



nature publishing group



► **COVER:** 'Targeting the cell cycle' by Susanne Harris, inspired by the review on p547.



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Several initiatives have recently been established to encourage and improve translational research, which could help increase the success rate of drug development projects. A Perspective this month highlights a key issue for translational research in general: how to assess the translational potential of a novel drug project. With this in mind, Wehling proposes a systematic scoring system for assessing translatability — including aspects such as animal and human evidence, biomarkers, personalized medicine and chemical tractability — and discusses the challenges for developing and validating such a system. Two Reviews this month focus on therapeutic strategies for cancer. Aberrant activity of cell cycle kinases is common in cancer but, although many of these kinases have been established as promising targets and several small-molecule inhibitors are now in clinical trials, no such agent has yet been approved. Lapenna and Giordano overview the roles of cell cycle kinases that are relevant to cancer, consider the main families of inhibitors currently in preclinical and clinical development, and present novel targets and therapeutic strategies. Increased levels of reactive oxygen species (ROS) are also observed in cancer cells, and although excessive ROS levels may be toxic, cancer cells are capable of surviving under such conditions through an endogenous antioxidant capacity. Huang and colleagues review the role of ROS stress in tumour development and drug resistance, and discuss the potential of pro-oxidant therapeutic strategies. Finally, Feng and colleagues summarize various technologies for cellular phenotypic profiling of small molecules, and discuss how integrating such screens earlier and more widely in the drug discovery process may provide a promising strategy for advancing pathway-oriented drug discovery.

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