

## Curriculum Vitae

*Wen-Shu Wu, PhD*

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### Education:

1983-1987 B.S., Biology  
Dept. of Biology  
East China Normal University, Shanghai, China

1987-1990 M.S., Tumor Immunology  
The Joint Program of Shanghai Cancer Institute  
& Shanghai Second Medical University, Shanghai, China

1997-2001 Ph.D., Cancer Biology  
M.D. Anderson Cancer Center  
University of Texas, Houston

### Postdoctoral Training:

2001-2005 Postdoctoral Fellow, (Laboratory of A. Thomas Look, M.D.)  
Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA

### Academic Appointments:

1991-1993 Instructor, Shanghai Cancer Institute, Shanghai, China

1993-1994 Research Exchange Scholar, Mount Desert Island Biological Laboratories  
Salsbury Cove, ME

1994-1997 Research Associate, Baylor College of Medicine, Houston, TX

2005-2006 Instructor, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA

2007- Co-director, the Cell Separation and Analysis Core  
Maine Medical Center Research Institute, Scarborough, ME

- 2007- Principal Investigator, COBRE in Stem and Progenitor Cell Biology  
Center for Molecular Medicine, Maine Medical Center Research Institute  
Scarborough, ME
- 2007- Joint Faculty, the University of Maine Graduate School of Biomedical Sciences

### Research Interests:

The major research interests of my laboratory are stem cell and cancer biology. These include: 1) Regulation of proliferation, differentiation, and lineage commitment of normal hematopoietic stem cells (HSCs) under homeostatic conditions and under conditions of stress; 2) Novel strategies to ameliorate the side effects of cancer therapy on hematopoietic stem and progenitor cells in vivo. 3) Signaling network for lineage-specific differentiation of embryonic stem (ES) cells and iPS cells; 4) Novel technologies for generation of induced pluripotent stem cells (iPS cells); 5) Role of SNAIL families in regulation of mammary gland development, self-renewal of mammary gland stem cells and breast cancer stem cells, and breast cancer metastasis.

### Awards and Honors:

NSF-EPSCoR Fellowship (1994), Mount Desert Island Biological Laboratories, ME  
Research Award for Trainee (2001), M.D. Anderson Cancer Center  
Travel Award (2001), American Society for Biochemistry & Molecular Biology  
NIH Ruth L. Kirschstein National Research Service Award (2003)  
Travel Award (2004), American Society of Hematology  
Travel Award (2005), Cell Death Society  
NIH Mentored Research Scientist Development Award (2006)

### Teaching Activities

- 2007-present Lecture on Cell Biology, The University of Maine Graduate School of  
Biomedical Sciences (GSBS)
- 2008 Isolation and analysis of stem cells by FACS (Training course for Stem cell  
technology, Oct. 12-14, Tianjin, China)

### Memberships in Professional Societies:

International Society for Stem Cell Research (ISSCR)  
American Society for Hematology (ASH)

### Ongoing Research Support:

NIH/NCRR P20 RR18789 (Wojchowski) 09/01/2008-09/01/2013  
“COBRE in Stem Cell Biology and Regenerative Medicine”

Project 5: “Slug as a Key Regulator of Hematopoietic Stem Cell Survival” 09/01/2008-09/01/2010  
The goal of this project is to study roles of endogenous Slug in normal hematopoietic stem cells before after gamma-irradiation and to test whether enforced expression of Slug enhance protection of hematopoietic stem cells against lethal dose irradiation in vivo. Outcomes of these studies should provide rationales, and strategies to reinforce Slug-mediated survival pathways in ways that will enhance stem cell regeneration of the hematopoietic system following cancer radiotherapy.

Role: Project 5# PI

**NIH/NIDDK K01-DK-078180-01 (Wu)**

Research mentored Scientist Development Award 09/01/07-09/01/10

“Role of Slug in Regulation of Hematopoietic Stem Cells”

The goal of the application is to test the hypothesis that transcription factor Slug functions to negatively regulate p53-mediated apoptotic signaling in hematopoietic stem cells (HSCs) and is obligatory for preserving HSC integrity during genotoxic challenge.

Role: PI

**American Cancer Society & Norris Cotton Cancer Center Grant (Wu) 06/30/08-06/30/09**

“Slug’s Role in Development and Metastasis of Breast Cancer”

The goal of this grant is to investigate the roles for endogenous *SLUG* in development and metastasis of breast cancer. We will address this question by employing *Slug* knockout mouse and the breast cancer mouse model carrying PyVT (mouse polyoma virus middle T antigen).

Role: PI

**Selected peer-reviewed publications (in chronological order):**

1. Jiu Jian, and **Wenshu Wu**, et. al. Cloning and Sequencing of Immunoglobulin Heavy Variable Region Gene by Polymerase Chain Reaction. *Chinese Biochemical Journal*, Vol. 8, 70-74, 1992
2. **Wenshu Wu**, Zhen-yu Huang, Wen-xiang Zhang, Dai-zong Li, Jin-xin Hong. Cloning and Sequencing of the Variable Regions Gene of 2F7 Monoclonal Antibody against Human Small Cell Lung Cancer. *Acta Biochimica et Biophysica Sinica*, Vol. 24, 581-586, 1992
3. Towle DW, Rushton ME, Heidysch D, Magnani JJ, Rose MJ, Amstutz A, Jordon MK, Shearer DW, **Wu WS**. Sodium/Proton Antiporter in the Euryhaline Crab Carcinus Maenas: Molecular Cloning, Expression and Tissue Distribution. *J. Exp. Biol*, Vol. 200, 1003-1014, 1997
4. **Wen-shu Wu**, Kenneth L. McClain. DNA Polymorphisms and Mutations of the Tumor Necrosis Factor- $\alpha$  Promoter in Langerhans Cell Histiocytosis (LCH). *J. Interferon and Cytokine Research*, Vol. 17, 631-635, 1997
5. **Wen-shu Wu**, Sadeq Vallian, Edward Seto, Wen-Ming Yang, Diane Edmondson, Sharon Roth, and Kun-Sang Chang. The Growth Suppressor PML Represses Transcription by Functionally and Physically Interacting with Histone Deacetylases. *Molecular and Cellular Biology*, Vol. 21, 2259-2268, 2001
6. Akira Inoue, Markus G. Seidel, **Wenshu Wu**, Shintaro Kamizono, Adolfo A. Ferrando, Roderick T. Bronson, Hiromi Iwasaki, Koichi Akashi, Akira Morimoto, Johann K. Hitzler, Tamara I. Pestina, Carl W. Jackson, Ryuhei Tanaka, Miriam J. Chong, Peter J. McKinnon, Takeshi Inukai, Gerard C. Grosveld, and A. Thomas Look. Slug, a highly Conserved Zinc Finger Transcriptional Repressor, Protects Hematopoietic Progenitor Cells from Radiation-induced Apoptosis in vivo. *Cancer Cell*, Vol. 2, 279-288, 2002
7. **Wen-shu Wu**, Zhi-Xiang Xu, and Kun-Sang Chang. The Promyelocytic Leukemia Protein Represses A20 mediated Transcription. *J. Biol. Chem.*, Vol. 27, 31734-31739, 2002
8. **Wen-shu Wu**, Zi-Xiang Xu, Rai-qiong Ran, Feng Meng, Kun-Sang Chang. Promyelocytic Leukemia Protein PML Inhibits Nur77-mediated Transactivation Through Specific Function Interaction.

*Oncogene*, Vol. 21, 3925-3933, 2002

9. McClain KL, Laud P, **Wu WS**, Pollack MS. Langerhans cell histiocytosis patients have HLA Cw7 and DR4 types associated with specific clinical presentations and no increased frequency in polymorphisms of the tumor necrosis factor alpha promoter. *Medical and Pediatric Oncology*, Vol. 41, 502-507, 2003
10. **Wen-shu Wu**, Zhi-Xiang Xu, Walter N. Hittelman, Paolo Salomoni, Pier Paolo Pandolfi, and Kun-Sang Chang. Promyelocytic Leukemia Protein Sensitizes Tumor Necrosis Factor  $\alpha$ -Induced Apoptosis by Inhibiting the NF- $\kappa$ B Survival Pathway. *J Biol. Chem.*, Vol. 278, 12294-12304, 2003
11. Takeshi Inukai, Toshiya Inaba, Jinjun Dang, Ryoko Kuribara, Keiya Ozawa, Atsushi Miyajima, **Wenshu Wu**, A. Thomas Look, Yojiro Arinobu, Hiromi Iwasaki, Koichi Akashi, Keiko Kagami, Kumiko Goi, Kanji Sugita, and Shinpei Nakazawa. TEF, an antiapoptotic bZIP transcription factor related to the oncogenic E2A-HLF chimera, inhibits cell growth by down-regulating expression of the common beta chain of cytokine receptors. *Blood*, Vol. 105, 2005
12. **Wen-shu Wu**, Stefan Heinrichs, Dong Xu, Sean P. Garrison Gerard P. Zambetti, Jerry M. Adams, and A. Thomas Look. Slug Antagonizes p53-Mediated Apoptosis of Hematopoietic Progenitors by Repressing Puma. *Cell*, Vol. 123, 641-653, November 18, 2005  
**The Cover:** "Slug Represses Puma to Antagonize Apoptosis" *Cell*, Nov.18, 2005  
**Previews:** "Slugging It out: Fine Tuning the p53-PUMA Death Connection" *Cell*, 123, 545-548, 2005  
**Research Highlights:** "Slug beats Puma" *Nature*, Vol. 438, 398-399, 2005  
**Research Highlights:** "Taming Puma" *Nature Reviews Cancer*, Vol. 6, 1, 2006  
**News and Reports:** "Slug ging It Out Until the End" *Hematologist*, Vol. 3, 7, 2006  
**News and Commentary:** "Clues from worms: a Slug at Puma promotes the survival of blood progenitors" *Cell Death and Differentiation* 1-3, 2006 (March 17)
13. Liu, T.X., Becker, M.W., Jelinek, J., **Wu, W.S.**, Deng, M., Mikhalkovich, N., Hsu, K., Bloomfield, C.D., Stone, R.M., DeAngelo, D.J., et al. 2007. Chromosome 5q deletion and epigenetic suppression of the gene encoding alpha-catenin (CTNNA1) in myeloid cell transformation. *Nat Med* 13:78-83.

### Selected meeting presentations:

**Wenshu Wu**, F. Meng, P.P. Pandolfi and K. S. Chang. *PML Growth-suppressor Potentiates Cell Death through the Inhibition of NF-kappa B Survival Pathway*. **ASBMB Meeting**, FL, March 30/2001, **Oral Presentation**

**Wenshu Wu**, Dong Xu, Stefan Heinrichs, A. Thomas Look. *Slug Plays an Essential Role in the Radioprotection of Hematopoietic Progenitors In Vivo by Antagonizing p53-mediated Apoptotic Pathways*. **ASH Meeting**, San Diego, Dec. 5/2004, **Oral Presentation**

**Wenshu Wu**, Stefan Heinrichs, Dong Xu, A. Thomas Look. *Slug Confers Radioprotection of Hematopoietic Progenitors by Antagonizing p53-Mediated Apoptotic pathway*. **Programmed Cell Death Meeting**, Cold Spring Harbor Lab, Sep./21, 2005, **Oral Presentation**

Lijian Shao, Yan Sun, Terry Henderson, and **Wen-Shu Wu**. *Deletion of Transcriptional Repressor Slug Leads to Age-related Phenotypes and Stem Cell Defect*. **International Society for Stem Cell Research, 6th Annual Meeting, Philadelphia, PA, June 11 -14, 2008, Oral Presentation**

Lijian Shao, Yan Sun, Wei Feng, Zack Wang, A. Thomas Look, and **Wen-Shu Wu**. *Deletion of PUMA Selectively Protects HSCs from Lethal Dose  $\gamma$ -Irradiation*. **International Forum on Stem Cells, Tianjin, China, Oct 16-18, 2008. Oral Presentation**