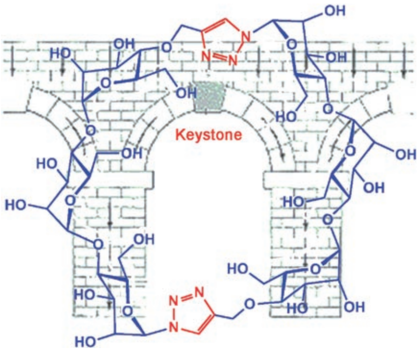
Spotlights ...

Click Chemistry

A. Dondoni*

Triazole: the Keystone in Glycosylated Molecular Architectures Constructed by a Click Reaction

Chem. Asian J.
DOI: **10.1002/asia.200700015**



Things don't fall apart: Like the wedge-shaped keystone in the central part of an arch, triazole units formed by Cu^I-catalyzed azide–alkyne coupling acts as the ligation element of glycosylated molecular fragments. This structural motif is present in various complex glycoconjugates such as glycoclusters, glycodendrimers, glycopolymers, glycomacrocycles, and DNA strands.

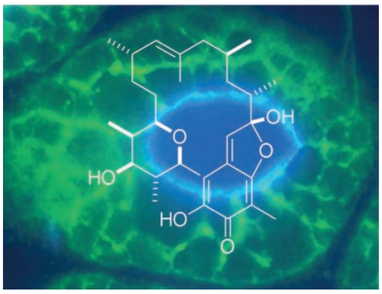
Natural Products

Y. A. Elnakady, M. Rohde, F. Sasse, C. Backes, A. Keller, H.-P. Lenhof, K. J. Weissman, R. Müller*

Evidence for the Mode of Action of the Highly Cytotoxic *Streptomyces* Polyketide Kendomycin

ChemBioChem
DOI: **10.1002/cbic.200700050**

The first macrocyclic polyketide proteasome inhibitor. Kendomycin is a macrocyclic polyketide recently discovered in several *Streptomyces* species. We provide evidence here that kendomycin's potent antiproliferative activity derives from inhibition of the proteasome. Kendomycin therefore represents the founding member of a new class of proteasome inhibitors with promise both in therapy and in chemical genetics.

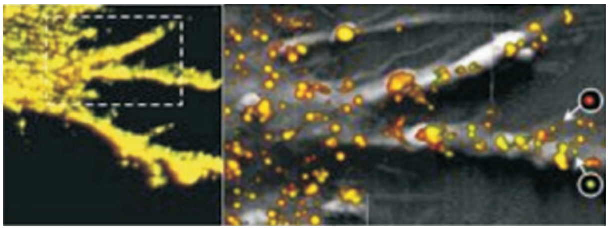


Single-Molecule Study

B. I. de Bakker, F. de Lange, A. Cambi, J. P. Korterik, E. M. H. P. van Dijk, N. F. van Hulst, C. G. Figdor, M. F. Garcia-Parajo*

Nanoscale Organization of the Pathogen Receptor DC-SIGN Mapped by Single-Molecule High-Resolution Fluorescence Microscopy

ChemPhysChem
DOI: **10.1002/cphc.200700169**



Near-field scanning optical microscopy (NSOM) was used to visualize the nanoscale spatial arrangement of the lectin DC-SIGN on the membrane of intact dendritic cells. Whereas the confocal image has a diffraction-limited resolution of about 350 nm (see picture, left), NSOM can visualize DC-SIGN nanodomains with a spatial resolution of less than 100 nm (right).

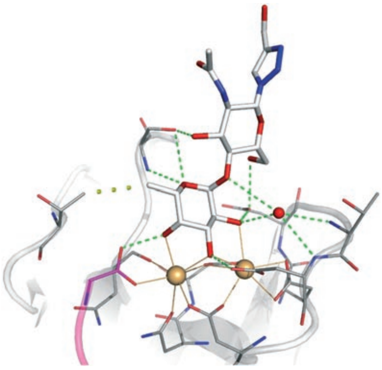
Glycomimetics

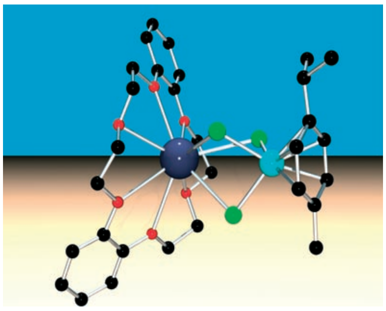
K. Marotte, C. Sabin, C. Préville, M. Moumé-Pymbock, M. Wimmerová, E. P. Mitchell, A. Imberty,* R. Roy*

X-ray Structures and Thermodynamics of the Interaction of PA-IIL from *Pseudomonas aeruginosa* with Disaccharide Derivatives

ChemMedChem
DOI: **10.1002/cmdc.200700100**

The disaccharide αFuc1-4GlcNAc has been used as a scaffold toward the synthesis of a series of derivatives targeting the fucose binding lectin from *Pseudomonas aeruginosa*. High affinity has been measured by titration microcalorimetry and structural studies rationalized the difference observed for the thermodynamics of binding between the natural and the synthetic ligands.





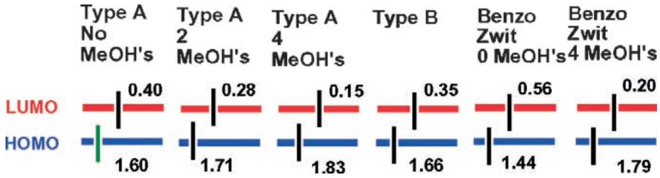
The first example of a triple-chlorido-bridged heterodimetallic dinuclear complex comprising an (η^6-arene)Ru^{II} fragment and a Group 1 metal crown ether fragment is presented. The solid-state structure was determined by X-ray crystallography. NMR investigations indicate the presence of a dynamic equilibrium in solution.

Heterodimetallic Dinuclear Complexes

C. A. Vock, R. Scopelliti, P. J. Dyson*

Synthesis and Crystallographic Characterisation of the Heterodimetallic Complex [(Dibenzo-18-crown-6)K-(μ-Cl)$_3$Ru(η^6-*p*-cymene)]

Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200700430**



The zwitterion vs. diradical nature of the S0 intermediate in photochemical enone and dienone rearrangements has been assessed by experimental and computational means. In this study we report a number of new reactions and their mechanisms in both ground and excited states. Natural orbital analyses are used in one approach. Charge and electron density distribution are used in another. Explicit inclusion of solvent is demonstrated to be important.

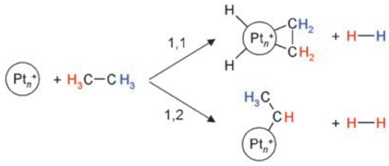
Photochemistry

H. E. Zimmerman,* V. Suryanarayan

Organic Photochemical Rearrangements of Triplets and Zwitterions; Mechanistic and Exploratory Organic Photochemistry

Eur. J. Org. Chem.
DOI: **10.1002/ejoc.200700456**

Platinum favors alpha: Gase-phase reactions of size-selected platinum cluster cations with hydrocarbons reveal a preference for α-hydrogen atoms upon dihydrogen elimination (see scheme). These observations are in strong contrast to rhodium, which favors 1,2-elimination and explains why platinum is reactive towards methane whilst rhodium is not.



Heterogeneous Catalysis

C. Adlhart, E. Uggerud*

Mechanisms for the Dehydrogenation of Alkanes on Platinum: Insights Gained from the Reactivity of Gaseous Cluster Cations, Pt$_n^+$ $n = 1$–21

Chem. Eur. J.
DOI: **10.1002/chem.200700501**

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