

WORLD DRUG DELIVERY AND NOVEL THERAPY SUMMIT

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Annual Congress on NEUROSCIENCE & THERAPEUTICS

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Signature of neuroinflammation from pathophysiology to machine learning

Neuroinflammatory changes constitute substrate and precede appearances of behavioural changes. By the time such changes are detected pathophysiological processes within the CNS often irreversible. Therefore, early detection of neuroinflammation will allow faster and more successful treatments. It is especially relevant for multiple sclerosis (MS) patients in whom diseases return periodically. We have used a novel model of spontaneous MS-like disease in mice

to study early mechanisms of the disease and to find the behavioural signature of approaching autoimmune attack. Using comprehensive automated video analysis followed by machine learning algorithms we have dissociated general sickness behaviour from behavioural changes associated with activation of innate immune response in the CNS. Also, we found one of the mechanisms responsible for the initiation of multiple sclerosis.

Biography

Denis Gris completed his PhD in Neurosciences in 2007 at the Western University in London, Ontario, Canada. He then moved to the University of North Carolina at Chapel Hill where he studied the biology of pattern recognition receptors. In 2011, he established his laboratory at the University of Sherbrooke. He has published more than 30 papers in reputed journals and has been serving on several editorial boards. His primary interests are neuroimmunology and machine learning.

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