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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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Neural Circuit Physiology

P207.-Early Ethanol Preexposure Modifies Expression of the 5HT2A Receptor Promoting Long-Term Breathing Plasticity in Neonate Rats

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EtOH's effects upon respiration are attributed to central respiratory network disruptions, especially in the medullary serotonin (5HT) system. 5HT2A/2C receptors are involved in the reduction of the phrenic nerve activity and breathing depression. We hypothesize that early EtOH preexposure alters neonatal respiration through the 5HT systeḿs plasticity. Here, we evaluated breathing rates and the relative expression of 5HT 2 A and 2 C receptors in the brainstem as a function of EtOH preexposure in neonates. Pups received i.g administrations of 2.0 or 0.0 g/kg EtOH at postnatal days (PD) 3, 5 and 7. At PD 9, breathing frequencies were recorded under normoxia or hypoxia. Brainstems were collected to quantified relative mRNA expression of 5HT 2 A and 2 C receptors by qPCR. Under normoxia, EtOH preexposed pups (preEtOH) exhibited high 5HT2A expression levels and breathing depressions. An opposite phenomenon was observed in preEtOH pups tested under hypoxia. An exacerbated hyperventilation associated with low 5HT2A expression levels was found. No significant differences were found in 5HT2C expression levels. These results together with our previous findings that show changes in the raphe obscurus activation patterns, suggest that a brief EtOH preexposure is enough to induce 5HT system's plasticity, disturbing neonatal breathing. The 5HT components mismatch may be associated with breathing disruptions commonly observed in human neonates, such as Sudden Infant Death Syndrome.

Neural Circuit Physiology

P208.-Neuronal Correlates for the Timely Execution of Actions in the Dorsal Striatum

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The selection and the appropriate execution of sequences of movements is essential to survival. Striatal activity has been shown to signal the initiation and termination of behavior and it is also involved in the selection of future actions. Here we studied the neuronal activity of the dorsal striatum of adult rats that were trained to obtain water by emitting a sequence of 8 licks following a visual cue. Trials were self-initiated by the animal by entering into the nose-poke following a 2.5 s inter-trial interval (ITI). We found a modulation of the neuronal activity related to different events in the task such as the execution of the action sequence, reward delivery and at the boundaries of the trials (nose poke entry and exit). In particular, firing rate modulation previous to the beginning of the trials was larger for longer waiting times. This anticipatory activity did not merely reflect elapsed time nor the motor plan to be executed so, to assess if it was related to reward expectancy, rats were trained to initiate trials in a restricted time-window (ITI 2.5–5 s). Results show thatactivity modulation for long waiting times differed between both versions of the task: when the ITI was long and had no reward associated to it, the amplitude of the modulation decayed, whereas rewarded long ITIs had an increasing anticipatory activity. We hypothesize this striatal activity reflects the animals' subjective valuation of timing and is key for the timely execution of actions.

Neural Circuit Physiology

P209.-Adult Born Dentate Granule Cells Evoke CA3 Activity With a Gain That Increases Along Maturation

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