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IN BRIEF

BONE

Soluble FGFR-3 as potential therapy for achondroplasia

French researchers have developed a recombinant protein therapeutic approach, based on a soluble form of human fibroblast growth factor receptor 3 (sFGFR-3), to treat mice with abnormal bone development caused by achondroplasia. This genetic disorder, which is characterized by short stature, is caused by a single point mutation in the gene *FGFR3*, which leads to prolonged receptor activation upon FGF binding. sFGFR-3 prevents ligand binding to the mutant receptor, thereby preventing excessive intracellular signalling and rescuing the symptoms of achondroplasia.

Original article Garcia, S. *et al.* Postnatal soluble FGFR3 therapy rescues achondroplasia symptoms and restores bone growth in mice. *Sci. Transl. Med.* **5**, 203ra124 (2013)

DIABETES

Novel predictor of diabetes development identified

Using metabolomics, Wang *et al.* have identified 2-aminoadipic acid (2-AAA) as a new metabolite biomarker of diabetes risk. This nested case–control study included 188 individuals who developed diabetes mellitus and 188 propensity-matched controls selected from 2,422 normoglycaemic participants followed up for 12 years in the Framingham Heart Study. The investigators found that individuals with 2-AAA concentrations in the top quartile had a greater than fourfold risk of developing diabetes mellitus. Levels of the metabolite were increased up to 12 years before the onset of overt disease.

Original article Wang, T. J. *et al.* 2-Aminoadipic acid is a biomarker for diabetes risk. *J. Clin. Invest.* doi:10.1172/JCI64801

CANCER

Biochemical diagnosis of phaeochromocytomas and paragangliomas requires supine blood sampling

A new study highlights the importance of blood sampling under supine fasting conditions rather than seated nonfasting conditions for the diagnosis of phaeochromocytomas and paragangliomas using plasma concentrations of normetanephrine, metanephrine and methoxytyramine. Use of upper cut-off levels for these metabolites obtained from sampling under seated nonfasting conditions led to a 5.7-fold increase in false-positive results.

Original article Därr, R. *et al.* Biochemical diagnosis of phaeochromocytoma using plasma free normetanephrine, metanephrine and methoxytyramine: importance of supine sampling under fasting conditions. *Clin. Endocrinol. (Oxf.)* doi:10.1111/cen.12327

METABOLISM

Isoform-specific inhibition of Phd3 improves metabolism

Inhibition of prolyl hydroxylase domain–containing protein 3 (Phd3)—which together with Phd1 and Phd2 regulates the protein stability of Hif-1α and Hif-2α—could be used to treat type 2 diabetes mellitus without the toxicity expected to occur with inhibition of multiple Phd isoforms. Deletion of hepatic Phd3, also known as Egln3, in mice improved insulin sensitivity and diabetes mellitus by stabilizing Hif-2α, which ultimately increases insulin-stimulated Akt activation.

Original article Taniguchi, C. M. *et al.* Cross-talk between hypoxia and insulin signaling through Phd3 regulates hepatic glucose and lipid metabolism and ameliorates diabetes. *Nat. Med.* doi:10.1038/nm.329