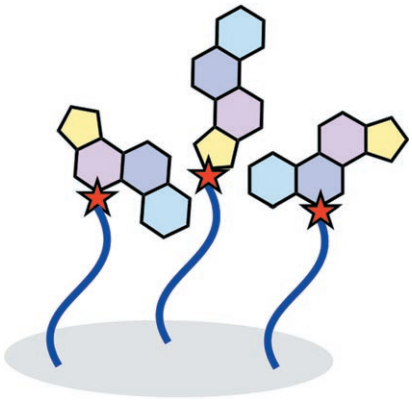
Microarrays

N. Kanoh, A. Asami, M. Kawatani, K. Honda, S. Kumashiro, H. Takayama, S. Simizu, T. Amemiya, Y. Kondoh, S. Hatakeyama, K. Tsuganezawa, R. Utata, A. Tanaka, S. Yokoyama, H. Tashiro, H. Osada**

Photo-Cross-Linked Small-Molecule Microarrays as Chemical Genomic Tools for Dissecting Protein–Ligand Interactions

Chem. Asian J.
DOI: **10.1002/asia.200600208**

Not fussy is good: A nonselective photo-cross-linking approach can be applied to introduce a variety of small molecules onto glass slides in a functional-group-independent manner. The resulting photo-cross-linked small-molecule microarray is useful not merely for ligand screening but also for studies on structure–activity relationships.

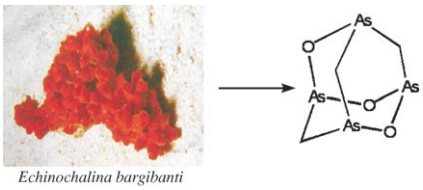


Natural Products

I. Mancini, G. Guella, M. Frostin, E. Hnawia, D. Laurent, C. Debitus, F. Pietra*

On the First Polyarsenic Organic Compound from Nature: Arsenicin A from the New Caledonian Marine Sponge *Echinochalina bargibanti*

Chem. Eur. J.
DOI: **10.1002/chem.200600783**



Echinochalina bargibanti

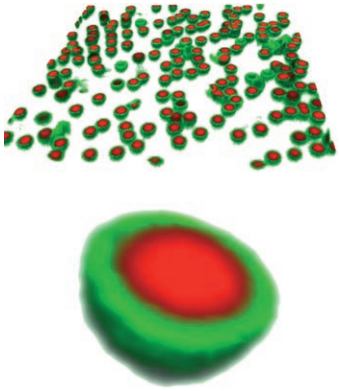
Antibiotics: Arsenicin A, isolated from a marine sponge, represents the first polyarsenic organic compound from nature. Clarification of the molecular structure comes from NMR and extensive MS analysis, comparison with a synthetic analogue and simulation of IR spectra with ab initio vibrational analysis. It may serve as a template for the synthesis of novel antibacterial agents.

Encapsulated Oligonucleotides

*A. N. Zelikin, Q. Li, F. Caruso**

Degradable Polyelectrolyte Capsules Filled with Oligonucleotide Sequences

Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200602779**



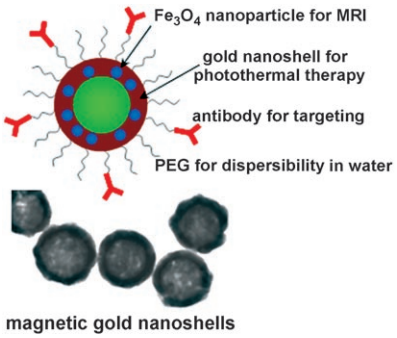
To cap it all: A polycation-free encapsulation method is used to obtain high concentrations of uncomplexed, short oligonucleotide chains confined within monodisperse, degradable microcapsules. Oligonucleotide loadings of $>10^4$ chains per capsule are obtained, and more than 90% of the capsules are filled with DNA. These capsules also undergo degradation under reducing conditions (such as those that occur in cells), releasing the encapsulated DNA.

Nanomedicine

J. Kim, S. Park, J. E. Lee, S. M. Jin, J. H. Lee, I. S. Lee, I. Yang, J.-S. Kim, S. K. Kim, M.-H. Cho, T. Hyeon**

Designed Fabrication of Multifunctional Magnetic Gold Nanoshells and Their Application to Magnetic Resonance Imaging and Photothermal Therapy

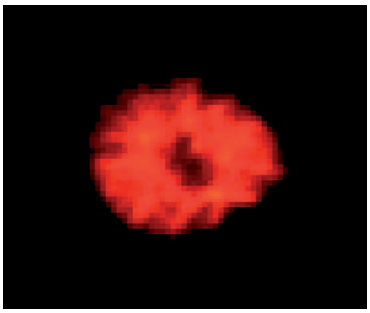
Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200602471**



Targeting cancer: Multifunctional magnetic gold nanoshells (Mag-GNS) are prepared by coating silica spheres with gold nanoshells embedded with Fe_3O_4 nanoparticles. The Fe_3O_4 nanoparticles allow magnetic resonance imaging (MRI) for diagnosis, and the gold nanoshells enable photothermal therapy. By attaching an antibody to the Mag-GNS by a poly(ethylene glycol) (PEG) linker, cancer cells can be targeted.

Protein Chemistry

A synthetic antimalarial protein presenting a native-like fold. A virosomally formulated, synthetic EGF-like domain from *P. falciparum* MSP-1, which is shown by NMR to adopt a native-like fold, elicits antibodies in mice that cross-react with the native protein on mature schizonts. This opens a medicinal chemistry-oriented approach to optimization of the antigenicity of the protein as a potential malaria vaccine candidate.

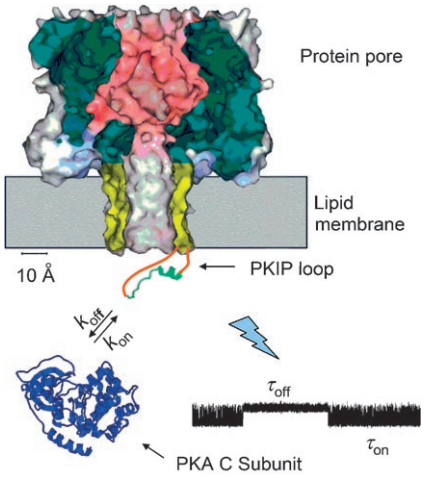


S. James, K. Moehle, A. Renard, M. S. Mueller, D. Vogel, R. Zurbriggen, G. Pluschke, J. A. Robinson**

Synthesis, Solution Structure and Immune Recognition of an Epidermal Growth Factor-Like Domain from *Plasmodium falciparum* Merozoite Surface Protein-1

ChemBioChem
DOI: **10.1002/cbic.200600357**

Screening Technology



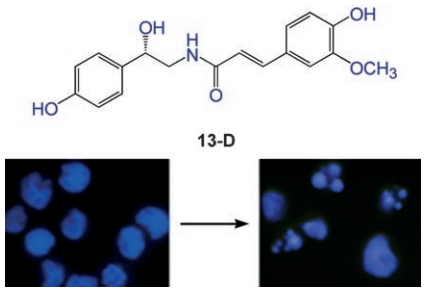
The genetic way. Protein analytes can be detected by stochastic sensing in which the modulation of a current flowing through a single protein pore is observed. In previous work, proteins have been detected with pores to which ligands were appended by targeted chemical modification. We now report the first genetically encoded stochastic sensor element for detecting a protein: an α-hemolysin pore containing a single copy of a protein kinase inhibitor sequence. This development should facilitate the rapid screening of kinase inhibitors.

*S. Cheley, H. Xie, H. Bayley**

A Genetically Encoded Pore for the Stochastic Detection of a Protein Kinase

ChemBioChem
DOI: **10.1002/cbic.200600274**

Anticancer Agents



Unlucky for some. Leukemia and lymphoma cell lines are especially susceptible to the apoptosis-inducing effects of compound **13-D**. This compound has no effect on noncancerous cell types or on other cancer cell lines.

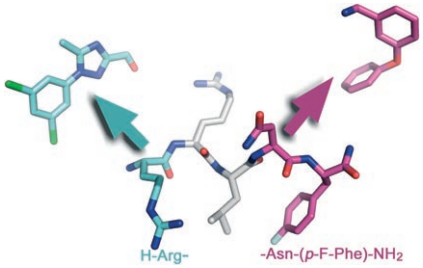
*K. S. Putt, V. Nesterenko, R. S. Dothager, P. J. Hergenrother**

The Compound 13-D Selectively Induces Apoptosis in White Blood Cancers versus Other Cancer Cell Types

ChemBioChem
DOI: **10.1002/cbic.200600228**

Drug Design

REplacement with Partial Ligand Alternatives through Computational Enrichment is a structure-guided design method that permits the stepwise and iterative introduction of nonpeptidic and drug-like fragments into a peptide ligand. Here REPLACE is exemplified in the redesign of cyclin groove inhibitors of the cyclin-dependent kinase 2–cyclin A complex.



M. J. I. Andrews, G. Kontopidis,* C. McInnes,* A. Plater, L. Innes, A. Cowan, P. Jewsbury, P. M. Fischer*

REPLACE: A Strategy for Iterative Design of Cyclin-Binding Groove Inhibitors

ChemBioChem
DOI: **10.1002/cbic.200600189**

