Hanako Kobayashi, Ph.D.

C3107 Medical Center North
1161 21st Ave. South
Nashville, TN 37232
hanako.kobayashi@vanderbilt.edu

1312 West Running Brook Road
Nashville, TN 37209
(615) 483-7714

EDUCATION

Ph.D. **University of California, Berkeley**
Molecular and Biochemical Nutrition, 2003

The antiproliferative effects of butyric acid in human colon cancer cells; chromatin remodeling on p21$^{Waf1/Cip1}$ promoter

B.S. **University of Tennessee, Knoxville**
Nutrition, 1998

RESEARCH EXPERIENCES

Research Assistant Professor, Vanderbilt University, 2009 – Current

Investigation on chronic and acute renal diseases, and renal erythropoietin regulation using mouse models

Macrophage isolation from mice and culture, Unilateral ureteral ligation for chronic kidney disease, Renal artery clamp for acute kidney injury, Metabolic flux analysis using GC-MS, Immunohistochemistry, Flow cytometry analysis, Real-time RT-PCR, Renal Interstitial cell isolation from mice, and In situ hybridization.

Research Instructor, Vanderbilt University, 2006 – 2009

Investigation on vascular inflammation

Endothelial cell culture, Isolation of lung endothelial cells from mice, Retroviral vector production, leukocyte-endothelium adhesion assay, Real-time RT-PCR, Luciferase assay for promoter analysis, Mouse luciferase imaging.

Postdoctoral Fellow, Vanderbilt University, 2003 – 2006

Investigation on vascular inflammation

Endothelial cell culture, Isolation of lung endothelial cells from mice, Adenoviral vector production, Tube formation assay, Migration assay, Real-time RT-PCR, Confocal microscopy, Mouse luciferase imaging, Northern blot, Southern blot, Western blot, and Immunoprecipitation.

Graduate Student Researcher, University of California, Berkeley, 1998 – 2003

Investigation on chromatin remodeling in colon cancer cell

Mammalian cell culture, Northern blot, Southern blot, Western blot, Co-immunoprecipitation, Transient transfection, DNase I hypersensitive assay,

Chromatin immunoprecipitation, RT-PCR, PCR, Flow cytometry, and Mass Isotope Distribution Analysis (GC-MS).

Laboratory Assistant, University of Tennessee, Knoxville, 1996-1998

Investigation on fatty acid synthesis

Mammalian cell culture, Northern blot, Southern blot, and Gas Chromatography

TEACHING EXPERIENCES

Lecturer, Vanderbilt University, 2008

Tumor angiogenesis lecture, Cancer Biology, Fall 2008

Adjunct Faculty, Nashville State Community College, 2007 - 2008

Human Anatomy and Physiology, Spring 2007
Introductory Biology, Fall 2007 and Spring 2008

Graduate Student Instructor, University of California, Berkeley, 1998 – 2003

Food Toxicology, Fall 2002
Experimental Nutrition Laboratory, Fall 2001
Human Food Practice, Spring 2001

OTHER EXPERIENCES

Kishimoto & Co,, Osaka, Japan, 1993-1995

Assisted Japanese companies to apply their patents and trade marks overseas.

PUBLICATIONS

Farsijiani, N.M., Liu, Q., **Kobayashi, H**., Davidoff, O., Fandrey, J., O'Connor, P.M., and Haase, V.H. *Renal tubular epithelial cells regulate erythropoiesis via HIF-dependent suppression of erythropoietin production.* J Clin Invest. In revision, 2015.

Kapitsinou, P.P., Sano, H., Michael, M., **Kobayashi, H**., Davidoff, O., Bian, A., Yao, B., Zhang, M.Z., Harris, R.C., Duffy, K.J., Erickson-Miller, C.L., Sutton, T.A., and Haase V.H. *Endothelial Hif-2 mediates protection and recovery from ischemic kidney injury.* J Clin Invest. Jun 2; 124(6):2396-409, 2014.

Kobayashi, H., Gilbert, V., Liu, Q., Kapitsinou, P.P., Unger, T.L., Rha, J. Schlondorff, D., and Haase V.H. *Myeloid cell-derived hypoxia-inducible factor attenuates inflammation in unilateral ureteral obstruction-induced kidney injury.* J Immunol. May 15; 188(10):5106-15, 2012.

Boelte, K., **Kobayashi, H.** and Lin, C.P., *Endothelial Cell Adhesion Molecules and Cancer Progression.* Adhesion Molecules. Edited by Victor R. Preedy, 2010.

Kobayashi, H., Huang, J., Ye, F., Shyr Y., Blackwell, T.S., and Lin, C.P. *Interleukin-32β propagates vascular inflammation and exacerbates sepsis in a mouse model.* Plos One. Mar 5;5(3):e9458, 2010.

Kobayashi, H., Yazlovitskaya E.M., and Lin, C.P. *Interleukin-32 positively regulates radiation-induced vascular inflammation.* Int J Radiat Oncol Bio Phys. 74 (5): 1573-9. 2009.

Kobayashi, H. and Lin, C.P. *Molecular characterization of IL-32 in human endothelial cells*. Cytokine. 46(3):351-8. 2009.

Kobayashi, H. and Lin C.P. *Angiogenesis links chronic inflammation with cancer.* Methods Mol Biol. 511:185-91. 2009.

Kobayashi, H., Laura M. DeBusk and Lin C.P. *Angiopoietin/Tie2 signaling regulates tumor angiogenesis.* Antiangiogenic Agents in Cancer Therapy. Edited by Lee Ellis and Beverly Teicher, 2nd ed., 2008.

Kobayashi, H., Kimberly C. Boelte and Lin C.P. *Endothelium cell adhesion molecules and cancer progression.* Current Medicinal Chemistry, 14(4):377-86, 2007.

Kobayashi, H., and Lin C.P. *Nanotechnology for antiangiogenic cancer therapy*. Nanomedicine. 1, 17, 2006

Kobayashi, H., and Lin C.P. *A combination approach for cancer therapy: angiogenesis with ionizing radiation.* Histol Histopathol. 2006 Oct;21(10):1125-34.

Kobayashi, H., Debusk, L.M., Babichev, Y.O., Dumont, D.J. and Lin, C.P. *Hepatocyte Growth Factor Mediates Angiopoietin-induced Smooth Muscle Cells Recruitment.* Blood. 2006 Aug15; 108(4): 1260-6.

Kobayashi, H., and Lin C.P. *Angiopoietin/Tie2 Signaling, Inflammation and Disease Development.* Front Biosci. 2005 Jan 1, 10:666-74.

Chen, Y., Donnelly, E. **Kobayashi, H**., Debusk, L., and Lin, CP. *Gene Therapy Targeting the Tie2 Signaling Pathway Ameriorates Collagen-Induced Arthritis and Protects Against Bone Destruction.* Arthritis Rheum. Vol. 52, No. 5, May 2005: 1585-1594.

Kobayashi, H., Tan E. M., and Fleming S. E. *Acetylation of Histones Associated with the* $p21^{WAF1/CIP1}$ *Gene Transcription in Human Colorectal Adenocacinoma Cells.* Int. J. Cancer. 2004;109(2):207-13

Kobayashi, H., Tan E. M., and Fleming S. E. *Sodium butyrate inhibits cell growth and stimulates p21 protein in human colonic adenocarcinoma cells independent of p53 status.* Nutr Cancer. 2003; 46(2):202-11.

H. Kobayashi and S. E. Fleming, *The Source of Dietary Fiber Influences – Short Chain Fatty Acid Production and Concentrations in the Large Bowel.* CRC Handbook of Dietary Fiber in Human Nutrition. 3rd Edition. 287 – 315, 2001.

S. Kim, S. Urs, F. Massiera, P. Wortman, R. Joshi, Y-R .Heo, B. Andersen, **H. Kobayashi**, M.Teboul, Ailhaud, A.Quignard-Boulangé, Fukamizu A, BH. Jones, JH. Kim, and N.Moustaid-Moussa *Effects of high fat diet, angiotensinogen (agt) gene inactivation and targeted expression to adipose tissue on lipid metabolism and renal gene expression*. Horm Metab Res 2002 Nov; 34(11-12):721-5

PROCEEDINGS

Kobayashi, H., Liu, Q., and Haase V.H. *Renal Epo expression is differentially regulated in FoxD1-lineage cells.* Keystone Symposium Abstract Book, 2015.

Kobayashi, H., Farsijani, N., and Haase V.H. *Renal tubule epithelial deletion of Phd2 protects kidney from ischemia reperfusion injury via Hif-1a activation.* Keystone Symposium Abstract Book, 2014.

Kobayashi, H., Schlondorff, D., and Haase V.H. *Macrophage HIF suppresses renal inflammation in chronic kidney disease.* American Society of Nephrology, Kidney Week 2011.

Sano H., **Kobayashi, H.**, and Haase V.H. *Endothelial HIF2, but not HIF1 modulates inflammation and protects from renal ischemia-reperfusion injury.* American Society of Nephrology, Kidney Week 2011.

Kobayashi, H., Yazlovitskaya, E.Y., and Lin, P.C. *Role of Interleukin-32 in the radiation-induced inflammation.* Keystone Symposium Abstract Book, 2008.

Kobayashi, H., Debusk, L.M., and Lin, C. *Hepatocyte Growth Factor Mediates Angiopoietin-induced Smooth Muscle Cells Recruitment.* Proceedings of the American Association for Cancer Research, 2005.

Kobayashi, H., Bai, X., Kamiyama, M., Debusk, L.M., and Lin, C. *A novel gene, natural killer transcript 4 (NK4), may be involved in the inflammation angiogenesis.* Proceedings of the American Association for Cancer Research, 2004.

Kobayashi, H., Tan E. M., and Fleming S. E. *The mechanism inducing p21$^{WAF1/CIP1}$ by sodium butyrate in human colorectal adenocacinoma cells.* Proceedings of the American Association for Cancer Research, 2003 (44):18.

Kobayashi, H., Tan E. M., and Fleming S. E. *The antiproliferative effect of sodium butyrate in human colorectal adenocarcinoma cell lines.* Proceedings of the American Association for Cancer Research, 2002 (43):106.

WORKSHOP AND CONFERENCE ATTENDANCE

Keystone symposium, Sensing and Signaling of Hypoxia: Interfaces with Biology and Medicine, 2014

NIH-sponsored Mouse Metabolic Phenotyping Center Consortium Workshop, Isotope Tracers in Metabolic Research, 2013

American Society of Nephrology (ASN) Kidney week, 2011
Oral presentation

Keystone symposium, Hypoxia: Molecular Mechanisms of oxygen sensing and response pathways, 2010

Keystone symposia, Eicosanoids and other mediators of chronic inflammation, 2008
Poster presentation

American Association of Cancer Research (AACR) Annual Conference, 2006

American Association of Cancer Research (AACR) Annual Conference, 2005
Poster presentation

American Association of Cancer Research (AACR) Annual Conference, 2004
Minisymposium presentation

American Association of Cancer Research (AACR) Annual Conference, 2003
Poster presentation

American Association of Cancer Research (AACR) Annual Conference, 2002
Poster presentation

AACR Workshop, Pathobiology of Cancer, 2002
Poster presentation

GRANT

Training grant T32-CA093240, 2003-2006

AWARD

AACR Scholar-In-Training Award, 2003

Keystone symposium assistantship, 2010