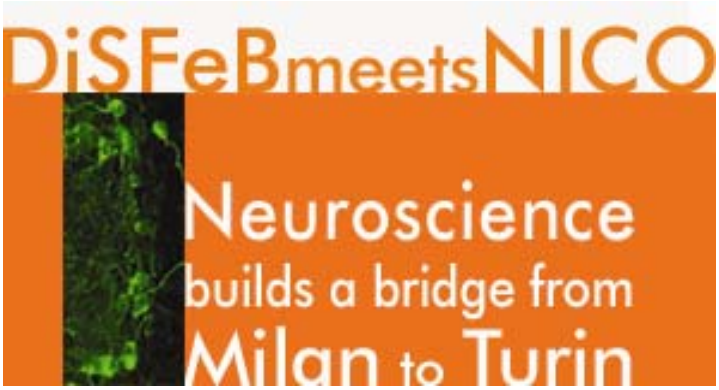
Neuroscience Institute Cavalieri Ottolenghi

NICO

UNIVERSITÀ DEGLI STUDI DI TORINO

FONDAZIONE CAVALIERI OTTOLENGHI

UNIVERSITÀ DEGLI STUDI DI MILANO



Venerdì 19 dicembre 2014 - ore 14:00

Aula Seminari, NICO

GluN2A-containing NMDA receptors as synaptic trait of levodopa-induced dyskinesias: from experimental models to patients

Fabrizio Gardoni

Dipartimento di Scienze Farmacologiche e Biomolecolari
Università degli Studi di Milano

Levodopa (L-DOPA)-induced dyskinesias (LIDs) are a major complication in the pharmacological management of Parkinson's Disease (PD). Abnormal glutamatergic transmission in striatum is considered a key factor in the development of LIDs. Here we show that an altered ratio of synaptic GluN2A/GluN2B-containing NMDA receptors (NMDARs) in striatum represents a common trait in L-DOPA-treated dyskinetic animals (6-OHDA rats and MPTP monkeys) and in post-mortem tissue from dyskinetic PD patients.

The modulation of synaptic NMDAR composition by cell-permeable peptides interfering with GluN2A subunit clustering at postsynaptic sites leads to a reduction in the dyskinetic motor behavior in the two animal models of LIDs. Our results indicate that targeting synaptic NMDAR subunit composition may represent an intriguing therapeutic approach aimed at ameliorating L-DOPA motor side effects.

Host: Alessandro Vercelli