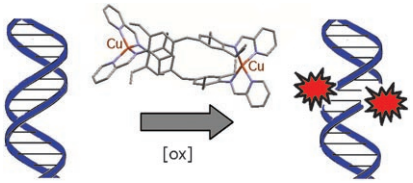
DNA Cleavage

L. J. Childs, J. Malina, B. E. Rolfsnes, M. Pascu, M. J. Prieto, M. J. Broome, P. M. Rodger, E. Sletten, V. Moreno, A. Rodger,* M. J. Hannon**

A DNA-Binding Copper(I) Metallosupramolecular Cylinder that Acts as an Artificial Nuclease

Chem. Eur. J.
DOI: **10.1002/chem.200600060**

It's a snip! Dicationic pyridylimine-based dicopper(I) metallosupramolecular cylinders bind strongly to DNA and exhibit cleavage activity towards double-stranded DNA in the presence of peroxide.



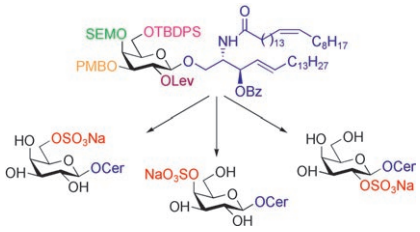
Carbohydrates

F. Compostella, S. Ronchi, L. Panza, S. Mariotti, L. Mori, G. De Libero, F. Ronchetti*

Synthesis of Sulfated Galactocerebrosides from an Orthogonal β-D-Galactosylceramide Scaffold for the Study of CD1–Antigen Interactions

Chem. Eur. J.
DOI: **10.1002/chem.200501586**

Cerebroside derivatives bearing various functionalities at different positions: The synthesis of a multifunctional β-D-galactosylceramide scaffold has been developed for the easy preparation of differently sulfated β-D-galactosylceramides. These molecules are useful for study of the influence of the sulfate position in sulfatide–CD1a protein interactions.

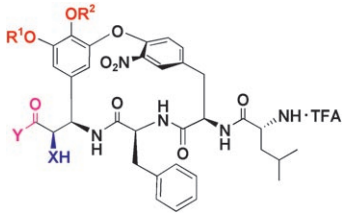


Antibiotics

*Y. Jia, N. Ma, Z. Liu, M. Bois-Choussy, E. Gonzalez-Zamora, A. Malabarba, C. Brunati, J. Zhu**

Design and Synthesis of Simple Macrocycles Active Against Vancomycin-Resistant *Enterococci* (VRE)

Chem. Eur. J.
DOI: **10.1002/chem.200600137**



Fine-tuning chemistry! Both vancomycin-sensitive bacteria and vancomycin-resistant *enterococci* can be killed in vitro by fine-tuning the X, Y, and R groups in the molecule. Active compounds were found in both the hydroxy (X = OH) and amide (X = $nC_{11}H_{23}CONH$) series. The presence of hydrophobic chains either as an amide residue (X) or attached to an aminoglucose (R) is essential for the observed bioactivity.

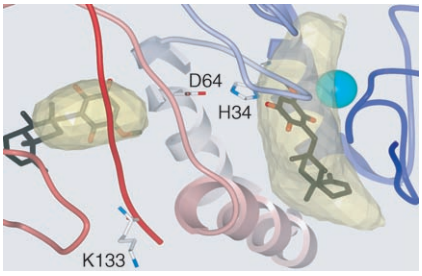
Enzyme Inhibition

*M. C. Monti, A. Casapullo, C. Santomauro, M. V. D'Auria, R. Riccio, L. Gomez-Paloma1r**

The Molecular Mechanism of Bee Venom Phospholipase A_2 Inactivation by Bolinaquinone

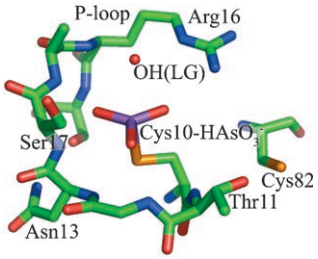
ChemBioChem
DOI: **10.1002/cbic.200500454**

Two routes to inhibition. The molecular basis of bee venom phospholipase A_2 (PLA_2) inactivation by the marine natural product bolinaquinone (BLQ; see structure) is presented. BLQ acts through a dual inhibition mechanism involving both covalent and noncovalent site-specific binding to PLA_2.



Reaction Mechanisms

A loopy mechanism. The onset of the second reaction step (see figure) in the reduction of arsenate to arsenite by pI258 arsenate reductase and the 'looping-out" of the redox helix is studied through experimental studies and quantum chemical calculations in a density functional theory context. This work fits into a multidisciplinary approach, with the combination of theoretical and experimental studies to gain full insight into an enzymatic reaction mechanism.



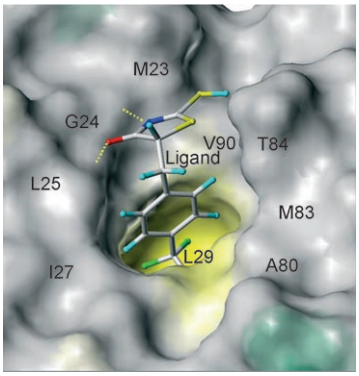
G. Roos, S. Loverix, E. Brosens, K. Van Belle, L. Wyns, P. Geerlings, J. Messens*

The Activation of Electrophile, Nucleophile and Leaving Group during the Reaction Catalysed by pI258 Arsenate Reductase

ChemBioChem
DOI: **10.1002/cbic.200500507**

Protein–Protein Interactions

In the groove: The "drugability" of protein–protein interaction domains is still a matter of debate. The 3D structure of a complex of a small organic ligand and the AF6 PDZ domain revealed the creation of a binding pocket by the ligand (see picture). The derived compound is able to compete with a natural peptide ligand of the domain and represents a basic building block for the generation of selective PDZ inhibitors.

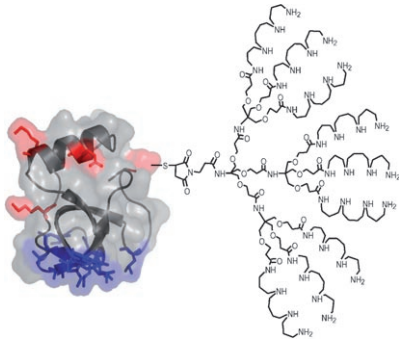


M. Joshi, C. Vargas, P. Boisguerin, A. Diehl, G. Krause, P. Schmieder, K. Moelling, V. Hagen, M. Schade, H. Oschkinat**

Discovery of Low-Molecular-Weight Ligands for the AF6 PDZ Domain

Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200503965**

Protein Functionalization



Strength in numbers: Multivalent dendrons that have an *N*-maleimido group at the focal point can be used to construct monodisperse one-to-one protein–dendron conjugates. The second generation polyamine dendron with spermine surface groups clearly imparts its high-affinity DNA binding to a protein of choice.

M. A. Kostiainen, G. R. Szilvay, D. K. Smith,* M. B. Linder, O. Ikkala*

Multivalent Dendrons for High-Affinity Adhesion of Proteins to DNA

Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200504540**

On these pages, we feature the excellent work in chemistry that has been recently reported in our sister journals *ChemBioChem*, *Angewandte Chemie*, or *Chemistry—A European Journal*.

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