

William R. Thelin, Ph.D.

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EDUCATION

University of North Carolina at Chapel Hill January 2006
Ph.D. in Cell and Developmental Biology
Specializations: Proteomics, protein signaling and membrane trafficking

University of Tennessee, Knoxville May 2000
B.S. in Biochemistry, Cellular, and Molecular Biology

AWARDS & HONORS

American Heart Association Fellowship 2003-2005
University of North Carolina at Chapel Hill

Moderator for Proteomics Roundtable discussion 2003
North American Cystic Fibrosis Conference

RESEARCH EXPERIENCE

University of North Carolina at Chapel Hill February 2006-present
Postdoctoral Fellow, Cystic Fibrosis/Pulmonary Research and Treatment Center
Advisor: Dr. Richard Boucher

- Investigating the role of extracellular nucleotides (ATP and UTP) on epithelial cell signaling and fluid secretion in primary cultures of human airway epithelial cells.
- Characterizing the mechanism of action for a G-protein coupled purinergic receptor agonists currently in phase III clinical trials for stimulating epithelial cell secretion.

University of North Carolina at Chapel Hill 2000-2006
Doctoral Candidate, Department of Cell and Developmental Biology
Advisor: Dr. Sharon Milgram

- Developed methods to study protein-protein interactions of epithelial ion channels, receptors, and scaffolding proteins using mass spectrometry.
- Identified and characterized proteins that regulate the signaling, trafficking, and membrane stability of the cystic fibrosis transmembrane conductance regulator (CFTR).
- Investigated of the binding partners, tissue distribution, and cellular function of epithelial PDZ domain containing scaffolding proteins.

Photogen, Inc. Knoxville, Tennessee 1998-2000
Research Assistant

- Generated a stable cell line used for producing high titer viral cultures which was licensed to Schering-Plough.

- In accordance with GMPs, I conducted research as part of a team to test the efficacy of using photodynamic therapy to treat cancers and skin disorders.
- Performed large scale data analysis.

MENTORING AND TEACHING EXPERIENCE

University of North Carolina at Chapel Hill 2002-2006

- Mentored five undergraduate students in independent research projects utilizing molecular biology and biochemistry.
- Advised five graduate students during rotation projects focused on using proteomics to study protein-protein interactions.
- Taught proteomics section of biology course to first year graduate students.

PROFESSIONAL SERVICE

Graduate Studies Committee 2003-2004

Served with Cell and Developmental Biology faculty members to decide on department policy issues, course requirements, and choose incoming students to the department.

Graduate Student President 2002-2003

Organized student meetings and events. This includes managing the graduate students during the largest recruiting year in the history of the department of Cell and Developmental Biology.

Graduate and Professional Student Federation 2001

Represented graduate students on financial and university policy issues.

INVITED TALKS

Gordon Conference on Salivary Glands & Exocrine Secretion 2007
Protein interactions that regulate CFTR trafficking and function

The Cystic Fibrosis Foundation Williamsburg Conference 2006
The regulation of CFTR stability and membrane trafficking by protein-protein interactions.

Experimental Biology, San Diego, CA 2005
CFTR regulation by novel protein-protein interactions

North American Cystic Fibrosis Conference, St. Louis, MO 2004
Proteomic approaches to identifying CFTR-associated proteins that regulate channel trafficking and activity

Human Proteome Organization Congress, Montreal, Canada 2003
The Identification of Novel CFTR-Associated Proteins by Mass Spectrometry

International Society for Preventive Oncology, Geneva, Switzerland 2000
The toxic effects of the dietary factors Indole-3-Carbinol and 3,3'-Diindolymethane on estrogen responsive and non-responsive cells *in vitro*

PUBLICATIONS

W. Thelin, M. McDermott, M. Gentsch, G. Haddock, W. Hong, M. Stutts, and S. Milgram. Sorting nexin 27 mediates the efficient endocytic recycling of CFTR. (Anticipated submission to *Molecular Biology of the Cell*, February 2007)

W. Thelin, M. Stutts, C. Borchers, and S. Milgram. A single step approach to analyze affinity purified protein complexes by mass spectrometry (Anticipated submission to *Journal of Proteome Research*, December 2006)

N. Zachos, C. Hodson, **W. Thelin**, O. Kovbasnjuk, B. Cha, X. Li, S. Milgram, and M. Donowitz. Elevated intracellular calcium stimulates NHE3 activity by an IKEPP (NHERF4) dependent mechanism. (Under review, *Journal of Biological Chemistry*)

W. Thelin and R. Boucher. The epithelium as a target for therapy in cystic fibrosis. (Invited Review to *Current Opinion in Pharmacology* submitted November 2006).

W. Thelin, M. Gentsch, S. Kreda, Y. Chen, J. Schneider, J. Sallee, M. Schaller, C. Borchers, M. Stutts, S. Milgram. CFTR stability and endocytic trafficking are regulated by an NH₂-terminal interaction with filamin. (Accepted to *The Journal of Clinical Investigation*, September 2006)

Y. Chen, **W. Thelin**, B. Yang, S. Milgram, and K. Jacobson. Transient anchorage of cross-linked glycosyl-phosphatidylinositol-anchored proteins depends on cholesterol, Src family kinases, caveolin, and phosphoinositides. 2006. *The Journal of Cell Biology*, 175, 169-78.

W. Thelin, M. Keisner, R. Tarran, S. Kreda, B. Grubb, J. Sheehan, M. Stutts, and S. Milgram. CFTR is regulated by a direct interaction with the protein phosphatase PP2A. 2005. *Journal of Biological Chemistry*, 280, 41512-20.

W. Thelin, C. Hodson, and S. Milgram. Beyond the brush border: NHERF4 blazes new NHERF turf. 2005. *Journal of Physiology*, 569, 13-19.

W. Thelin, D. Loiselle, C. Parker, N. Dicheva, B. Kesner, V. Mocanu, F. Wang, S. Milgram, M. Esteban-Warren, C. Borchers. Improved protein identification through the use of unstained gels. 2005. *Journal of Proteome Research*, 4, 992-997.

T. Hegedus, T. Sessler, R. Scott, **W. Thelin**, E. Bakos, A. Váradi, K Szabo, L. Homolya, S. Milgram, B. Sarkadi. C-terminal phosphorylation of MRP2 modulates its interaction with PDZ proteins. 2003. *Biochemical and Biophysical Research Communications*, 302, 454-61.

R. Scott, **W. Thelin**, S. Milgram. A novel PDZ protein regulates the activity of guanylyl cyclase C, the heat-stable enterotoxin receptor. 2002. *Journal of Biological Chemistry*, 277, 22934-41.