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## IN THIS ISSUE

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### Cover

See Nancy D. Denslow, Natàlia Garcia-Reyero and David S. Barber, page 172. Fish 'n' Chips: the use of microarrays for aquatic toxicology. Image reproduced with permission of Nancy D. Denslow *et al.*, from *Mol. BioSyst.*, 2007, 3, 172.

## CHEMICAL BIOLOGY

B17

### Chemical Biology

March 2007/Volume 2/Issue 3

[www.rsc.org/chemicalbiology](http://www.rsc.org/chemicalbiology)

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.

## HOT OFF THE PRESS

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### Hot off the Press

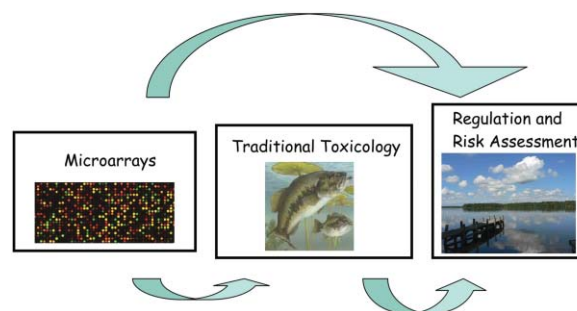
Hot off the Press highlights recently published work for the benefit of our readers. Our contributors this month have focused on the action of RNA polymerase on DNA, new developments in magnetic resonance imaging and the use of amyloid fibrils as nanomaterials. New contributors are always welcome. If you are interested please contact [molbiosyst@rsc.org](mailto:molbiosyst@rsc.org) for more information, we'd like to hear from you.

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**Fish 'n' chips: the use of microarrays for aquatic toxicology**

Nancy D. Denslow,\* Natàlia Garcia-Reyero and David S. Barber

Gene expression analysis for aquatic toxicology has shown promise for studying complex mixtures of contaminants in the environment, including their modes of action and specifying unique gene transcription signatures for each.

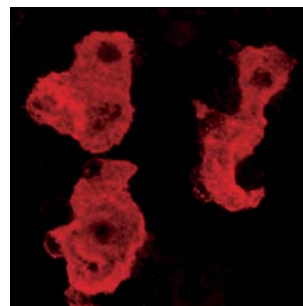


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**Ion transport in alveolar type I cells**

Meshell D. Johnson

Recent findings of ion channels in alveolar type I cells, which cover ~95% of the lung's internal surface area but were thought incapable of ion transport, necessitate a revised paradigm of ion and fluid transport in the lung.

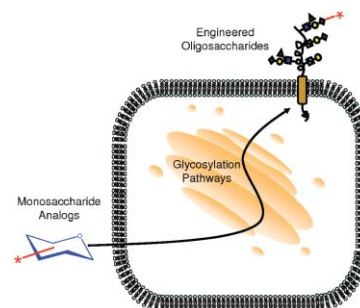


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**Metabolic oligosaccharide engineering: perspectives, applications, and future directions**

Christopher T. Campbell, Srinivasa-Gopalan Sampathkumar and Kevin J. Yarema\*

Metabolic oligosaccharide engineering provides a toolkit for manipulating glycoconjugates in living cells. This technology has potential applications ranging from control of stem cell development to treating diverse diseases including cancer and influenza.



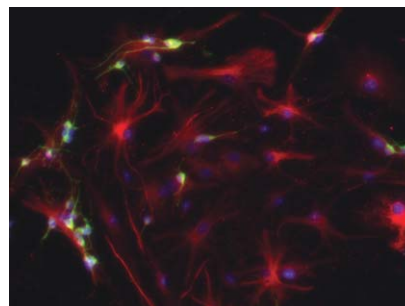
## REVIEW

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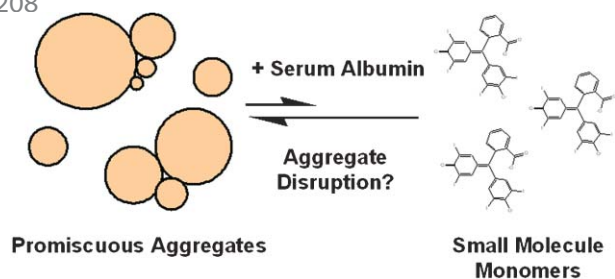
**Functional screening revisited in the postgenomic era**

Shiro Tochtani\* and Yoshihide Hayashizaki

The authors give an overview of phenotypic screening in mammalian cells in the postgenomic era, currently available resources for gene-oriented screening, effective systems for high-throughput phenotypic screens.



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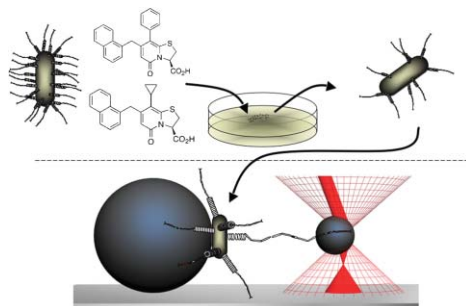


### Stability and equilibria of promiscuous aggregates in high protein milieus

Kristin E. D. Coan and Brian K. Shoichet\*

Promiscuous colloid-like aggregates and aggregate–enzyme complexes are generally unperturbed by high concentrations of protein, including bovine serum albumin. Inhibition can be attenuated by saturation with excess protein, but the aggregates themselves persist.

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### Pilicides regulate pili expression in *E. coli* without affecting the functional properties of the pilus rod

Veronica Åberg, Erik Fällman, Ove Axner, Bernt Eric Uhlin, Scott J. Hultgren and Fredrik Almqvist\*

Pilicide treated *E. coli* are shown to express fewer adhesive organelles (pili) and the assembled pili fibers display intact physical properties, and thus biological function, as determined by optical tweezers force measurements.