British Journal of Cancer (2007) 96, R1

www.bjcancer.com

Editorial

New targets for cancer therapy: minireview reprints collection

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British Journal of Cancer (2007) **96,** R1. doi:10.1038/sj.bjc.6603572 www.bjcancer.com

The minireviews programme was launched in *British Journal of Cancer* in 2002 and has gradually gathered pace: we have now published more than 100 articles. The aim of the minireviews is to provide short, accessible reviews on the most current topics. They differ from other reviews as they do not try to be all encompassing, but instead they provide insight into recent movement in a field of particular interest. The topics covered are broad range and reflect the multidisciplinary nature of the journal – from clinical studies and epidemiology, to translational therapeutics and molecular diagnostics, as well as genetics and genomics.

This reprints collection is a showcase for some of the most cited of the recent minireviews in the field of new targets for cancer therapy. This collection focuses on a few key pathways and targets: the insulin-like growth factor (IGF) pathway, mammalian target of rapamycin (mTOR) signalling, the epidermal growth factor receptor (EGFR) pathway, epigenetics and microRNAs.

In the first article, Girnita and colleagues describe the role of the IGF pathway – specifically the insulin-like growth factor 1 receptor (IGF-1R) – in cancer and how it can be targeted for therapy. Yee further evaluates strategies for inhibiting IGF-1R and considers how the efficacy of such agents can be measured. For example, are there biomarkers for IGF action and should they be incorporated into clinical studies?

Mammalian target of rapamycin is a protein that is named after the drug that inhibits it. The drug was originally isolated from a bacterium found on Rapa Nui, the indigenous name for Easter Island. mTOR lies downstream of IGF and has been implicated in several pathways that contribute to tumorigenesis, such as translation initiation and cap-dependent translation. Sonenberg and colleagues explore these pathways and also their potential as targets for cancer therapy. The activity of rapamycin, its use in combination therapy and other approaches for inhibiting this pathway are also discussed.

The next pair of articles focuses on another major anti-cancer signalling pathway: that of EGFR. Lo and Hung describe EGFR's lesser studied and more contentious role in the nucleus, where it upregulates gene expression by interacting with transcription factors. The nuclear EGFR pathway might be associated with more aggressive tumours, as it is involved in increasing proliferation and accelerating cell cycle progression. Hasson and Paroush describe the crosstalk between the EGFR and Notch pathways, and how these converge on the transcriptional co-repressor Groucho.

The epigenome is emerging as a major factor contributing to tumour formation and progression. Esteller focuses on its role in affecting oncogene and tumour suppressor gene expression and the potential for cancer therapy in targeting these epigenetic genes. Allis and colleagues describe the different covalent modifications that underlie epigenetic changes, and focus on the contribution of histone modifications to cancer and their role as cancer targets.

Finally, Hwang and Mendell describe the recently discovered microRNAs (miRNAs), which negatively regulate mRNAs and are involved in processes that are important in tumorigenesis, such as proliferation, differentiation and apoptosis. Indeed, miRNAs have been found to act directly as oncogenes and tumour suppressors.

We hope you enjoy this short collection and continue to look out for the exciting range of minireviews we have scheduled for the coming months.