

Curriculum Vitae

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Education

1981-1985 B.S. Seoul National University, Seoul, Korea

1985-1987 M.S. Seoul National University, Seoul Korea

1989-1994 Ph.D. University of Illinois at Urbana-Champaign, IL, USA

Professional Experiences

1994-1996 Postdoc, The Scripps Research Institute (San Diego, CA)

1996-1997 Scientist, Johnson & Johnson (San Diego, USA)

1997-2004 Assistant/Associate Professor, Korea University (Seoul, Korea)

2002-2003 Visiting Professor, Vaccine and Gene Therapy Institute, Oregon Health and Science University, USA

2006-2015 Director, Creative Research Initiatives Center for Immune Regulation

2004-present Professor, Seoul National University

2022-present Director, SNU Institute for Virus Research

Research Interests

- Virus-host interactions
- Human cytomegalovirus latency and reactivation
- RNA immunology
- Retroelement biology

Awards

- 2003 Presidential Young Scientist Award (Life Sciences), Ministry of Science and Technology, Instructed by the president (Korea)
- 2007 The Scientist of the month Award, Ministry of Science and Technology, Korea
- 2015 2015 Research Grand Prize Award, College of Natural Sciences, SNU
- 2015 2015 Best Teacher Award, College of Natural Sciences, SNU
- 2016 2016 SNU Research Award
- 2021 2021 Best Education Award, College of Natural Sciences, SNU

Publications

Lee, S., Kim, H., Hong, A., Song, J., Lee, S-Y., Kim, M., Hwang, S., Jeong, D., Kim, J., Son, A., Lee, Y-S., Kim, V.N., Kim, J-S., Chang, H., & Ahn, K. (2022). Functional and molecular dissection of HCMV long non-coding RNAs. **Scientific Reports**. 19303.

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Hong, Y., Jeong, H., Park, K., Lee, S., Shim, J., Kim, Song, Y., Park, S., Park, H., Kim, NV. & Ahn, K. (2021). STING Facilitates Nuclear Import of Herpesvirus Genome During Infection. **Proc Natl Acad Sci USA**. 118 (33) e2108631118; <https://doi.org/10.1073/pnas.2108631118>.

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Choi, J., Hwang, S.Y., and Ahn, K. (2018). Interplay between RNASEH2 and MOV10 controls LINE-1 retrotransposition. **Nucleic Acids Res** 46, 1912-1926.

Seo, M., Lee, S. O., Kim, J. H., Hong, Y., Kim, S., Kim, Y., Min, D. H., Kong, Y. Y., Shin, J. & Ahn, K. MAP4-regulated dynein-dependent trafficking of BTN3A1 controls the TBK1-IRF3 signaling axis. *Proc Natl Acad Sci U S A* 113, 14390-14395 (2016).

Ryoo, J., Hwang, S. Y., Choi, J., Oh, C. & Ahn, K. SAMHD1, the Aicardi-Goutieres syndrome gene and retroviral restriction factor, is a phosphorolytic ribonuclease rather than a hydrolytic ribonuclease. *Biochem Biophys Res Commun* 477, 977-981 (2016).

Ryoo, J., Hwang, S. Y., Choi, J., Oh, C. & Ahn, K. Reply to SAMHD1-mediated HIV-1 restriction in cells does not involve ribonuclease activity. *Nat Med* 22, 1074-1075 (2016).

Jeong, G. U., Park, I. H., Ahn, K. & Ahn, B. Y. Inhibition of hepatitis B virus replication by a dNTPase-dependent function of the host restriction factor SAMHD1. *Virology* 495, 71-78 (2016).

Choi, J., Ryoo, J., Oh, C., Hwang, S. & Ahn, K. SAMHD1 specifically restricts retroviruses through its RNase activity. *Retrovirology* 12, 46 (2015).

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Lee, S., Song, J., Kim, S., Kim, J., Hong, Y., Kim, Y., Kim, D., Baek, D. & Ahn, K. Selective degradation of host MicroRNAs by an intergenic HCMV noncoding RNA accelerates virus production. *Cell Host Microbe* 13, 678-690 (2013).

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Jun, Y. & Ahn, K. Tmp21, a novel MHC-I interacting protein, preferentially binds to Beta2-microglobulin-free MHC-I heavy chains. *BMB Rep* 44, 369-374 (2011).

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Cho, K., Cho, S., Lee, S. O., Oh, C., Kang, K., Ryoo, J., Lee, S., Kang, S. & Ahn, K. Redox-regulated peptide transfer from the transporter associated with antigen processing to major histocompatibility complex class I molecules by protein disulfide isomerase. *Antioxid Redox Signal* 15, 621-633 (2011).

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Kim, Y., Kang, K., Kim, I., Lee, Y. J., Oh, C., Ryoo, J., Jeong, E. & Ahn, K. Molecular mechanisms of MHC class I-antigen processing: redox considerations. *Antioxid Redox Signal* 11, 907-936 (2009).

Kim, E., Kwak, H. & Ahn, K. Cytosolic aminopeptidases influence MHC class I-mediated antigen presentation in an allele-dependent manner. *J Immunol* 183, 7379-7387 (2009).

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Kim, Y., Park, B., Cho, S., Shin, J., Cho, K., Jun, Y. & Ahn, K. Human cytomegalovirus UL18 utilizes US6 for evading the NK and T-cell responses. *PLoS Pathog* 4, e1000123 (2008).

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Jun, Y., Kim, E., Jin, M., Sung, H. C., Han, H., Geraghty, D. E. & Ahn, K. Human cytomegalovirus gene products US3 and US6 down-regulate trophoblast class I MHC molecules. *J Immunol* 164, 805-811 (2000).

Jin, B. S., Ryu, J. R., Ahn, K. & Yu, Y. G. Design of a peptide inhibitor that blocks the cell fusion mediated by glycoprotein 41 of human immunodeficiency virus type 1. *AIDS Res Hum Retroviruses* 16, 1797-1804 (2000).

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Kim, T. S., Yu, M. H., Chung, Y. W., Kim, J., Choi, E. J., Ahn, K. & Kim, I. Y. Fetal mouse selenophosphate synthetase 2 (SPS2): biological activities of mutant forms in *Escherichia coli*. *Mol Cells* 9, 422-428 (1999).

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Ahn, K., Meyer, T. H., Uebel, S., Sempe, P., Djaballah, H., Yang, Y., Peterson, P. A., Fruh, K. & Tampe, R. Molecular mechanism and species specificity of TAP inhibition by herpes simplex virus ICP47. *EMBO J* 15, 3247-3255 (1996).

Ahn, K., Erlander, M., Leturcq, D., Peterson, P. A., Fruh, K. & Yang, Y. In vivo characterization of the proteasome regulator PA28. *J Biol Chem* 271, 18237-18242 (1996).

Ahn, K., Angulo, A., Ghazal, P., Peterson, P. A., Yang, Y. & Fruh, K. Human cytomegalovirus inhibits antigen presentation by a sequential multistep process. *Proc Natl Acad Sci U S A* 93, 10990-10995 (1996).

Yang, Y., Fruh, K., Ahn, K. & Peterson, P. A. In vivo assembly of the proteasomal complexes, implications for antigen processing. *J Biol Chem* 270, 27687-27694 (1995).

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Patents

Ahn, K., Yang, Y., and Fruh, K. Joint Inventors. Identification of human cytomegalovirus genes involved in down-regulation of MHC class I heavy chain expression. Ortho McNeil Pharmaceutical Corporation. US Patent Number 6,033,671 (Mar. 7, 2000).

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Books (도서출판)

- 팬데믹에서 엔데믹으로. 안광석 외 16 인, 동아시아출판, 2021
- 팬데믹 시대를 위한 바이러스+면역 특강. 안광석, 반니출판, 2020
- 코로나 사이언스. 안광석 외 11 인, 동아시아출판, 2020
- 코로나 19 위기·대응·미래. 안광석 외 8 인, 이음출판, 2020