SPOTLIGHTS …

Hydrogels

W. Deng, D. H. Yamaguchi, D. Y. Takashima, A. Harada*

Construction of Chemical-Responsive Supramolecular Hydrogels from Guest-Modified Cyclodextrins

Chem. Asian J.
DOI: **10.1002/asia.200700378**

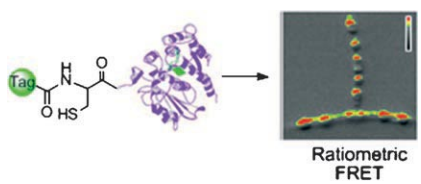
Gelling together: Supramolecular hydrogels can be prepared from guest-modified cyclodextrins (CDs) by a method based on the host–guest and hydrogen-bonding interactions of CDs. These hydrogels display excellent chemical-responsive properties, and reversible gel-to-sol and sol-to-gel transitions occur upon the alternate addition of methyl orange and α-CD.

Site-Specific Labeling

S. Chattopadhaya, F. B. Abu Bakar, R. Srinivasan, S. Q. Yao*

In Vivo Imaging of a Bacterial Cell Division Protein Using a Protease-Assisted Small-Molecule Labeling Approach

ChemBioChem
DOI: **10.1002/cbic.200700647**



Announce on entry: We present a method for the site-specific labeling of target proteins using a set of cell permeable small-molecule probes. The tobacco etch virus (TEV) NIa protease, was used to generate target proteins with an N-terminal cysteine residue, which was subsequently labeled with thioester probe(s) in a site-specific and covalent manner. Furthermore, we demonstrate the utility of this approach for the study of FtsZ, an important bacterial cell-division protein (see figure).

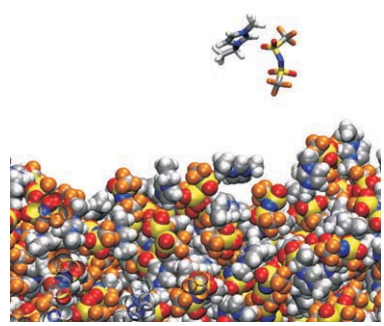
Ionic Liquids

T. Köddermann, D. Paschek,* R. Ludwig*

Ionic Liquids: Dissecting the Enthalpies of Vaporization

ChemPhysChem
DOI: **10.1002/cphc.200700814**

Green vapors: The low volatility and the corresponding high heats of vaporisation make ionic liquids attractive as "green" solvents. Molecular dynamics simulations are able to reproduce thermodynamic properties of these new materials and can explain their origin on the basis of molecular interactions.



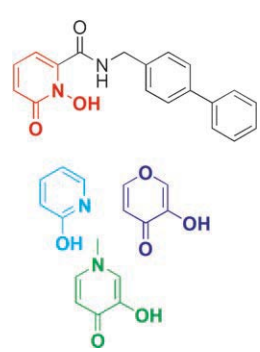
Enzyme Inhibitors

A. Agrawal, D. Romero-Perez, J. A. Jacobsen, F. J. Villarreal, S. M. Cohen*

Zinc-Binding Groups Modulate Selective Inhibition of MMPs

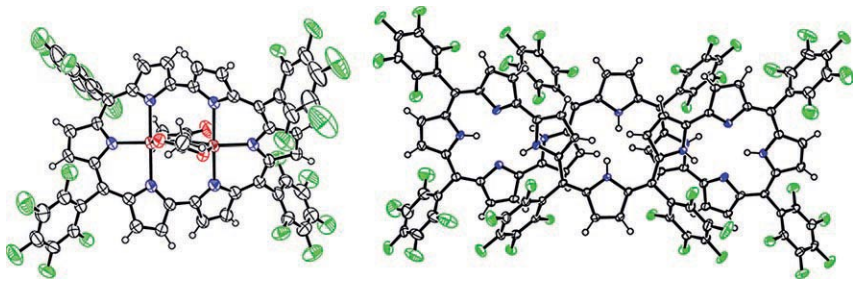
ChemMedChem
DOI: **10.1002/cmdc.200700290**

Improving MMP inhibition: Matrix metalloproteinases (MMPs) are a family of zinc-dependent endopeptidases. The zinc-binding group (ZBG) of matrix metalloproteinase inhibitors (MMPi) is shown to be effective in obtaining isoform selectivity. This suggests a novel route to obtaining targeted MMPi, which elicit specificity through both the ZBG and the peptidomimetic backbone.



EurJIC European Journal of Inorganic Chemistry

Porphyrinoids



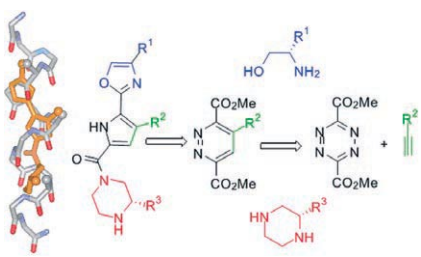
Aromatic switching has been demonstrated in both the absence and presence of a metal cation (i.e., zinc(II)) in the case of a *meso*-substituted rubyrin-type hexapyrrolic expanded porphyrin. This same system acts as an anion-binding agent in methanol solution, whereas the synthetic procedure used to prepare the parent compound, involving an oxidative coupling reaction of a *meso*-pentafluorophenyl substituted tripyrrane allows isolation of rubyrin-type expanded porphyrins.

S. Shimizu, W.-S. Cho, J. L. Sessler,* H. Shinokubo, A. Osuka*

meso-Aryl Substituted Rubyrin and Its Higher Homologues: Structural Characterization and Chemical Properties

Chem. Eur. J.
DOI: **10.1002/chem.200701909**

α-Helix Mimetics



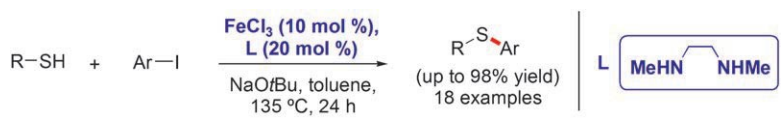
The design and synthesis of nonpeptidic α-helix mimetics based on a tricyclic oxazole–pyrrole–piperazine scaffold is described. The scaffolds present both a hydrophobic surface for recognition and a hydrophilic edge that is rich in hydrogen-bond donors and acceptors.

L. Moisan, S. Odermatt, N. Gombosuren, A. Carella, J. Rebek Jr.*

Synthesis of an Oxazole–Pyrrole–Piperazine Scaffold as an α-Helix Mimetic

Eur. J. Org. Chem.
DOI: **10.1002/ejoc.200701164**

Cross-Coupling Reactions



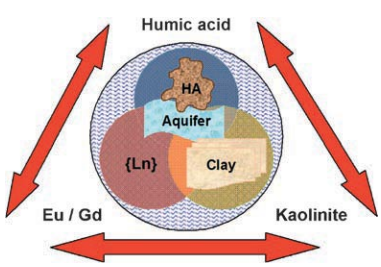
Strike while the iron is hot: An efficient iron-catalyzed protocol for the S-arylation of aromatic and heteroaromatic thiol derivatives has been developed, which involves an inexpensive catalyst system formed by combining $FeCl_3$ and *N*,*N*′-dimethylethylenediamine at 135 °C. This method avoids the use of expensive and/or air-sensitive ligands and provides in most cases the desired sulfide in high yields.

A. Correa, M. Carril, C. Bolm*

Iron-Catalyzed S-Arylation of Thiols with Aryl Iodides

Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200705668**

Environmental Chemistry



Heavy metal and rock: Humic acid (HA) in natural clays can play an important role in the (im)mobilization (complexation) of toxic metal ions such as radionuclides in the deep geological disposal of high-level radioactive waste. To better understand the influencing factors, the sorption behavior of Eu^{3+} and Gd^{3+} ions, as homologues of the actinides Am and Cm, was studied under various conditions.

R. Kautenburger,* H. P. Beck

Waste Disposal in Clay Formations: Influence of Humic Acid on the Migration of Heavy-Metal Pollutants

ChemSusChem
DOI: **10.1002/cssc.200800014**

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