IN BRIEF

OBESITY AND DIABETES

Targeting lipid transport in diabetes

This paper showed that reducing vascular endothelial growth factor B (VEGFB) signalling improves type 2 diabetes by preventing the pathological deposition of lipids into tissues. Administration of a VEGFB-targeted antibody to diabetic mice enhanced glucose tolerance, improved β-cell function and ameliorated dyslipidaemia. In rats that were fed a high-fat diet, the antibody normalized insulin sensitivity and increased glucose uptake in skeletal muscle and the heart, suggesting that VEGFB antagonism — which targets the lipid-transporting properties of the endothelium — could be a novel therapeutic approach for type 2 diabetes.

ORIGINAL RESEARCH PAPER Hagberg, C. E. *et al.* Targeting VEGF-B as a novel treatment for insulin resistance and type 2 diabetes. *Nature* **490**, 426–430 (2012)

ANTICANCER DRUGS

Imatinib hits anaplastic large cell lymphoma

This study characterized a new signalling pathway in nucleophosmin-anaplastic lymphoma kinase (NPM-ALK)-triggered lymphoma. The authors showed that the transcription factors JUN and JUNB promote lymphoma development and tumour dissemination through transcriptional regulation of platelet-derived growth factor receptor B (PDGFRB). Inhibition of PDGFRB with imatinib prolonged the survival of NPM-ALK transgenic mice and increased the efficacy of the ALK-specific inhibitor crizotinib in transplanted NPM-ALK tumours. In a patient with refractory late-stage NPM-ALK-positive lymphoma, imatinib produced a rapid, complete and sustained remission.

ORIGINAL RESEARCH PAPER Laimer, D. *et al.* PDGFR blockade is a rational and effective therapy for NPM-ALK-driven lymphomas. *Nature Med.* **18**, 1699–1704 (2012)

CARDIOVASCULAR DISEASE

Inhibiting microRNA-34 benefits heart disease

MicroRNA-34 (miR-34) family members are upregulated in the heart in response to stress. This study investigated the effects of miR-34 inhibition using a subcutaneously delivered seed-targeting 8-mer locked nucleic acid-modified antimiR (LNA-antimiR-34) in mouse models of heart disease. LNA-antimiR-34 attenuated cardiac remodelling and atrial enlargement and improved systolic function. Moreover, this study suggests that seed-targeting 8-mer LNA-antimiRs could be used to inhibit other miRNA seed families implicated in disease.

ORIGINAL RESEARCH PAPER Bernardo, B. C. *et al.* Therapeutic inhibition of the miR-34 family attenuates pathological cardiac remodeling and improves heart function. *Proc. Natl Acad. Sci. USA* **109**, 17615–17620 (2012)

IMMUNE REGULATION

Disassembling antibody–receptor complexes

Preformed complexes between immunoglobulin E (IgE) antibodies and the IgE Fcε receptor I (FcεRI) prime cells before allergen exposure to trigger an inflammatory response, and cannot be disrupted by current competitive inhibitors. This study showed that an engineered protein inhibitor, DARPin E2-79, acts through a novel mechanism to stimulate the dissociation of preformed IgE–FcεRI complexes (as well as blocking IgE–FcεRI interactions). Such inhibitors could be used to block the allergic response, and this work suggests that other protein–protein complexes may be amenable to disruption by macromolecular inhibitors.

ORIGINAL RESEARCH PAPER Kim, B. *et al.* Accelerated disassembly of IgE–receptor complexes by a disruptive macromolecular inhibitor. *Nature* 28 Oct 2012 (doi:10.1038/nature11546)