OLGA OSTROVSKAYA, Ph.D.

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Citizenship: **USA**

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Summary

I am a motivated scientist with expert knowledge in neuroscience, electrophysiology, pharmacology and statistics. Extensive experience in brain circuitry, synaptic transmission, and transgenic models. Scientific findings are relevant to mental and substance abuse disorders. Key skills include:

- Patch Clamp Electrophysiology
- Brain slices and isolated cells
- Cell culture / recombinant expression
- Stereotaxic surgery
- Optogenetics
- Ion channel drug discovery
- Ca imaging
- Problem solving
- Statistics and Analysis
- Manuscript/proposal writing
- Team collaboration
- Coordination of teamwork

Education

Bioscience Management Bootcamp "Bridging the Gap", Keck Graduate Institute of Applied Life Sciences, Claremont, CA. Certificate of completion. **2013**

Ph.D. Biophysics, Bogomoletz Institute of Physiology, National Academy of Sciences, Kiev, Ukraine. **2004**

M.S. *summa cum laude* Organic and Natural Products Chemistry, Taras Shevchenko National University, Kiev, Ukraine. **1999**

Experience

Research Scientist, Ctr for Learning and Memory, The University of Texas at Austin, TX **02/2017- current**
Laboratory of Dr. Kristen Harris

Directing electrophysiology projects and managing the equipment for electrophysiology and optogenetics

Senior Postdoctoral Fellow, The Scripps Research Institute, Jupiter, FL **09/2011- 02/2017**
Laboratory of Dr. Kirill Martemyanov

The first electrophysiologist in the biochemistry lab. Established investigation of GPCR-ion channel crosstalk. Investigating regulation of circuitry function and synaptic plasticity by GPCRs in hippocampus and striatum. (5 publications+1 in revision).

- Set up the electrophysiology core and assembled equipment
- Directed electrophysiological approach in multidisciplinary projects
- Designed / implemented functional characterization strategies for brain circuits in transgenic animals
- Provided scientific guidance to the prosecution of ion channel targets
- Actively collaborated and communicated with different research teams

Postdoctoral Fellow, University of Southern California, Los Angeles, CA **2008-2010**
Laboratory of Dr. Daryl Davies

Investigated biophysical and pharmacological characteristics of ethanol interaction with P2X receptors. Determined mechanism-of-action, as well as structure-activity relationship (SAR). Findings led to a clinical trial for a new treatment for alcohol addiction, targeting P2X4 receptors (4 publications).

- Managed patch-clamp electrophysiology, cell culture, and recombinant expression
- Functional characterization and structure-activity relationships (SAR) of endogenous and recombinant P2X receptors
- Discussed lab projects, interpreted team data and suggested new directions

Postdoctoral Fellow, University of Mississippi, University, MS **2004-2007**
Laboratory of Dr. Sean Wilson

Investigated pathways of activity regulation of smooth muscle cells. Compiled pharmacological characterization of a drug candidate via electrophysiology and fura-2 Ca imaging (3 publications).

- Set up a new electrophysiology lab

Doctoral Candidate, Bogomoletz Institute of Physiology, Kiev, Ukraine **1996-2004**
Laboratory of Dr. Oleg Krishtal

Performed research on pain and sensory neuroscience and ion channel drug discovery. Engaged in successful collaboration with Merck and Boehringer Ingelheim, which brought new projects and funding (7 publications).

- Coordinated teamwork for target identification and validation in screening projects
- Evaluated the structure-activity relationships (SAR) and drug-target interaction of small molecules
- Analyzed and presented group data for substance libraries, generated databases and reports

Teaching Experience

Teaching assistant for courses: "NMR-spectroscopy in Organic Chemistry", "General Organic Chemistry", "Organic Reaction Mechanisms". Taught chemistry to high school students. Supervised undergraduate and garduate students.

Activities and Societies

Communication Chair and Distinguished Lecture Series Chair, the Society of Research Fellows of Scripps Florida **2015-2016**

Participated in *CELLebrate Science* and *Brain Daze* events at Palm Beach Gardens Mall and county library. Presented science exhibitions to public of all ages **2012-2016**

Chair of professional development, Keck Postdoctoral Association, University of Southern California. **2009-2010**

Freelance Writer, VOKRUG SVETA Publishing House
Wrote science fiction articles for broad audience in *Around The World* – a renown Russian magazine about science and nature (in Russian). Publications are listed in Other Publications/Professional Writing section. http://www.vokrugsveta.ru/authors/226/ **2007-2009**

Vice-President of Student Body, Chemistry Department, Kiev Shevchenko University **1998-1999**

Public Relations

Scientists Identify Critical Protein Complex Involved in Learning and Memory. Scripps, News & Views, Vol 14. Issue 13, 2014
Getting in Shape for Industry Jobs. Science Careers, Science, Aug 2013

Peer Reviewed Publications

1. **O Ostrovskaya**, C Orlandi, A Fajardo-Serrano, S Young Jr., R Luján, and K Martemyanov 2018. Inhibitory signaling to ion channels in hippocampal neurons is differentially regulated by alternative macromolecular complexes of RGS7. ***Journal of Neuroscience*** 38(46):10002-10015.
2. L Asatryan, **O Ostrovskaya**, D Lieu, DL Davies 2018. Ethanol differentially modulates P2X4 and P2X7 receptor activity and function in BV2 microglial cells. ***Neuropharmacology*** 128, 11-21.
3. Victoria NC, De Velasco EMF, **Ostrovskaya O**, Metzger S, Xia Z, Kotecki L, Benneyworth MA, Zink AN, Martemyanov KA & Wickman K 2016. G protein-gated K+ channel ablation in forebrain pyramidal neurons selectively impairs fear learning. ***Biological Psychiatry*** 80 (10), 796-806.
4. Sutton LP, **Ostrovskaya O**, Dao M, Xie K, Orlandi C, Smith R, Wee S & Martemyanov KA 2016. Regulator of G-Protein Signaling 7 Regulates Reward Behavior by Controlling Opioid Signaling in the Striatum. ***Biological Psychiatry*** 80 (3), 235-245.
5. Masuho I, **Ostrovskaya O**, Kramer GM, Jones CD, Xie K & Martemyanov KA 2015. Distinct profiles of functional discrimination among G proteins determine the actions of G protein-coupled receptors. ***Sci Signaling,*** 8 (405), ra123.
6. **Ostrovskaya O**, Xie K, Masuho I, Fajardo-Serrano A, Lujan R, Wickman K & Martemyanov KA 2014. RGS7/Gβ5/R7BP complex regulates synaptic plasticity and memory by modulating hippocampal GABABR-GIRK signaling. ***Elife,*** 3**,** e02053.
7. **Ostrovskaya O**, Asatryan L, Wyatt L, Popova M, Li K, Peoples RW, Alkana RL & Davies DL 2011. Ethanol is a fast channel inhibitor of P2X4 receptors. ***Journal of Pharmacology and Experimental Therapeutics,*** 337**,** 171-179.
8. Popova M, Asatryan L, **Ostrovskaya O**, Wyatt LR, Li K, Alkana RL & Davies DL 2010. A point mutation in the ectodomain-transmembrane 2 interface eliminates the inhibitory effects of ethanol in P2X4 receptors. ***Journal of Neurochemistry,*** 112**,** 307-317.
9. Goyal R, Angermann JE, **Ostrovskaya O**, Buchholz JN, Smith GD & Wilson SM 2009. Enhanced capacitative calcium entry and sarcoplasmic-reticulum calcium storage capacity with advanced age in murine mesenteric arterial smooth muscle cells. ***Experimental Gerontology,*** 44**,** 201-207.
10. **Ostrovskaya O**, Goyal R, Osman N, Mcallister CE, Pessah IN, Hume JR & Wilson SM 2007. Inhibition of ryanodine receptors by 4-(2-aminopropyl)-3, 5-dichloro-N, N-dimethylaniline (FLA 365) in canine pulmonary arterial smooth muscle cells. ***Journal of Pharmacology and Experimental Therapeutics,*** 323**,** 381-390.
11. Del Corsso C, **Ostrovskaya O**, Mcallister CE, Murray K, Hatton WJ, Gurney AM, Spencer NJ & Wilson SM 2006. Effects of aging on Ca 2+ signaling in murine mesenteric arterial smooth muscle cells. ***Mechanisms of Ageing and Development,*** 127**,** 315-323.
12. Yudin YK, Tamarova ZA, **Ostrovskaya OI**, Moroz LL & Krishtal OA 2004. RFa-related peptides are algogenic: Evidence in vitro and in vivo. ***European Journal of Neuroscience,*** 20**,** 1419-1423.
13. **Ostrovskaya O**, Moroz L & Krishtal O 2004. Modulatory action of RFamide-related peptides on acid-sensing ionic channels is pH dependent: the role of arginine. ***Journal of Neurochemistry,*** 91**,** 252-255.
14. **Ostrovskaya O**, Volkova T & Kristal O 2003. Properties of proton-gated ion channels in sensory neurons of rats. ***Neurophysiology,*** 35**,** 82-89.
15. Krishtal O, **Ostrovskaya O** & Moroz L 2003. pH Receptors: Peptides and Nociception. ***Neurophysiology,*** 35**,** 208-216.
16. **Ostrovskaya O**, Kostyuchenko O & Krishtal O 2000. A component of the transmembrane current in molluscan neurons is gated by both protons and voltage. ***Neurophysiology,*** 32**,** 125-126.
17. Nikolayev A, Kirichek YV, **Ostrovskaya O**, Maletina I, Petko K & Yagupol'skii L 1999. Suppression of A-type potassium current in pyramidal neurons of the rat hippocampus, induced by pinacidil and its fluorine derivatives. ***Neurophysiology,*** 31**,** 191-193.
18. Magura E, **Ostrovskaya O**, Kopanitsa M, Kryshtal O & Gleitz J 1996. Down-modulation induced block of voltage-operated Na+ channels in ratCA1 hippocampal neurons by (+)-methysticin. ***Neurophysiology,*** 28**,** 140-144.

Other Publications/ Professional Writing

http://www.vokrugsveta.ru/authors/226/

1. Olga Ostrovskaya, ***The X Files: Nerve Number Zero*****.** Vokrug Sveta (Around The World) Internet Edition. Feb, 2009 (in Russian). **Could this little secretive Nerve Zero be a direct path from impression to sexual turn-on?**

2. Olga Ostrovskaya, ***Treatment in Favor of Disease*****.** Vokrug Sveta (Around The World) Internet Edition. May, 2008 (in Russian). **Antibiotics favor mutagenesis of bad bugs.** Lately the spread of drug-resistant bacteria brings greater concern. New forms of bacteria are being revealed all around the world and resistance to antibiotics increases. It seems we are losing the war in the micro-world.

3. Olga Ostrovskaya, ***Masks of Black Death in XXI Century****.* Vokrug Sveta (Around The World) Internet Edition. Jan, 2008 (in Russian). **Like centuries ago, deadly plagues are spreading from animals to humans.** Hundreds of epidemic outbreaks are threatening the world. Modern plagues contend to become the Black Death of the 21th Century. Forty new plagues were identified during the last century, and more than a thousand new outbreaks were detected. From where do they emerge?

4. Olga Ostrovskaya, ***Humans' Microscopic Friends****.* Vokrug Sveta (Around The World) Internet Edition. Dec, 2007 (in Russian). **Human hosts and bacteria live peacefully in symbiosis.** There are ten times more bacterial cells in our bodies than our own cells. However bacteria take up much less space due to their very small size – microbes "weigh" only about 6 pounds in the adult human.