



**LABEX ICST** 

**ION CHANNEL SCIENCE AND THERAPEUTICS**

November 25, 26, and 27, 2013

Colloque of the LabEx ICST

Grenoble Institut des Neurosciences, Institut de Biologie Structurale.

**Monday November 25th**

**13h:** Welcoming participants (coffee - poster setup)

**13h45: General presentation of the LabEx by Florian Lesage**

**14h – 15h30: 1<sup>st</sup> session: Oral presentations (20 min + 10 min questions):**

**Chairman M. Vivaudou**

Jacques Barhanin (LP2M - Université de Nice-Sophia Antipolis)

*TASK2 K<sup>+</sup> channel contribution to pH regulation of breathing*

Iulia Blesneac (Institut de Génomique Fonctionnelle, Montpellier : IGF)

*Combining mass spectrometry and electrophysiology to study phosphorylation of T-type calcium channels*

Michel Ronjat & Juan Brusés (Grenoble Institut des Neurosciences : GIN)

*Control of gene expression by the beta4 subunit of voltage gated calcium channels*

**15h30 – 16h30: 1<sup>st</sup> Poster session and coffee (posters n°1 to 10):**

**16h30 – 17h30: 2<sup>nd</sup> session: Oral presentations**

**Chairman: M. Canepari**

Massimo Mantegazza (Institut de Pharmacologie Moléculaire et Cellulaire, Nice Sophia Antipolis : IPMC)

*Neuronal Excitability in Nav1.1 epilepsy and migraine*

Michel Vivaudou & Christophe Moreau (Institut de Biologie Structurale, Grenoble)

*G protein-coupled receptors and potassium channels*

**17h30: Plenary lecture: Prof. Yasuo Mori**

*Function and physiology of redox-sensitive TRP channels*

**20h:** Dinner at the restaurant “Le 5”

**Tuesday November 26<sup>th</sup>**

**9h – 10h: 3<sup>rd</sup> session: Oral presentations**

**Chairman: M. Ronjat**

Guillaume Sandoz & Yannick Comoglio (Institut de Biologie de Valrose, Nice)  
*Phospholipase D2 directly binds to TREK channels to provide specific regulation by phosphatidic acid (part 1)*

Fabien Van den Abeelle & Vyacheslav Lehenkiy (University of Lille 1)  
*ORAI channels in physiopathology: new roles for known actors*

**10h – 11h: 2<sup>nd</sup> poster session** and coffee (posters n°11-19)

**11h – 12h30: 4<sup>th</sup> session: Oral presentations**

**Chairman: J. Brusés**

Marc Borsotto (IPMC)  
*Spadin: a new concept in antidepressant drug design*

Marco Canepari & Nadia Jaafari (GIN)  
*Optical measurement of fast calcium currents (part 1): the method*

Sylvie Diochot (IPMC)  
*Mamba toxins reveal new roles for Acid-Sensing Ion channels in pain.*

**12h30 – 14h: Lunch**

**14h – 15h30: 5<sup>th</sup> session: oral presentations**

**Chairman: M. De Waard**

Amanda Patel (IPMC)  
*Polycystin-1 and -2 dosage regulates the Piezo1 mechanosensitive channel*

François Rassendren (IGF)  
*P2X4 function and regulation in immune cells*

Franck Chatelain (IPMC)  
*Dynamic ion selectivity of the TWIK1 background channel*

**15h30 – 16h30: 3<sup>rd</sup> poster session** and coffee (posters n°20-28)

**16h30: Plenary lecture: Prof. Terrence Snutch**

*T-type Calcium Channels: Pathophysiological Contributions and Therapeutic Implications for Epilepsy*

**20h: Dinner of the Scientific Advisory Board with team leaders and PI**

**Wednesday, November 27<sup>th</sup>**

**9h – 10h: 6<sup>th</sup> session: Oral presentations**

**Chairman: M. Ronjat**

Emmanuel Bourinet (IGF)

*New insights in the roles of Cav3.2 voltage gated calcium channels in the pathophysiology of pain*

Pietro Mesirca (IGF)

*The role of ion channels in cardiac pacemaking and therapeutic perspectives*

**10h – 10h30: Meeting of the SAB, coffee.**

**10h30 11h15: round table “How to create valuables from the LabEx”: M. De Waard**

With the participation of Melissa Farinelli (presentation of the company “E-PHY-SCIENCE”) and Remy Beroud (presentation of the company “SMARTOX”).

**11h15: Conclusions by the SAB and the ANR representative (Mme Amélie Vergne).**

**END of the meeting**

For the members of the scientific committee of the LabEx and the members of the SAB

**12h30:** meeting of the scientific committee of the LabEx with the SAB: lunch

**14h:** visit of the Institut de Biologie Structurale II.

**Posters:**

**1<sup>st</sup> session**

- 1. Delphine Bichet, Franck Chatelain, Sylvain Feliciangeli, Maud Larroque, Florian Lesage (IPMC):**  
*Functional expression of a silent two pore domain potassium channel*
- 2. Franck Chatelain, Michel Mazzuca, Maud Larroque, Jérôme Honorat, Véronique Rogemond, Florian Lesage (IPMC):**  
*A microarray for the detection of anti-ion channel antibodies in autoimmune neuronal disorders*
- 3. Jennifer Lavigne et al. (IPMC):**  
*Epileptiform activities in brain slices from mouse models of genetic epilepsy*
- 4. Maud Cochet (IGF):**  
*The NALCN/Unc-80 protein complex is involved in the Amyloid Precursor Protein shedding through an  $\alpha$ -secretase-dependent pathway*
- 5. Tiphaine Voisin (IGF):**  
*Characterization of a novel mouse model to study the zinc modulation of Cav3.2 T-type calcium channels*
- 6. Maria A. Principalli, Jean Revilloud, Charlotte Haas, Michel Vivaudou (IBS):**  
*Structural and functional studies of the ATP-sensitive Potassium channel*
- 7. Pini J, Rouleau M, Sacconi S, Desnuelle C, Bendahhou S (LP2M):**  
*Human induced pluripotent stem cells from Andersen's syndrome patients: implication of a potassium channel in bone morphogenesis*
- 8. Anne Pizzoccaro (IGF):**  
*A low voltage threshold calcium channel for low threshold mechanoreceptors*
- 9. Emmanuel Bourinet (IGF):**  
*TAF4A, a C-LTMR-derived chemokine-like protein, modulates injury-induced mechanical and chemical pain hypersensitivity in mice*

**10. Céline Tisseyre, Lucie Dardevet, Mayeul Collot, Michel Ronjat, Michel De Waard (GIN) :**

*Coupling M<sub>Ca</sub> to cargoes via innovative chemistry: a powerful tool for the intracellular delivery of antitumor agents*

**2<sup>nd</sup> session**

**11. Michel Ronjat, Shigeki Kiyonaka, Maud Barbado, Katell Fablet, Yasuo Mori, Michel De Waard (GIN):**

*CACNB4 subunit of voltage-gated calcium channels promotes the formation of a nuclear protein platform that controls gene expression*

**12. Anne Delaunay, Xavier Gasull, Miguel Salinas, Jacques Noël, Valérie Friend, Eric Lingueglia, Emmanuel Deval (IPMC):**

*Human Acid-Sensing Ion Channel 3 dynamically adapts its activity to sense the extracellular pH in both acidic and alkaline directions*

**13. Chaymae El Alaoui (IGF):**

*Study of the anticonvulsivant and antiepileptic activities of medicinal plant extracts in a zebrafish seizure model and their effect on T-type calcium channel activity.*

**14. Miguel Salinas, Quentin Delettre, Sylvie Diochot, Dominique Douguet, Eric Lingueglia (IPMC):**

*Pain-relieving peptides block Acid-Sensing Ion Channels by a pH sensor-trapping mechanism.*

**15. Katarzyna Niescierowicz, Lydia Caro, Vadim Cherezov, Michel Vivaudou, Christophe Moreau (IBS):**

*Functional assessment of crystallization-optimized G Protein-Coupled Receptors using Ion Channel-Coupled Receptors*

**16. Gina Reyes-Mejia, Michel Vivaudou (IBS):**

*Illuminating the physiology of ATP-sensitive K<sup>+</sup> channels with optogenetics*

**17. Hélène Hirbec (IGF):**

*Characterization of new and more reliable model of Kainate-induced Status Epilepticus in the C57BL6/J mice*

**18. Peyronnet R, Sharif-Naeini R, Folgering JH, Arhatte M, Jodar M, El Boustany C, Gallian C, Tauc M, Durantou C, Rubera I, Lesage F, Pei Y, Peters DJ, Somlo S, Sachs F, Patel A, Honoré E, Duprat F (IPMC):**

*Mechanoprotection by polycystins against apoptosis is mediated through the opening of stretch-activated K(2P) channels.*

**19. Girisaran Gangatharan (IGF):**

*Molecular Mechanisms of Zebrafish Cardiac Regeneration*

### 3<sup>rd</sup> session

**20. Nadia Jaafari, Marco Canepari (GIN):**

*Optical measurement of fast calcium currents (part 2): study of the dendritic calcium current activated by the action potential in CA1 hippocampal neurons.*

**21. Viviana Delgado (IGF):**

*L-type Cav1.3 channels as new therapeutic targets in cardioprotection*

**22. George Shapovalov (PHYCELL):**

*Looking inside: patch clamping intracellularly localized ion channels*

**23. Guillaume Sandoz, Yannick Comoglio (IPMC):**

*Phospholipase D2 directly binds to TREK channels to provide specific regulation by phosphatidic acid (part 2)*

**24. Mattia DiFrancesco (IGF):**

*Ion channels in pacemaker cells differentiated from muscle-derived adult stem cells*

**25. Masayuki Mori, Yasuo Mori (Kyoto University) :**

*Dominant inhibition by reduction of PI(4,5)P2 accelerates inactivation of receptor-operated TRPC6/7 currents*

**26. Tarek Abd El Aziz, Sandrine Bourgoïn, Stephanie Combemale, Michel Dève, Michel De Waard (GIN) :**

*Fractionation methods for venom peptides from the Egyptian snake *Walterinnesia egyptia**

**27. Elvira Garcia de Paco (IGF):**

*Identification of the protein signaling complex associated to P2X receptors in primary cultures of mouse macrophages*

**28. Sarah Lalisse (IGF):**

*Involvement of P2X4 receptors expressed by sensory neurons in inflammatory pain*



## Participants

*Institute of Molecular and Cellular Pharmacology (IPMC) Nice-Sophia Antipolis*

1. Florian LESAGE
2. Delphine BICHET
3. Franck CHATELAIN
4. Sylvain FELICIANGELI
5. Sandy BLIN
  
6. Sophie DEMOLOMBE
7. Amanda PATEL
  
8. Massimo MANTEGAZZA
9. Jennifer LAVIGNE
  
10. Eric LINGUEGLIA
11. Sylvie DIOCHOT
12. Emmanuel DEVAL
13. Miguel SALINAS
14. Thomas BESSON
  
15. Guillaume SANDOZ
16. Ryan ARANT
17. Yannick COMOGLIO
  
18. Jacques BARHANIN
19. Saïd BENDAHHOU
20. Serana GIULIANO
21. Jonathan PINI
  
22. Catherine HEURTEAUX
23. Marc BORSOTTO

*Institut de Biologie Structurale Grenoble*

24. Michel VIVAUDOU
25. Christophe MOREAU
26. Jean REVILLOUD

27. Maria Antonietta PRINCIPALLI
28. Gina Catalina REYES
29. Karla LANGER
30. Charlotte HAAS
31. Anaëlle RONGIER

*University of Lille 1; Inserm U2003*

32. Natalia PREVARSKAYA ();
33. V'yacheslav LEHENKYI
34. Fabien VANDEN ABEELLE
35. George SHAPOVALOV

*Institut de Génomique Fonctionnelle (IGF) Montpellier*

36. Philippe LORY
37. Arnaud MONTEIL
38. Nathalie GUERINEAU
39. Iulia BLESNEAC
40. Maud COCHET
41. Tiphaine VOISIN
42. Chaymae El Alaoui
43. Stephanie Knapp
  
44. Emmanuel BOURINET
45. Pierre François MERY
46. Sophie LAFFRAY
47. Anne PIZZOCCARO
  
48. Girisaran GANGATHARAN
  
49. Stephanie BARRERE-LEMAIRE
50. Matteo MANGONI
51. Joël NARGEOT
52. Anne VINCENT
53. Aurélie COVINHES
54. Viviana DELGADO-BETANCOURT
55. Mattia DIFRANCESCO
56. Isabelle BIDAUD
57. Pietro MESIRCA
  
58. François RASSENDREN
59. Hélène HIRBEC
60. Elvira GARCIA DE PACO
61. Sarah LALISSE



*Grenoble Institut Neurosciences*

- 62. Michel De WAARD
- 63. Juan BRUSES
- 64. Michel RONJAT
- 65. Nathalie LABEYE
- 66. Lucie DARDEVET
- 67. Céline TISSEYRE
- 68. Emmanuel LEFEBVRE
- 69. Sawsan KOUHNY
- 70. Tarek ABD EL AZIZ
- 71. Josiane DENIS
- 72. Eloi BAHEMBERA

- 73. Marco CANEPARI
- 74. Nadia JAAFARI

*Kyoto University*

- 75. Masayuki MORI

*Scientific Advisory Board (SAB)*

- 76. Yasuo MORI
- 77. Terry SNUTCH
- 78. Peter McNAUGHTON

*Agence Nationale de la Recherche (ANR)*

- 79. Amélie VERGNE