CHARALAMBOS SIGALAS, PhD

csigalas@bioacademy.gr

PROFESSIONAL EXPERIENCE

- **Present** — ***Post-doctoral Fellow,*** Neurophysiology Lab, Basic Research Centre, Biomedical Research Foundation of the Academy of Athens in cooperation with the Singer Emeritus Group in Max Planck Institute for Brain Research, Frankfurt, Germany.

  Subject: Spontaneous cortical activity in vitro: spatiotemporal dynamics.

- **2014 – 2015** — ***Post-doctoral Researcher,*** Neurophysiology Lab, Basic Research Centre, Biomedical Research Foundation of the Academy of Athens.

  Subject: Long-term effects of early life seizures on cortical function and excitability.

- **2010 – 2014** — ***Post-doctoral Researcher,*** Neurophysiology Lab, Basic Research Centre, Biomedical Research Foundation of the Academy of Athens.

  Subject: The effects of nicotinic acetylcholine receptors on the spontaneous network activity of the cortex.

- **2003** — ***Research Assistant,*** Academic unit of Anaesthesia and Intensive care, Department of Medicine and Therapeutics, University of Aberdeen, United Kingdom.

  Subject: Prevention of sepsis-induced organ failure by gene transfection with manganese superoxide dismutase.

EDUCATION

- **2004 - 2009** — ***PhD in Pharmacology,*** School of Physiology and Pharmacology, University of Bristol, United Kingdom.

  Subject: Regulation of the cardiac Ryanodine Receptor by Calmodulin.

- **2001 - 2004** — ***BSc (with Honours) in Biomedical Sciences (specialisation on Molecular Biology),*** School of Medical Sciences, University of Aberdeen, United Kingdom.

  Honours Research Project: Transdifferentiation of pancreatic stem cells into hepatocytes.

SCHOLARSHIPS

- **2004 - 2007** ***PhD studentship,*** British Heart Foundation, United Kingdom.
- **2003** ***Undergraduate studentship,*** Anaesthetic Research Society, United Kingdom.
- **2001 - 2004** ***Undergraduate studentship,*** Student Awards Agency for Scotland, United Kingdom.

TEACHING EXPERIENCE

- **2007 - 2008** ***Teaching Assistant,*** Human Patient Simulator, AIMS Excellence in Teaching and Learning, School of Physiology and Pharmacology, University of Bristol, United Kingdom.
- **2004 - 2007** ***Teaching Assistant,*** Undergraduate student Tutorial and Lab session teaching, School of Physiology and Pharmacology, University of Bristol, United Kingdom.

PUBLICATIONS (peer reviewed)

- "High affinity nicotinic receptors modulate cortical Up states in vitro" Sigalas C, Rigas P, Tsakanikas P and Skaliora I, **Journal of Neuroscience**, in press.
- "Ca^{2+}-calmodulin increases RyR2 open probability yet reduces ryanoid association with RyR2" Sigalas C, Mayo-Martin MB, Jane DE and Sitsapesan R, **Biophysical Journal**, 2009, 97(7), 1907-16.
- "Ca^{2+}-calmodulin can activate and inactivate cardiac ryanodine receptors" Sigalas C, Bent S, Kitmitto A, O'Neill S & Sitsapesan R, **British Journal of Pharmacology**, 2009, 156, 794-806.
- "Single-channel characterization of the rabbit recombinant RyR2 reveals a novel inactivation property of physiological concentrations of ATP" Stewart R, Song L, Carter S, Sigalas C, Zaccai N, Kanamarlapudi V, Bhat M, Takeshima H & Sitsapesan R, **Journal of Membrane Biology**, 2008, 222, 65-77.
- "Pregnenolone-16alpha-carbonitrile inhibits rodent liver fibrogenesis via PXR (pregnane X receptor)-dependent and PXR-independent mechanisms" Marek CJ, Tucker ST, Konstantinou DK, Elrick LJ, Haefner D, Sigalas C, Murray GI, Goodwin B and Wright MC, **Biochemical Journal**, 2005, 387, 601-608.

ORAL PRESENTATIONS IN SCIENTIFIC CONFERENCES

- "Physiological levels of calmodulin activates cardiac ryanodine receptors and increases sarcoplasmic reticulum Ca^{2+}-release in cardiac cells", 31st Meeting of the EWGCCE, 5-6 September 2007, Manchester, UK.

- "Calmodulin activates the cardiac ryanodine receptor (RyR2) and increases single-channel conductance at sub-activating Ca^{2+} levels" Sigalas C, Sitsapesan R, 51st Annual Meeting of the Biophysical-Society, Mar 03-07, 2007, Baltimore MD, Biophysical Journal, 23A-23A.

- "The effects of calmodulin on the cardiac ryanodine receptor (RyR2)" Sigalas C, Zaccai NR, Sitsapesan R, Proceedings of The Physiological Society, University of Heidelberg, Muscle Contraction, 2006, Proc Physiol Soc 4 (2006) C1.

PRESENTATIONS IN SCIENTIFIC CONFERENCES

- "Spatiotemporal propagation patterns of cortical synchronised activity in vitro" Sigalas C, Gansel K, Singer W, Skaliora I, AREADNE 2014, 25-29 June 2014, Santorini, Greece.

- "Effect of early life seizures on cortical excitability and epileptogenesis" Rigas P, Sigalas C, Nikita M, Tsakanikas P, Skaliora I, AREADNE 2014, 25-29 June 2014, Santorini, Greece.

- "A non-parametric prototyping scheme for LFP dynamics and its application to detect changes in spontaneous Up states due to cortical maturation and aging" Adamos DA, Laskaris NA, Rigas P, Sigalas C, Skaliora I, AREADNE 2014, 25-29 June 2014, Santorini, Greece.

- "Long-term effects of single early-life seizures on cortical excitability" Rigas P, Nikita M, Sigalas C, Tsakanikas P, Skaliora I, 8th Panhellenic Epilepsy Congress, 18-20 October 2013, Thessaloniki, Greece.

- "Neocortical spontaneous slow-rhythmic activity in mice lacking the β2-subunit of the nicotinic acetylcholine receptor" Sigalas C, Rigas P, Tsakanikas P, Konsolaki E, Skaliora I, AREADNE 2012, 21-24 June 2012, Santorini, Greece.

- "Neocortical Spontaneous Slow-Rhythmic Activity In Mice Lacking The ß2-Subunit Of The Nicotinic Acetylcholine Receptor", " Sigalas C, Rigas P, Tsakanikas P, Konsolaki E, Skaliora I, 8th FENS Forum of Neuroscience, 14-18 July 2012, Barcelona, Spain.

- Age And Region-Dependent Changes Of Spontaneous Network Activity In Mouse Cortical Slices" Skaliora I, Rigas P, Sigalas C, Tsakanikas P, 8th FENS Forum of Neuroscience, 14-18 July 2012, Barcelona, Spain.

- "Effects of age on pyramidal neuron morphology, vasculature and behaviour in a mouse model of accelerated cognitive aging" Konsolaki E, Polissidis A, Sigalas C, Skaliora I, ISN-ESN 23rd Biennial Meeting, 28 September -1 September 2011 , Athens, Greece.

- "Developmental regulation of spontaneous network activity in mouse cortical slices" Rigas P, Sigalas C, Skaliora I, ISN-ESN 23rd Biennial Meeting, 28 September -1 September 2011, Athens, Greece.

- "Spontaneous cortical activity during development and aging in WT and β2 knock-out mice" Sigalas C, Rigas P, Konsolaki E, Skaliora I, FENS-IBRO Summer School 2011, Bertinoro, Italy.

- "Ca^{2+}-bound calmodulin (Ca^{2+}CaM) activates the cardiac ryanodine receptor (RyR2) via a high affinity binding site and inhibits activity via a lower affinity site" Sigalas C, Sitsapesan R, 51st Annual Meeting of the Biophysical-Society, Mar 03-07, 2007, Baltimore MD, Biophysical Journal, 88A-88A.

PUBLIC AWARENESS ACTIONS

- Member of the scientific team of authors for the informative platform «Αρραντήσεις» of the Institute of Molecular Medicine and Biomedical Research, funded by the Youth and Lifelong Learning Foundation (Ίδρυμα Νεολαίας και Δια Βίου Μάθησης – Εθνική Υπηρεσία) and the General Secretariat for Youth (Γενική Γραμματεία Νέας Γενιάς). Article Subject: "Narcotic Drugs: What is true and what is not? How do they really affect our lives? How can I get help if me or someone around me has a problem with substances?".

- "The facebook of the brain: networks and behaviour" Konsolaki E and Sigalas C, interactive workshop in the 1st Athens Science Festival, 30 April – 4 May 2014, Athens, Greece.

- Oral presentations and interactive workshops for students of primary and secondary education to raise public awareness of research on sleep and brain function, Biomedical Research Foundation of the Academy of Athens

MEMBERSHIPS

- Hellenic Society for Neuroscience
- Federation of European Neuroscience Societies
- International Brain Research Organization
- Physiological Society
- Biophysical Society