

HAEYOUNG KIM, PH.D.

CURRENT POSITION

Assistant Professor
Department of Biological and Health Sciences
Texas A&M University-Kingsville
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EDUCATION

Ph.D., Biochemistry, Molecular Biology, and Biophysics, 2007

University of Minnesota, Twin Cities, MN

Advisor: Dr. Dennis M. Livingston

Thesis: Characterization of the local chromatin structure of CAG trinucleotide repeat tracts and CAG repeat chromatin-associated proteins

M.A., Biochemistry, 2002

Chonnam National University, Gwangju, South Korea

Advisor: Dr. Oksoo Han

Thesis: Heterologous expression and characterization of allen oxide synthase and lipoxygenase

Graduate Program, Life Sciences (No Degree Earned), 2000

Pohang University of Science and Technology, Pohang, South Korea

B.A., Genetic Engineering, 1999

Chonnam National University, Gwangju, South Korea

RESEARCH EXPERIENCE

Research Fellow in Genetics, 2007-2016

Harvard Medical School, Boston, MA

Studied the molecular mechanism of aging focused on genome stability, epigenetics and cell signaling pathways in age-associated diseases including Alzheimer's disease and cancer

- Develop cellular models for Alzheimer's disease using CRISPR-mediated genome editing technique in patient-derived induced pluripotent stem cells (iPSCs)
- Verify the role of epigenetic modulators in DNA repair pathway and damage response signaling

Research Assistant in Biochemistry and Molecular Biology, 2002-2007

University of Minnesota, Minneapolis, MN

Studied the molecular mechanism of rare-genetic diseases caused by repetitive DNA elements such as Huntington's disease

- Conducted comprehensive study of DNA damage repair, chromatin structure, yeast genetics, and rare genetic diseases including Huntington's disease
- Structured molecular biology methodologies for illustrating the local chromatin structure
- Initiated yeast one hybrid screening to determine specific DNA binding proteins and verify the role of the protein in DNA damage repair and chromatin organization

Research Assistant in Biochemistry, 2000-2002

Chonnam National University, Gwangju, South Korea

Studied enzyme kinetics, antibiotics biosynthesis pathways, and lipid metabolism

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- Developed enzymatic assays using analytical tools including HPLC, GC-MS, spectrophotometer and fluorescence spectrometer
- Engineered secondary metabolite biosynthesis pathways and utilized various bioanalytical tools to analyze small metabolites to macromolecules

Research Assistant in Life Sciences, 1998-2000

Pohang University of Science and Technology, Pohang, South Korea

Studied the genetics of plant senescence using *Arabidopsis thaliana* as a model system

- Screened mutant plants with longer longevity and performed genetic mapping and positional cloning using RFLP and other SNP detection methods

TEACHING EXPERIENCE

Graduate Teaching Assistant - Biochemistry, 2004

University of Minnesota, Twin Cities, MN

Graduate Teaching Assistant - Biochemistry, 2001

Graduate Teaching Assistant – Organic Chemistry, 2000

Chonnam National University, Gwangju, South Korea

AWARDS AND HONORS

University of Minnesota, Minneapolis, MN

- Dr. Frederick J. Bollum Research Award, 2006
- Graduate Student Travel Award, 2006 and 2004
- Summer Research Fellowship in Structural Biology, 2002

Chonnam National University, Gwangju, South Korea

- Graduated with Honors, 1999
- Tuition Scholarships, 1996–1999

PRESENTATIONS

Kim, H. (2011). New biological functions of REST/NRSF. Department of Pathology, Harvard Medical School, Boston, MA.

Kim, H. (2013). Role of REST/NRSF in genome maintenance. Department of Genetics, Harvard Medical School, Boston, MA.

Kim, H., and Livingston, D.M. (2006). A high mobility group protein binds to long CAG repeat tracts and establishes their chromatin organization in *Saccharomyces cerevisiae*. DNA replication and genome integrity. Salk Meeting, La Jolla, CA. (Poster)

Refsland, E., Kim, H., and Livingston D.M. (2004). Expansion of CAG repeat tracts in DNA ligase I mutants. Yeast Genetics Meeting, University of Washington, Seattle, WA. (Poster)

PUBLICATIONS

1. Lu T, Aron L, Zullo J, Pan Y, **Kim H**, Chen Y, Yang TH, Kim HM, Drake D, Liu XS, Bennett DA, Colaiácovo MP, Yankner BA. (2014) REST and stress resistance in aging and Alzheimer's disease. *Nature*. 507(7493):448-54.
2. Mosammaparast N, **Kim H**, Laurent B, Zhao Y, Lim HJ, Majid MC, Dango S, Luo Y, Hempel K, Sowa ME, Gygi SP, Steen H, Harper JW, Yankner B, Shi Y. (2013) The histone demethylase LSD1/KDM1A promotes the DNA damage response. *J Cell Biol*. 203(3):457-70.
3. **Kim H**, Livingston DM. (2009) Suppression of a DNA polymerase delta mutation by the absence of the high mobility group protein Hmo1 in *Saccharomyces cerevisiae*. *Curr Genet*. 55(2):127-38.
4. **Kim H**, Livingston DM. (2006) A high mobility group protein binds to long CAG repeat tracts and establishes their chromatin organization in *Saccharomyces cerevisiae*. *J Biol Chem*. 281(23):15735-40.
5. Myung K, Ghosh G, Fattah FJ, Li G, **Kim H**, Dutia A, Pak E, Smith S, Hendrickson EA. (2004) Regulation of telomere length and suppression of genomic instability in human somatic cells by Ku86. *Mol Cell Biol*. 24(11):5050-9.
6. Kim ES, **Kim H**, Park RD, Lee Y, Han O. (2002) Dual positional specificity of wound-responsive lipoxygenase from maize seedlings. *J Plant Physiol*. 159(11): 1263-5.
7. Kim C, **Kim H**, Han O. (2001) The role of serine-246 in cytochrome P450eryF-catalyzed hydroxylation of 6-deoxyerythronolide B. *Biosci Biotechnol Biochem*. 65(4):752-7.