Report on the

Regional Workshop "MORPHOLOGICAL APPROACHES TO STUDY STRUCTURAL & BIOCHEMICAL NEURONAL PROPERTIES"

29th August – 2nd September, 2011 Instituto de Investigaciones Biológicas Clemente Estable (MEC), School of Medicine- School of Science (UdelaR)

and

Symposium "Neuronal generation and degeneration in vertebrates" 3rd September, 2011 Instituto de Investigaciones Biológicas Clemente Estable (MEC) Montevideo – Uruguay

Anabel Fernández

Organizing Committee Silvia Olivera

María E. Castelló



The main aim was to give students and young scientists from Latin America the opportunity to get theoretical and practical training some of the methodological

approaches to analyze and describe the morphological and biochemical structural neuronal properties.

Nineteen scientists from Argentina, Mexico, Spain, USA and Uruguay were intensively involved in all the activities.

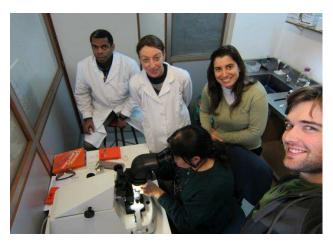
Among 38 applications, twenty Latin American students coming from Argentina (6), Brazil (2), Peru (1), and Uruguay (11), were selected to participate in both activities (the list of all students, their nationality and e-mail address is attached bellow).

The course provided an intensive training through morning lectures and practical activities along the afternoon and skills talks in the evening. After an introductory lecture introducing to the concept of structural neuronal properties and their role in the functional properties achieved by neurons and neuronal networks the series of morning talks introduced students to the theoretical background of several methodological approaches



that allow the analysis of neuronal structural morphological and biochemical properties. These methodological approaches were exercised at the practical activities.

To ensure hands-on work, the students were divided groups (3 to 4 students), each of which was involved in one practical seminar that lasted the whole extension of the Workshop.







The application of the learned methodological approaches to specific scientific problems was introduced in some of the morning talks and, mainly through the Symposium focused on Neuronal Generation and Degeneration in Vertebrates.

То contribute to the students' professional training, two sessions of oral presentations by all students were organized. One of them consisted on individual presentations of the research projects in which students are involved at their home laboratories. The other consisted on group presentations of the results obtained in each of the practical activities preceded by а brief introduction theoretical of the background. Besides, it was offered evening skills talks.



All faculty and student received a set of materials, and all students received CDs containing support material (including research articles, practical activities tutorials and



electronic versions of most of the lectures provided by the faculty) and the others to backup the data of the experimental activities.

The evaluation of the students (not finished yet) takes into account their participation in all the programmed activities and a personal report on one of the topics of the Workshop, including the discussion of results obtained in the practical activities.

To promote scientific and social interaction among participants, regional students and international invited faculty were lodged in the same hotel. Besides, all students and faculty shared the coffee breaks and the meals, most of them afforded by the Workshop and Symposium.





Our overall opinion of both the Workshop and the Symposium is very positive. Students actively and enthusiastically engaged in all the activities fostered by an excellent team of faculty that gave their best effort for making both activities an invaluable experience. We explicitly express our gratitude to all of them. The Workshop/Symposim had a further impact. On one hand, all the morning lectures were open to the rest of the Uruguayan scientific community. It also allowed the members of the organizing committee to get training on some of the techniques that were not implemented on our Institution yet. This provides and amplification factor as we are also involved in the Uruguayan post-graduate program in Basic Science.

Students' feedback about both activities was obtained by an evaluation form covering several aspects such as the content and duration of the activities, depth and time dedicated to each topic, theoretical/practical activities ratio, quality of conferences,

organization of the course, provided material, opportunity to interact with faculty and other students, and lodging. The overall students' judgment was very positive (an average mean score of 4.2 of a maximum of 5 for 14 questions).

The form also allowed adding comments, some of which are: "It fulfilled all my expectations at scientific-academic as well as personal level, as gave us the opportunity of meet excellent docents and students from the region". "The course exceeded my expectations. I'm very grateful for this opportunity. I learned a lot and I know it will impact directly on my scientific career. This is the first course I attend out from my country, an experience I will remember for ever". "I came back to Brazil happy with all I have done here and I acknowledge the organizers for this gift"

Students.

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Ximena Lanosa	ximena.lanosa@gmail.com - Argentina

Economical Report

The Workshop and Symposia were funded by CAEN-ISN (net budget of 3958.63 dollars), PEDECIBA (89440 Uruguayan pesos) and CSIC (18000 Uruguayan pesos), reaching a total about 9750 dollars.

This financial aid was used to cover the following costs:

1) Airplane tickets of two international faculty: A. Kamaid from Mexico (11948 Mexican pesos equivalent to 955 dollars) and N. Cuenca from Spain (48000 Uruguayan pesos) both covered by PEDECIBA EVENTOS AND PEDECIBA PROFESORES VISITANTES.

2) Partial cost of students transport covered by CAEN/ISN: 1400 dollars (400 dollars for the student from Peru, 400 dollars for two students from Brazil, and 600 dollars for six students from Argentina).

3) Hotel accommodation of three faculties (6 days for D. Peterson and N. Cuenca, and 2 days for A. Schinder). Total cost: 7312 Uruguayan pesos (covered by PEDECIBA EVENTOS+ 60 dollars covered by CAEN/ISN.

4) Most meals that included a) all lunches of international faculty and regional students, b) opening and closing dinners of the Workshop and the lunch Symposium for all participants, c) cookies for coffee breaks, d) two dinners for international invited faculty, Total cost in Uruguayan pesos 21368.35 (1150 dollars) covered by CAEN/ISN.:

5) Organizational costs and material provided to students and faculty (18000 Uruguayan pesos, covered by CSIC, Universidad de la República).

6) Chemicals and transport of reagents for practical activities (14468 Uruguayan pesos covered by PEDECIBA EVENTOS AND PEDECIBA COURSES)

The activities were also supported by the Ministry of Education and Culture that provided transport for regional students and international faculty from the hotel to the IIBCE, and between the IIBCE and the Instituto Pasteur Montevideo for lunch. We also received the donation of coffee and all the implements for its preparation and serving from Castera Hnos. S.A. (Uruguay).

Finally, we also received an invaluable and generous contribution from the Dr. Peterson and Dr. Schinder that contributed with the cost of their air tickets. We acknowledge them and also Dr. Cuenca, Dr. Kamaid and. all the Uruguayan that faculties and laboratories that contributed with reagents and preparations for the practical.

SUMMARY OF ECONOMICAL REPORT

CAEN/ISN		
Approved (DOLLARS)	3958.63	
Aid for travel costs of 9 Regional Students	1400.00	
Lodging of Regional Students & Complement of lodging of invited professors	1405.00	
Meals (see bellow)	1150.07	
TOTAL	3955.07	
Not justified	3.56	
Meals covered by the Workshop & Symposium - CAEN/ISN	Uruguayan pesos	DOLLARS
Cookies for coffee breaks & food for invited professors	1812	
First day dinner for all students and professors of Workshop(29/08/2011)	2982	
Dinner Invited professors- 30/08/2011	730	
Dinner Invited professors- 03/09/2011	1460	
Last day dinner for all students and professors of Workshop- 02/09/2011	4586.35	
Last day dinner for all students and professors of Workshop- 02/09/2011	118	
Lunch for all students and speakers Symposium- 03/09/2011	5000	
Lunch for regional students and invited professors-I. PASTEUR - 05/09/2011	4680	
	21368.35	1150.07
PEDECIBA/SCIENTIFIC EVENTS		
Approved (URUGUAYAN PESOS)	65000.00	
Air ticket - Dr. Nicolás Cuenca	48000.00	
Partial coverage Air ticket - Dr. Andrés Kamaid	3571.97	
Lodging Invited professors (Dr. Cuenca, Dr. Peterson & Dr. Schinder)	7312.00	
Transport airport-hotel & parking Dr. Cuenca	604.00	
Taxi transport students hotel-IIBCE	129.00	
FedEx shipment of reagents for Workshop donated by Dr. Peterson	5068.00	
TOTAL	64684.97	
Not justified	315.03	

PEDECIBA/INVITED PROFESSORS		
Approved (URUGUAYAN PESOS)	15040.00	
Air ticket - Dr. Andrés Kamaid (11948 Mexican Pesos equivalent to 954.46 dollars)	15040.00	
TOTAL	15040.00	
PEDECIBA/COURSES	9400.00	
Secondary antibodies	9400.00	
TOTAL	9400.00	
Not justified	0.00	

(Scans of the bills are attached at the bottom of this document).

REGIONAL WORKSHOP "MORPHOLOGICAL APPROACHES TO STUDY STRUCTURAL & BIOCHEMICAL NEURONAL PROPERTIES" PROGRAM

<u>Monday 29 August</u>

9:00 - 12:00

- Welcome and presentation of course.

- Neuronal structural properties - theoretical considerations (A. Caputi).

Coffee break

- Classical approaches devoted to the identification and characterization of the structural morphological and biochemical neuronal properties (D. Rodriguez-Ithurralde).

12:00 - 14:00 - Lunch

14:00 - 18:00 - Practical activities

18:30 – 20:00 - Student own research presentation I

Dinner "Uruguayan empanadas"

<u>Tuesday 30 August</u>

9:00 - 12:30

- Light microscopy (C. Negreira)
- Fluorescence microscopy (D. Peterson)

Coffee break

- Laser scanning confocal microscopy (N. Cuenca)

- Electron microscopy (G. Casanova)

12:30 - 14:00 - Lunch

14:00 - 18:00 - Practical activities

18:30-19:30 – Skills: "Specimen Preparation for Good Microscopy" (D. Peterson)

Wednesday 31 August

9:00 - 12:30

- Use of confocal microscopy to the study of skeletal muscle calcium movements (G. Brum)

- Immunolabelling techniques: commonalities and differences (N. Cuenca)

Coffee break

-In situ hybridization I (A. Kun)

12:30 – 14:00 - Lunch

14:00 - 18:00 - Practical activities

18:30 – 19:30 – Students' own research presentation II

Thursday 1 September

9:00 - 12:30

- Electron microscopy (G. Casanova)

- Characterization of functional neuronal properties "in vitro" (J. Nogueira)

Coffee break

- Tissue staining for multiple labeling & analysis of double-labeling (N. Cuenca)

- In situ hybridization II (A. Kamaid)

12:30 - 14:00 - Lunch

14:00 - 18:00 - Practical activities

18:30 – 19:30 - Skills: "Ethical use of Photoshop for scientists" (D. Peterson)

Friday 2 September

9:00 - 12:30

- Methodological approaches to study neurogenesis (A. Schinder)

- Quantifying neurogenesis (D. Peterson)

Coffee break

- Development of morphological & functional properties of adult newborn neurons (A. Schinder)

- Induction of focal adult neurogenesis by "in vivo" gene delivery (D. Peterson)

12:30 - 14:00 - Lunch

14:00 - 18:00 - Practical activities

18:30 – 19:30 Lab work students' presentations & closing of the course

Dr. Peterson cooking master class at Bremen's

PRACTICAL ACTIVITIES

14:00 - 18:00 - 29 August - 2 September

1) Histochemistry and Immunolabeling in a model of nervous system damage (N. Cuenca, S. Olivera, M. Radmilovich, N. Lago & MN Sarlabos, IIBCE & Histology & Embriology Department, School of Medicine)

2) In situ hybridization (A. Kamaid & A. Kun, IIBCE

3) Analysis of postnatal neurogenesis using IdU & CldU thimidine analogs (D. Peterson, M. Castelló & A. Fernández; IIBCE)

4) Analysis of the cellular & subcellular morphological structural properties of the ventricular linning using MET (G. Casanova – J.C. Rosillo, IIBCE & School of Science)

5) "In vitro" intracellular recording and labeling of neurons (A. Caputi – P. Aguilera, IIBCE).

6) Culture and characterization of spinal motor neurons (P. Cassina & L. Martinez-Palma, School of Medicine).

Demonstration on "Dynamic confocal microscopy" (G. Brum, School of Medicine)

FACULTY

- P. Aguilera, IIBCE, Uruguay
- G. Brum, School of Medicine, UdelaR, Uruguay
- A. Caputi, IIBCE, Uruguay
- G. Casanova, School of Science, UdelaR, Uruguay
- P. Cassina, School of Medicine, UdelaR, Uruguay
- M. Castelló, IIBCE, Uruguay
- N. Cuenca, School of Science, Universidad de Alicante, España
- A. Fernández, IIBCE School of Science, UdelaR, Uruguay
- A. Kamaid, UNAM, Mexico
- A. Kun, IIBCE- School of Science, UdelaR, Uruguay
- N. Lago, NBCM-School of Medicine, UdelaR
- C. Negreira, School of Science, UdelaR
- J. Nogueira, IIBCE- School of Medicine, UdelaR
- S. Olivera, IIBCE, Uruguay
- D. Peterson, Rosalind Franklin University of Medicine & Science, USA
- M. Radmilovich, IIBCE- School of Medicine, UdelaR
- D. Rodríguez–Ithurralde, IIBCE
- JC. Rosillo, IIBCE, Uruguay
- A. Schinder, Instituto Leloir, Argentina

Symposium "Neuronal generation and degeneration in vertebrates" Saturday 3th of September

PROGRAM

9:00 - CNS development and postnatal neurogenesis

9:00 - Proliferation and neurogenesis in adult brain of Austrolebias. Anabel Fernández (IIBCE - School of Science, UdelaR, Montevideo, Uruguay)

9:15 – Brain proliferation zones along postnatal develoment of pulse type weakly electric fish. Maria E. Castello (IIBCE, Montevideo, Uruguay)

9:30 - The role of astorcytes in the neurogénic niche. Daniel Peterson (Center for Stem Cell and Regenerative Medicine, Rosalind Franklin University of Medicine and Science, The Chicago Medical School, Chicago, USA).

Coffee break

10:10 - Functional relevance of adult-born hippocampal neurons. Alejandro Schinder (Neuronal Plasticity, Instituto Leloir, Buenos Aires, Argentina),

10:50 – BMP signaling in sensory organ generation: an example of embryonic neural cell fate regulation. Andres Kamaid (UNAM, Ciudad de México, México).

Lunch

13:30 -- CNS function and dysfunction

13:30 - Therapeutic approach for retinal degeneration. Nicolas Cuenca (Depto. de Fisiología, Genética y Microbiología, Universidad de Alicante, Alicante, España).

14:10 – Delayed neurodegeneration in a modeloof Glutaric Acidemia (Silvia Olivera (IIBCE, Montevideo, Uruguay).

14:25 - Axon.glia contact: a bridge crossed in health and disease. Alejandra Kun (IIBCE, Montevideo, Uruguay).

14:40 - Use of YFP transgenic mice to visualise nerve regeneration.Natalia Lago (Natalia Lago, Institute. Pasteur - School of Medicine, UdelaR, Montevideo, Uruguay).

14:55 - Stimulation of mitochondrial respiration in astrocytes as a strategy to prevent neurdegeneration. (Patricia Casina, School of Medicine, UdelaR, Montevideo, Uruguay).

SCANNED BILLS AND DOCUMENTATION – CAEN

REGIONAL WORKSHOP: MORPHOLOGICAL APPROACHES TO STUDY STRUCTURAL & BIOCHEMICAL NEURONAL PROPERTIES

Aid for travelling

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SCANNED BILLS PEECIBA EVENTOS

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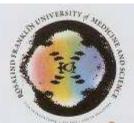
ROSALIND FRANKLIN UNIVERSITY OF MEDICINE AND SCIENCE

Daniel A. Peterson, Ph.D.

Executive Director Center for Stem Cell and Regenerative Medicine

3333 Green Bay Road, North Chicago, IL 60064 Telephone: 847-578-3411 Facsimile: 847-578-8545 daniel.peterson@rosalindfranklin.edu

July 14, 2011



Chicago Medical School College of Health Professions School College of Poclatric Medicine School of Graduate and Postdoctoral Studies

Dra. María E. Castelló Instituto de Investigaciones Biológicas Clemente Estable Avenida Italia 3318 C.P.: 11600 Montevideo URUGUAY

Dear Marita,

Enclosed, please find reagents to use for the detection of proliferating cells in fish. I am happy to support the teaching mission of the international workshop you are organizing by providing these materials for teaching the course participants as a gift at no cost to you or the institute.

I am looking forward to joining you at the end of August to participate in the teaching of this year's workshop.

Best regards,

Daniel A. Peterson, Ph.D.

SCANNED BILLS – PEDECIBA INVITED PROFESSORS



Folio	
0031	

Orden de Servicios

FECHA: <u>06 DE SEPTIEMBRE DEL 2011</u> CLIENTE: <u>PEDECIBA, UNIVERSIDAD DE LA REPUBLICA.</u> DIRECCIÓN: <u>MONTEVIDEO, URUGUAY.</u> C.P.: ______ R.F.C.: <u>KATA730703C11</u>

RUTA DEL AÉREO: <u>MEX-SCL-MVD-SCL-MEX</u> AEROLÍNEA: <u>LAN AIRLINES</u> PASAJEROS: <u>KAMAID ANDRES</u>

Cantidad	Descripción	Precio Unitario	Importe
1	BOLETO AÉREO RUTA: MEX-SCL-MVD-SCL-MEX PAX. KAMAID ANDRES FECHA DE SALIDA: 26 / 08 / 11 FECHA DE REGRESO: 25 / 09 / 11	\$10,541.00	\$10, 541.00
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	Importe con letra.	Total	\$ 11,948.00
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SCANNED BILLS PEDECIBA COURSES

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