



PRINCIPE FELIPE

CENTRO DE INVESTIGACION

The Future of Biomedical Research Lecture Series

Targeting the extracellular matrix to restore neurological function and memory

Speaker: **Prof. James Fawcett**

Clinical Neurosciences

Cambridge Center for Brain Repair

University of Cambridge

Date: **25/05/18- 12:30h**

Place: Salón de Actos CIPF

Abstract: The most effective treatments for CNS damage have their main effect through stimulating plasticity. The CNS then has to learn how to use new connections, so effective treatments combine rehabilitation with measures that affect plasticity or excitability. To promote recovery in animal models of spinal cord injury, stroke, Alzheimer's disease and ageing a successful method has been to target the perineuronal by digesting or blocking chondroitin sulphate proteoglycans or by inhibiting perineuronal net synthesis. This has allowed restoration of sensorimotor function and memory. Perineuronal nets exert their effects through the sulfation motifs on the chondroitin sulphate glycan chains, which bind to effectors which include semaphorin3A. The sulfation pattern of the nets changes with ageing, rendering the nets more inhibitory and preventing memory formation. Treatments that remove the nets or change their sulphation pattern can restore memory.

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