IN BRIEF

CANCER

Preventing metastatic relapse

A substantial fraction of patients develop overt metastases soon after resection of primary breast tumours, but the cause of this metastatic relapse remains undefined. In a mouse model of tumour dormancy, Krall et al. show that the surgical wounding required for tumour resection induces a systemic inflammatory response that can trigger the outgrowth of breast cancer tumours at distant anatomical sites, which was otherwise restricted by a tumour-specific T cell response. Perioperative treatment of the mice with the anti-inflammatory drug meloxicam significantly reduced tumour growth.

ORIGINAL ARTICLE Krall, J. A. et al. The systemic response to surgery triggers the outgrowth of distant immune-controlled tumors in mouse models of dormancy. *Sci. Transl Med.* **10**, eaan3464 (2018)

AUTOIMMUNE DISEASE

Targeting glucose transport in psoriasis

Expression of the glucose transporter type 1 (GLUT1) is increased in wound healing, in psoriatic plaques or after UV-induced hyperplasia, suggesting a role in the promotion of keratinocyte proliferation. Here, Zhang et al. report that in mice, specific deletion of GLUT1 in epidermal keratinocytes selectively impaired physiological proliferation triggered by injury, having no effect on normal epidermal development or function. Furthermore, GLUT1-deficient mice were protected from experimentally induced psoriasiform hyperplasia. Similarly, topical application of the GLUT1 inhibitor, WZB117, decreased psoriasiform hyperplasia in mice and inhibited expression of psoriatic biomarkers in human psoriatic skin organoids.

ORIGINAL ARTICLE Zhang, Z. et al. Differential glucose requirement in skin homeostasis and injury identifies a therapeutic target for psoriasis. *Nat. Med.* https://doi.org/10.1038/s41591-018-0003-0 (2018)

LIVER DISEASE

Reducing cancer risk

Nonalcoholic fatty liver disease (NAFLD) represents a risk factor for hepatocellular carcinoma (HCC). Liu et al. report that squalene epoxidase (SQLE) is markedly upregulated in human NAFLD–HCC compared with adjacent normal tissue. Furthermore, SQLE expression was associated with poor survival in three cohorts of patients with HCC. In NAFLD–HCC cell lines, SQLE expression promoted cell growth and inhibited apoptosis. In mice, hepatocyte-specific transgenic SQLE expression accelerated NAFLD–HCC formation, while the SQLE inhibitor terbinafine suppressed tumour growth.

ORIGINAL ARTICLE Liu, D. et al. Squalene epoxidase drives NAFLD-induced hepatocellular carcinoma and is a pharmaceutical target. *Sci. Transl Med.* **10**, eaap9840 (2018)

CANCER

Restoring p53 activity

Tumour suppressor p53 is frequently inactivated in acute myeloid leukaemia (AML) owing to overexpression of the endogenous p53 inhibitors MDMX or MDM2. Here, Carvajal et al. demonstrate that the α-helical p53-stapled peptide ALRN-6924 binds to both MDMX and MDM2, blocking their interaction with p53, enabling p53 activation. In AML cell lines and primary human leukaemia cells, ALRN-6924 potently inhibited cell proliferation, triggering p53-dependent cell cycle arrest and apoptosis. Furthermore, ALRN-6924 increased overall survival in AML xenograft mouse models and activated p53 in leukaemia cells of a patient exhibiting high-risk myelodysplastic syndrome with excess of leukaemic blasts.

ORIGINAL ARTICLE Carvajal, L. A. et al. Dual inhibition of MDMX and MDM2 as a therapeutic strategy in leukemia. *Sci. Transl Med.* **10**, eaao3003 (2018)