

January 2008

Volume 13 · Numbers 1/2

pp. 1–96

**Cover Story**

In the first issue of *Drug Discovery Today* in 2008, microfluidics are the topic of the Keynote Review. Their application in drug discovery and development has mainly been driven by their ability to miniaturize assays and thereby increase experimental throughput. In his review, Ali Khademhosseini systematically reviews the applications of microfluidics during the different stages of the drug discovery progress.

DRUG DISCOVERY TODAY

REVIEWS

KEYNOTE

- 1 Microfluidics for drug discovery and development: From target selection to product lifecycle management**

Lifeng Kang, Bong Geun Chung, Robert Langer and Ali Khademhosseini

GENE TO SCREEN

- 14 Bright future of optical assays for ion channel drug discovery**

Elena Molokanova and Alex Savchenko

INFORMATICS

- 23 Molecule-pharmacophore superpositioning and pattern matching in computational drug design**

Gerhard Wolber, Thomas Seidel, Fabian Bendix and Thierry Langer

POST SCREEN

- 30 Development trends for new cancer therapeutics and vaccines**

Janice M. Reichert and Julia B. Wenger

- 38 Development and application of Hsp90 inhibitors**

David B. Solit and Gabriela Chiosis

- 44 Case study: impact of technology investment on lead discovery at Bristol–Myers Squibb, 1998–2006**

John G. Houston, Martyn N. Banks, Alastair Binnie, Stephen Brenner, Jonathan O'Connell and Edward W. Petrillo

- 52 Alternative drug discovery approaches for orphan GPCRs**

Angélique Levoye and Ralf Jockers

- 59 New drugs and methods of doping and manipulation**

Mario Thevis, Maxie Kohler and Wilhelm Schänzer

- 67 Strategic approaches to developing drug treatments for ALS**

Andrea M. Vincent, Stacey A. Sakowski, Adam Schuyler and Eva L. Feldman

- 73 Novel approaches to the treatment of cachexia**

Josep M. Argilés, Francisco J. López-Soriano and Sílvia Busquets

- 79 Cognition assessment in paediatric clinical trials**

Chris J. Edgar and Keith A. Wesnes

- 86 Effect of mergers and acquisitions on drug discovery: perspective from a case study of a Japanese pharmaceutical company**

Sotaro Shibayama, Kunihiro Tanikawa, Ryuhei Fujimoto and Hiromichi Kimura