Diels–Alder Reactions

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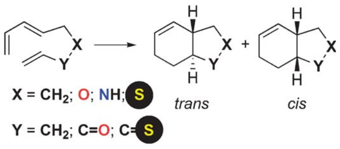
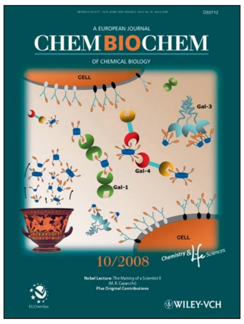
On the Effect of Tether Composition on *cis*/*trans* Selectivity in Intramolecular Diels–Alder Reactions

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.



Chem. Asian J.
DOI: **10.1002/asia.200800352**



Photoactivation

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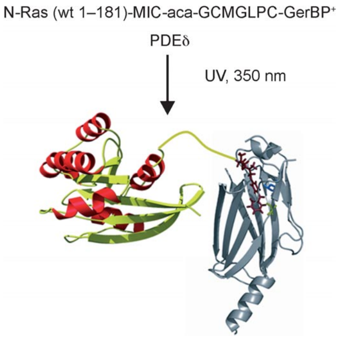
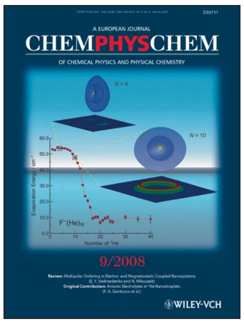
R. Dvorsky, L. Brunsveld, H. Waldmann,* J. Kuhlmann

Mapping the Isoprenoid Binding Pocket of PDEδ by a Semisynthetic, Photoactivatable N-Ras Lipoprotein

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



ChemBioChem
DOI: **10.1002/cbic.200800275**



Protein Hydration

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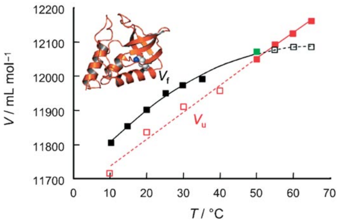
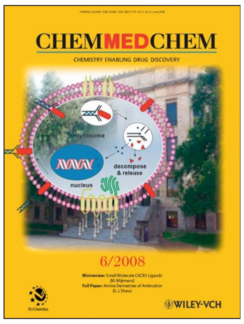
Towards a Quantitative Understanding of Protein Hydration and Volumetric Properties

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
DOI: **10.1002/cphc.200800405**



Antibiotics

S. Petit, Y. Duroc, V. Larue, C. Giglione, C. Léon, C. Soulama,
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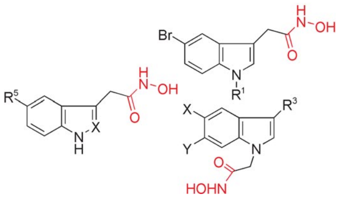
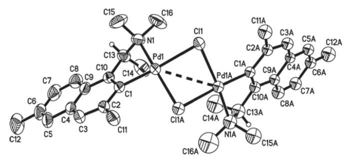
Structure–Activity Relationship Analysis of the Peptide Deformylase Inhibitor 5-Bromo-1*H*-indole-3-acetohydroxamic Acid

SAR by NMR. A series of indole compounds derived from 5-bromo-1*H*-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 ^{15}N-labeled *E. coli* Ni-PDF.



ChemMedChem
DOI: **10.1002/cmdc.200800251**



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200800923**

Chiral Palladacycles

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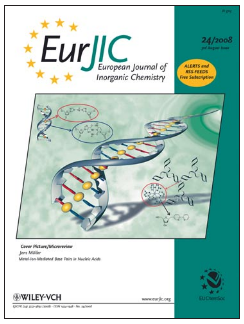
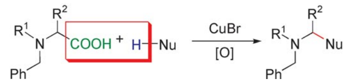
Rational Design of a Novel Chiral Palladacycle: Synthesis, Optical Resolution, and Stereochemical Evaluation

A racemic cyclopalladated complex was efficiently resolved through the formation of its (*S*)-prolinato derivatives. The new chiral palladacycle showed high stereoselectivity in the chiral template-promoted asymmetric Diels–Alder reaction of coordinated 3,4-dimethyl-1-phenylphosphole and *N*,*N*-dimethylacrylamide.





Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200805122**

C–C Coupling

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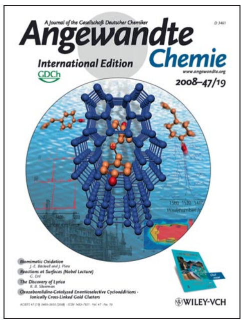
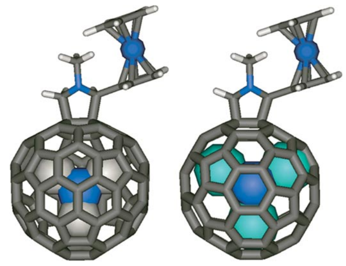
The Copper-Catalyzed Decarboxylative Coupling of the sp^3-Hybridized Carbon Atoms of α-Amino Acids

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 α-amino acids as starting materials was developed (see scheme). Various functionalized nitrogen-containing compounds were obtained by this method.





Chem. Eur. J.
DOI: **10.1002/chem.200801559**

Fullerenes

J. R. Pinzón, C. M. Cardona, M. Á. Herranz,
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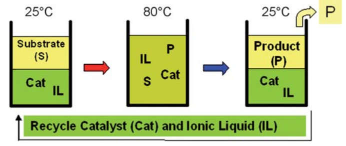
Metal Nitride Cluster Fullerene $M_3N@C_{80}$ (M = Y, Sc) Based Dyads: Synthesis, and Electrochemical, Theoretical and Photophysical Studies

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.



ChemSusChem
DOI: **10.1002/cssc.200800140**

Biphasic Catalysis

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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.