

CURRICULUM VITAE

Dr Matthieu RAOUX, 39 years-old, French, married, 2 children
Assistant Professor in Physiology at the University of Bordeaux
Institute of Chemistry & Biology of Membranes & Nano-objects, CBMN, UMR 5248
Group of Pr Jochen LANG

FORMATION & PROFESSIONAL EXPERIENCE

- 2011-** **Assistant Professor, University of Bordeaux**
UMR CNRS 5248, Institute of Chemistry & Biology of Membranes & Nano-objects
Group of Pr Jochen LANG
- 2008-11** **Post-doctoral research fellow, University of Bordeaux**
UMR CNRS 5248, Institute of Chemistry & Biology of Membranes & Nano-objects
Group of Pr Jochen LANG
- 2004-08** **PhD in Neuroscience, University of Aix-Marseille 2**
First class honours (« mention très honorable », « félicitations du Jury »)
UMR CNRS 6231, Centre de Recherche en Neurobiologie Neurophysiologie de Marseille
Group of Dr Patrick DELMAS
Supervisor: Dr Marcel CREST
- 2002-03** **Postgraduate degree in Neurobiology (DESS) University of Paris**
First class honours, Best of class (1/28)
Laboratory: GlaxoSmithKline (Marly-le-Roi, 78)
Supervisor: Dr Olivier SOL
- 2001-02** **Postgraduate degree in Neuroscience (DEA), University of Aix-Marseille 3**
INSERM EMI9902, Laboratory: Otologie - Neuro-Otologie (currently UMR6231)
Group of Dr Yves CAZALS

ACTIVITES D'ENSEIGNEMENT

- 2011-** Assistant Professor (University of Bordeaux) : lectures / directed & practical works in Animal Biology, Physiology, Cell Biology, Methodology, Initiation R&D, Biology and society (Licence 1-2, Master 1, Engineers 3rd year Institut National Polytechnique de Bordeaux) (192 h / year)
- 2008-10** Part time teaching (University of Bordeaux) : directed & practical works in Animal Biology (Licence 2-3, Master1) (40 h)

SUPERVISION OF STUDENTS

- Authorization to supervise a thesis**, Doctoral School of Life and Health Sciences, Bordeaux, 2014
- 2016-17** Manon JAFFREDO (100%), Master 2 Cell Biology Physiology Pathophysiology (CBPP), University of Bordeaux; 1 oral communication co-signed
- 2015-16** Eléonore BERTIN (100%), Master 2 CBPP (ranking 5th/18), University of Bordeaux ; 2 oral communications co-signed
- 2012-14** Participation to the supervision of Fanny LEBRETON (40%), PhD CBPP, University of Bordeaux; 1 article, 4 oral communications and 5 posters co-signed
- 2014-15** Grégoire CULLOT (100%), Master 1 CBPP (ranking 1st/13), University of Bordeaux; 1 oral communication co-signed
Karen LEAL-FISHER (100%), Licence 1 Internship of Excellence (ranking 1st/4), University of Bordeaux; 1 oral communication co-signed
- 2013-14** Isma BELOUAH (100%), Master 2 Nutrition (ranking 4th/11), University of Bordeaux; 1 article co-signed
- 2012-13** Cynthia ROUGE (100%), Master 1 CBPP, University of Bordeaux
- 2011-12** Julia LALOUM (100%), Engineer ENSEIRB-MATMECA 3rd year, Institut National Polytechnique de Bordeaux; 1 poster co-signed

JURYS & JOURNALS

- Sensors (reviewer, 2016)
- 2 Thesis juries (Adam QUOTB, University of Bordeaux , 2012 ; Fanny LEBRETON, University of Bordeaux, 2014)
- Jury member for research internships and tutored projects Master 1 CBPP (Bordeaux) (since 2011)
- President of Baccalauréat Jury (Lycée Jay de Beaufort, Périgueux, 2012)

SCIENTIFIC SOCIETIES & RESEARCH GROUPS

- French research group 'Multielectrode Systems and Signal Processing for Neuroscience' since 2013
- 'European Association for the Study of Diabetes' (EASD) since 2010
- Société Francophone du Diabète (SFD) since 2010
- French Society for Neuroscience 2004-2011

GRANTS & AWARDS

- As principal investigator:
 - 2015-16: PEPS IdEx Bordeaux/CNRS (21.5 k€)
 - 2011: Institut National Polytechnique de Bordeaux (11 k€, co-PI)
 - 2010: Société Francophone du Diabète (ALFEDIAM) (40 k€)
 - 2007: Fondation pour la Recherche Médicale (4th year of thesis)
- Award: Best oral presentation, Young Scientist Symposium, IECB (2010, Bordeaux)

SCIENTIFIC WORKS

- **17 peer-reviewed international publications:**
 - 9 original articles (4 as 1st author and 1 as co-last author)
 - 3 reviews (1 as 1st author)
 - 2 book chapters (1 as 1st author)
 - 3 IEEE conference proceedings
- **1 international patent**
- **1 cover image**
- **>35 communications in international meetings**

- ORIGINAL PAPERS -

Raoux M, Colombari C, Delmas P and Crest M (2007) The amine-containing cutaneous irritant heptylamine inhibits the volume-regulated anion channel and mobilizes intracellular calcium in normal human epidermal keratinocytes. *Mol Pharmacol*. 71: 1685-94. **(IF 4.13)**
<http://molpharm.aspetjournals.org/content/71/6/1685.full.pdf+html>

Azorin N, **Raoux M**, Rodat-Despoix L, Merrot T, Delmas P and Crest M (2011) ATP signaling is crucial for hyposmotic shock response of human keratinocytes. *Exp Dermatol*. 20: 401-7. **(IF 3.76)**
<http://onlinelibrary.wiley.com/doi/10.1111/j.1600-0625.2010.01219.x/epdf>

Roger B, Papin J, Vacher P, **Raoux M**, Dubois M, Mulot A, Vanderwalle B, Pattou F, Charpentier G, Jonas JC, Moustaid-Moussa N and Lang J (2011) Adenylyl cyclase 8 is central to glucagon-like peptide 1 signalling and effects of chronically elevated glucose in rat and human pancreatic beta cells. *Diabetologia*. 54: 390-402. **(IF 6.67)**
<http://link.springer.com/article/10.1007%2Fs00125-010-1955-x>

Raoux M, Bornat Y, Quotb A, Catargi B, Renaud S and Lang J (2012) Non-invasive long-term and real-time analysis of endocrine cells on micro-electrode arrays. *J Physiol*. 590: 1085-91. **(IF 5.04)**
<http://onlinelibrary.wiley.com/doi/10.1113/jphysiol.2011.220038/pdf>

Raoux M, Azorin N, Colombari C, Rivoire S, Merrot T, Delmas P and Crest M (2013) Chemicals inducing acute irritant contact dermatitis mobilize intracellular calcium in human keratinocytes. *Toxicol In Vitro*. 27: 402-8. **(IF 2.90)**
<http://www.sciencedirect.com/science/article/pii/S0887233312002147>

Dou H, Wang C, Wu X, Yao L, Zhang X, Teng S, Xu H, Liu B, Wu Q, Zhang Q, Hu M, Wang Y, Wang L, Wu Y, Shang S, Kang X, Zheng L, Zhang J, **Raoux M**, Lang J, Li Q, Su J, Yu X, Chen L, Zhou Z (2015) Calcium influx activates adenylyl cyclase 8 for sustained insulin secretion in rat pancreatic beta cells. *Diabetologia*. 58: 324-33. (IF 6.67)
<http://link.springer.com/article/10.1007%2Fs00125-014-3437-z>

Raoux M, Vacher P, Papin J, Picard A, Kostrzewa E, Devin A, Gaitan J, Limon I, Kas M, Magnan C and Lang J (2015) Multilevel control of glucose homeostasis by adenylyl cyclase 8. *Diabetologia*. 54: 391-402. (IF 6.67)
<http://link.springer.com/article/10.1007%2Fs00125-014-3445-z>

Lebreton F, Pirog A, Belouah I, Bosco D, Berney T, Meda P, Bornat Y, Catargi B, Renaud S, **Raoux M** * and Lang J * (2015) Slow potentials encode intercellular coupling and insulin demand in pancreatic beta cells. *Diabetologia*. 58: 1291-9. (IF 6.67) * **Equal contribution**
<http://link.springer.com/article/10.1007%2Fs00125-015-3558-z>

Pedraza E, Karajić A, **Raoux M**, Perrier R, Pirog A, Lebreton F, Arbault S, Gaitan J, Renaud S, Kuhn A and Lang J (2015) Guiding pancreatic beta cells to target electrodes in a whole-cell biosensor for diabetes. *Lab Chip*. 15: 3880-90. (IF 6.12)
<http://pubs.rsc.org/en/content/articlepdf/2015/lc/c5lc00616c>

- REVIEWS -

Delmas P, Padilla F, Osorio N, Coste B, **Raoux M** and Crest M (2004) Polycystins, calcium signaling, and human diseases. *Biochem Biophys Res Commun*. 322: 1374-83. (IF 2.30)
<http://www.sciencedirect.com/science/article/pii/S0006291X04017826>

Giamarchi A, Padilla F, **Raoux M**, Crest M, Honoré E and Delmas P (2006) The versatile nature of the calcium-permeable cation channel TRPP2. *EMBO Rep*. 7: 787-93. (IF 9.06)
<http://embor.embopress.org/content/embor/7/8/787.full.pdf>

Raoux M, Rodat-Despoix L, Azorin N, Giamarchi A, Hao J, Maingret F, Coste B, Crest M and Delmas P (2007) Mechanosensor channels in mammalian somatosensory neurons. *Sensors*. 7: 1667-82. (IF 2.25)
<http://www.mdpi.org/sensors/papers/s7091667.pdf>

- BOOK CHAPTERS -

Hao J, **Raoux M**, Azorin N, Giamarchi A, Rodat-Despoix L, Maingret F, Coste B, Crest M and Delmas P (2009) Mechanosensitive cation currents and their molecular counterparts in mammalian sensory neurons. In *Mechanosensitivity in Cells and Tissues: Mechanosensitivity of Nervous Systems*: 51-67. Kamkin A and Kiseleva I (Eds.); Springer Verlag, London.
http://link.springer.com/chapter/10.1007/978-1-4020-8716-5_3

Raoux M, Bontorin G, Bornat Y, Lang J and Renaud S (2011) Bioelectronic sensing of insulin demand. In *Biohybrid Systems: Nerves, Interfaces, and Machines*: 191-202. Jung R (Ed.); Wiley-VCH, Weinheim.
<http://onlinelibrary.wiley.com/doi/10.1002/9783527639366.ch11/summary>

- PEER-REVIEWED PROCEEDINGS -

Bornat Y, **Raoux M**, Boutaib Y, Morin FO, Charpentier G, Lang J and Renaud S (2010) Detection of electrical activity of pancreatic β -cells using micro-electrode arrays. *IEEE Electronic Design, Test and Application. DELTA '10*. 2010: 233-6.
<http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=5438683&url=http%3A%2F%2Fieeexplore.ieee.org%2FarticleDetails.jsp%3Farnumber%3D5438683>

Quotb A, Bornat, **Raoux M**, Lang J and Renaud S (2012) NeuroBetaMed: A re-configurable wavelet-based event detection circuit for in vitro biological signals. *IEEE International Symposium on Circuits and Systems*. 2012: 1532-5.
<http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6271542>

Nguyen QV, Caro A, **Raoux M**, Quotb A, Floderer JB, Bornat Y, Renaud S and Lang J (2013) A novel bioelectronic glucose sensor to process distinct electrical activities of pancreatic beta-cells. *Conf Proc IEEE Eng Med Biol Soc*. 2013: 172-5.
<http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6609465>

- INTERNATIONAL PATENT -

World Patent Application WO/2011/086105, Lang J, Renaud S, Catargi B, **Raoux M**, Charpentier G, Bornat Y (2011) Sensor for measuring the activity of beta-pancreatic cells or of islets of Langerhans, manufacture and use of such a sensor.

<http://www.freepatentsonline.com/20130030271.pdf>

- COVER IMAGE -

Lab Chip, 2015, vol 15. (IF 6.12) <http://pubs.rsc.org/en/content/articlepdf/2015/lc/c5lc00616c>