

### ***Curriculum Vitae***

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#### ***Education***

- 1996-2001 Ph.D. in Physiology and Biophysics, State University of New York at Stony Brook, NY, U.S.A  
1991-1995 B.S. in Biochemistry, University of California, Davis, CA, U.S.A

#### ***Research Experiences***

- 2015 Associate professor in the Department of Biological Sciences at Seoul National University, South Korea  
2009-2014 Assistant professor in the Department of Biological Sciences at Seoul National University, South Korea  
2006-2008 Group leader at the Center for Biomembrane Research, Department of Biochemistry and Biophysics, Stockholm University, Sweden.  
2001-2005 Postdoctoral fellow in the laboratory of Dr. Gunnar von Heijne in the Department of Biochemistry and Biophysics, Stockholm University, Sweden, established eukaryotic membrane proteomics studies.  
1997-2001 Graduate student in the laboratory of Dr. William J. Lennarz in the Department of Cell Biology and Biochemistry, SUNY at Stony Brook, studied the structure/function of Ost4p, a subunit of yeast oligosaccharyltransferase.  
1996-1997 Graduate laboratory rotations with Dr. James Dilger in the Department of Anesthesiology, studied electrophysiology of acetylcholine receptor channel and Dr. Erwin London in the Department of Cell Biology and Biochemistry, studied the mechanism of membrane insertion of diphtheria toxin at the SUNY at Stony Brook.

#### ***On-going research support***

Basic Research Grant NRF-2016R1A2B2013459 Hyun Ah Kim (Principal Investigator) 06/01/16-05/31/19  
National Research Foundation of Korea 125 million KRW per year  
Protein translocation into subcellular organelles in the eukaryotic cell

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Seoul National University 92 million KRW per year  
Dynamic mitochondrial proteostasis: Import and degradation of mitochondrial membrane proteins

## Publications since 2011

### Research articles

- Yim C, Jung S, Kim JH, Jung Y, Jeong S, Kim H. Profiling of signal sequence characteristics and requirement of different translocation components. *BBA-Mol. Cell. Res.* 2018 Nov., 1865;1640-1648.
- Lee S, Lee H, Yoo S, Kim H. Molecular insight into the m-AAA protease-mediated dislocation of transmembrane helices in the mitochondrial inner membrane. *J Biol Chem.* 2017 Dec 8, 292(49):20058-20066.
- Lara P, Öjemalm K, Reithinger J, Holgado A, Maojun Y, Hamed A, Mattle D, Kim H, Nilsson I. Refined topology model of the STT3/Stt3 protein subunit of the oligosaccharyltransferase complex. *J Biol Chem.* 2017 Jul 7, 292(27):11349-11360.
- H. Kim, K. Park, S. Botelho and H. Kim. Use of carbonate extraction in analyzing moderately hydrophobic transmembrane proteins in the mitochondrial inner membrane. *Protein Sci.* 2015 Dec 24, 12:2063-9.
- S. Jung, J. Kim, J.H. Reithinger and H. Kim. The Sec62/Sec63 translocon facilitates the C<sub>out</sub> orientation of membrane proteins. *J Cell Sci.* 2014 Oct 1, 127: 4270-8.
- K. Park, S. Jung, H. Kim and H. Kim. Mode of membrane insertion of individual transmembrane segments in Mdl1 and Mdl2, multi-spanning mitochondrial ABC transporters. *FEBS Lett.* 2014 Sep 17, 588(18):3445-53.
- H. Lee, P. Lara, A. Ostuni, J. Presto, J. Johansson, I. Nilsson and H. Kim. Live-cell topology assessment of URG7, MRP6<sub>102</sub> and SP-C using glycosylatable green fluorescent protein in mammalian cells. *Biochem Biophys Res Commun.* 2014 Aug 8;450(4):1587-92.
- J.H. Reithinger, C. Yim, S. Kim, P. H. Lee and H. Kim. Structural and functional profiling of the lateral gate of the Sec61 translocon. *J Biol Chem.* 2014 May 30, 289(22):15845-55.
- J.H. Reithinger, C. Yim, K. Park, P. Björkholm, G. von Heijne and H. Kim. A short C-terminal tail prevents mis-targeting of hydrophobic mitochondrial membrane proteins to the ER. *FEBS Lett.* 2013 Nov 1, 587(21), 3480-3486. ISSN:0014-5793.
- J.H. Reithinger, J. Kim and H. Kim. Sec62 mediates membrane insertion and orientation of moderately hydrophobic signal anchor proteins in the ER. *J Biol Chem.* 2013 Jun 21, 288(25):18058-67.
- S. Botelho, T. Tatsuta, G. von Heijne, H. Kim. Dislocation by the m-AAA protease increases the threshold hydrophobicity for retention of transmembrane helices in the inner membrane of yeast mitochondria. *J Biol Chem.* 2013 Feb 15, 288(7):4792-8.
- K. Park, S.C. Bothelho, J. Hong, M. Österberg and H. Kim. Dissecting stop-transfer vs. conservative sorting pathways for mitochondrial inner membrane proteins in vivo. *J Biol Chem.* 2013 Jan 18, 288(3):1521-32.
- H. Lee, J. Min, G. von Heijne and H. Kim. Glycosylatable GFP as a compartment-specific membrane topology reporter. *Biochem Biophys Res Commun.* 2012 Nov 2, 427(4):780-4.
- M. Österberg, S.C. Bothelho, G. von Heijne\* and H. Kim\*. Charged flanking residues control the efficiency of membrane insertion of the first transmembrane segment in yeast mitochondrial Mgm1p. *FEBS Lett.* 2011 Mar 30, 585, 1238-1242.

- S.C. Bothelho, M. Österberg, A.S. Reichert, K. Yamano, P. Björkholm, T. Endo, G. von Heijne and H. Kim. TIM23-mediated insertion of transmembrane  $\alpha$ -helices into the mitochondrial inner membrane. *Embo J.* 2011 Mar 16, 30, 1003-1011.

**Review and method articles**

- Hunsang Lee and Hyun Kim. Membrane topology of transmembrane proteins; determinants and experimental tools. *Biochem Biophys Res Commun.* 2014 Oct 17;453(2):268-276
- David Drew and Hyun Kim. Chapter 4. Preparation of *Saccharomyces cerevisiae* expression plasmids. *Methods in Mol. Biol.* 2012 866, 41-46.
- David Drew and Hyun Kim. Chapter 8. Screening for high-yielding *Saccharomyces cerevisiae* clones: using a green fluorescent protein fusion strategy in the production of membrane proteins. *Methods in Mol. Biol.* 2012 866, 75-86.
- David Drew and Hyun Kim. Chapter 16. Optimizing *Saccharomyces cerevisiae* induction regimes. *Methods in Mol. Biol.* 2012 866, 191-195.
- David Drew and Hyun Kim. Chapter 18. Large-scale production of membrane proteins in *Saccharomyces cerevisiae*: using a green fluorescent protein fusion strategy in the production of membrane proteins. *Methods in Mol. Biol.* 2012 866, 209-216.