

HEATHER M. WILCOX, Ph.D.

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SUMMARY

A PhD immunologist with 14 years experience in flow cytometry and immunology research. Experience with multiple software platforms and instruments, including the use of a BD LSR II for 12-color analysis. Established and managed a small flow cytometry facility; responsible for basic maintenance and repairs, formal user training, and development of SOPs. Extensive experience in teaching (immunology and flow cytometry), training both new and experienced users of flow cytometers, and managing a team of research associates and scientists.

EDUCATION

Doctor of Philosophy in Immunology – Harvard University
Bachelor of Arts in Molecular and Cellular Biology – University of California at Berkeley

PROFESSIONAL EXPERIENCE

MEDIVAS LLC, San Diego, CA

2005 – 2007

Senior Staff Scientist

Project leader for the HPV vaccine program and manager of the flow cytometry core facility.

- Trained new users of the flow cytometry facility and expanded the range of application used.
- Designed experiments to test candidate vaccine formulations for their ability to elicit a cytotoxic T cell response and to prevent or suppress tumor growth in an animal model for cervical cancer.
- Developed assays and animal models, analyzed and presented data inside and outside of the company.
- Supervised and trained junior scientists and research associates.

Staff Scientist

Project leader for vaccines group.

- Created a vaccine program at Medivas that became the core focus of the company.
- Hired and managed five other scientists and research associates.
- Established and ran a small flow cytometry core facility.

CHIRON VACCINES (now Novartis Vaccines), Emeryville, CA

2003 – 2004

Postdoctoral Fellow

- Investigated the use of DNA vaccines and alphavirus-based vaccines for the induction of protective mucosal immunity in an animal model. Used Luminex, ELISA, and flow cytometric methods to assess cytokine and antibody responses to novel immunization protocols.

UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL, Worcester, MA

2001 – 2003

Postdoctoral Fellow

- Characterized immune system defects in gene-targeted mice using a combination of biochemical and cell-based assays to examine signal transduction pathways.
- Extensive use and development of assays involving flow cytometry, protein biochemistry, and ex vivo culture of primary T cells.

HARVARD UNIVERSITY, Cambridge, MA

1994 – 2000

Graduate Student

- Generated and expressed recombinant versions of a novel tyrosine kinase, Itk, characterizing mutants with defects in protein binding, lipid binding, phosphorylation, and catalytic activity.
- Initiated the use of advanced flow cytometric methods in the lab, including calcium flux analysis, intracellular staining, CFSE staining, and cell cycle analysis.

HONORS AND AWARDS

Derek Bok Award for Excellence in Teaching, Harvard University, 1996
National Science Foundation Predoctoral Fellowship, 1993-1996
Dean's High Honors, U.C. Berkeley, 1991
Departmental Honors, U.C. Berkeley, 1991

PROFESSIONAL ASSOCIATIONS

Member, International Society for Analytical Cytology (ISAC)
Member, Phi Beta Kappa Society

PATENTS AND INVENTIONS

- Invention: Monoclonal antibody specific for Itk (2F12); licensed to multiple commercial suppliers of research antibodies including BD Pharmingen and Upstate Biotechnology, Inc. through Harvard's Office of Technology and Trademark Licensing.
- Patent application: "Vaccine Delivery Compositions and Methods of Use". Submitted to US Patent Office, with co-inventors W. Turnell, Z. Gomurashvili, V. Vassilev, and M.A. Vitiello.

PRESENTATIONS AND TEACHING EXPERIENCE

- Invited speaker at the Biosymposia Inc. event, Overcoming Barriers to Immune Therapy in Melanoma, held at the John Moores Cancer Center, U.C. San Diego, Nov 11, 2006. "A Novel Biodegradable Polymer Platform Technology for Vaccine Delivery".
- Invited speaker at The American Association of Immunologists and The Clinical Immunology Society (AAI/CIS) Joint Annual Meeting, Seattle, WA, May 2000. "The Role of the T Cell Kinase, Itk, in IL-2 Production".
- Guest lecturer in the Molecular Immunology course at Harvard University, annually, 1994-1997.
- Head teaching fellow, 4 years, Molecular and Cellular Immunology course, Harvard University. Lectured, taught study section, wrote and graded exams, trained and supervised teaching fellows.

FLOW CYTOMETRY INSTRUMENTATION AND SOFTWARE

BD FACScan (4 color), BD FACSCalibur (4 color), BD FACSCanto (6 color), BD LSR II (12 color)
Software: CellQuest, CellQuestPro, DigitalVantage (DiVa), FlowJo

RESEARCH ARTICLES

Vitiello AM, Charles C, **Wilcox HM** et al. "Efficacy of a biodegradable polymer-bound influenza protein subunit vaccine in mice and ferrets" (manuscript in preparation).

Wilcox HM, Li CM, and Berg LJ. "Regulation of the tyrosine kinase Itk through differential interactions of the pleckstrin homology domain with membrane phospholipids" (manuscript in preparation).

Miller AT, **Wilcox HM**, Lai ZB and Berg LJ. "Altered regulation of T-bet expression in T cells lacking the tyrosine kinase Itk" *Immunity*, 2004 July 23.

Wilcox HM and Berg LJ. "Itk phosphorylation sites are required for functional activity in primary T cells" *J Biol Chem*, 2003 Sept 26.

Heyeck SD, **Wilcox HM**, Bunnell SC, and Berg LJ. "Lck phosphorylates the activation loop tyrosine of the Itk kinase domain and activates Itk kinase activity" *J Biol Chem*, 1997 Oct 3.