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Cover

See David J. Craik and Norelle L. Daly, p. 257.

The prototypical cyclotide kalata B1 is shown superimposed upon the sweet violet (*Viola odorata*), a source of this peptide. Cyclotides are topologically unique plant defence proteins that have a cyclic backbone and knotted arrangement of disulfide bonds, that contribute to their remarkable stability.

Image reproduced by permission of David J. Craik and Norelle L. Daly from *Mol. BioSyst.*, 2007, 3, 257.

CHEMICAL BIOLOGY

B25

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

April 2007/Volume 2/Issue 4

www.rsc.org/chembiology

HOT OFF THE PRESS

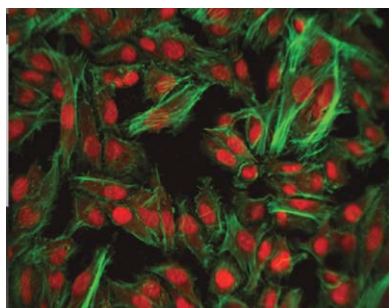
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Hot off the Press

Hot off the Press highlights recently published work for the benefit of our readers. Our contributors this month have focused on the labelling of proteins for ^{19}F NMR and whole cell biosensors for detection of pathogenic bacteria. New contributors are always welcome. If you are interested please contact molbiosyst@rsc.org for more information, we'd like to hear from you.

HOT OFF THE PRESS

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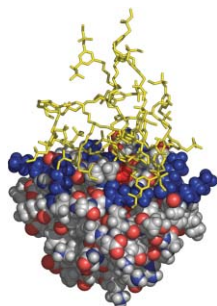


High-content siRNA screening

Eberhard Krausz*

Automated microscopy and multi-parametric image analysis combined with RNA interference in mammalian cells allows systematic functional analysis of genes involved in complex biological processes.

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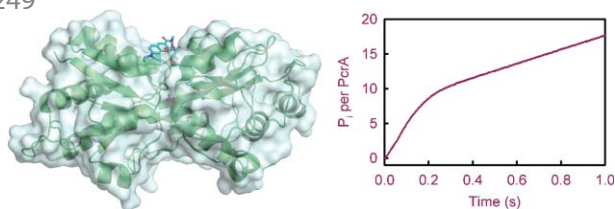


Artificial protein sensors

Thomas Schrader* and Sebastian Koch

Recent advances in protein recognition by synthetic molecules involve specific metal coordination, epitope-docking on miniature proteins, aptamer selection, nonnatural peptide isosteres, functionalized platforms, secondary structure mimetics, molecular imprinting and receptors embedded in lipid layers.

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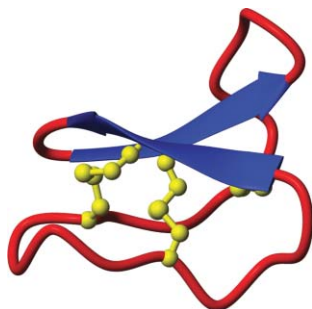


Development of fluorescent biosensors for probing the function of motor proteins

Martin R. Webb

Reagentless biosensors for small molecules, based on binding proteins and using fluorescence reporting, are being used to probe the mechanochemical coupling of motility proteins with high time resolution.

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NMR as a tool for elucidating the structures of circular and knotted proteins

David J. Craik* and Norelle L. Daly

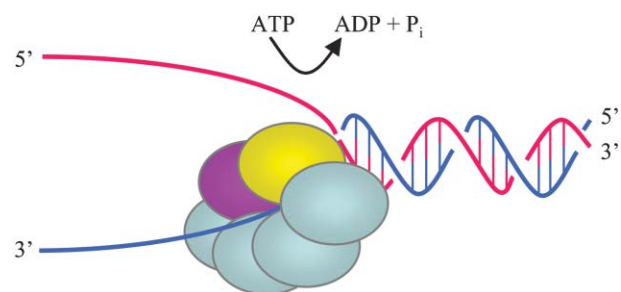
NMR has played a pivotal role in structurally defining the cyclic cystine knot motif of cyclotides. This novel structural motif is responsible for the remarkable resistance of cyclotides to chemical, thermal or enzymatic degradation. The stability of the motif makes it valuable as a template in drug design.

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Biochemical, biophysical, and proteomic approaches to study DNA helicases

Alessandro Vindigni

Helicases are a family of motor proteins that play an essential role in nearly all DNA metabolic processes, catalyzing the transient opening of DNA duplexes. This review describes the biochemical, biophysical, and proteomics techniques that have been developed to elucidate the helicase-catalyzed mechanism of DNA unwinding.



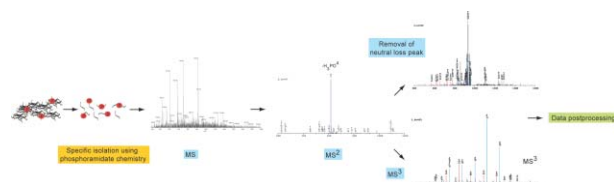
PAPER

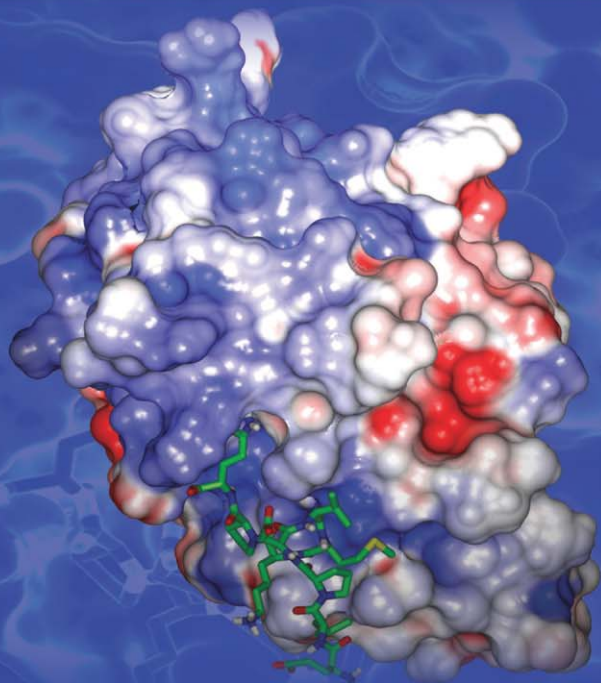
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An integrated chemical, mass spectrometric and computational strategy for (quantitative) phosphoproteomics: application to *Drosophila melanogaster* Kc167 cells

Bernd Bodenmiller, Lukas N. Mueller, Patrick G. A. Pedrioli, Delphine Pflieger, Martin A. Jünger, Jimmy K. Eng, Ruedi Aebersold* and W. Andy Tao*

A phospho-specific isolation method data acquisition leads to enhanced ability to analyze protein phosphorylation.





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Robert A. Field, UK

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Richard A. Bartsch, USA

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Yuji Kubo, Japan

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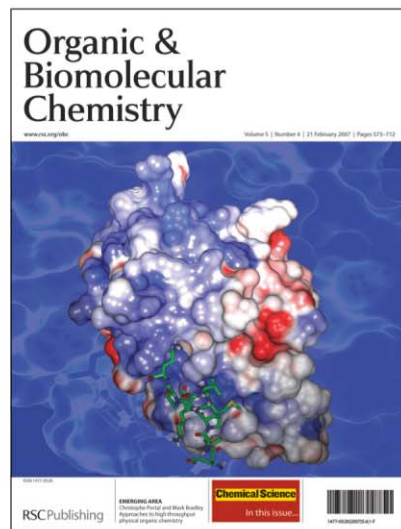
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