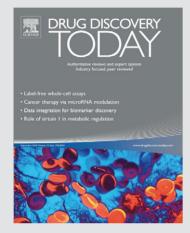


September 2010

Volume 15 · Numbers 17/18 pp. 693–800



Cover Story

The leading story of this issue of *Drug Discovery Today*, by Clay W Scott and Matthew F. Peters, reviews the highly topical field of label-free cell-based assays. They cover the technological developments that now allow the determination of live cell responses with unparalleled and exquisite sensitivity. They look at G-protein-coupled pathways as a means of measuring cell response. The bulk of their article addresses impedence and optical-based label-free strategies and point out their respective strengths and weaknesses and opportunities that may develop in the near future.



REVIEWS

KEYNOTE

- 704 Label-free whole-cell assays: expanding the scope of GPCR screening Clay W Scott and Matthew F. Peters
- 717 Insights into the novel three 'D's of epilepsy treatment: drugs, delivery systems and devices

Shadab A. Pathan, Gaurav K. Jain, Sohail Akhter, Divya Vohora, Farhan J. Ahmad and Roop K. Khar

GENE TO SCREEN

733 Cancer therapy via modulation of micro RNA levels: a promising future Satya K. Kota and Savithri Balasubramanian

INFORMATICS

741 Clinical and biological data integration for biomarker discovery

Marco D. Sorani, Ward A. Ortmann, Erik P. Bierwagen and Timothy W. Behrens

POST SCREEN

749 Drug profiling: knowing where it hits

Alejandro Merino, Agnieszka K. Bronowska, David B. Jackson and Dolores J. Cahill

- 757 Resveratrol and derivatives for the prevention and treatment of cancer Simone Fulda
- 766 Do technical and commercial biases contribute to the pharmaceutical industry's productivity problems? An analysis of how reordering priorities can improve productivity

David A. Fryburg

- **773** Post-translational modifications of protein biopharmaceuticals

 Gary Walsh
- 781 Role of Sirtuin 1 in metabolic regulation

 Jose P. Silva and Claes Wahlestedt
- 792 Drug discovery from uncultivable microorganisms

Brajesh K. Singh and Catriona A. Macdonald



DRUG DISCOVERY TODAY

Editorial

Editor: Steve Carney

Assistant Editor: Kirsty Strawbridge
Content Development Manager: Joanna

Content Development Manager: Joanna Aldred Journal Manager: Basil Nyaku

Publisher: Jaap van Harten Editorial Enquiries: Drug Discovery Today Elsevier

32 Jamestown Road, London, NW1 7BY, UK

Tel: +44 (0)20 7424 4200 Fax: +44 (0)1865 853067

Email: ddt@drugdiscoverytoday.com



Jurgen Bajorath University of Bonn, Germany Walter Blackstock Experimental Therapeutics Centre. Singapore

David Brayden University College Dublin, Ireland **Paul Caron** Vertex Pharmaceuticals, USA

David Cavalla Arachnova, UK
David Clark Argenta Discovery, UK
Dalia Cohen Rosetta Genomics, USA
Donald Daley Argenta Discovery, UK
Sean Ekins ACT LLC and Collaborations in
Chemistry, USA

Hans-Peter Fischer GeneData, Switzerland Peter Ghazal University of Edinburgh, UK Christopher M. Hill Organon, UK

Nick Hird Takeda Chemical Industries, Japan Enoch Huang Pfizer, USA

Enoch Huang Pfizer, USA **Thomas Joos** University of Tuebingen, Germany

Vincent H.L. Lee Chinese University of Hong Kong,
Hong Kong
Pavid Lewin, Yale University, USA

David Lewin Yale University, USA Christopher A. Lipinski Melior Discovery, USA Lorenz Mayr Novartis, Switzerland

Nick Meanwell Bristol-Myers Squibb, USA
BK Muralidhara Pfizer Global Biologics, St. Louis,

Mark Murcko Vertex Pharmaceuticals, USA
Fajun Nan Shanghai Institute of Materia Medica,
China

Pradeep Nathan Experimental Medicine, GSK and University of Cambridge

Gitte Neubauer Cellzome, Germany Eric Neumann Teranode, USA Tim Peakman UK Biobank, UK Norton Peet Aurigene, USA Manuel Peitsch Novartis, Switzerland Kurt Rasmussen Eli Lilly and Co. Ltd. USA Janice Reichert Tufts Center for the Study of Drug Development, USA

John Reidhaar-Olson Hoffmann-La Roche, USA Mike Romanos GlaxoSmithKline, UK Raymond C. Rowe Intelligensys, UK

Andreas Russ University of Oxford, UK Esther Schmid Pfizer, UK Jonathan Sheldon Inforsense, UK

Michael Snyder Yale University, USA Susie Stephens Eli Lilly and Co. Ltd., USA Robert Strausberg The J. Craig Venter Institute, USA Donny Strosberg Scripps Florida, USA

Yuichi Sugiyama University of Tokyo, Japan David Szymkowski Xencor, USA

Nick Terrett Ensemble Discovery, USA Vladimir Torchilin Northeastern University, Boston,

Mark Whittaker Evotec OAI, UK
Hans Winkler Johnson and Johnson, Belgium
Limsoon Wong Laboratories for Information
Technology (LIT), Singapore

X.F. Steven Zheng Robert Wood Johnson Medical School, USA





EDITORIAL

- **Virtual drug discovery with the rise of Chinese CROs** *Ming-Qiang Zhang*
- 698 Ex vivo fucosylation to improve the engraftment capability and therapeutic potential of human cord blood stem cells

PERSPECTIVE

FEATURE

Philippe Taupin

700 Medicines discovery in the 21st century: the case for a stakeholder corporation

John Dixon, Paul England, Geoff Lawton, Peter Machin and Alan Palmer

800 DIARY

FORTHCOMING ARTICLES:

Fit-for-purpose biomarker method validation in anticancer drug development *By Jeffrey Cummings, Tim H. Ward and Caroline Dive*

Cancer nanotechnology: application of nanotechnology in cancer therapy, diagnosis and imaging By Ranjita Misra, Sarbari Acharya and Sanjeeb K Sahoo

Computational quantum chemistry and adaptive ligand modeling in mechanistic QSAR By Pier G. De Benedetti and Francesca Fanelli

What is the value of human FMRI in CNS drug development?

By Richard G. Wise and Cliff Preston