

September 2007

Volume 12 · Numbers 17/18

pp. 683–788

**Cover Story**

In this month's Keynote Review, Peter Sartipy and co-authors discuss how human embryonic stem cells technologies can advance drug discovery. It is already known that the study of embryonic stem cells will be of significant benefit for the understanding of cell development and differentiation. Moreover, due to their differentiation potential, stem cells are expected to be of use in regenerative medicine. A new development is that novel *in vitro* models based on undifferentiated or selectively differentiated human stem cells will be instrumental for increasing R&D productivity in the pharmaceutical industry. Cover image by David Scharf/ Science Photo Library.

DRUG DISCOVERY TODAY

REVIEWS

KEYNOTE

- 688 The application of human embryonic stem cell technologies to drug discovery**

Peter Sartipy, Petter Björquist, Raimund Strehl and Johan Hyllner

GENE TO SCREEN

- 700 The ongoing evolution of proteomics in malignancy**

Amit S. Dhamoon, Elise C. Kohn and Nilofer S. Azad

- 709 Human protein–protein interaction networks and the value for drug discovery**

Heinz Ruffner, Andreas Bauer and Tewis Bouwmeester

- 717 Dissecting kinase signaling pathways**

Scott N. Boyle and Anthony J. Koleske

INFORMATICS

- 725 The role of quantum mechanics in structure-based drug design**

Kaushik Raha, Martin B. Peters, Bing Wang, Ning Yu, Andrew M. Wollacott, Lance M. Westerhoff and Kenneth M. Merz Jr

- 732 Rapid retrieval of protein structures from databases**

Zeyar Aung and Kian-Lee Tan

POST SCREEN

- 740 Modulation of sterol regulatory element binding proteins (SREBPs) as potential treatments for non-alcoholic fatty liver disease (NAFLD)**

Mohamed H. Ahmed and Christopher D. Byrne

- 748 PET tracers for 5-HT_{1A} receptors and uses thereof**

J.S. Dileep Kumar and J. John Mann

- 757 Designing drugs for the treatment of female sexual dysfunction**

Alan D. Brown, Julian Blagg and David S. Reynolds

- 767 Progress in the discovery and development of glutamate carboxypeptidase II inhibitors**

Takashi Tsukamoto, Krystyna M. Wozniak and Barbara S. Slusher

- 777 The significance of mitochondrial toxicity testing in drug development**

James A. Dykens and Yvonne Will