Aniella ABI GERGES
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Born on August 12, 1981
Lebanese - French

EDUCATIONAL BACKGROUND

2009 - 2011 **Postdoctoral researcher.** Role of MRP4 in normal cardiac function and heart failure. INSERM UMRS-956. Pierre and Marie Curie University, Faculty of Medicine, Paris, France.

2004 - 2008 **PhD** in Cellular, Molecular and Cardiac Physiopathology with the highest level of distinction. University of Paris South, France.

2003 - 2004 **Research Master's degree** in Cellular Physiopathology and Therapeutic Innovation. University of Paris South, France.

2002 - 2003 **Bsc. Hons. Degree** in Biology. Emphasis on Physiology. Saint Joseph University, Lebanon.

1999 - 2002 **Bachelor of Science** in Biology. Emphasis on Cell Biology, Biochemistry and Genetics. Saint Joseph University, Lebanon.

1998 - 1999 **Lebanese Baccalaureates**. Emphasis on Experimental Sciences. Notre Dame de Mont Carmel, Lebanon.

PROFESSIONAL/TEACHING EXPERIENCE

Sept 2016-Present **Assistant Professor of Physiology, Gilbert and Rose-Mary Chagoury School of Medicine, Lebanese American University (LAU),** Byblos, Lebanon.
Human Physiology lectures (Med I, Med II students)
Physiology Coordinator
Problem based learning (PBL) facilitator (Med I and Med II students)
Medical Ethics (Med I and Med II students)
Medical Ethics Coordinator

Sept 2015-Aug 2016	**Visiting Assistant Professor of Physiology, Gilbert and Rose-Mary Chagoury School of Medicine, Lebanese American University (LAU),** Byblos, Lebanon. *Human Physiology lectures (Med I and Med II students)*
Feb 2015-Sept 2015	**Project Manager, National Influenza Center in partnership with the World Human Organization and the Lebanese Ministry of Heatlh.** Rafic Hariri University Hospital, Jnah, Lebanon.
Nov 2014 - Sept 2016	**Assistant Professor, School of Pharmacy, Lebanese University,** Hadath, Lebanon. *Pharmacology of Cardiovascular Diseases (Master students)*
Sept 2013-Aug 2015	**Part-time Assistant Professor of Physiology, Gilbert and Rose-Mary Chagoury School of Medicine, Lebanese American University (LAU),** Byblos, Lebanon. *Physiology (Med I and Med II students)*
Sept 2012-Sept 2015	**Instructor, Faculty of Natural and Applied Sciences, Notre Dame University (NDU),** Barsa, Lebanon. *Human Anatomy, Human Physiology, Cell Biology, Cell Biology Lab and Histology (Undergraduate students); Introduction to Biology (Freshman students)*
Oct 2011-Sept 2016	**Instructor, Faculty of Arts and Sciences, Saint Joseph University (USJ)** Lebanon. *Developmental Biology (Master students)* *Comparative Physiology (3rd year Biology)* *Comparative Physiology Lab sessions (3rd year Biology)* *Cell Biology (3rd year Biology)* *Cell Physiology (2nd year Biology)* *Cellular and Organ Physiology Lab sessions (2nd year Biology)* *Neurophysiology (3rd year Biology)* *Neurophysiology Lab sessions (3rd year Biology)* *General Biology Lab sessions (1st year Biology)*
Oct 2011-Jan 2012	**Instructor, Faculty of Health Sciences, University of Balamand** Achrafieh, Lebanon. *Basic and Clinical Immunology (Undergraduate students)* *General Biology Lab sessions (Undergraduate students)*
Dec 2010	**Invited lecturer:** Gene Therapy in cardiovascular field. Master of biotechnology. University of Paris South, France.
2002 - 2003	**Lab assistant:** Histology/ General Biology (1st year biology students) and Fundamental Ecology (Bachelor of Science students). Saint Joseph University, Lebanon.

RESEARCH EXPERIENCE

Jan 2009- Sept 2011	**Postdoctoral researcher.** Role of MRP4 in normal cardiac function and heart failure. INSERM UMRS-956. Pierre and Marie Curie University, Faculty of Medicine, Paris, France.
Dec 2009 (3 weeks)	**Project study** on the Interaction between MRP4 and β-adrenergic receptors in the heart. Institute of Pharmacology and Toxicology. University of Würzburg, Germany.
2004 - 2008	**PhD researcher.** Regulation of cAMP signals by phosphodiesterases in normal and hypertrophied cardiac myocytes. INSERM U-769. University of Paris South, Faculty of Pharmacy, France.
2007 - 2008 (5 weeks)	**Project study** on the expression and activity of cyclic nucleotide phosphodiesterases in normal and hypertrophied cardiac myocytes. Laboratory of Gynecology, Obstetrics, and Reproductive Sciences. University of California, San Francisco, USA.
2005 - 2006 (5 weeks)	**Project study** on the expression and activity of cyclic nucleotide phosphodiesterases in normal and hypertrophied cardiac myocytes. UMR CNRS-7213. University of Strasbourg, Faculty of Pharmacy, France.
2003 - 2004 (10 months)	**Master-research training** on cAMP signals in cardiac hypertrophy in rat. INSERM U-769.University of Paris South, Faculty of Pharmacy, France.
2002 - 2003 (6 months)	**Final project (Bsc. Hons. Degree)** on Biomarkers in cardiac hypertrophy: implication in the differentiation and pathogenesis of cardiac myocytes. Laboratory of Cardiology and Pharmacology. Faculty of Medicine, Saint Joseph University, Lebanon.
2001 - 2002 (1month)	**Training** in Medical Biochemistry, Hematology, Serology and Blood bank. Rizk hospital, Lebanon.
2000 - 2001 (1 month)	**Training** in cytogenetic and neonatal diseases. Faculty of Medicine, Saint Joseph University, Lebanon.

PROFESSIONAL TRAININGS, WORKSHOPS & DIPLOMAS

May 2-4 2018	**Team Building - "Synergie de l'Equipe". MOFFIT Cancer Center and SQUALLI PRO Leadership Professionals -** Ifran, Morocco.
November 30 2017	**Successful research proposals for young researchers from idea to Implementation.** CNRS-DAAD, Lebanon.
Feb 2017 – Present	**Bioethics Diploma**. Faculty of Medicine. Lebanese University.

Feb 24-27 2015	**Intercountry Meeting of the directors of public health laboratories in the eastern Mediterranean** organized by the WHO. Tunis, Tunisia
June 15-27 2014	Cell culture and Viral Isolation. **World Human Organization and US Naval Medical Research Unit 3. Cairo, Egypt.**
June 29-July 7 2007	**Individualization: towards personalized medicine.** ULLA Summer School. Leiden, the Netherlands.
July 1-3 2003	**Virology.** Faculty of Sciences, Saint Joseph University, Lebanon.

SERVICES

Service to the Lebanese American University and School of Medicine (SOM)

2017-2018: LAU - SOM Research committee: Member
LAU - SOM website committee: Member
LAU-MSA National Health Day: Students advisor
Oct 2016 – Present: Inter-Professional Education (IPE) workgroup: Facilitator
Sept 2015 – Present: LAU - SOM Interview (Admission) Committee: Member
Sept 2015 – Present: LAU - SOM MEDI, II Students Promotion Committee: Member
Sept 2015 - Present: LAU - SOM Curriculum Evaluation Committee: Member

EXPERTISE & SKILLS

Scientific: Animal and Human Physiology, Cardiac Physiology, Pathophysiology, Electrophysiology, Cell Signaling, Immunology, Cell biology, General Biology, Endocrinology, Developmental Biology, Animal and Human Anatomy, Virology and Histology.

Technical:
Electrophysiology**:** Patch Clamp technique
Fluorescence imaging: Fluorescence Resonance Energy Transfer (FRET)
Biochemical assays of cyclic nucleotide phosphodiesterase
Western Blot, Immunoprecipitation, and Pull-down
Enzymatic isolation and culture of cardiac myocytes isolated from neonatal and adult rats
Adenoviral infection and transfection; In vivo studies: Electrocardiogram
Genotyping, cloning, bacteriology
Cell line culture, viral amplification and isolation
Animal models

Software currently used: Microsoft office, Sigma Plot, Procite.

Languages: Trilingual: French, English (Classified "advanced" in a "George Washington University" English Proficiency Test) and Arabic.

AWARDS AND FELLOWSHIPS

2007 - 2008 Post-graduate award from the « Groupe de Réflexion sur la Recherche Cardiovasculaire » (G.R.R.C)

2006 Award from the GRRC for the training in Strasbourg, UMR CNRS-7213

2004 - 2007 Post-graduate grant award from the French Ministry of Research

June 2006 Award for the best poster. Gordon Research Conference on Cyclic Nucleotide Phosphodiesterases, Biddeford Maine, USA, June 4-9, 2006

2003 - 2004 Grant for M.Sc. degree from the "Service des Relations Internationales", University of Paris South, France

1997 - 1998 Scholarship from the Science department, Ecole Notre Dame de Mont Carmel, Lebanon

GRANTS AND RESEARCH PROPOSALS

1. **Title**: Rôle des régulateurs de la voie β-adrénergique dans la cardiomyopathie diabétique et les arythmies – Submitted
   Source of funding: PHC CEDRE, 2019.
   Role: PI

2. **Title:** Characterization of cAMP signaling pathway in diabetic cardiomyopathy: Interplay between PDEs, MRP4 and Epac - Successful
   Source of funding: CNRS-L, 2017; 28.000 USD for 2 years.
   Role: PI

3. **Title:** Post-translational modifications of the CPEB3 prion, including glycosylation, and their implications for learning and memory- Successful
   Source of funding and amount: LAU Research Fund, 2017; 20.000 USD for 2 years
   PI: Dr. Joseph Stephan
   Co-I: Dr. Aniella Abi-Gerges

4. **Title:** Characterization of the cAMP signaling pathway in heart diseases: a novel role for phosphodiesterases - Unsuccessful.
   Source of funding: LAU Research Fund, 2017.
   Role: PI

5. **Title:** Effect of smoking on cardiac function: Characterization of the cAMP signaling pathway in heart diseases triggered by secondhand smoking - Unsuccessful.
   Source of funding: UNESCO L'OREAL for women in Science, 2016.
   Role: PI

PUBLICATIONS

I- Original papers:

1. **Aniella Abi-Gerges,** Liliana Castro, Jérôme Leroy, Valérie Domergue-Dupont, Rodolphe Fischmeister, Grégoire Vandecasteele. Selective Changes in Spatiotemporal Dynamics of Cytosolic β-adrenergic cAMP Signals and L-Type Calcium Channels Regulation by Phosphodiesterases in Adult Rat Cardiac Hypertrophy Induced by Pressure Overload. *In preparation.*

2. **Aniella Abi-Gerges**, Alexandre Marchand, Kristina Lorenz, Adeline Jacquet, Nathalie Mougenot, Stéphane N Hatem, Jean-Sébastien Hulot, Anne-Marie Lompré. The multidrug resistant-associated protein 4 controls beta2-adrenergic response of the adult heart. *In preparation.*

3. Yassine Sassi, **Aniella Abi-Gerges**, Jeremy Fauconnier, Nathalie Mougenot, Steven Reiken, Kobra Haghighi, Evangelia G Kranias, Andrew R. Marks, Alain Lacampagne, Stefan Engelhardt, Stéphane N Hatem, Anne-Marie Lompré, Jean-Sébastien Hulot. Regulation of cAMP homeostasis by the efflux protein MRP4 in cardiac myocytes. *Faseb Journal (*2012) **26**(3):1009-17.

4. Jérôme Leroy, Wito Richter, Delphine Mika, Liliana RV Castro, **Aniella Abi-Gerges**, Moses Xie, Colleen Scheitrum, Florence Lefebvre, Julia Schittl, Ruth Westenbroek, William A. Catterall, Flavien Charpentier, Marco Conti, Rodolphe Fischmeister, and Grégoire Vandecasteele. Phosphodiesterase 4B in the cardiac L-type Ca^{2+} channel complex regulates Ca^{2+} current and protects against ventricular arrhythmias in mice. *Journal of Clinical Invesigation,* (2011) **121**(7):2651–2661.

5. **Aniella Abi-Gerges**, Wito Richter, Florence Lefebvre, Christophe Heymes, Jane-Lise Samuel, Claire Lugnier, Marco Conti, Rodolphe Fischmeister, and Grégoire Vandecasteele. Decreased expression and activity of cAMP phosphodiesterases in cardiac hypertrophy and its impact on β-adrenergic cAMP signals. *Circulation Research,* (2009) **105**(8):784-92.

6. Jérôme Leroy, **Aniella Abi-Gerges**, Viacheslav O Nikolaev, Wito Richter, Jean-Luc Mazet, Marco Conti, Rodolphe Fischmeister, and Grégoire Vandecasteele. Spatiotemporal dynamics of β-adrenergic cAMP signals and L-type Ca^{2+} channel regulation in adult rat ventricular myocytes: Role of phosphodiesterases. *Circulation Research* (2008) **102:** 1091-100.

7. Rochais, F., **Abi-Gerges, A**., Horner, K., Lefebvre, F., Cooper, M. F., Conti, M., Fischmeister, R. & Vandecasteele, G. A specific pattern of phosphodiesterases controls the cAMP signals generated by different G_s-coupled receptors in adult rat ventricular myocytes. *Circulation Research* (2006) **98,** 1081-1088.

*II- **Review papers:***

1. Alexandre Marchand, **Aniella Abi-Gerges**, Youakim Saliba, Elise Merlet, Anne-Marie Lompré. Calcium signaling in vascular smooth muscle cells: from physiology to pathology. *Adv Exp Med Biol.* (2012) 740:795-810.

2. Fischmeister, R., Castro, L. R. V., **Abi-Gerges, A**., Rochais, F., Jurevicius, J., Leroy, J. & Vandecasteele, G. Compartmentation of cyclic nucleotide signaling in the heart: The role of cyclic nucleotide phosphodiesterases. *Circulation Research* (2006) **99**:816-828.

3. Vandecasteele, G., Rochais, F., **Abi-Gerges, A**. & Fischmeister, R. Functional localization of cAMP signaling in cardiac myocytes. *Biochemical Society Transactions* (2006) **34,** 484-488.

4. Fischmeister R, Castro L, **Abi-Gerges A,** Rochais F, Vandecasteele G. Species – and Tissues-dependent effect of NO and cyclic GMP on cardiac ion channels. *Comp Biochem Physiol A Mol Integr Physiol.* (2005) **142**:136-43.

*III- **Book chapters:***

1. **Aniella Abi-Gerges**, Khalil N. Khalil, Yara R. Neaimeh and Rodolphe Fischmeister. Real time monitoring of cyclic nucleotide changes in Living Cells. *Encyclopedia of Biophysics. Submitted*

2. **Aniella Abi-Gerges,** Rodolphe Fischmeister. Ion Channels: New Tools to Track Cyclic Nucleotide Changes in Living Cells. *Encyclopedia of Biophysics* (2013), pp 1135-1142.

3. **Abi-Gerges, A.,** Castro, L., Rochais, F., Vandecasteele, G. & Fischmeister, R. Role of phosphodiesterases in cyclic nucleotide compartmentation in cardiac myocytes. *In: Cyclic Nucleotide Phosphodiesterases in Health and Disease, S. Francis, J.A. Beavo, M.D. Houslay (Eds)* (2006) Chapter 20, pp. 395-414.

ORAL COMMUNICATIONS

Abi-Gerges A, Fischmeister R, Vandecasteele G. Decreases in PDE activity and expression in cardiac hypertrophy: impact of β-adrenergic regulation on cAMP and L-type calcium current. Printemps de la Cardiologie, Montpellier, May 2008.

Abi-Gerges A, Fischmeister R, Vandecasteele G. Effect of decreased PDE3 and PDE4 activities on cAMP and calcium homeostasis during compensated cardiac hypertrophy. Summer school for PhD students, Leiden, 2007.

Abi-Gerges A, Fischmeister R, Vandecasteele G. Signaux AMPc dans les myocytes isolés de cœurs sains et hypertrophiés de rat. 22ème congrès du GRRC, Strasbourg, April 2005.

Abi-Gerges A, Fischmeister R, Vandecasteele G. Subsarcolemmal cAMP signals monitored by cyclic nucleotide gated channels in hypertrophied cardiac myocytes. Canaux ioniques, Presqu'île de Giens, September 2004.

PUBLISHED ABSTRACTS

Aniella Abi-Gerges*, Yassine Sassi*, Nathalie Mougenot[§], Adeline Jacquet[§], Stefan Engelhardt[#], Stéphane N Hatem, Jean-Sébastien Hulot, Anne-Marie Lompré. MRP4: A novel protein involved in cAMP homeostasis in the heart. Basic Cardiovascular Sciences, New Orleans, July 2011.

Aniella Abi-Gerges*, Yassine Sassi*, Nathalie Mougenot, Adeline Jacquet, Stéphane N Hatem, Jean-Sébastien Hulot, Anne-Marie Lompré. MRP4: A novel protein involved in cAMP homeostasis in the heart. 28e Congrès du GRRC "*Biologie et Pathologie du Coeur et des Vaisseaux*", Lyon, May 2011.

Aniella Abi-Gerges, Liliana R.V. Castro, Jérôme Leroy, Wito Richter, Christophe Heymes, Jane-Lise Samuel, Marco Conti, Rodolphe Fischmeister, Grégoire Vandecasteele. Decreased phosphodiesterase activities in cardiac hypertrophy: Consequences for ß-adrenergic regulation of cAMP and $I_{Ca,L}$. 25e Congrès du GRRC "*Biologie et Pathologie du Cœur et des Vaisseaux*", Montpellier, May 2008.

Aniella Abi-Gerges, Liliana R.V. Castro, Jérôme Leroy, Christophe Heymes, Jane-Lise Samuel, Claire Lugnier, Rodolphe Fischmeister, Grégoire Vandecasteele. Decreased phosphodiesterase activities in cardiac hypertrophy: Consequences for ß-adrenergic regulation of cAMP and $I_{Ca,L}$. International Society for Heart Research, Bologna, Italy, June 2007. *Journal of Molecular and Cellular Cardiology* (2007).

Aniella Abi-Gerges, Liliana R.V. Castro, Jérôme Leroy, Florence Lefebvre, Françoise Marotte, Christophe Heymes, Jane-Lise Samuel, Claire Lugnier, Rodolphe Fischmeister, Grégoire Vandecasteele. Decreased phosphodiesterase activities in cardiac hypertrophy: Consequences for ß-adrenergic regulation of cAMP and $I_{Ca,L}$. 24e Congrès du GRRC "*Biologie et Pathologie du Coeur et des Vaisseaux*", Tours, April 2007.

Abi-Gerges A, Fischmeister R, Vandecasteele G. Subsarcolemmal cAMP signals monitored by cyclic nucleotide gated channels in hypertrophied cardiac myocytes. 4th Mammalian Myocardium Symposium of the International Society for Heart Research, Bristol, United Kingdom, July 2005. *Journal of Molecular and Cellular Cardiology* (2005).

Abi-Gerges A, Fischmeister R, Vandecasteele G. Subsarcolemmal cAMP signals monitored by cyclic nucleotide gated channels in hypertrophied cardiac myocytes. 22ème congrès du GRRC, Strasbourg, April 2005. *Archives des Maladies du Cœur et des Vaisseaux* (2005) 98, 393.

OTHER ABSTRACTS

Aniella Abi-Gerges, Liliana R.V. Castro, Jérôme Leroy, Audrey Varin, Wito Richter, Christophe Heymes, Jane-Lise Samuel, Marco Conti, Rodolphe Fischmeister, Grégoire Vandecasteele. Decreased phosphodiesterase activities in cardiac hypertrophy: Consequences for ß-adrenergic regulation of cAMP and $I_{Ca,L}$. Gordon Research Conference on Cyclic Nucleotide Phosphodiesterases, Il Ciocco, Italy, June 2008.

Aniella Abi-Gerges, Liliana R.V. Castro, Jérôme Leroy, Florence Lefebvre, Françoise Marotte, Christophe Heymes, Jane-Lise Samuel, Claire Lugnier, Rodolphe Fischmeister, Grégoire Vandecasteele. Biochemical and functional characterization of cyclic nucleotide phosphodiesterase alterations during cardiac hypertrophy. Winter Meeting on Translational Basic Science of the Heart Failure Association of the European Society of Cardiology, Garmisch-Partenkirchen, Germany, January 2007.