

# nature REVIEWS

## NATURE REVIEWS DRUG DISCOVERY

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It still takes on average 7–9 years and costs more than US\$800 million to produce a new drug. In this issue, we focus on new tools and methods that might expedite the R&D process. Watts describes the potential of solid-state NMR in drug design and discovery for membrane-embedded targets — demonstrating how this powerful technique allows researchers to observe drugs and ligands at their site of action. Novel analytical approaches in the emerging field of lipidomics are analysed by Wenk. This field is gaining increasing attention because the disruption of lipid metabolic enzymes is now implied in diseases such as cancer, diabetes and neurodegenerative diseases. The link between metabolism and ageing is also increasingly appreciated, and Curtis *et al.* explore how targeting ageing processes could provide potential new drug targets for age-related metabolic diseases. Finally, in the field of gene therapy, Pack *et al.* discuss the design and development of polymers for gene delivery, examining advances in the understanding of their mechanism of action and improvements in their efficacy. Further downstream in the process, efforts to accelerate the final FDA review process are analysed by Berndt *et al.* The authors investigate the impact of the Prescription Drug User Fee Acts (PDUFA), which sought to speed up approval. However, the review of safety must continue post-approval, and in this month's Perspective article Breckenridge *et al.* look at what mechanisms are in place for safety monitoring, the ways in which these are implemented, and consider the need for changes to the regulatory system. Also in this issue, Booth examines the trends in valuation of biotech companies in 'From the Analyst's Couch', and 'Fresh from the Pipeline' looks at the development of the latest drug against hepatitis B, entecavir.



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