

nature
view

16 October 2003

Nature view

Research highlights from the NPG family of journals.

Development: building neural tubes

The neural tube — the precursor of the brain and spinal cord — is formed by the process of neurulation. It has long attracted the interest of developmental biologists as a model of embryonic morphogenesis. Epidemiologists and clinicians have also focused on neurulation with a view to understanding the origin of severely disabling or life-threatening neural-tube defects (NTDs) in humans. In this month's *Nature Reviews Genetics*, Andrew Copp and colleagues investigate how the use of mutant mouse strains, in which NTDs form part of the phenotype, has recently helped to unravel several molecular pathways that are crucial for normal neurulation.



reviews

The genetic basis of mammalian neurulation

A. J. COPP *et al.*

Nature Reviews Genetics 4, 784; October 2003

| [Abstract](#) | [Full Text \(HTML/PDF\)](#) |

What neuroscience can tell us about suicide

One million suicides and ten million suicide attempts occur worldwide each year. In this month's *Nature Reviews Neuroscience*, John Mann investigates the possible neurological causes. Mann proposes a stress–diathesis model — diathesis being the make-up of the body that makes it react in certain ways to external stimuli, whereas typical stressors include acute psychosocial crisis. He argues that rather than simply being a response to stress, suicide often results from a complication of an existing psychiatric disorder.



reviews

Neurobiology of suicidal behaviour

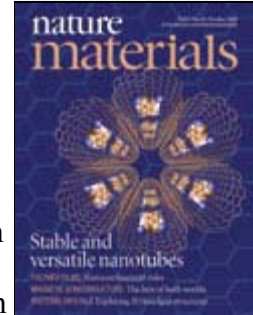
J. J. MANN

Nature Reviews Neuroscience **4**, 819; October 2003

| [Abstract](#) | [Full Text \(HTML/PDF\)](#) |

Cellular target practice

The goal of gene therapy is to introduce foreign genes into somatic cells to supplement defective genes, or provide additional biological functions. But delivering foreign DNA into the cell — although child's play for infecting viruses — is no easy task. Synthetic systems made of organic materials are safer than viruses, but can't compete in terms of targeting efficiency. In this month's *Nature Materials*, Aliasger Salem and colleagues present an inorganic alternative. In their system, DNA is attached to the nickel half of a bimetallic Au/Ni nanorod, whereas the gold half of the nanorod is bound to a protein that targets cells and catalyses the internalization of the nanorod. Preliminary *in vivo* efficacy studies show promise for the use of multisegment nanorods in realizing the potential of non-viral gene therapy.



letters

Multifunctional nanorods for gene delivery

A. K. SALEM *et al.*

Nature Materials **2**, 668; October 2003

| [First Paragraph](#) | [Full Text \(HTML/PDF\)](#) |

Repulsive attraction

Cell-contact-dependent repulsion mediated by Eph-receptor tyrosine kinases and membrane-bound ephrins plays an important part in controlling cell movements in several developing tissues. But how can a receptor–ligand system — activated by intercellular binding — regulate repulsion? A study by Manuel Zimmer and colleagues in this month's *Nature Cell Biology* shows that the interaction of cells expressing an Eph and ephrin protein results in the rapid appearance of intracellular vesicles containing the full-length proteins. This indicates that endocytosis may mediate disengagement of the cells by removing Eph–ephrin complexes from the cell surface. David Wilkinson provides context in a News and Views article.



articles

EphB-ephrinB bi-directional endocytosis terminates adhesion allowing contact-mediated repulsion

M. ZIMMER *et al.*

Nature Cell Biology **5**, 869; October 2003
| [Abstract](#) | [Full Text \(HTML/PDF\)](#) |

new and views

How attraction turns to repulsion

D. G. WILKINSON

Nature Cell Biology **5**, 851; October 2003
| [Full Text \(HTML/PDF\)](#) |

Heavy metal good for kids

Children living near industrial sites may actually benefit from the extra zinc in their environment. Past studies suggest that zinc lowers lead absorption in animals. To see if the same is true for children, Dr. Curtis Noonan and colleagues at Atlanta's Agency for Toxic Substances and Disease Registry compared two communities that were environmentally similar, except one housed a zinc-emitting industrial facility. Noonan tested the blood in over 100 children for lead absorption in both communities and found that children near the industrial facility harbored less lead in their blood. Noonan concludes in the *Journal of Exposure Analysis and Environmental Epidemiology* that zinc lessens lead absorption in children.



original articles

Influence of environmental zinc on the association between environmental and biological measures of lead in children.

CURTIS W NOONAN, STEVEN J KATHMAN, SARA M SARASUA & MARY C WHITE
Journal of Exposure Analysis and Environmental Epidemiology (2003) **13**, 318-323.

| [Abstract](#) | [Full Text \(HTML/PDF\)](#) |

Designer blood vessels

Fatal heart attacks, chronic ulcers and other serious clinical conditions can result from inadequate vascular perfusion. 'Designer blood vessels' may prove to be a valuable, if radical option among therapeutic strategies for revascularization, and at the same time could provide an educational tool for learning more about our own blood vessels. A review published in the current issue of *British Journal of Pharmacology* describes the common efforts to continuously improve vascular replacement design. This forms part of the series of Symposium Reviews published from the BJP's Symposium on Therapeutic Angiogenesis in Cardiovascular Medicine to be held in Orlando in



November.

[symposium reviews](#)

Designer blood vessels and therapeutic revascularization

JOSEPH D BERGLUND & ZORINA S GALIS

British Journal of Pharmacology (2003) **140**, 627-636.

| [Abstract](#) | [Full Text \(HTML/PDF\)](#) |

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