

CONTENTS

22 March 2012 / Vol 483 / Issue No 7390

THIS WEEK

EDITORIALS

373 BIOETHICS

Incidental benefits

Volunteers who have their genes screened should be told of relevant health information gleaned

373 ANIMAL RESEARCH

Flight risk

Scientists cannot remain silent over threats to the availability of lab animals

374 PHYSICS

Mass appeal

The Higgs by any other name ... would still be the Higgs



WORLD VIEW

375 Change the approach to sustainable development

Mark Stafford-Smith

A global system is needed for tackling environmental assessments

RESEARCH HIGHLIGHTS

376 SELECTIONS FROM THE SCIENTIFIC LITERATURE

Storing hydrogen / Silicon sliced / A test tube with guts / Testosterone-fuelled conflict / Bacteria that hide / Better local weather forecasts

SEVEN DAYS

378 THE NEWS IN BRIEF

China tackles scientific misconduct / Spanish researchers up in arms over cuts / Neutrinos slow down to below light speed

CAREERS

499 RESEARCH

Postdoc or not?

Alternative routes to a career in research — for physicists at least

501 TURNING POINT

Think about your research as a brand, says ecologist Jessica Hellman

501 CAREER BRIEFS

NATUREJOBS ADVERTISING FEATURE

Spotlight on physics

NEWS IN FOCUS

381 ANIMAL RESEARCH

Pressure from activists hampers transport of lab animals

383 CRYSTALLOGRAPHY

Structures of opioid receptors revealed

384 FUNDING

Science faces up to disappointment in India's budget

385 PHYSICS

Synchrotron bridges divide between Middle Eastern foes

387 BIOETHICS

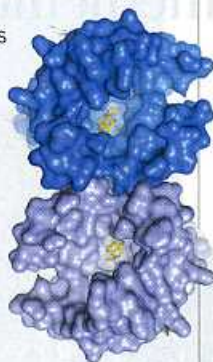
DNA donors in line to get medically relevant information

388 TECHNOLOGY

Shared approach promises boost for photonic chips

389 TRANSLATIONAL RESEARCH

Parallel clinical trial using mice yields insights into human response to drugs



FEATURES

390 MOLECULAR BIOLOGY

Raising the dead

How Joe Thornton breathes new life into proteins extinct for millions of years

NEUROSCIENCE

Making connections

Will an ambitious bid to map the brain's communications network pay off? **PAGE 394**



COMMENT

397 NEUROSCIENCE

Observatories of the mind

Christof Koch & R Clay Reid

A cell-by-cell map of the mouse cerebral cortex could galvanize brain research

399 ECOLOGY

Think big for marine conservation

Phil Weaver & David Johnson

Bigger is better, when it comes to marine conservation zones

400 PHYSICS

A century of cosmic rays

Michael Friedlander

Exotic particles from the depths of the Universe right here on Earth

BOOKS & ARTS

402 CLIMATE SCIENCE

At the storm front

Simon Lewis

403 BOOKS IN BRIEF



404 NUTRITION

Chew on this

Anthony King

405 Q&A

The maths raconteur

Barry Mazur's essays add imagination to the realm of mathematics

CORRESPONDENCE

407 Not-so-open government in the

United States / Science in China — and the role of Confucius / Gas-field methane emissions

OBITUARY

408 Renato Dulbecco (1914–2012)

Inder M. Verma

FUTURES

504 Visiting Bob

John Gilbey

CONTENTS

22 March 2012 / Vol 483 / Issue No 7390

RESEARCH

NEW ONLINE

409 Papers published this week at nature.com

NEWS & VIEWS

410 EVOLUTIONARY BIOLOGY

Life imperfectly imitates life

Weak selection pressure may explain imperfect Batesian mimicry

David W Pfennig & David W Kikuchi

SEE LETTER P.461

411 BIOLOGICAL PHYSICS

Swarming microtubules

Microtubules propelled by dynein proteins self-organize into vortices

Tamás Vicsek SEE LETTER P.448

412 MOLECULAR BIOLOGY

How to duplicate a DNA package

The interplay between nucleosome assembly and DNA replication

Alysia Vandenberg & Geneviève Almouzni

SEE ARTICLE P.434

413 GEOCHEMISTRY

Bubbles from the deep

Global warming and gas release from sedimentary basins during the Eocene

Henrik Svensen

416 VIROLOGY

Influenza's tale of tails

Virus mimics histone sequence to suppress antiviral gene expression

Alexei L Krasnoselsky & Michael G Katze

SEE ARTICLE P.428

417 MICROSCOPY

Plasmons go quantum

Observing collective electron waves in metal nanoparticles

F Javier García de Abajo

SEE ARTICLE P.421

418 NEURODEGENERATION

Trouble in the cell's powerhouse

Mitochondrial dysfunction as the basis for a rare hereditary ataxia

Derek P Narendra & Richard J Youle

ARTICLES

421 MATERIALS SCIENCE Quantum

plasmon resonances of individual metallic nanoparticles

J A Scholl, A L Koh & J A Dionne

SEE N&V P.417

428 IMMUNOLOGY Suppression of the antiviral response by an

ON THE COVER

Downsizing

A detail from 'Through the Looking Glass,' a glass artwork by TED Fellow Kate Nichols, which uses silver nanoparticles as 'paint'. Scholl *et al.* investigate the plasmonic properties of individual silver nanoparticles in the quantum size regime. **PAGES 417 & 421**

influenza histone mimic

I Marazzi *et al.* SEE N&V P.416

434 MOLECULAR BIOLOGY Intrinsic coupling of lagging-strand synthesis to chromatin assembly

D J Smith & I Whitehouse SEE N&V P.412

LETTERS

439 PHYSICS Resonant quantum transitions in trapped antihydrogen atoms

C Amole *et al.*

444 APPLIED PHYSICS Electron tomography at 2.4-ångström resolution

M C Scott *et al.*

448 BIOPHYSICS Large-scale vortex lattice emerging from collectively moving microtubules

Y Sumino *et al.* SEE N&V P.411

453 CLIMATE SCIENCE Collapse of polar ice sheets during the stage 11 interglacial

M E Raymo & J X Mitrovica

457 EVOLUTION Adaptive radiation of multituberculate mammals before the extinction of dinosaurs

G P Wilson *et al.*

461 EVOLUTION A comparative analysis of the evolution of imperfect mimicry

H D Penney, C Hassall, J H Skevington,

K R Abbott & T N Sherratt SEE N&V P.410

465 NEUROSCIENCE MEGF10 and MEGF11 mediate homotypic interactions required for mosaic spacing of retinal neurons

J N Kay, M W Chu & J R Sanes

470 STEM CELLS Control of ground-state pluripotency by allelic regulation of *Nanog*

Y Miyazaki & M-E Torres-Padilla

474 CELL BIOLOGY IDH mutation impairs histone demethylation and results in a block to cell differentiation

C Lu *et al.*

479 GENOMICS IDH1 mutation is sufficient to establish the glioma hypermethylator phenotype

S Turcan *et al.*

484 CANCER Transformation by the (R)-enantiomer of 2-hydroxyglutarate linked to EGLN activation

P Koivunen *et al.*

489 BIOPHYSICS Crystal structure of a concentrative nucleoside transporter from *Vibrio cholerae* at 2.4 Å

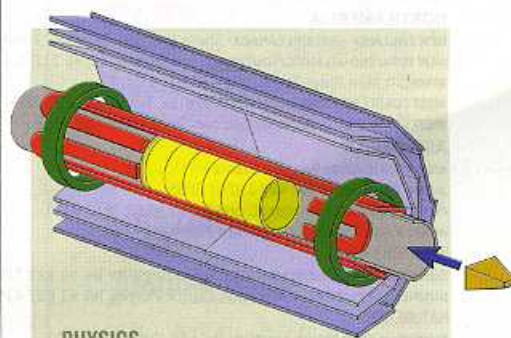
Z L Johnson, C-G Cheong & S-Y Lee

494 STRUCTURAL BIOLOGY Identification and characterization of a bacterial hydrosulphide ion channel

B K Czerwinski & D-N Wang

498 CORRIGENDUM Functional complementation between FADD and RIP1 in embryos and lymphocytes

H Zhang *et al.*



PHYSICS

Anti matters

The ALPHA experiment at CERN keeps antihydrogen in its place. **PAGE 439**