

## Huiyun Shen

Graduate Center for Toxicology  
University of Kentucky  
Charles T. Wethington Bldg 589,  
900 S. Limestone  
Lexington, KY 40536-0200

Phone: (859) 323-4933 x 81374  
Fax: (859) 257-1811  
E-mail: shuiy2@uky.edu

### EDUCATION

- **Ph.D.** Toxicology, University of Kentucky, Lexington, Kentucky (expected in December 2007).  
Advisor: Dr. Bernhard Hennig  
Dissertation: Zinc deficiency and endothelial cell dysfunction: implications in atherosclerosis.
- **M.S.** Toxicology, Sichuan University, Chengdu, Sichuan, P. R. China, July 2002.  
Advisor: Dr. Yuqing Liu  
Thesis: Effects of p-nonylphenol on expression of hER $\alpha$  and proliferation of MCF-7 cells.
- **B.M.** Preventive Medicine, West China University of Medical Sciences, Chengdu, Sichuan, P. R. China, July 1997.  
Thesis: Effects of human fetal liver cells (hFLC) on nonspecific immunity of BALB/c mice.

### AWARDS

2007	University of Kentucky Graduate School Travel Award to Experimental Biology Annual Meeting
2005-2006	University of Kentucky Superfund Basic Research Program Traineeship, University of Kentucky
2004-2005	Kentucky Opportunity Fellowship, University of Kentucky
2004	University of Kentucky Graduate School Travel Award to American Association for Cancer Research Annual Meeting
2002-2003	Research Challenge Trust Fund I Fellowship, University of Kentucky
2001	Excellent Graduate Student, West China Center of Medical Sciences, Sichuan University
1997	Honored Student of the Year, West China University of Medical Sciences
1992-1997	West China University of Medical Sciences Scholarship, First Prize each year

### RESEARCH AND INDUSTRY EXPERIENCE

2003-Present **Research Assistant**, Graduate Center for Toxicology, College of Medicine, University of Kentucky, Lexington, Kentucky

Participated in the following research projects:

- Zinc deficiency and early events in atherosclerosis
  - Effects of Zn deficiency on pro- and anti- inflammatory responses in porcine vascular endothelial cells.

- The indispensable role of zinc in maintaining proper function of PPAR gamma in regulating lipid metabolism and inflammatory response in LDL-receptor-deficient mice treated with rosiglitazone.
- Role of Zinc nutritional status in modulating expression of AhR-responsive P450 enzymes in porcine vascular endothelial cells.
- Molecular mechanism of the DNA damage-induced mutagenesis pathway in yeast.
  - Roles of Pol $\zeta$ , Pol $\eta$ , and Rev1 in translesion synthesis of ( $\pm$ )-trans-anti-BPDE-N2-dG and acetylaminofluorene-dG DNA adducts.
  - Role of Pol $\eta$  in the bypass of abasic sites.
  - Role of Rev1 in stimulating Pol $\zeta$  catalyzed translesion synthesis of acetylaminofluorene-dG adducts.

1999-2002      **Research and Teaching Assistant**, Department of Hygiene Toxicology, School of Public Health, West China Center of Medical Sciences, Sichuan University, Chengdu, Sichuan, P. R. China

Participated in the following projects and experiments:

- Effects of p-nonylphenol on expression of hER $\alpha$  and proliferation of MCF-7 cells.
- Regular toxicological experiments, e.g. acute toxicity tests, bone marrow micronucleus test, Ames assay, and assay of the protective effects of certain substance against chemical damages on rodent hepatocytes.

Assisted in teaching and grading the undergraduate course Hygiene Toxicology.

1997-1999      **Research Project Administrator and Hygiene Secretary**, General Office, Sichuan Provincial Center for Disease Control and Prevention, Chengdu, Sichuan, P. R. China

- Manage the research projects in disease control and hygiene surveillance departments in Sichuan CDC.
- Develop and track annual research budget.
- Review and track project data for compliance with project and sponsor requirements.
- Develop and maintain collaborative relationships with partner agencies and provide technical support.
- Recruit, train, and supervise disease control and hygiene surveillance staff in Chengdu.

## TECHNICAL COMPETENCIES

- Molecular Biology – PCR, plasmid cloning, agarose gel electrophoresis • DNA sequencing • protein purification (HPLC).
- Cell Biology – Yeast and mammalian cell culture • mammalian cell transient transfection and luciferase assay • RNA, DNA, and protein extraction • RT-real time PCR • Western blot • EMSA • Co-IP • 2D-Gel Electrophoresis.
- Experimental Animal – gavage, dissection, and tissue sampling of experimental animals i.e. mice, rats, and rabbits • handling of various animal tissues, including plasma, aorta, liver, etc.
- Enzymology – ELISA • spectrophotometry • immunohistochemistry.
- Radioanalysis – 5' and/or 3' end radiolabeling ( $^{32}$ P) of DNA oligomers • Liquid scintillation counting • autoradiography.
- Software –SPSS • digital gel imaging software • Microsoft Office Suite.

## PUBLICATIONS

1. **Shen H**, MacDonald R, Bruemmer D, Stromberg A, Daugherty A, Li X, Toborek M, and Hennig B. Zinc deficiency alters lipid metabolism in LDL-receptor-deficient mice treated with rosiglitazone. *J. Nutrition* (in press).
2. **Shen H**, Arzuaga X, Toborek M, and Hennig B. Zinc nutritional status modulates expression of AhR-responsive P450 enzymes in vascular endothelial cells. *Environmental Toxicology and Pharmacology* (in press).
3. Xie Z, Zhang Y, Guliaev AB, **Shen H**, Hang B, Singer B, and Wang, Z. (2005) The *p*-benzoquinone DNA adducts derived from benzene are highly mutagenic. *DNA Repair* 5: 1399-1409.
4. Zhao B, Xie Z, **Shen H**, and Wang Z. (2004) Role of DNA polymerase  $\eta$  in the bypass of abasic sites in yeast cells. *Nucleic Acids Res.* 32: 3984-3994.
5. Guo D, Xie Z, **Shen H**, Zhao B, and Wang Z. (2004) Translesion synthesis of acetylaminofluorene-dG adducts by DNA polymerase  $\zeta$  is stimulated by yeast Rev1 protein. *Nucleic Acids Res.* 32: 1122-1130.
6. **Shen H**, Xu P, Yu W, Liu Y, and Wu D. (2003) Effects of *p*-nonylphenol on expression of ER protein and ER alpha mRNA of MCF-7 cells. *Sichuan Da Xue Xue Bao Yi Xue Ban.* 34(4):641-644.
7. Hu Y, Liu Y, **Shen H**, Yu Q, and Liu Z. (2000) The study on effects of human fetal liver cells on immunity of BALB/c mice. *Hua Xi Yi Ke Da Xue Xue Bao* 31(1): 52-55.
8. Hu Y, **Shen H**, and Wan H. (1999) Current study on the relationship between lung tumors and oncogenes and tumor suppressor genes. *Guowai Yixue Weishengxue Fence.* 26(3):138-142.

## CONFERENCE PRESENTATIONS

1. **Shen H**, MacDonald R, Bruemmer D, Stromberg A, Daugherty A, Li X, Toborek M, and Hennig B. Zinc deficiency compromises lipid metabolism in LDL-receptor-deficient mice treated with rosiglitazone. *Experimental Biology 16<sup>th</sup> Annual Meeting*. Washington, DC. April-May 2007. (*Poster presentation*)
2. **Shen H**, Arzuaga X, Toborek M, and Hennig B. Zinc nutritional status modulates PCB77-induced pro-inflammatory responses in vascular endothelial cells. *The 4<sup>th</sup> PCB Workshop: Recent Advances in the Environmental Toxicology and Health Effects of PCBs*. Zakopane, Poland. September 2006. (*Poster presentation*)
  - Same poster presented at the 9<sup>th</sup> Annual Gill Heart Institute Cardiovascular Research Day. Lexington, KY. October 2006.
3. **Shen H**, Toborek M, and Hennig B. Compromised anti-inflammatory properties and intensified pro-inflammatory responses in vascular endothelial cells during zinc deficiency. *The 8<sup>th</sup> Annual Gill Heart Institute Cardiovascular Research Day*. Lexington, KY. October 2005. (*Poster presentation*)

4. **Shen H**, Toborek M, and Hennig B. Effects of zinc deficiency on inflammatory responses in vascular endothelial cells. American College of Nutrition 46<sup>th</sup> Annual Meeting: Symposium on Advances in Clinical Nutrition. Kiawah Island, SC. September 2005. (*Oral presentation*)
5. **Shen H**, Guo D, Xie Z, Zhao B, Geacintov NE, and Wang Z. Roles of Pol $\zeta$ , Pol $\eta$ , and Rev1 in translesion synthesis of ( $\pm$ )-*trans-anti*-BPDE-*N*<sup>2</sup>-dG and acetylaminofluorene-dG DNA adducts in yeast. American Association for Cancer Research 95<sup>th</sup> Annual Meeting. Orlando, FL. March 2004. (*Poster presentation*)
  - Same poster presented at 6<sup>th</sup> Annual Midwest DNA Repair Symposium. Lexington, KY. June 2004.

#### **ACTIVITIES**

- University of Kentucky Superfund Basic Research Program (SBRP) Outreach Core activity: trip to Harlan County to visit a PCB contaminated site and attend a mini-conference to help community members choose the correct medicine for their medical condition and learn to eat healthier food. Harlan, KY, Spring 2006.
- Chinese Student and Scholar Association (CSSA) Committee, University of Kentucky, 2002-2003.