

IN THIS ISSUE

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In this issue...

ICAT-MS/MS is used to provide a time-dependent analysis of muscle wasting. See Marco Toigo *et al.* pp. 229-241.



Cover

See Martin Welch, Helga Mikkelsen, Jane E. Swatton, Debra Smith, Gemma L. Thomas, Freija G. Glansdorp and David R. Spring, page 196. The bacteria *Serratia marsescens* (red), *Chromobacterium violaceum* (blue/purple) and *Pseudomonas aeruginosa* (light green) produce pigments that are under quorum sensing control. Image reproduced by permission of David R. Spring *et al.*, from *Mol. BioSyst.*, 2005, 1, 196.

HOT OFF THE PRESS

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Hot off the Press

Topics highlighted in this month's *Hot off the Press* include enrichment of the phospho-proteome, sequencing on a picolitre scale, and real-time detection of protein translocation.



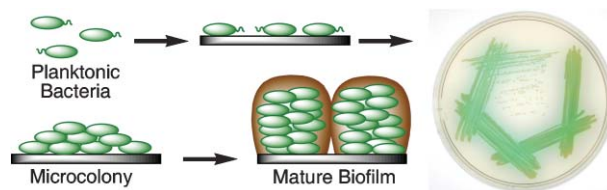
HIGHLIGHT

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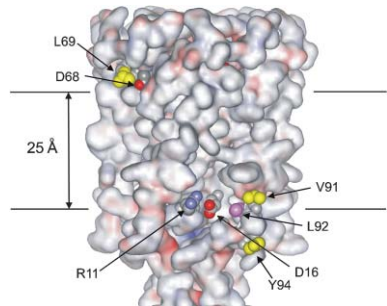
Cell-cell communication in Gram-negative bacteria

Martin Welch, Helga Mikkelsen, Jane E. Swatton, Debra Smith, Gemma L. Thomas, Freija G. Glansdorp and David R. Spring*

Bacteria are not simply single-celled organisms. They communicate using small molecules. This recently discovered communication mechanism is discussed for Gram-negative bacteria.



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How lipids and proteins interact in a membrane: a molecular approach

Anthony G. Lee

Activities of integral membrane proteins are affected by interaction with the lipid molecules that surround them in the membrane. This review describes spectroscopic techniques used to study lipid–protein interactions at the molecular level.

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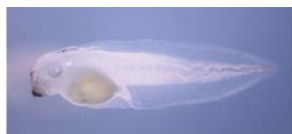
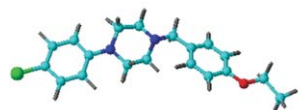
Polymyxin B: An ode to an old antidote for endotoxic shock

Vikrant M. Bhor, Celestine J. Thomas, Namita Surolia and Avadhesh Surolia*

This article reviews the current understanding of the mode of interaction between lipopolysaccharide and polymyxin B, an old but toxic antidote for endotoxic shock, highlighting unique features that can be incorporated into the design of effective, non-toxic therapeutic peptides.

METHOD

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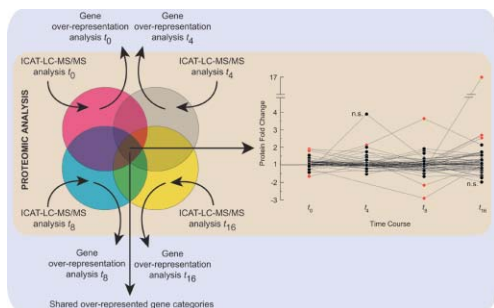
Xenopus as a model organism in developmental chemical genetic screens

Matthew L. Tomlinson, Robert A. Field and Grant N. Wheeler*

Xenopus laevis offers an alternative model system for high throughput chemical genetic screening, in particular screens targeting early events in cell differentiation and organogenesis.

PAPERS

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ICAT-MS-MS time course analysis of atrophying mouse skeletal muscle cytosolic subproteome

Marco Toigo,* Samuel Donohoe, Gina Sperrazzo, Bradley Jarrold, Feng Wang, Richard Hinkle, Elizabeth Dolan, Robert J. Isfort and Ruedi Aebersold

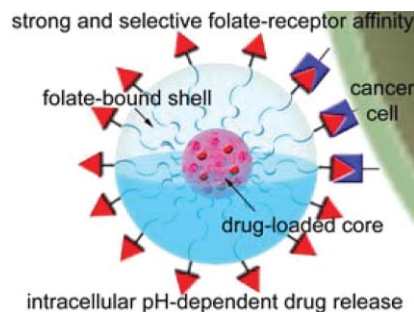
The ability to measure global time courses is important for systems biology, especially if they are measured at the protein level. In what way the randomness of ICAT-LC-MS-MS data acquisition affects the generation of a skeletal muscle disuse atrophy time course is reported.

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Multifunctional polymeric micelles with folate-mediated cancer cell targeting and pH-triggered drug releasing properties for active intracellular drug delivery

Younsoo Bae, Woo-Dong Jang, Nobuhiro Nishiyama, Shigeto Fukushima and Kazunori Kataoka*

This work reports a multifunctional polymeric micelle nanodevice that can selectively deliver and activate anticancer drugs inside targeted cells *via* folate-receptor affinity and intracellular pH-sensitivity, providing a safe and effective strategy for cancer chemotherapy.

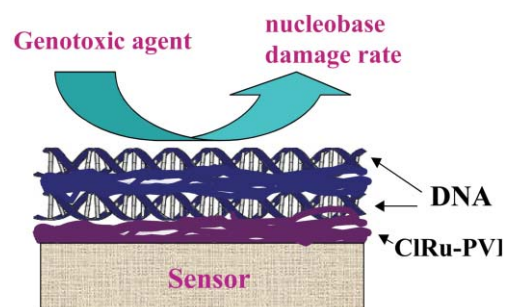


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Genotoxicity sensor response correlated with DNA nucleobase damage rates measured by LC-MS

Jing Yang, Bingquan Wang and James F. Rusling*

Responses of DNA-containing electrochemical toxicity sensors toward DNA damage agents gave excellent correlations to formation rates of total damaged nucleobases in DNA measured by LC-UV-MS. Results confirm that sensor response correlates with DNA damage, and with measures of genotoxicity in mice and rats.

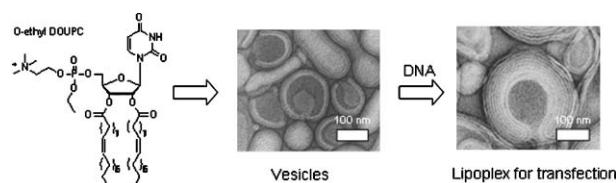


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Nucleoside phosphocholine amphiphile for *in vitro* DNA transfection

Louis Moreau, Philippe Barthélémy,* Yougen Li, Dan Luo, Carla A. H. Prata and Mark W. Grinstaff

A new transfection reagent based on nucleoside phosphocholine amphiphile leading to high transfection efficacy and low cytotoxicity is described. TEM, ethidium bromide displacement assays, agarose gel electrophoresis and SAXS studies support the formation of lipoplexes for the transfection of CHO cells.



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