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IN BRIEF

ALZHEIMER DISEASE

Mutation in APP protects against Alzheimer disease

In a whole-genome sequencing study of 1,795 Icelandic people, researchers have identified a coding variant in amyloid- β (A β) precursor protein (APP) that protects against Alzheimer disease (AD) and cognitive decline. The A673T substitution occurs close to the target site of BACE1, the APP-cleaving enzyme that generates toxic A β fragments. The mutation leads to reduced production of A β by BACE1, and provides proof of principle for the hypothesis that blocking BACE1 cleavage of APP protects against AD.

Original article Jonsson, T. *et al.* A mutation in APP protects against Alzheimer's disease and age-related cognitive decline. *Nature* doi:10.1038/nature11283

EPILEPSY

A role for GABA receptor signalling in granule cell ectopia and pathogenesis of adult epilepsy

As temporal lobe epilepsy (TLE) is associated with abnormal localization of hippocampal granule cells, Koyama *et al.* investigated the mechanisms underlying granule cell ectopia. Using a rat model of complex febrile seizures, they found upregulation of γ -aminobutyric acid (GABA) receptors in granule cells, which caused a reversal of migration by these cells. This abnormality was avoided by inhibition of a cotransporter that regulates GABA activation, indicating a potential therapeutic approach.

Original article Koyama, R. *et al.* GABAergic excitation after febrile seizures induces ectopic granule cells and adult epilepsy. *Nat. Med.* doi:10.1038/nm.2850

SPINAL CORD INJURY

Fluoxetine shows promise as a neuroprotective therapy following spinal cord injury

Fluoxetine, an antidepressant drug, has shown promise as a therapy in spinal cord injury (SCI), but the mechanism underlying this neuroprotection was unknown. Using a mouse contusion-injury model, Lee *et al.* show that fluoxetine prevents breakdown of the blood–spinal cord barrier by inhibiting activation of matrix metalloproteinases and maintaining tight-junction integrity. The study highlights fluoxetine as a promising therapy for brain injury and SCI.

Original article Lee, J. Y. *et al.* Fluoxetine inhibits matrix metalloproteinase activation and prevents disruption of blood–spinal cord barrier after spinal cord injury. *Brain* doi:10.1093/brain/aws171

CEREBROVASCULAR DISEASE

Amyloid imaging enables prediction of haemorrhage sites in cerebral amyloid angiopathy

In a recent study, published in *Neurology*, Edip Gurol *et al.* sought to determine whether MRI combined with Pittsburgh compound B (PiB)-PET could be used to predict the locations of future haemorrhages in patients with cerebral amyloid angiopathy (CAA). In 11 patients who underwent baseline and follow-up MRI with PiB-PET, CAA-related haemorrhages tended to occur at sites with greatest amyloid deposition. The researchers suggest PiB-PET could be a useful tool for prediction of haemorrhages in CAA.

Original article Edip Gurol, E. *et al.* Predicting sites of new haemorrhage with amyloid imaging in cerebral amyloid angiopathy. *Neurology* doi:10.1212/WNL.0b013e31826043a9