Resume

Viktor János Oláh

e-mail: olah.viktor@tdk.koki.mta.hu

STUDIES

2013-

Medical Biotechnology MSc, Pázmány Péter Catholic University

2008-2012

Molecular Bionics BSc, Pázmány Péter Catholic University

Thesis: Studying Synaptic Interneuronal Connections in the CA3 Region Using Electrophysiological Methods

SCIENTIFIC WORK

2011-

Student's scientific association: Intitute of Experimental Medicine- Hungarian Academy of Sciences „Lendület" Cellular Neuropharmacology Group, group leader: János Szabadics

2010-2011

Student's scientific association: Semmelweis University – Laboratory of Neuromorphology, group leader: Zsuzsanna Tóth

STUDENT'S SCIENTIFIC ASSOCIATION (SSA) COMPETITION RESULTS 2013

Semmelweis regional SSA – Neuroscience section I. – 1st place

XXI. national SSA – Neuroscience section – participation

Science4health 2013 – V. International Scientific Conference for international students, Moscow – Life Sciences II. – 2nd place

PUBLICATION LIST

POSTERS

2013

MITT 2013 - Different availability of potassium currents distinguishes two functionally distinct populations within CCK-expressing perisomatically-targeting interneurons in the CA3 area

Gordon Research Conferences - Inhibition in the CNS - Different availability of potassium currents distinguishes two functionally distinct populations within CCK-expressing perisomatically-targeting interneurons in the CA3 area

MTA – KOKI days: Different availability of potassium currents distinguishes two functionally distinct populations within CCK-expressing perisomatically-targeting interneurons in the CA3 area

ORAL PRESENTATION

2013

Semmelweis regional SSA – Neuroscience section I.

XXI. national SSA – Neuroscience section

Neuronus 2013 IBRO – IRUN Conference - Krakow

Science4health 2013 – V. International Scientific Conference – Life Sciences II.

GOALS FOR 2014:

During the one year period of the Stephen W. Kuffler scholarship I will continue to work on functional diversity of the GABAergic inhibitory neurons of the CA3 network of the hippocampus, which is essential for certain memory functions and contributes to devastating diseases, such as epilepsy. In the last two years that I spent in the laboratory to learn in vitro patch clamp electrophysiology of anatomically identified neurons my results revealed a novel level of functional diversity among one of the most abundant GABAergic cells, the CCK-expressing neurons, which known to play a crucial role in shaping the neuronal activities of this network. Specifically, in contrary to the general notion, anatomically identical CCK-expressing cells represent two distinct firing properties: about half of the population have regular firing pattern; whereas the other half of the CCK cells show state-dependent firing, which allows unique integration of neuronal information. My work identified that the presence or absence of a potassium current underlies this functional segregation. However, to understand this mechanism next we need to identify the molecular identity of the underlying potassium channels, which is the primary goal of my work during the one-year scholarship in 2014. Furthermore, by learning and employing new skills (such as multicompartmental modeling and conductance clamp) I will explore the potential contribution of the state dependent firing of CCK neurons to the information processing capabilities of the hippocampal network. My long term goal is to publish this ongoing work before or around the end of my undergraduate studies in a relevant journal to be competitive for a Ph.D. scholarship.