

# KONSTANTINA CHACHLAKI

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Nationality: Greek

## EDUCATION

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- Ph.D Neuroscience** present-2013
- University Lille 2, Health and Law
- Ph.D thesis: “Leptin and puberty: a major role for the hypothalamic nitric oxide synthesizing neurons?”
- Supervisor : Dr. Vincent Prevot, laboratory of “Development and Plasticity of the Postnatal Brain”  
Jean-Pierre Aubert Research Centre, Inserm U837,  
University of Lille 2  
Prof. John Garthwaite, laboratory of Neural Signaling.  
Wolfson Institute for Biomedical Research, University  
College London
- MS 2 MSc in Brain and Mind Sciences (2<sup>nd</sup> year)** 2012-2011
- University Pierre and Marie Curie (UPMC) and École Normale Supérieure (ENS)
- Dissertation: “Role of Yif1B in intracellular neuronal trafficking”  
Supervisor : Dr. Michele Darmon, laboratory of Molecular and Cellular Biology of Serotonergic Neurotransmission  
Unit of Neuropharmacology, Hospital Pitié-Salpêtrière,  
UPMC
- MS 1 MSc in Brain and Mind Sciences (1st year)** 2011-2010
- University College London (UCL)
- Dissertation: “Real-time imaging of cyclic-GMP in N1E-115 neuroblastoma cells using a novel fluorescent biosensor”  
Supervisor : Prof. John Garthwaite, laboratory of Neural Signaling.  
Wolfson Institute for Biomedical Research, University  
College London

University of Crete Department of Biology, Molecular  
Biology  
Direction: Biomolecular Sciences and Biotechnology

Thesis : “Role of neuronal protein TAG1 in the migration of  
neuronal cells and the development of the brain structure”  
Supervisor : Prof. Domna Karagogeos, laboratory of Developmental  
and Functional Biology (IMBB-FORTH) Department of  
Basic Science, School of Medicine , University of Crete

## **RESEARCH EXPERIENCE**

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Molecular Biology Techniques: RNA and DNA isolation, PCR and Real Time-PCR analysis, Western blotting, Plasmid DNA purification, Immunoprecipitation  
Cellular Biology/ Biochemical Techniques: Immunofluorescence, Elisa, Cell culture techniques, Cryosectioning, Vibratome sectioning, Light and Confocal Microscopy, Live imaging, Flow cytometry.  
Animal handling: Animal dissection techniques, Perfusion, Vaginal cytology observation, Injections

### **Dissertation MSc 2, Role of Yif1B in intracellular neuronal trafficking**

During my work with Dr. M. Darmon (January '12- June '12) I studied the role of Yif1B protein in intracellular neuronal traffic and its implication in the targeting of 5HT1A receptor - a receptor known to play an important role in depression- in dendrites. Since Yif1B is the first protein reported to be implicated in the specific transport of the serotonin receptor along neuronal dendrites, it is essential to clarify the precise role of Yif1B protein in neuronal intracellular trafficking, and thus study how 5-HT1AR localization can control neuronal excitability. Our results identified for the first time, a role of Yif1B in the retainment of the tightly organized Golgi structure, and suggested a possible involvement in the Golgi to plasma membrane transport. This study could constitute the basis for the understanding of Yif1B implication in the modulation of the serotonergic system.

### **Dissertation MSc 1, Real-time imaging of cyclic-GMP in N1E-115 neuroblastoma cells using a novel fluorescent biosensor**

Working under the supervision of Prof. J. Garthwaite (November '10- July '11), I studied the dynamics of NO/cGMP signaling in a neuroblastoma cell line using a novel cGMP-sensitive biosensor, with the aim to identify how the nitric oxide signaling pathway operates at physiological concentrations and in real time. The development of delta-FlnG biosensor is a key advancement in the field; our study evidenced for the

first time, the capability of a mitotic neuronal cell line to express the delta-FliG novel biosensor, but also identified and characterized the kinetics of GC, NOS and PDE5, 9 and 10 in N1E-115 neuroblastoma cells, setting the ground for further studies into the NO signal transduction pathway under physiological conditions in real time.

**Diploma Thesis**, Role of neuronal protein TAG1 in the migration of neuronal cells and the development of the brain structure

In the context of my diploma thesis I had the chance to be part of the high quality research conducted by Prof. D. Karagozeos' team (September '09-September '10), in the field of neuronal development and myelination. The purpose of my work was to characterize the expression pattern of the molecule TAG-1 in mouse brain of the transgenic animals Tag1(Tg)loxP-GFP-loxP-DTA in the embryonic day E13.5 and P10 (postnatal). In this way we could study and examine interneurons that have migrated to different parts of the brain with horizontal movement, as well as other populations of neuronal cells that may express TAG-1 molecule. As a consequence, we identified high expression levels of the TAG-1 protein during E13.3 as well as P10, in the neuronal cell bodies and axons of the spinal cord region. Furthermore, TAG-1 expression was seen in the granule cell region of the cerebellum and the occipital lobe region. These results confirmed the expression patterns of TAG-1 protein.

## **PUBLICATIONS**

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Yogesh Bhargava, Kathryn Hampden-Smith, **Konstantina Chachlaki**, Katherine Wood, Jeffrey Vernon, Charles K. Allerton, Andrew M. Batchelor, John Garthwaite. 2013. Improved genetically-encoded fluorescent biosensors for cGMP. *Front Mol Neurosci*.6:26.

Nicole Bellefontaine, **Konstantina Chachlaki**, Jyoti Parkash, Charlotte Vanaker, William Colledge, Xavier d'Anglemont de Tassigny, Carol F Elias, John Garthwaite, Sebastien G Bouret, Vincent Prevot. Leptin facilitates reproduction through neuronal nitric oxide signaling in the hypothalamic preoptic region. *J Clin Invest*. 124(6):2550-9.

## **LANGUAGES**

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Cambridge Certificate of Proficiency in English (CPE)

Michigan Certificate of Proficiency in English (ECPE)

DELFI, Sorbonne I, Sorbonne II University of Sorbonne

## **COMPUTER SKILLS**

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General Software: Microsoft Office, Open Office, Web Browsing Software (Internet Explorer, Safari, etc), Image Analysis Software (Adobe Photoshop, Scion Image, Origin Lab Pro), Graph Pad Prism.