Weiß, H.-A. Wagenknecht\*

### Indole in DNA: Comparison of a Nucleosidic with a Non-Nucleosidic DNA Base Substitution

**Linkage does not matter for indole as DNA base substitution:** The synthetic incorporation of indole as an artificial DNA base into oligonucleotides by two different structural approaches is described. The natural-like indole nucleoside In destabilizes DNA duplexes as much as the nonnucleosidic surrogate In' that connects the phosphodiester bridges by a glycol unit.

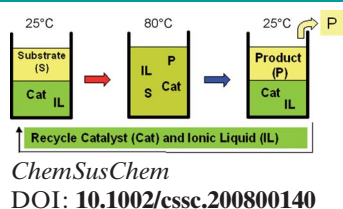


## Fullerenes

J. R. Pinzón, C. M. Cardona, M. Á. Herranz, M. E. Plonska-Brzezinska, A. Palkar, A. J. Athans, N. Martín,\* A. Rodríguez-Forte, J. M. Poblet,\* G. Bottari, T. Torres,\* S. S. Gayathri, D. M. Guldi,\* L. Echegoyen\*

### Metal Nitride Cluster Fullerene $M_3N@C_{80}$ ( $M = Y, Sc$ ) Based Dyads: Synthesis, and Electrochemical, Theoretical and Photophysical Studies

**Endohedral fullerene dyads:** The reactivity of  $I_h$ - $Sc_3N@C_{80}$  and  $I_h$ - $Y_3N@C_{80}$  (see figure) towards 1,3-dipolar azomethine ylide and Bingel–Hirsch cycloaddition reactions was explored in order to construct different electron donor–acceptor conjugates. The unique redox properties of the structures formed were investigated by means of cyclic voltammetry and the experimental results were supported by density functional calculations.



## Biphasic Catalysis

C. Van Doorslaer, J. Wahlen, P. G. N. Mertens, B. Thijs, P. Nockemann, K. Binnemans, D. E. De Vos\*

### Catalytic Hydrogenolysis of Aromatic Ketones in Mixed Choline–Betainium Ionic Liquids

**Mild, green fairy liquids:** After screening a wide range of ionic liquids, a binary mixture of choline and betainium bis(trifluoromethylsulfonyl)imide ionic liquids was selected as the reaction medium for the hydrogenolysis of aromatic ketones. This mixture of ionic liquids functions both as co-catalyst and as immobilization medium for the palladium catalyst, which can efficiently be recycled after decantation of the reaction products.

