
BIOGRAPHICAL SKETCH

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NAME Oleh M. Pochynyuk	POSITION TITLE Assistant Professor		
eRA COMMONS USER NAME (credential, e.g., agency login) POCHYNYUK			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
National Taras Shevchenko University of Kiev, Kiev, Ukraine	BS	1993-1997	Radiophysics and Electronics
National Taras Shevchenko University of Kiev, Kiev, Ukraine	MS	1997-1999	Medical Radiophysics
Bogomoletz Institute of Physiology NASU, Kiev, Ukraine	PhD	1999-2003	Physiology/Biophysics
University of Texas Health Science Center at San Antonio	postdoc	2004-2008	Renal Physiology

A. POSITIONS AND HONORS

Positions and Employment

- 2010 - now Assistant Professor, Department of Integrative Biology and Pharmacology, University of Texas Health Science Center at Houston
- 2008 - 2010 Research Assistant Professor, Department of Physiology, University of Texas Health Science Center at San Antonio.
- 2004 - 2008 Postdoctoral Fellow, Department of Physiology, University of Texas Health Science Center at San Antonio.
- 2003 - 2004 Research scientist, Department of General Physiology of the Nervous System, Bogomoletz Institute of Physiology, National Academy of Sciences, Kiev, Ukraine.
- 1999 - 2003 Postgraduate student, Department of General Physiology of the Nervous System Bogomoletz Institute of Physiology, National Academy of Sciences, Kiev, Ukraine.
- 1998 - 2002 Research assistant, Department of General Physiology of the Nervous System, Bogomoletz Institute of Physiology, National Academy of Sciences, Kiev, Ukraine.

Other experience and Professional Memberships

- 2008 - present American Society of Nephrology
- 2005 - present American Physiological Society

Served as a reviewer for: Canadian J. Physiology and Pharmacology, American J. Physiology-Renal Physiology, PLoS One, BMC Physiology.

Editorial board: Frontiers in Physiology

Grant reviewing: Welcome Trust 2011.

Guest Lecturer:

- 2011 University of Nebraska Medical Center, Dept. Cellular and Integrative Physiology
- 2010 NHLBI, Epithelial Systems Biology Center

Academic/Professional Honors

- 2010 Renal Section Research Recognition award by the American Physiological Society
- 2009 Best poster award, UTHSCSA.
- 2007 UTHSCSA postdoctoral fellow travel award.
- 2006 Barbara H. Bowman post-doctoral research scholarship award, UTHSCSA.
- 2006 American Society of Nephrology travel award.
- 2006 Young Investigator Research Recognition Award by the American Physiological Society, Cell & Molecular Physiology Section.

- 2004 Invited speaker at the National Academy of Science of Ukraine Plenary Session.
- 2001 President of Ukraine personal stipend for young scientist from the National Academy of Science of Ukraine.
- 2000 Award for the best poster at the Advanced workshop "Membrane and signaling", Kiev, Ukraine

B. SELECTED PEER-REVIEWED PUBLICATIONS (from total of 39)

(i) Research articles

1. M. Mamenko, O. Zaika, D. Ilatovskaya, A. Staruschenko and **O. Pochynyuk** (2011) Angiotensin II increases activity of the Epithelial Na⁺ Channel (ENaC) in the distal nephron additively to aldosterone. *J. Biol. Chem.* epub ahead of print. PMID: 22086923, *PMCID in progress*
2. M. Mamenko, O. Zaika, M. Jin, RG O'Neil, and **O. Pochynyuk** (2011) Purinergic activation of Ca²⁺-permeable TRPV4 channels is essential for mechano-sensitivity in the aldosterone-sensitive distal nephron. *PLoS One* 6(8):e22824. *PMCID: PMC3151261*
3. O. Zaika, M. Mamenko, RG O'Neil, and **O. Pochynyuk** (2011) Bradykinin acutely inhibits activity of the epithelial Na⁺ channels (ENaC) in mammalian aldosterone-sensitive distal nephron. *Am. J. Physiol. Renal Physiol.* Vol. 300(5):F1105-15. *PMCID: PMC3094057*
4. Stockand JD, Mironova E, Bugaj V, Rieg T, Insel PA, Vallon V, Peti-Peterdi J, and **Pochynyuk O.** (2010) Purinergic inhibition of ENaC produces aldosterone escape. *J. Am. Soc. Nephrol.* Vol. 21(11):1903-11. *PMCID: PMC3014005*
5. **O. Pochynyuk**, T. Rieg, V. Bugaj, J. Schroth, U. Yokoyama, P.A. Insel, J.D. Stockand, and V. Vallon (2010) Dietary Na⁺ inhibits ENaC open probability in cortical collecting duct by enhancing apical ATP/P2Y₂ receptor tone. *FASEB J.* Vol. 24(6):2056-65. *PMCID: PMC2874475*
6. **O. Pochynyuk**, E. Mironova, V. Kucher, N. Boiko, A. Staruschenko, A. Karpushev, Q. Tong, E. Hendron and J. Stockand (2009) Intrinsic voltage dependence of the epithelial Na⁺ channel is masked by a conserved transmembrane domain tryptophan *J. Biol. Chem.* Vol. 284(38):25512-21. *PMCID: PMC2757952*
7. **O. Pochynyuk**, V. Bugaj, T. Rieg, PA. Insel, E. Mironova, V. Vallon and JD. Stockand (2008) Paracrine regulation of the Epithelial Na⁺ channel in the mammalian collecting duct by purinergic P2Y₂ receptor tone. *J. Biol. Chem.* Vol. 283(52):36599-607. *PMCID: PMC2605978*
8. **O. Pochynyuk**, V. Bugaj, and J. D. Stockand (2008) Physiological regulation of ENaC by phospholipids. *Curr Opin Nephrol Hypertens.* 17(5):533-40. PMID: 18459164
9. **O. Pochynyuk**, V. Bugaj, A. Vandewalle, and James D. Stockand (2008) Purinergic control of apical plasma membrane PI(4,5)P₂ levels sets ENaC activity in principal cells. *Am. J. Physiol. Renal. Physiol.* Vol. 294(1), F38-F46. PMID: 17913833
10. **O. Pochynyuk**, Q. Tong, J. Medina, A. Vandewalle A. Staruschenko, V. Bugaj and James D. Stockand (2007) Molecular determinants of PI(4,5)P₂ and PI(3,4,5)P₃ regulation of the epithelial Na⁺ channel. *J. Gen. Physiol.* Vol. 130(4): 399-413. *PMCID: PMC2151653*
11. **O. Pochynyuk**, James D. Stockand and A. Staruschenko (2007) Ion channel regulation by Ras, Rho and Rab small GTPases. *Exp. Biol. Med.* Vol. 232(10): 1258-65. PMID: 17959838
12. **O. Pochynyuk**, A. Staruschenko, V. Bugaj L. LaGrange and J. Stockand (2007) Quantifying RhoA facilitated trafficking of ENaC towards the plasma membrane with TIRF-FRAP. *J. Biol. Chem.* Vol. 282(19):14576-85. PMID: 17376773
13. **O. Pochynyuk**, Q. Tong, A. Staruschenko and James D Stockand (2007) Binding and direct activation of the epithelial Na⁺ channel (ENaC) by phosphatidylinositides. *J. Physiol.* Vol. 580(Pt. 2):365-72. *PMCID: PMC2075560*
14. **Pochynyuk O**, Medina J, Gamper N, Genth H, Stockand JD, Staruschenko A. (2006) Rapid translocation and insertion of the epithelial Na⁺ channel in response to RhoA signaling *J. Biol. Chem.* Vol. 281, NO. 36, pp. 26520-26527. PMID: 16829523
15. **Pochynyuk O**, Tong Q, Staruschenko A, Ma HP, Stockand JD. (2006) Regulation of the epithelial Na⁺ channel (ENaC) by phosphatidylinositides. (Review) *Am. J. Physiol. Renal Physiol.* May; 290(5):F949-57. PMID: 16601296

(ii) Book chapters

1. Staruschenko A., Booth R.E., **Pochynyuk O.**, Stockand J.D. Tong Q. (2006) Functional reconstitution of the human epithelial Na⁺ channel in a mammalian expression system. "Ion Channels. Methods and Protocols" Book's chapter, Humana Press, pp. 3-15. PMID: 16929934
2. Lukyanetz EA, **Pochynyuk OM**, Zaika OL. (2005) Role of calcium signaling in neurotransmitter release from adrenal chromaffin cells. "Receptors channels messengers" Book's chapter, IBRO-CEERC DUS, pp. 181-211.

C. RESEARCH SUPPORT

Active research support

#09SDG2230391 (Pochynyuk)

07/01/2009-6/30/2013

AHA National Center NCRP Spring 09 Scientist Development Grant

Physiological role of purinergic regulation of ENaC in the collecting duct

- 1) Determine the physiological importance of purinergic regulation of ENaC in the mammalian collecting duct;
- 2) Delineate the cellular signaling pathway and define the molecular determinants of purinergic regulation of ENaC;
- 3) Define the consequences on ENaC function of inappropriate purinergic regulation using genetically modified mice.

Role: PI

ASN Carl W. Gottschalk Research Scholar Grant (Pochynyuk)

07/01/2011-6/30/2013

"Purinergic control of mechanosensitivity in the ASDN".

- 1) Establish a role for ATP in generation of mechano-sensitive [Ca²⁺]_i response in the ASDN.
- 2) Determine physiological importance of ATP regulation of mechano-sensitivity in the ASDN and define the patho-physiological ramifications of its disruption in genetically modified mice.

Role: PI

Past research support

#0825062F (Pochynyuk)

07/01/2008-06/30/2010

AHA-South Central

(postdoctoral fellowship)

rescinded 06/30/2009

Purinergic control of ENaC activity in the distal nephron.

Specific Aims: 1): Delineate the signaling pathway and define the final mechanism of action of ATP on ENaC in freshly isolated mouse collecting duct. 2) Establish the physiological role and consequences of metabotropic P2Y receptors in regulation of ENaC activity using genetically modified mice.

Role: PI.