

SAN 2019 Abstract Book for ASN Neuro MAY 2020

ASN Neuro
Volume 13: 1–133
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DOI: 10.1177/1759091420979851
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Abstracts of the 2019 Meeting of Argentine Society for Research in Neurosciences

XXXIV Annual Meeting SAN 2019

October 3–5, 2019

Villa Carlos Paz, Córdoba, Argentina

The 2019 meeting of the Argentine Society for research in Neurosciences (SAN) was held at Villa Carlos Paz, Córdoba, Argentina, in Portal del Lago Hotel, from October 3 to 5, 2019.

There were 350 attendees among researchers, scholars, PhD students and guests from different centers and universities of Argentina and abroad from 8 countries of Latin America, North America and Europe. Our congress had a total of 4 Plenary Lectures, 6 Symposia, 2 Short Conferences, 6 Youth Conferences, 19 Oral Communications, 256 Posters covering a broad number of areas in the field of neurosciences together with 2 special activities at lunch time and a round table on “Gender and Science.”

It is noteworthy that two of the Plenary Lectures were placed in honors of the pioneers of neurochemistry and neurobiology of Argentina, Drs. Ranwel Caputto and Eduardo De Robertis. This year the “Ranwel Caputto” Lecture was delivered by Prof. Belen Elgoyhen of the University of Buenos Aires (Argentina) and the “De Robertis” Lecture by Prof. Beatriz L. Caputto of the National University of Córdoba (Argentina). The “Opening Lecture” was given by Prof. Marla B. Feller, Department of Molecular and Cell Biology and Helen Wills Neuroscience Institute, University of California (USA) and the “Hector Maldonado” Lecture by Prof. Lucas Pozzo-Miller Department of Neurobiology, University of Alabama at Birmingham (USA). Short conferences were delivered by Drs. Ethan Buhr of the University of Washington in Seattle (USA), and Emilio Kropff of the Leloir Institute, Buenos Aires (Argentina).

As pre-meeting activity, the specific course for PhD students “Molecular and Cellular Neuroscience and Neurochemistry: Experimental strategies for studying the nervous system in health and disease,” took place on September 30 to October 1–2, 2019 at the School of Chemical Sciences of the National University of Córdoba, Córdoba with the participation of more than 60 students.

Remarkably, all the activities organized, including the Symposia and the Young Investigator Lectures, covered a number of diverse disciplines in the field of neurosciences with the participation of outstanding invited speakers from Argentina and other countries.

Moreover, a very friendly atmosphere for discussion and data presentation was generated during the poster and oral communication sessions with the participation of 104 researchers, 139 PhD students, 64 undergrads and 34 postdocs from Argentina, Chile, Brazil, Uruguay, USA, Canada, Denmark, Germany and France.

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Short Program SAN 2019

Mon., Sept 30th - Wed., Oct 2nd	Thursday, October 3rd	Friday, October 4th	Saturday, October 5th
PRE-CONGRESS COURSE "Molecular and Cellular Neuroscience and Neurochemistry: Experimental strategies for studying the nervous system in health and disease" Auditorio Ciencias / Facultad de Ciencias Químicas – UNC REGISTRATION	8:30 - REGISTRATION 9:00 - 11:00 SYMPOSIUM I <i>"New perspectives and mechanisms underlying neurological disorders"</i>	8:30 - 10:30 SYMPOSIUM III <i>"Molecular mechanisms of epigenetics and chromatin remodeling during brain development and aging"</i>	8:30:00 - 10:30 SYMPOSIUM VI <i>"Sensory processing and integration in olfactory and tactile systems"</i>
	11:00 - 11:30 Coffee break	10:30 - 11:00 Coffee break	10:30 - 11:00 Coffee break
	11:30 - 12:30 OPENING LECTURE Prof. Marla Feller	11:00 - 13:00 SYMPOSIUM IV <i>"First impressions: New roles for perinatal factors governing brain development"</i>	11:00 - 12:00 Oral Communications Room Auditorio (OC 8-12) Room Lago (OC 13-18)
	12:30 - Lunch with activities <i>"The 3Rs in neuroscience research"</i>	13:00 - Lunch with activities <i>"HD Foundation"</i>	12:00 - 13:00 EDUARDO DE ROBERTIS LECTURE Prof. Beatriz Caputto
	14:30 - 15:30 SHORT LECTURES Ethan Buhr Emilio Kropff	14:30 - 16:00 Oral Communications Room Lago (OC 1-7)	13:00 - Farewell Lunch
	15:30-16:00 Gender and Science Verónica de la Fuente	14:30-15:30 Young Investigator Lectures Room Auditorio (YIL 1-3) Room Lago (YIL 4-6)	
	16:00 - 17:30 SYMPOSIUM II <i>"Advances in early diagnosis and in experimental therapy of Alzheimer's disease"</i>	15:30 - 17:30 SYMPOSIUM V <i>"Sexual differences on development and function of CNS"</i>	
	17:30 - Coffee break	17:30 - Coffee break	
	17:30 - 19:30 Poster Session (Even numbers)	17:30 - 19:30 Poster Session (Odd numbers)	
	19:30 - 20:30 RANWEL CAPUTTO LECTURE Prof. Ana Belén Elgoyhen	19:30 - 20:30 HÉCTOR MALDONADO PLENARY LECTURE Prof. Lucas Pozzo-Miller	
	20:30 WELCOME RECEPTION	20:30 SAN General Assembly	

OC 15 _ Molecular Mechanisms in the DG and CA3 Regulate the Balance Between Differentiation and Generalization During Retrieval in a Cue-Degraded Context

Magdalena Miranda, Facundo Morici, Dinka Piromalli Girado, Carla Navas, Francisco Gallo, Noelia Weisstaub and Pedro Bekinschtein

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Because our environment is permanently evolving, it is crucial for episodic memory to remember our previous experiences despite environmental changes. Computational models have suggested the existence of a pattern completion process by which networks could retrieve entire memories from partial or degraded cues. The CA3 region of the hippocampus was proposed to mediate this computation by the plastic enhancement of the recurrent collateral connections of CA3 neurons that were active during learning. In this work, we manipulated the amount of cues available during retrieval (test phase) in a spontaneous object recognition task to investigate the function of CA3 NMDA-receptors (NMDAR) for pattern completion. We show that pharmacological intervention of hippocampal CA3 NMDAR receptors impairs retrieval of the object location memory only when cues are degraded, while similar manipulations in the dentate gyrus have no effect. Moreover, while the context alone is enough to guide retrieval of the object memory under partial cues, antagonists of NMDAR in the test phase prevent this retrieval. These findings suggest that NMDAR in CA3 are necessary for the retrieval of spatial memories when the amount of environmental information is reduced, and that plastic changes in the dentate gyrus and CA3 are important to define if behavioral pattern separation or pattern completion occurs when exposed to a modified context.

OC 16 _ Dynamics of GABABR Signaling: Influence of Cholesterol and Aging

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GABA B receptors (GABABRs) are obligatory heterodimers which belong to the superfamily of G protein-coupled receptors (GPCRs). Age-related changes in membrane cholesterol levels modulate membrane fluidity, which in-turn influences GPCR's localization and function. We studied the GABABR and also a transmembrane transporter structurally homologous to KCC2. To characterize transient conformational changes over time, molecular dynamics simulations were performed using a neuronal plasma membrane (PM) model. Two different membrane cholesterol levels were evaluated: 45% and 10%, which intend to resemble the composition of adult and aged neuronal PMs, respectively. For experimental verification in both young and aged cerebella, we determined protein expression and distribution, and we assessed whether the two proteins interact with each other in vivo. Techniques were: western blots (WB), co-immunoprecipitation assays, and multiple immunolabeling followed by confocal microscopy. Our results suggest that the expression and spatial distribution of both proteins change as the cerebellum grows older. Based on our in silico analyses, we infer that a G protein-independent interaction does occur. Also, we confirmed that the two proteins are part of the same complex in the cerebellum. As our simulations indicate, we propose that the underlying mechanism implies transient conformational changes, which are highly dependent on cholesterol levels and are therefore affected by the aging process.

OC 17 _ Melatonin Protects the Retinal Pigmentary Epithelium and Photoreceptor Damage Within Experimental Non-Exudative Age-Related Macular Degeneration

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Non-exudative age-related macular degeneration (NEAMD), the main cause of blindness in the elderly, is characterized by retinal pigment epithelium (RPE) and photoreceptors (PR) atrophy exclusively circumscribed to the macula. There are no effective therapeutic strategies that can