

# nature REVIEWS

## NATURE REVIEWS DRUG DISCOVERY

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With the number of annually approved drugs falling, and the safety of a number of drugs recently called into question, the pharmaceutical industry is currently under very close scrutiny. In this issue, we feature an ‘Innovation’ article in which van der Greef and McBurney address the question of whether systems-orientated approaches to drug discovery, as opposed to the target-centric approaches that have dominated in recent years, could bring about a paradigm shift that rescues the industry. A different approach to finding new therapeutic strategies is proposed by O’Connor and Roth, and in their article on ‘teaching old drugs new tricks’ they discuss how phenotypic and molecular target-based screening of approved drugs can yield compounds that are immediately suitable for clinical trials for novel indications. A ‘new trick’ of an established drug class, the statins, is increasingly being recognized — Jain and Ridker review the evidence that apart from lowering serum cholesterol, these drugs have potent anti-inflammatory properties that contribute to their favourable effects in patients with cardiovascular disease. There are, of course, still some promising new targets on the horizon. Spooren and colleagues present recent preclinical and clinical evidence that neurokinin 3 receptor antagonists might represent a new approach to the treatment of schizophrenia, and Zhou and colleagues review the potential of NAAG peptidase inhibitors as a new class of neuroprotective drugs. Finally, Mills and colleagues investigate how the PI3 kinase/AKT signalling pathway, which is frequently activated in cancer cells, can be exploited for cancer drug discovery. In ‘Fresh from the pipeline’ we present tipranavir, a recently approved first-in-class non-peptidic HIV-1 protease inhibitor, and on the ‘Analyst’s couch’ we examine the concept of ‘authorized generics’.



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