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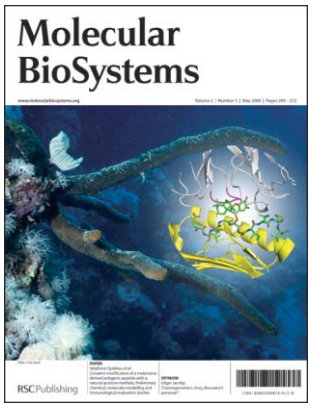
IN THIS ISSUE

ISSN 1742-206X CODEN MBOIBW 2(5) 209–272 (2006)



Cover

See Céline Douat-Casassus, Nathalie Marchand-Geneste, Elisabeth Diez, Céline Aznar, Philippe Picard, Serge Geoffre, Aline Huet, Marie-Lise Bourguet-Kondracki, Nadine Gervois, Francine Jotereau and Stéphane Quideau, page 240. MHC class I-presented antigenic peptides can be chemically transformed to be equipped, in their central part, with small natural molecules, such as the *Hyrtios erectus* sponge-derived (+)-puupehenone, and still be recognized by receptors of CD8+ T-cells for induction of immune responses. Image of *Hyrtios erectus*, Red Sea, at 8 m depth, by Jean Vacelet, reproduced with permission, by Stéphane Quideau *et al.*, from *Mol. BioSyst.*, 2006, **2**, 240.

CHEMICAL BIOLOGY

Drawing together research highlights and news from all RSC publications, *Chemical Biology* provides a 'snapshot' of the latest developments in chemical biology, showcasing newsworthy articles and significant scientific advances.

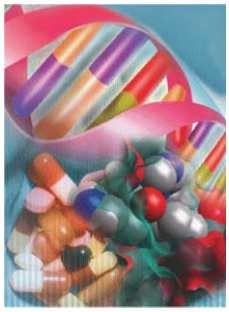
Chemical Biology
May 2006/Volume 1/Issue 5
www.rsc.org/chemicalbiology

HOT OFF THE PRESS

Hot off the Press

Topics highlighted in this month's *Hot off the Press* include the use of metal nanoparticles in DNA sensors, the use of RNAi in identifying the targets of biologically active small molecules and the selectivity of potassium ion channels in membranes.

OPINION

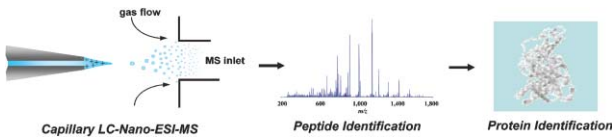


Chemogenomics: drug discovery's panacea?

Edgar Jacoby

Chemogenomics aims towards the systematic identification of small molecules that interact with the products of the genome and modulate their biological function. This *Opinion* article summarizes the different knowledge-based chemogenomics strategies that are followed and outlines the challenges and opportunities that will impact drug discovery.

HIGHLIGHT

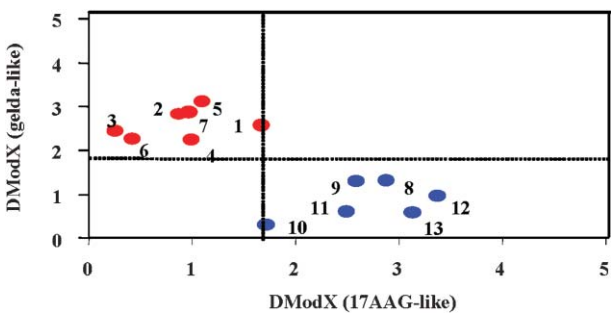


Ultra-sensitive and quantitative characterization of proteomes

Richard D. Smith,* Keqi Tang and Yufeng Shen

Electrospray ionization mass spectrometry combined with high efficiency capillary liquid chromatography provides high sensitivity and broad dynamic range measurements for the characterization of biological macromolecules in complex matrices, and is an increasingly powerful analytical tool for systems biology research.

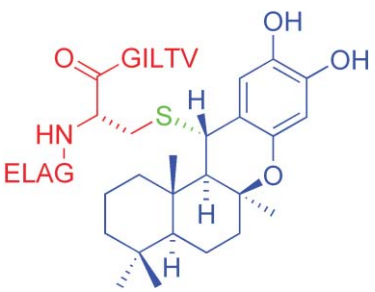
PAPERS



Identification of genes involved in the sensitivity to antitumour drug 17-allylamino,17-demethoxygeldanamycin (17AAG)

Vincenza Barresi, Cosimo G. Fortuna, Roberta Garozzo, Giuseppe Musumarra, Salvatore Scirè and Daniele F. Condorelli*

The SIMCA approach dissected 13 geldanamycin analogues into two classes, each with different "top" gene transcripts involved in drug sensitivity. RNA interference experiments supported the statistical results.



Covalent modification of a melanoma-derived antigenic peptide with a natural quinone methide. Preliminary chemical, molecular modelling and immunological evaluation studies

C. Douat-Casassus, N. Marchand-Geneste, E. Diez, C. Aznar, P Picard, S. Geoffre, A. Huet, M.-L. Bourguet-Kondracki, N. Gervois, F. Jotereau and S. Quideau*

This melanoma-associated antigenic peptide bearing the marine product puupehenone induces IFN-γ secretion as a result of its MHC class-I restricted recognition by T cell clones.

PAPERS

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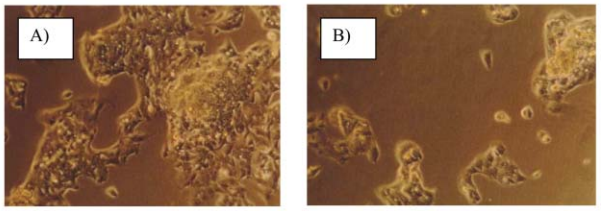
Investigation of differentially expressed proteins due to the inhibitory effects of berberine in human liver cancer cell line HepG2

Yan Lin Tan, David Goh and Eng Shi Ong*



Inhibitory effect of berberine on human liver cancer cells, HepG2 for A) control treated with medium and B) cells treated with 24.0 mg l^{-1} of berberine after 48 hours.

BOOK CHAPTER

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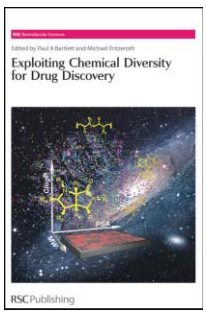
Screening chemical microarrays: methods and applications

Pappanaicken R. Kumaresan and Kit S. Lam

This is Chapter 13 of the book *Exploiting Chemical Diversity for Drug Discovery* which forms part of the RSC Biomolecular Sciences series. More information about this book and the whole series is available from www.rsc.org/biomolecularsciences or the RSC Sales team, email: sales@rsc.org.



Best for bioinorganic chemistry

Indexed in MEDLINE, Dalton Transactions is a leading journal for biological inorganic and bioinorganic chemistry research.

A selection of excellent recent articles is listed below; to keep abreast of latest developments in this area bookmark the website.

Inert benzothiazole functionalised ruthenium(II) complexes; potential DNA hairpin binding agents
Caitriona B. Spillane, Joy L. Morgan, Nicholas C. Fletcher, J. Grant Collins and F. Richard Keene

The enzymatic activation of coenzyme B_{12}
Kenneth L. Brown, Dalton Trans., 2006, 1123

Redox behavior of tumor-inhibiting ruthenium(III) complexes and effects of physiological reductants on their binding to GMP
Petra Schluga, Christian G. Hartinger, Alexander Egger, Erwin Reisner, Markus Galanski, Michael A. Jakupec and Bernhard K. Keppler

Synthesis, characterisation, reactivity and *in vitro* antiamoebic activity of hydrazone based oxovanadium(IV), oxovanadium(V) and μ-bis(oxo)bis{oxovanadium(V)} complexes
Mannar R. Maurya, Shalu Agarwal, Mohammad Abid, Amir Azam, Cerstin Bader, Martin Ebel and Dieter Rehder

Metal complexes in medicinal chemistry: new vistas and challenges in drug design
Katherine H. Thompson and Chris Orvig

Thioester hydrolysis reactivity of zinc hydroxide complexes: investigating reactivity relevant to glyoxalase II enzymes
Lisa M. Berreau, Amrita Saha and Atta M. Arif

New antitumour active platinum compounds containing carboxylate ligands in *trans* geometry: synthesis, crystal structure and biological activity
Steven van Zutphen, Elena Pantoja, Rosario Soriano, Carlos Soro, Duncan M. Tooke, Anthony L. Spek, Hans den Dulk, Jaap Brouwer and Jan Reedijk

Probing the mechanism of hypoxia selectivity of copper bis(thiosemicarbazonato) complexes: DFT calculation of redox potentials and absolute acidities in solution
Jason P. Holland, Jennifer C. Green and Jonathan R. Dilworth

Cucurbit[n]uril binding of platinum anticancer complexes
Nial J. Wheate, Damian P. Buck, Anthony I. Day and J. Grant Collins

Metal complex SERMs (selective oestrogen receptor modulators). The influence of different metal units on breast cancer cell antiproliferative effects
Anne Vessières, Siden Top, Wolfgang Beck, Elizabeth Hillard and Gérard Jaouen

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