IN BRIEF

NON-CODING RNA

Editing suppresses melanoma progression

Adenosine-to-inosine RNA editing by ADAR adenosine deaminases can alter the gene targets of microRNAs (miRNAs). Shoshan and Mobley *et al.* have shown that ADAR1 expression is low in metastatic melanoma, and that restoring its expression suppresses melanoma growth and metastasis *in vivo*. The miRNA miR-455-5p had a different set of gene targets when edited by ADAR1. Unedited miR-455-5p inhibited the tumour suppressor *CPEB1*, whereas edited miR-455-5p increased *CPEB1* expression and suppressed melanoma growth and metastasis.

ORIGINAL RESEARCH PAPER Shoshan, E. & Mobley, A. K. *et al.* Reduced adenosine-to-inosine miR-455-5p editing promotes melanoma growth and metastasis. *Nature Cell Biol.* **17**, 311–321 (2015)

HETEROGENEITY

Cooperative crosstalk

One mechanism that might explain why tumours maintain intratumoural heterogeneity is that subpopulations of tumour cells cooperate and are all required to maintain tumours. Zhang *et al.* have identified two different tumour cell populations (mesenchymal-like cells (MLCs) and tumour-initiating cells (TICs)) in a p53-null mouse model of breast cancer that crosstalk with each other to promote tumour growth. Knockdown of WNT2 or CXCL12 ligands in the MLCs or knockdown of their corresponding receptors in the TICs reduced TIC mammosphere formation in co-culture with MLCs. Furthermore, knockdown of WNT2 in the MLCs increased tumour latency in the mice.

ORIGINAL RESEARCH PAPER Zhang, M. *et al.* Intratumoral heterogeneity in a p53 null mouse model of human breast cancer. *Cancer Discov.* http://dx.doi.org/10.1158/2159-8290.CD-14-1101 (2015)

LEUKAEMIA

Putting leukaemia genes in context

Meacham *et al.* conducted a short hairpin RNA (shRNA) screen for genes that affect B-cell acute lymphoblastic leukaemia (B-ALL) progression and found that many genes only became important for tumour progression once cells were transplanted *in vivo*, indicating the importance of the microenvironment. One of these genes encoded PHD finger protein 6 (PHF6); *Phf6* shRNAs were selected against *in vivo* but not *in vitro*, suggesting that PHF6 promotes B-ALL progression in mice. Interestingly, inactivating mutations of *PHF6* are common in T-cell ALL, so this gene might have opposite functions depending on the lineage from which the malignancy arose.

ORIGINAL RESEARCH PAPER Meacham, C. E. *et al.* A genome-scale *in vivo* loss-of-function screen identifies *Phf6* as a lineage-specific regulator of leukemia cell growth. *Genes Dev.* **29**, 483–488 (2015)

METABOLISM

Diabetes treatment and intestinal tumorigenesis

Agonists of the glucagon-like peptide-1 receptor (GLP1R) such as exendin-4 are used to treat type 2 diabetes. Koehler *et al.* have found that exendin-4 increases the size and number of colonic polyps in mice with the multiple intestinal neoplasia (Min) mutation in adenomatous polyposis coli ($Apc^{Min/+}$ mice) in a fibroblast growth factor 7 (FGF7)-dependent manner. Furthermore, polyp number was reduced in $Apc^{Min/+}$ mice that also lacked *Glp1r*. Whether long-term use of GLP1R agonists increases cancer risk should be studied.

ORIGINAL RESEARCH PAPER Koehler, J. A. *et al.* GLP-1R agonists promote normal and neoplastic intestinal growth through mechanisms requiring *Fgf7*. *Cell Metab.* **21**, 379–391 (2015)