BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Carol A. Otey	**Associate Professor**
eRA COMMONS USER NAME Carol_Otey	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Trinity University, San Antonio, TX	B.S.	1976-1980	Cell biology
University of California, Los Angeles, CA	Ph.D.	1980-1987	Cell biology
University of North Carolina, Chapel Hill	Post-doc	1987-1993	Cell adhesion

A. Positions and Honors

NIH Predoctoral Trainee, University of California at Los Angeles, Dept. of Biology

1985-1987 Graduate Research Assistant, Laboratory of Dr. J.C. Bulinski, U.C.L.A., Dept. of Biology

1987-1992 NIH Postdoctoral Trainee, Lineberger Cancer Research Center, U.N.C. at Chapel Hill, lab of Dr. Keith Burridge

1993-1998 Assistant Professor, Department of Cell Biology, University of Virginia, Charlottesville, VA

1997 Dean's Award for Excellence in Medical Education

1998-2004 Assistant Professor, Department of Cell and Molecular Physiology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

2004-present Associate Professor, Department of Cell and Molecular Physiology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

B. Peer-Reviewed Publications: Selected out of 55 total.

-Otey, C.A., M.H. Kalnoski, J.L. Lessard and J.C. Bulinski (1986) Immunolocalization of the gamma isoform of non-muscle actin in cultured cells. J. Cell Biol. 102: 1726-1737.

-Otey C.A., F.M. Pavalko, and K. Burridge K. (1990) An interaction between α-actinin and the β integrin subunit *in vitro*. J. Cell Biol. 111:721-729.

-Otey, C.A., G.B. Vasquez, K. Burridge and B.W. Erickson (1993) Mapping of the α-actinin binding site within the $ß_1$ integrin cytoplasmic domain. J. Biol. Chem. 268: 21193-21197.

-Eckert, W.A., J.G. Valtschanoff, C.A. Otey, A.L. Rustioni and R.J. Weinberg (1994) Tyrosine phosphorylation in rat spinal cord after sciatic nerve transection. Neuroreport 5: 1289-1292.

-Schaller, M.D., C.A. Otey, J.D. Hildebrand and J.T. Parsons (1995) Focal adhesion kinase and paxillin bind to peptides mimicking α-integrin cytoplasmic domains. J. Cell Biol., 130:1181-1188.

-Hungerford, J., M.I. Compton, M.L. Matter, B.G. Hoffstrom and C.A. Otey (1996) Inhibition of $pp125^{FAK}$ in cultured fibroblasts results in apoptosis. J. Cell Biol. 135: 1383-1390.

-Kiosses, W.B., R.H. Daniels, C. Otey, G.M. Bokoch and M.A. Schwartz (1999) A role for PAK in endothelial cell migration. J. Cell Biol. 147: 831-843.

-Parast, M.M. and C.A. Otey (2000) Characterization of palladin, a novel protein localized to stress fibers and cell adhesions. J. Cell Biol. 150: 643-656.

-Ren, X.-D., W.B. Kiosses, D.J. Sieg, C. Otey, D.D. Schlaepfer, and M.A. Schwartz (2000) Focal adhesion kinase suppresses Rho activity to promote focal adhesion turnover. J. Cell Sci.113: 3673-3678.

-Hwang, S.J., Pagliardini S., Boukelifa M., Parast, M.M., Otey C.A., Rustioni A., Valtschanoff J.G. (2001) Palladin is expressed in excitatory terminals in the rat central nervous system. J. Comp. Neurol. 436: 211-224.

-Boukhelifa, M., M.M. Parast, J.G. Valtschanoff, A.S. LaMantia, R.B. Meeker and C.A. Otey (2001) A role for the cytoskeletal protein palladin in neurite outgrowth. Molec. Biol. Cell 12: 2721-2729.

-Gonzalez, A.M., C. Otey, N.M. Edlund and J.C.R. Jones (2001) Interactions of a hemidesmosome component and actinin family members. J. Cell Sci. 114: 4197-4206.

-Rajfur, Z., P. Roy, C. Otey, L. Romer and K. Jacobson (2002) The connection between stress fibers and focal adhesions: Dissecting the link employing chromophore assisted laser inactivation (CALI) with EGFP-fusion proteins. Nature Cell Biology 4: 286-293.

-Bhatt A, Kaverina I, Otey C, Huttenlocher A. (2002) Regulation of focal complex composition and disassembly by the calcium-dependent protease calpain. J Cell Sci. 115: 3415-25.
-Boukhelifa, M., S.-J. Hwang, J.G. Valtschanoff, R. Meeker, A. Rustioni and C. Otey (2003) A critical role for palladin in astrocyte morphology and response to injury. Molec. Cell. Neurosci. 23: 661-668.
-Boukhelifa, M., M. M. Parast, J. Bear, F. Gertler and C. A. Otey. (2004) Palladin is a novel binding partner for Ena/VASP proteins. Cell Motil. Cytoskel. 58: 17-29.
-Ronty, M., A. Taivainene, M. Moza, C.A. Otey and O. Carpen. (2004) Molecular analysis of the interaction between palladin and α-actinin. FEBS Lett. 566: 30-34.
-Peterson, L.J., Z. Rajfur, A.S Mattox, C.D. Freel, Y. Chen, M. Edlund, C. Otey and K. Burridge. (2004) Simultaneous stretching and contraction of stress fibers *in vivo*. Molec. Biol. Cell 15: 3497-3508.
-Boukhelifa, M., A. Rachlin, M.M. Parast, M. Moza, T. Johansson, O. Carpen, R. Karlsson and C. A. Otey. (2005) The proline-rich protein palladin binds directly to profilin. FEBS J. 273: 26-33.
-Rachlin, A and Otey, C. (2006) Identification of Palladin Isoforms and Characterization of an Isoform-specific Interaction between Lasp-1 and Palladin. J. Cell Sci. 119: 995-1004.
-Lai CF, Bai S, Uthgenannt BA, Halstead LR, McLoughlin P, Schafer BW, Chu PH, Chen J, Otey CA, Cao X, Cheng SL. (2006). Four and half lim protein 2 (FHL2) stimulates osteoblast differentiation. J Bone Miner Res. 21:17-28.
-Rönty, M., Leivonen, S.K., Rachlin, A., Otey, C. and Carpén, O. (2006). Isoform-specific regulation of the actin-organizing protein palladin during TGF-β1-induced myofibroblast differentiation. J. Investigative Dermatology 126:2387-96.
-Goicoechea, S., Disanza, A., Arneman, D., Scita, G. and Otey, C. (2006). Palladin binds to Eps8 and enhances the formation of dorsal ruffles and podosomes in vascular smooth muscle cells. J. Cell Sci. 119:3316-24.
-Pogue-Geile, K., Chen, R., Bronner, M.P.,Crnogorac-Jurcevic, T., Moyes, K.W., Dowen, S., Otey, C.A., Crispin, D.A.,George, R.D., Whitcomb, D.C., and Brentnall, T.A. (2006). *Palladin* mutation causes familial pancreatic cancer and suggests a new cancer mechanism. PloS Medicine 3: 2216-2227.
-Wall ME, Otey C, Qi J, Banes AJ. (2007). Connexin 43 is localized with actin in tenocytes. Cell Motil Cytoskeleton 64: 121-130.
- Jin, L, M.J. Kern, C.A. Otey, and A.V. Somlyo. (2007). Angiotensin II, focal adhesion kinase, and PRX1 enhance smooth muscle expression of lipoma preferred partner and its newly identified binding partner palladin to promote cell migration. Circ. Research 100(6):817-25.
- Endlich, N., Otey, C.A., Kriz, W., and Endlich, K. (2007) Movement of Stress Fibers Away from Focal Adhesions Identifies Focal Adhesions as Sites of Stress Fiber Assembly. Cell Motil. Cytoskel. 64(12):966-76.
- Wall, M.E., Rachlin, A., Otey, C.A. and Loboa, E. (2007) Human Adipose-Derived Adult Stem Cells Upregulate Palladin During Osteogenesis and in Response to Cyclic Tensile Strain. Am J Physiol Cell Physiol 293(5):C1532-8.
- Dixon, R.D.S., Arneman, D.K., Rachlin, A.S., Sundaresan, N.R., Costello, J., Campbell, S.L., Otey, C.A. (2008) Palladin is an Actin Crosslinking Protein that Uses Immunoglobulin-like Domains to Bind Filamentous Actin. J. Biol. Chem. 283: 6222-31.
- Goicoechea, S., Prentice-Dunn, H., Bednarski, B., Kim, HJ and C. Otey. (2009) Palladin Expression Contributes to Invasive Motility in Human Breast Cancer Cells. Oncogene 28(4):587-98.
- Endlich N, Schordan E, Cohen CD, Kretzler M, Lewko B, Welsch T, Kriz W, Otey CA, Endlich K. (2009). Palladin is a dynamic actin-associated protein in podocytes. Kidney Int. 75(2):214-26
- De Kimpe L, Janssens K, Derua R, Armacki M, Goicoechea S, Otey C, Waelkens E, Vandoninck S, Vandenheede JR, Seufferlein T, Van Lint J. (2009). Characterization of cortactin as an in vivo protein kinase D substrate: interdependence of sites and potentiation by Src. Cell Signal. 21(2):253-63.

C. Research Support:

Ongoing:

Agency: North Carolina Biotechnology Center 8/01/2007-7/31/2009
Type: Multi-Disciplinary Research Grant (in no-cost extension)
"The Role of Palladin in the Mechanobiology of Human Mesenchymal Stem Cells"
Major goals: to test the hypotheses that palladin expression is regulated by mechanical load in human mesenchymal stem cells, that increased levels of palladin expression confer increased contractility on the cells, and that contractility results from direct interactions between palladin and actin.
Role: co-investigator. PI: Elizabeth Loboa

Agency: Elsa U. Pardee Foundation 9/01/2008-8/31/2010
"The protein palladin as a biomarker for detection of pancreatic cancer"
Major goals: to test the hypothesis that elevated palladin levels are associated with a diagnosis of pancreatic adenocarcinoma, in biological samples obtained by fine-needle aspiration.
Role: P.I.

NIH RO1-GM081505-01A1 9/01/2009-8/31/2011
"Molecular function of palladin's Ig domains in cell adhesion and motility"
Major goals: to investigate the role of palladin's five conserved immunoglobulin domains in the assembly of actin-based structures involved in adhesion and motility (stress fibers, podosomes, membrane ruffles, focal adhesions), in cultured epithelial and mesenchymal cells.
Role: PI

Recently Completed:

NIH RO1 NS43253 9/30/02 - 7/31/08
"Role of Palladin in Regulating Astrocytes"
Major goals: to determine if palladin expression directly controls shape change and actin assembly during astrocyte activation in response to injury, both *in vitro* and *in vivo*; to identify palladin's binding partners in astrocytes.
Role: P.I.

NIH RO1 GM61743 4/1/2002 – 3/30/2006
"Biochemical Regulation of Actin Cytoskeleton Assembly"
Major goals: to identify binding partners for palladin in fibroblasts; their binding sites and perform a mutational analysis to explore the role of palladin post-translational modification in cell rounding during mitosis.
Role: P.I.