



## 4<sup>th</sup> ISN Latin American School of Advanced Neurochemistry

"BRAIN PATHOLOGIES AND NATURAL PRODUCTS"

October 16th to 28th, 2017.

Instituto de Investigaciones Biológicas Clemente Estable.  
Montevideo, URUGUAY.

### FINAL REPORT

We have successfully finished the **4th ISN Latin American School of Advanced Neurochemistry: "*Brain pathologies and natural products*"**, with very satisfactory results. The 4th Latin American School took place at the Instituto de Investigaciones Biológicas Clemente Estable in Montevideo, from October 16<sup>th</sup> to 28<sup>th</sup>, 2017. Two major topics: "Neurodegenerative diseases" and "Mood and Substance Abuse disorders", were selected and the therapeutic potential of natural products was highlighted.

We have received 55 applications after a wide diffusion through announcements done in local organisms (Sociedad Uruguaya de Neurociencias, Programa de Desarrollo de Ciencias Básicas-Pedeciba), regional Societies of Neuroscience (e.g.; Federation of Latin American Societies of Neuroscience - FALAN) and directly to Latin American lab's from colleagues and collaborators of Organizing Committee members.

Separated by country, the final picture was: Argentina (14), Brasil (26), Chile (9), Colombia 1, México (1), Panamá (1) and Uruguay (3). The candidates had in general an excellent curricula that made very difficult to select the finally accepted candidates: Argentina 4, Brasil 5, Chile 2, Colombia 1, Uruguay 3. Students were selected based in the curriculum vitae, the relevance of its participation in the School for its scientific careers, taking into account a balanced distribution from different Latin American countries and, according to the ISN request, especial emphasis was taken in gender equilibrium. According to local curricular requirements, three undergraduate Uruguayan student have been selected to participate only in the theoretical lectures (listed as a listeners).

At the opening of the School and after an introductory talk supported by some slides given by the Directors of the School Federico Dajas and Cecilia Scorza, the first talk was offered

by Dr. Dajas about “Mental diseases and natural products: molecules and mechanisms”. As follow, a series of special lectures focused on neurodegenerative diseases has been presented. This topic lasted one week thus defining the Module I: Neurodegenerative Diseases. Dr. L. Morelli (Argentina), Dr. L. Sedeño (Argentina), Dr. F. Dajas Bailador (UK), Dr. C. Hetz (Chile), Dr. Rob Williams (UK) completed the international staff of the first module. At the first day, we planned a visit to the *Centro Uruguayo de Imagenología - CUDIM-*. This is a very important national institute specialized in the use of imaging techniques for the diagnosis of different pathologies as well as the development of new molecules to treat them. The visit to the CUDIM was combined with the Dr. Eduardo Savio's talk and other postdoc students' presentations referring to molecular imaging in the diagnosis of Alzheimer's disease and related disorders. Cellular and molecular physiology of astrocytes and pathologies involved in its function alteration were also introduced in this module.

On Saturday 21, the students presented lectures with their work that were discussed and evaluated by the participating staff. After the free Sunday 22, the following Monday started the second module.

It was mainly characterized by the introduction of topics related with mood and drug of abuse disorders. International professors with large expertise in both fields were invited such us S. Joca and T. de Lima from Brazil, K. Y. Tseng (USA), J. Fuentealba (Chile), V. Bisagno (Argentina). In addition, national lecturers have been specifically chosen to introduce the local research in both fields and share with the students the main results.

Most of lectures were the theoretical support of the hands-on activities that started on Tuesday 27. The hands-on activities were divided among the five experimental seminars: 1) experimental approaches to evaluate new therapies in Parkinson's disease; 2) In vivo approaches to study the mechanism of action of drugs of abuse/COI assay; 3) Characterization of primary cultures from 3xTg Alzheimer's disease model by the use of microfluidic devices; 4) Neurodegeneration and neuroprotection in culture (glia-neuron) and, 5) Effects of cocaine on sleep-awake cycle. (see attached some pictures). Three or four students participated in each seminar along the course and presented a summary with results the last day of the School. The selection of the student for each seminar was done based on their skills in neuroscience, nationality and gender.

On Friday 27, in the afternoon, students presented the results of experimental seminars. Clear, informative and well designed presentations were discussed by all participants (students and staff) in an exciting journey. This activity was also evaluated by the organizing committee. At the evening, a big gathering with music, Uruguayan food with lots of meat and good wines closed the School in a restaurant (see attached some pictures).

On Saturday 28, at the end of the School, the **Minisymposium “Phytoplant Research”: an update of clinical benefit and risks of medical Cannabis**” was developed. In addition to ISN an extra financial help was obtained from Phytoplant Research (<https://www.phytoplantresearch.com/es>) which is extremely committed to developing activities in Uruguay related to medicinal cannabis. International and very relevant participants shared with us current information about the medicinal application of isolated cannabinoids and cannabis in different diseases. Professors such as Lumir Hanus from Israel and Kuei Tseng from US opened the minisymposium.

#### Financial report

The final expenses of the 4th ISN Latin American School of Advanced Neurochemistry in USD were:

1) Traveling Students:	3.654
2) Traveling Faculties:	4.200
3) accomodation students and faculties:	5.346
4) rental venue:	1.000
5) Secretary:	1.500
6) lunch and coffee breaks:	10.000
7) hands-on expenses:	1.300
8) other expenses:	1.000
<b>TOTAL</b>	<b>28.000</b>

We also obtained financial support from other local and international organizations such as Pedeciba, ANII, CSIC, Phytoplant Research to reach the final budget (38.000 USD) needed to perform the course.

Main supported by ISN



Additional support by:



Management by Fundacion Instituto Clemente Estable



Some pictures taken



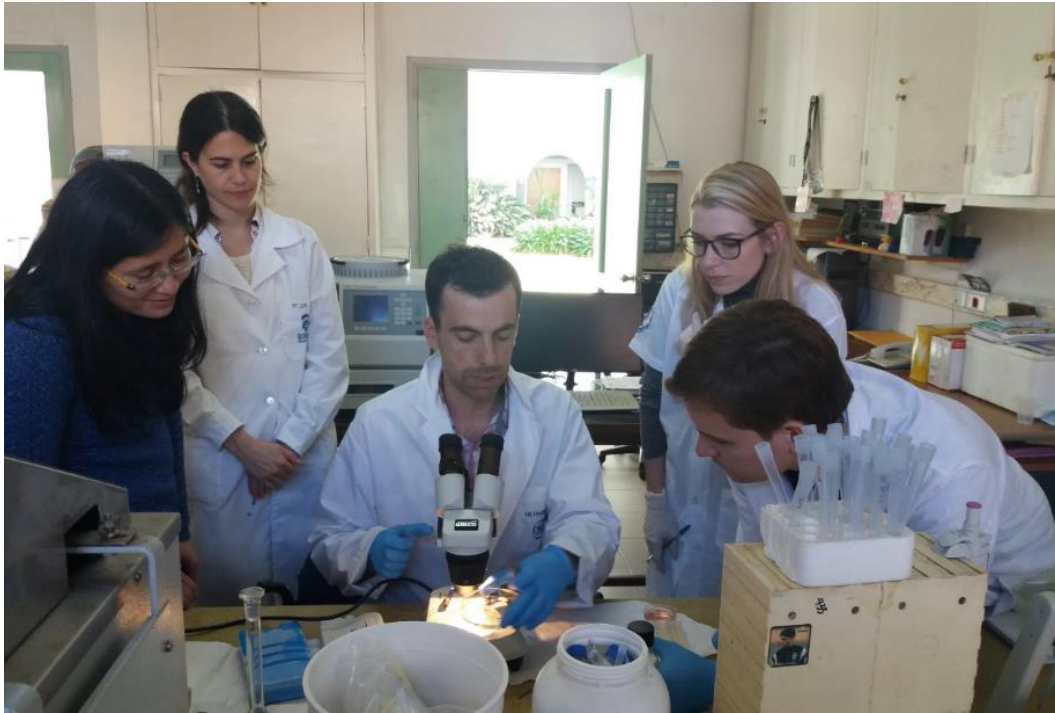
*Closing Dinner in the “Lo de Silverio” restaurant*





*Lunchs in the “Lo de Silverio” restaurant*

*Hands-on activities*





*Preparing the hands-on oral presentation*



*Student oral presentations and evaluation*

