IN BRIEF

MOUSE MODELS

TORC1 is essential for NF1-associated malignancies

Johannessen, C. M. *et al. Curr. Biol.* **18**, 56–62 (2008)

The authors show that the mTOR inhibitor rapamycin suppresses tumour growth in a mouse model of neurofibromatosis type 1 (NF1). Unlike in xenograft models, the microvasculature initially withstood rapamycin treatment, suggesting that rapamycin was instead acting in a cell-autonomous way. Interestingly, rapamycin did not affect either hypoxia-inducible factor 1α protein levels or Akt phosphorylation, indicating that in this tumour type the effect of rapamycin is mediated by TORC1 rather than TORC2.

MOUSE MODELS

Trisomy represses *Apc*^{Min}-mediated tumours in mouse models of Down's syndrome

Sussan, T. E. *et al. Nature* **451**, 73–75 (2008)

Two mouse models of Down syndrome, in which the mouse orthologues of some of the genes on human chromosome 21 are present in three copies, were crossed with the *Apc*^{Min} tumour model. The trisomy caused a decrease in tumour incidence, and crossing the *Apc*^{Min} mice with a line that is monosomic for the same loci resulted in increased tumour incidence. Using specific deletions, the authors showed that one of the candidate genes in the trisomic region, *Ets2*, which also has oncogenic properties, is responsible for some but not all of the reduced tumour incidence.

TUMOUR SUPPRESSORS

NUMB controls p53 tumour suppressor activity

Colaluca, I. N. *et al. Nature* **451**, 76–80 (2008)

NUMB, a protein involved in cell-fate determination, has been identified as a candidate breast cancer tumour-suppressor gene. In addition to its regulation of the receptor NOTCH, this paper shows that NUMB can interact with the tumour suppressor p53 and its ubiquitin ligase MDM2, preventing degradation of p53 and stabilizing p53 levels. Loss of NUMB in breast cancer cells results in reduced levels of p53 and increased resistance to chemotherapy. Moreover, loss of NUMB increases NOTCH activity, producing an oncogenic signal. These biological changes might explain the poor prognosis seen in patients with breast cancers that have lost NUMB expression.

DIET

A prospective study of red and processed meat intake in relation to cancer risk

Cross, A. J. *et al. PLoS Med.* **4**, 1973–1984 (2007)

This paper reports the results of the first prospective study of meat intake in relation to cancer risk. Approximately 500,000 people aged 50–71 years were asked to complete a food frequency questionnaire at the start of the study. During up to 8.2 years of follow-up 53,396 incident cancers were diagnosed. Significantly increased risks were shown for oesophageal, colorectal, liver and lung cancer in people who had high red meat intake. High processed meat intake was associated with increased risk for colorectal and lung cancers.