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IN BRIEF

ALZHEIMER DISEASE

New role for sortilin in amyloid processing

Two recent studies have shown that the pro-neurotrophin receptor sortilin regulates processing of amyloid- β (A β)—a key neurotoxic peptide in Alzheimer disease. Gustafsen *et al.* found that sortilin binds amyloid precursor protein and, thereby, promotes production of a nontoxic soluble product rather than A β . Carlo *et al.* showed that sortilin binds apolipoprotein E, which mediates A β clearance, with high affinity. Moreover, sortilin-deficient mice had increased brain A β levels and plaque burden compared with wild-type mice.

Original articles Gustafsen, C. *et al.* Sortilin and SorLA display distinct roles in processing and trafficking of amyloid precursor protein. *J. Neurosci.* 33, 64–71 (2013) | Carlo, A.-S. *et al.* The pro-neurotrophin receptor sortilin is a major neuronal apolipoprotein E receptor for catabolism of amyloid- β peptide in the brain. *J. Neurosci.* 33, 358–370 (2013)

PARKINSON DISEASE

Mechanistic link between fungicide and PD pathogenesis

The aetiology of Parkinson disease (PD) is known to include environmental factors such as exposure to toxins, but precisely how such factors lead to the characteristic degeneration of dopaminergic neurons in the substantia nigra is not clear. New research has shown that the fungicide benomyl, which was widely used for three decades, targets dopaminergic neurons through inhibition of aldehyde dehydrogenase—a key enzyme in dopamine metabolism. Moreover, epidemiological evidence suggested that risk of PD increased 67% in individuals with a history of benomyl exposure in the workplace.

Original article Fitzmaurice, A. G. *et al.* Aldehyde dehydrogenase inhibition as a pathogenic mechanism in Parkinson disease. *Proc. Natl Acad. Sci. USA* 110, 636–641 (2013)

NEURODEGENERATIVE DISEASE

Trial results do not support off-label use of memantine for frontotemporal lobar degeneration

The Alzheimer disease drug memantine has been used off-label to treat frontotemporal lobar degeneration (FLD). However, a recent double-blind, placebo-controlled trial involving 81 patients with FLD found that 26 weeks of memantine treatment did not improve neuropsychiatric scores and clinical global impression of change scores compared with placebo. Moreover, a trend towards increased cognitive adverse events was seen in the treatment group.

Original article Boxer, A. L. *et al.* Memantine in patients with frontotemporal lobar degeneration: a multicentre, randomised, double-blind, placebo-controlled trial. *Lancet* doi:10.1016/S1474-4422(12)70320-4

TRAUMATIC BRAIN INJURY

Purinergic signalling as a therapeutic target for brain injury

New research has shown that, following neurotrauma, purinergic signalling in astrocytes produces calcium waves in these neural cells that can spread to sites distant from the injury. In a preclinical model of traumatic brain injury, a purinergic-receptor antagonist improved histological and cognitive outcomes, suggesting this molecule as a therapeutic candidate.

Original article Choo, A. M. *et al.* Antagonism of purinergic signalling improves recovery from traumatic brain injury. *Brain* doi: 10.1093/brain/aws286