SAN

SOCIEDAD ARGENTINA DE
INVESTIGACIÓN EN NEUROCIENCIAS

XXX ANNUAL MEETING

and SAN-ISN Small Conference and Course

Mar del Plata, Argentina

SEPTEMBER 27th - OCTOBER 1st, 2015

COMMITTEES

Course Organizing Committee:

María Soledad Espósito
María Sol Fustiñana
Joaquín Piriz
Lorena Rela

Meeting Organizing Committee:

Ana Belén Elgoyhen
Diego Gelman
Pablo Helguera
Rafael Pagani
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SAN-ISN Course
"State-of-the-art methods in Neuroscience Research"
ROOM TOPACIO

PROGRAM

DAY 1: Sunday September 27th	
18:00-19:00	Registration
19:15-19:30	Welcome words by course organizers
19:30-21:00	**Lecture I:** ***"Mapping neuronal networks with viral tools"*** **María Soledad Espósito**, Friedrich Miescher Institute, Basel, Switzerland
21:00	Dinner

DAY 2: Monday September 28th	
09:00-10:30	**Lecture II:** ***"In vivo 2-photon microscopy for dissection of neuronal circuits"*** **Johannes Letzkus**, Max Planck Institute for Brain Research, Frankfurt, Germany
10:30-11:00	Coffee Break

Neuroendocrinology and Neuroimmunology

P213.-Participation of GABA transporters in immune response and neuro-immune communication

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The nervous and the immune systems (NS and IS respectively) are physically and physiologically connected. Recently, expression of neurotransmitter system components in immune cells and synthesis and receptors of cytokines in NS cells were described. We previously reported that a complete GABAergic system is functionally expressed in human lymphocytes. Now, we are focusing on GABA transporters (GATs). Four GAT subtypes (GAT 1-3 and BGT-1) were described in human NS. We studied GAT mRNA levels in activated and resting lymphocytes (with and without the mitogen phytohemagglutinin (PHA), respectively). GAT-2 and BGT-1 mRNAs were detected in most of activated cells. Moreover, incubation with PHA also increased [3H]GABA uptake. To evaluate the physiological role of GATs we determined cell proliferation by PHA in the presence of nipecotic acid (NA), a GAT inhibitor. Cell proliferation was negatively modulated by NA. We also analyzed GABA levels in lymphocyte cultures. We could only detect GABA in supernatant from activated cells. Despite its typical role in the synapse where they mediate cellular uptake of GABA, under certain conditions GATs can reverse and release GABA. This secretion is vesicle independent. We propose that this mechanism could be involved in GABA release in lymphocytes. Establishing the role of endogenous GATs in immune response and as a link between NS and IS will provide new therapeutic targets for the treatment of diseases that could affect both systems.