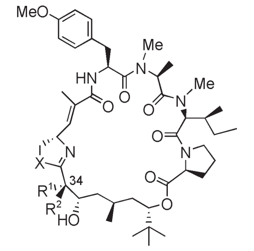
Total Synthesis

Y. Numajiri, T. Takahashi,* T. Doi*

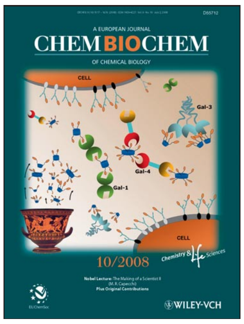
Total Synthesis of (−)-Apratoxin A, 34-Epimer, and Its Oxazoline Analogue

18-step plan: Total synthesis of the marine natural product apratoxin A and related synthetic analogues is described. Apratoxin A is prepared with an overall yield of 18 % through a synthetic route with a longest linear sequence of eighteen steps.



apratoxin A (X = S, R^1 = Me, R^2 = H)
34-epi apratoxin A (X = S, R^1 = H, R^2 = Me)
oxazoline analogue (X = O, R^1 = Me, R^2 = H)

Chem. Asian J.
DOI: **10.1002/asia.200800365**

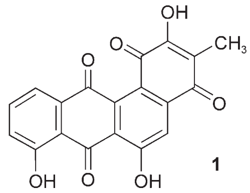


Biosynthesis

F. Lombó, M. S. Abdelfattah, A. F. Braña, J. A. Salas, J. Rohr,* C. Méndez*

Elucidation of Oxygenation Steps during Oviedomycin Biosynthesis and Generation of Derivatives with Increased Antitumor Activity

Eight different angucyclinones have been produced in *Streptomyces albus* by combining three oxygenase genes together with the polyketide synthase and cyclases genes from the oviedomycin biosynthetic gene cluster from *Streptomyces antibioticus* ATCC 11891. Three of these angucyclinones show higher antitumor activity than oviedomycin (**1**).



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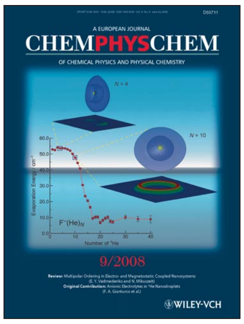
ChemBioChem
DOI: **10.1002/cbic.200800425**

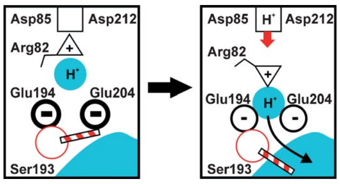


Solar Cells

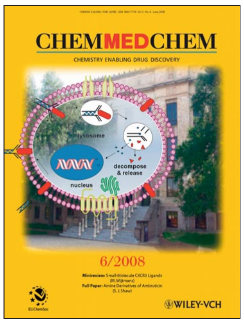
S. Wolf, E. Freier, K. Gerwert*

How Does a Membrane Protein Achieve a Vectorial Proton Transfer Via Water Molecules?

Pathway to extracellular bulk water: A mechanism for the proton transfer from a protein-bound protonated water cluster to the bulk water directed by side chains in bacteriorhodopsin is presented. During the photocycle, a transient protonation of Glu194/204 leads to the breaking of a hydrogen bond to Ser193, opening the water cluster to the extracellular water and leading to the proton release.



ChemPhysChem
DOI: **10.1002/cphc.200800703**

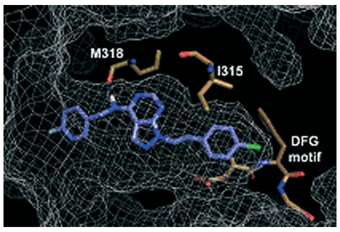


Antileukemia Agents

M. A. Santucci, V. Corradi, M. Mancini, F. Manetti, M. Radi, S. Schenone,* M. Botta

C6-Unsubstituted Pyrazolo[3,4-*d*]pyrimidines Are Dual Src/Abl Inhibitors Effective against Imatinib Mesylate Resistant Chronic Myeloid Leukemia Cell Lines

Docking studies with the Bcr–Abl T315I mutant suggest that C6-unsubstituted pyrazolo[3,4-*d*]pyrimidines engage the Abl kinase domain in a manner that avoids steric clashes with the gatekeeper residue. The selected compounds affect the proliferation and survival of cells with the T315I mutation which do not respond to dual Src/Abl inhibitors.



ChemMedChem
DOI: **10.1002/cmdc.200800320**

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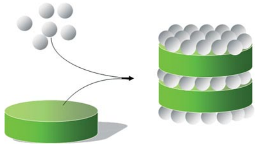


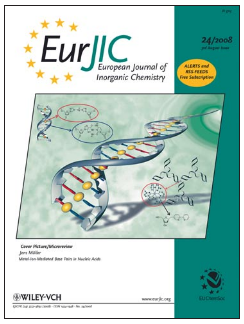
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200800668**

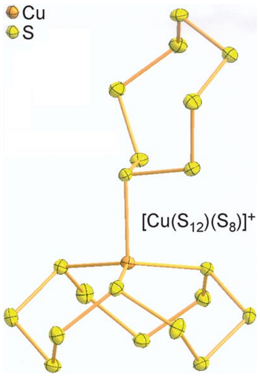
Hybrid Assembly

J. H. Lee, H. J. Nam, S. W. Rhee, D.-Y. Jung*

Hybrid Assembly of Layered Double Hydroxide Nanocrystals with Inorganic, Polymeric and Biomaterials from Micro- to Nanometer Scales

Nanosized PMMA beads were uniformly assembled on LDH nanocrystals through electrostatic interaction to form homogeneous polymer-LDH nanocomposites with conformal polymer layers.





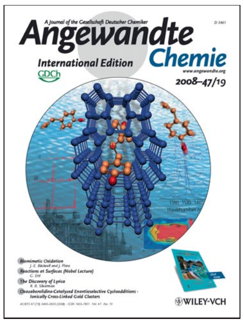
Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200804021**

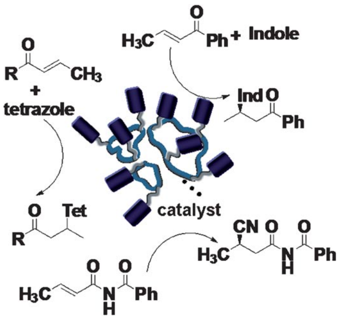
Cyclosulfur Ligands

G. Santiso-Quiñones, R. Brückner, C. Knapp, I. Dionne, J. Passmore, I. Krossing*

Cyclododecasulfur as a Ligand: From Gas-Phase Experiments to the Crystal Structures of $[Cu(S_{12})(S_8)]^+$ and $[Cu(S_{12})(CH_2Cl_2)]^+$

Just say S: Although gas-phase mass spectrometry experiments suggested the existence of Cu^I complexes with cyclosulfur ligands, such complexes had never been detected in the condensed phase. The use of “naked” Cu^I sources with weakly coordinating anions enables the preparation of the first cyclododecasulfur complexes of any metal.





Chem. Eur. J.
DOI: **10.1002/chem.200801611**

Asymmetric Catalysis

N. Madhavan, T. Takatani, C. D. Sherrill, M. Weck*

Macrocyclic Cyclooctene-Supported AlCl–Salen Catalysts for Conjugated Addition Reactions: Effect of Linker and Support Structure on Catalysis

Lending support! AlCl–salen (salen = *N*,*N*′-bis(salicylidene)ethylenediamine dianion) catalysts attached to macrocyclic oligomeric cyclooctene supports through linkers of varying length and flexibility demonstrate the importance of support architecture on catalytic activity for bimetallic as well as monometallic reactions (see scheme).

ChemSusChem
DOI: **10.1002/cssc.200800197**

Glycerol Conversion

A. Behr,* J. Leschinski, C. Awungacha, S. Simic, T. Knoth

Telomerization of Butadiene with Glycerol: Reaction Control through Process Engineering, Solvents, and Additives

Butadiene, telomer, glycerol: The telomerization of butadiene with glycerol leads to unsaturated glycerol ethers that can be used as detergents, emulsifiers, defoamers, or diluents. Two important considerations for this reaction are 1) control of the selectivity and 2) reduction of decomposition and leaching of the homogeneous noble-metal catalyst. The telomerization reaction was optimized by studying the influence of different solvents and additives.