

CURRICULUM VITAE

RAUL ROJAS, PH. D.

30 Convent Dr., Building 30, Room 524, NIH
Bethesda, MD 20892
rojasr@mail.nih.gov

EDUCATION

Ph.D, 2004, University of Pittsburgh, Department of Molecular Cell Biology and Physiology, School of Medicine, Pittsburgh, PA

Bachelors/Licentiate, 1995, University of Costa Rica, School of Chemistry, San Jose, CR

RESEARCH AND PROFESSIONAL EXPERIENCE

Staff Scientist, National Institutes of Health, National Institute of Dental and Cranofacial Research, Section on Biological Chemistry, Bethesda, MD 2011-present

RESEARCH INTERESTS: Identification of the molecular mechanisms key to the transport of O-glycans through the biosynthetic and endocytic pathways; Elucidation of the protein machinery that regulates ppGalNAcTs transport and activity through the biosynthetic pathway.

Supervisor: Dr. Lawrance Tabak

Post-doctoral Fellow, National Institutes of Health, National Institute of Child Health and Development, Vertebrate Neural Development Unit, Laboratory of Molecular Genetics , Bethesda, MD 2009-2010

PROJECT: "Characterization of molecular and cellular mechanisms that control Wnt secretion in the zebrafish neuroepithelium".

Mentor: Dr. Ajay Chitnis

Post-doctoral Fellow, National Institutes of Health, National Institute of Child Health and Development, Section of Intracellular Protein Trafficking, Cell Biology and Metabolism Program, Bethesda, MD 2004-2009

PROJECT: "Elucidation of molecular mechanisms involved in endosomal sorting key to the biogenesis of lysosomes, and lysosomal-related organelles".

Mentor: Dr. Juan Bonifacino

Graduate Student, University of Pittsburgh, School of Medicine, Department of Molecular Cell Biology and Physiology, Pittsburgh, PA, 1998-2004

PROJECT: "The role of Rho GTPases in the control of endocytic and biosynthetic trafficking through epithelial cells and the establishment and maintenance of epithelia cell polarity". Mentor: Dr. Gerard Apodaca

Research Technician, Department of Pharmacology, School of Medicine, University of Pittsburgh, Pittsburgh, PA, 1997-1998

PROJECT: Conducted cellular studies to understand proteins involved in cell signaling and intracellular trafficking of the insulin receptor. Mentor: Dr. Guillermo Romero

Research Technician and Licentiate Research Studies, School of Chemistry, University of Costa Rica, San Jose, CR 1989-1995

PROJECT: Performed studies aimed to understand the substrate specificity of porcine liver esterases

MEMBERSHIPS AND AWARDS

- American Society of Cell Biology, 1999-present
- Postdoctoral Intramural Research Training Award, NIH 2004-2010
- Attended the *Zebrafish Development and Genetics* class in 2008 at the Marine Biological Laboratory, Woods Hole, MA. USA
- American Heart Association, Pre-doctoral Award, 2003-2004
- American Society of Cell Biology, Minority Travel Award, from 1998-2001
- MAC/Pfizer, Inc. Poster Award (Graduate Student)/ASCB, 1999
- Molecular Pharmacology Training Grant, University of Pittsburgh, 1998-1999
- University of Costa Rica Scholarship for Academic Excellence, each of 1989-1991

INVITED ADDRESSES

- Georgetown Prep, North Bethesda, MD (Spring 2010)
- National Institute of Biodiversity (Inbio), San Jose, CR (Summer 2009)
- University of Costa Rica, School of General Studies, CR (Summer 2008)
- Laboratory of Cell Biology, NHLBI, NIH, Bethesda, MD (Fall 2007)
- Protein Trafficking Interest Group, NIH, Bethesda, MD (Spring 2007)
- Gordon Research Conference, Mechanisms of Membrane Transport, Andover, NH (Summer 2005)

PUBLICATIONS

1. Kloer P. D., **Rojas, R.**, Ivan, V., Moriyama, K., van Vlijman, T., Ghirlando, R, van der Sluijs, P., Hurley, J. and Bonifacino JS. 2010. Assembly of the Biogenesis of Lysosome-related Organelle Complex-3 (BLOC-3) and its interaction with Rab9. **J Biol Chem**, 285(10):7794-804
2. **Rojas, R***, van Vlijman*, T. Mardones, GA. Prabhu, Y, Adriana L. Rojas, Shabaz, M., Heck, A.J.R., Raposo, G, van der Sluijs, P. and Bonifacino JS. 2008. Regulation of Retromer Recruitment to Endosomes by Sequential Action of Rab5 and Rab7. **J Cell Biol.** 183(3): 513-526
3. Aitor Hierro, Adriana Rojas, **Raul Rojas**, Namita Murthy, Greg Effantin, Andrey V. Kajava, Alasdair C. Steven, Juan S. Bonifacino, and James H. Hurley. 2007. Functional architecture of the retromer cargo-recognition complex. **Nature.** 449(7165):1063-7
4. Popoff V., Mardones, GA, Tenza, D., **Rojas R.**, Lamaze, C., Bonifacino, JS., Raposo, G., and Johannes, L. 2007. The retromer complex and clathrin define an early endosomal retrograde exit site. **J. Cell Sci.** 120 (12): 2022-31

5. Rondanino, C*, **Rojas, R***, Ruiz, WG., Wang, E., Hughey, R., Dunn, KW., and Apodaca, G. 2007. RhoB-dependent modulation of early endocytic traffic in Polarized Madin-Darby canine kidney cells. **Traffic**, 8(7):932-49 * *Authors contribute equally to this work*
6. **Rojas, R.** Kametaka, S., Haft C., and Bonifacino JS. 2007. Interchangeable but essential functions of SNX1 and SNX2 in the association of retromer with endosomes and the trafficking of cation-independent mannose-6-phosphate receptors. **Mol Cell Biol.** 27(3):1112-24
7. Bonifacino JS., and **Rojas, R.** 2006. Retrograde transport from endosomes to the trans-Golgi network. **Nat Rev Mol Cell Biol.** 7(8): 568-79
8. Shi, H*, **Rojas R***, Bonifacino, JS, and Hurley, JH. 2006. The retromer subunit Vps26 has an arrestin fold and binds Vps35 through its C-terminal domain. **Nat Struct Mol Biol.** 13(6): 540-8
* *Authors contribute equally to this work*
9. Archaya, P., Beckel, J. Ruiz, W., Wang, E., **Rojas, R.**, Birder, L. and Apodaca, G. 2004. Distribution of the tight junction proteins ZO-1, occludin, and claudin-4, -8, and -12 in bladder epithelium. *Am J Physiol Renal Physiol.* 287(2):F305-18
10. Li HS., Shome K., **Rojas R.**, Rizzo MA., Vasudevan C., Fluharty E., Santy LC., Casanova JE., Romero G. 2003. The Guanine Nucleotide Exchange Factor ARNO mediates the activation of ARF and phospholipase D by insulin. *BMC Cell Biol.*11;4(1):13
11. Woda CB., Miyawaki N., Ramalakshmi S., Ramkumar M., **Rojas R.**, Zamilowitz B., Kleyman TR., Satlin LM. 2003. Ontogeny of flow-stimulated potassium secretion in rabbit cortical collecting duct: functional and molecular aspects. *Am J Physiol Renal Physiol.* 285(4):F629-39.
12. **R. Rojas** and G. Apodaca. 2002. Immunoglobulin transport across polarized epithelial cells. **Nat Rev Mol Cell Biol.** 3:944-955
13. Truschel, S., Wang, E., Ruiz, W.G., Leung, S.-M., **Rojas, R.**, Lavelle, J., Zeidel, M., Stoffer, D., and Apodaca, G. 2002. Stretch-regulated exocytosis/endocytosis in bladder umbrella cells. **Mol Biol Cell.** 13:830-846.
14. **Rojas, R.**, W.G. Ruiz, S.-M. Leung, T.-S. Jou, and G. Apodaca. 2001. Cdc42-dependent modulation of tight junctions and membrane protein traffic in polarized MDCK epithelial cells. **Mol Biol Cell.** 12:2257-2274.
15. Leung, S.-M., **R. Rojas**, C. Maples, C. Flynn, W. Ruiz, T.-S. Jou, and G. Apodaca. 1999. The small GTPase RhoA alters postendocytic traffic in polarized MDCK cells. **Mol Biol Cell** 10:4369-4384.
16. **Rojas-Garbanzo, R.** and J.F. Mata-Segreda. 1998. Assessment of the steric tolerance of the p sector in the catalytic site of porcine liver esterase. *Bioorganic & Medicinal Chemistry Letters* 8:7-10.