UNIVERSITÀ DEGLI STUDI DI PALERMO

Dottorato di Ricerca in Biomedicina e Neuroscienze

Coordinatore: Prof. Felicia Farina

Sede Amministrativa: Dipartimento di Biomedicina Sperimentale e Neuroscienze Cliniche

LAB-MEETING

Giovedì 20 Dicembre 2018, **ore 12:00**

Aula "E. Nesci", Anatomia Umana

Via del Vespro 129, Palermo

Invited speaker:

Giovanni Di Liberto, MD*

PhD Student

PhD programme in Neuroimmunology

University of Geneva, Switzerland

"Alla Ricerca delle Sinapsi Perdute"

Neurons under T Cell Attack Coordinate Phagocyte-Mediated Synaptic Stripping^

Riassunto:

Inflammatory brain diseases are often accompanied by synaptic loss with involvement of phagocytic microglia and complement components. However, the mechanisms accounting for aberrant synaptic connectivity in the context of CD8+ T cell-driven neuronal damage are poorly understood. Here, we profiled the neuronal translatome in a murine model of encephalitis caused by CD8+ T cells targeting antigenic neurons. Neuronal STAT1 signaling and downstream CCL2 expression were essential for apposition of phagocytes, ensuing synaptic loss and neurological disease. Analogous observations were made in the brains of Rasmussen's encephalitis patients. In this devastating CD8+ T cell-driven autoimmune disease, neuronal STAT1 phosphorylation and CCL2 expression co-clustered with infiltrating CD8+ T cells as well as phagocytes. Taken together, our findings uncover an active role of neurons in coordinating phagocyte-mediated synaptic loss and highlight neuronal STAT1 and CCL2 as druggable targets in this process.

***Biosketch:**

Laurea in Medicina e Chirurgia, Università degli Studi Palermo (2009-2015).
MD-PhD programme in Neuroimmunology, University of Geneva, Switzerland (2016-2019)
Secretary General of the European Academy of Neurology – Resident and Research Fellow Section

^: Di Liberto et al., 2018, Cell 175, 1–14, October 4, 2018. https://doi.org/10.1016/j.cell.2018.07.049