B·DEBATE International Center for Scientific Debate BARCELONA

Sant Joan de Déu HOSPITAL MATERNOINFANTIL - UNIVERSITAT DE BARCELONA

Sant Joan de Déu Research Foundation

MARA DIERSSEN

CV

PARTICIPANT AT:

CONNECTING THE GROWING BRAIN

UNDERSTANDING NEUROPAEDIATRIC DISEASES THROUGH SYNAPTIC COMMUNICATION

November, 26th-27th, 2015, Barcelona

Mara Dierssen, Group Leader at Centre for Genomic Regulation (CRG) and Institut Municipal d'Investigacions Mèdiques (IMIM), Barcelona, Spain

Dr. Dierssen research builds on multi-level exploration of neural networks and dynamical models to get insight in the integrative principles in brain cognitive systems, mainly using genetically modified mouse models of intellectual disability and other cognition disorders. The overall goal of her research is understanding how putative candidate genes for human complex genetic diseases impair the neuronal connectivity with consequences on brain cognitive systems. She is a world expert in the field of intellectual and has received several recognitions for her work (Ramón Trias Fargas, Jaime Blanco or Sisley-Lejeune Awards). Dr Dierssen is the President of the Spanish Society of Neuroscience, past president of the International Behavioral and Neural Genetics Society, and member of the Executive Committee of the Federation of European Neurosciences Societies, EDAB and Academia Europaea. She was associated professor of the University of Cantabria and the University Ramon Llull in Barcelona, and has organized a large number of courses and conferences. She is part of several Editorial Boards (Acta Neuropathologica, Genes Brain and Behavior, Frontiers in Behavioral Neuroscience, Down Syndrome Research and Practice, Amino Acids, Frontiers in Genetics and BMC).

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ABSTRACT

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Pharmacological Approaches for Synaptic Disorders

Recent insights into the neurobiological mechanisms of intellectual disability (ID) have shown that despite the broad spectrum of genetic and environmental aetiologies, alterations in neural plasticity are common neuropathological findings. Numerous ID genes converge on overlapping molecular networks thus opening the possibility to discover drugs for restoring cognitive function not restricted to a specific ID disorder. Over time, abnormal neural plasticity leads to a cognitive impairment regardless of the particular molecular cause. Thus, drugs targeting core molecules in neural plasticity cascades could set the brain in a favourable state for cognitive function and be disease-modifying treatments in individuals with ID of different genetic and environmental aetiologies. However, in addition to pharmacological interventions, it is necessary to explore novel non-pharmacological therapeutic avenues that can potentially play a key role as safe and effective co-adjuvants for further enhancing the positive effects of experimental compounds.

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