

Curriculum Vitae

**CV must be written in English*

Personal Information



Title (i.e. Prof., Dr., etc.)	Prof.
Name (First / Middle / Last)	Kwang Soon Kim
Degree (i.e. MD, MSc, PhD, etc.)	Ph.D
Country	South Korea
Affiliation	POSTECH

Educational Background

- 1996 - 2003 B.S., Dept. of Biology, Yonsei Univ., Korea
2003 - 2011 Ph.D., Dept. of Life Science, POSTECH, Korea

Professional Experience

- 2011 – 2013 Postdoctoral Fellow, Div. of Integrative Bioscience and Biotechnology, POSTECH, Korea
2013 – 2017 Research Fellow (non-tenured track), Academy of Immunology and Microbiology, Institute of Basic Science (IBS), Korea
2017 – 2019 Principal Investigator, Academy of Immunology and Microbiology, Institute of Basic Science (IBS), Korea
2019 – present Assistant Professor, Department of Life Sciences, POSTECH, Korea

Professional Organizations

Main Scientific Publications

I. Research Articles

- 1) Jung J, Yi J*, Kim KS*, Surh CD. Dietary antigens drive the generation of functional cytotoxic intraepithelial lymphocytes for early defense against foodborne pathogens. *Frontiers in Immunology*, 2026, 16:1639120 (*co - corresponding authors)
- 2) Yi J, Jung J, Horton D, Hsieh P, Peng Y, Wang SJ, Newberry R, Ericsson AC, Kim KS, Kau AL, Hsieh CS. A hierarchy of intestinal antigens instructs the CD4+ T cell receptor repertoire. *Immunity*, 2025, May 13, 58:1217 -1235.
- 3) Hong M-G, Song E-J, Yoon H J, Chung W-H, Seo H Y, Kim D, Lee D, Seo J-G, Lee H, Kim S I, Kim G J, Kim K-

- N, Lee S-N, Kim KS* & Nam Y-D. Clade-specific extracellular vesicles from *Akkermansia muciniphila* mediate competitive colonization via direct inhibition and immune stimulation. *Nature communications*, 2025, Mar 19, 16:2708 (* co - corresponding author).
- 4) Kawajiri A, Li J, Koinuma K, Yang Z, Yoon HJ, Yi J, Nagashima H, Ishii M, Gao F, Sato K, Tayama S, Harigae H, Iwakura Y, Ishii N, Sher A, Ishigaki K, Zhu J, Kim KS, Kawabe T. Naturally arising memory-phenotype CD4⁺ T lymphocytes contain an undifferentiated population that can generate TH1, TH17, and Treg cells. *Science Advances*, 2024, Dec 6, 10:49.
- 5) Kawabe T, Ciucci T, Kim KS, Tayama S, Kawajiri A, Suzuki T, Tanaka R, Ishii N, Jankovic D, Zhu J, Sprent J, Bosselut R, Sher A. Redefining the Foreign Antigen and Self-Driven Memory CD4⁺ T-Cell Compartments via Transcriptomic, Phenotypic, and Functional Analyses. *Front Immunol*. 2022, 30:13:870542.
- 6) Lee M, Ko HJ, Hong SW, Park J, Ham S, Kim M, Kwon DI, Lee MS, Roh TY, Kim KS, Lee YJ. Dietary antigens suppress the proliferation of type 2 innate lymphoid cells by restraining homeostatic IL -25 production. *Sci Rep*. 2022, 12:7443.
- 7) Lee YS, Kim TY, Kim Y, Kim S, Lee SH, Seo SU, Zhou BO, Eunju O, Kim KS, Kweon MN. Microbiota-derived lactate promotes hematopoiesis and erythropoiesis by inducing stem cell factor production from leptin receptor⁺ niche cells. *Exp Mol Med*. 2021, 53:1319 -1331.
- 8) Khairallah C, Bettke JA, Gorbatshevych O, Qiu Z, Zhang Y, Cho K, Kim KS, Chu TH, Imperato JN, Hatano S, Romanov G, Yoshikai Y, Puddington L, Surh CD, Bliska JB, van der Velden AWM, Sheridan BS. A blend of broadly - reactive and pathogen-selected V α 4 V δ 1 T cell receptors confer broad bacterial reactivity of resident memory $\gamma\delta$ T cells. *Mucosal Immunol*. 2022, 15:176-187.
- 9) Lee C, Verma R, Byun S, Jeun EJ, Kim GC, Lee S, Kang HJ, Kim CJ, Sharma G, Lahiri A, Paul S, Kim KS, Hwang DS, Iwakura Y, Speciale I, Molinaro A, De Castro C, Rudra D, Im SH. Structural specificities of cell surface β -glucan polysaccharides determine commensal yeast mediated immuno-modulatory activities. *Nature communications*, 2021, Jun 14, 12:3611.
- 10) Cho K, Spasova DS, Hong SW, O E, Surh CD, Im SH and Kim KS. *Listeria monocytogenes* Establishes Commensalism in Germ-Free Mice Through the Reversible Downregulation of Virulence Gene Expression, *Frontiers in Immunology*, 2021, May 3, DOI: 10.3389/fimmu.2021.666088 (corresponding author).
- 11) Kim SH, Cho BH, Kim KS and Jang YS. Complement C5a promotes antigen cross-presentation by Peyer's patch monocyte-derived dendritic cells and drives a protective CD8⁺ T cell response. *Cell Reports*, 2021, Apr 12, 35:108995
- 12) Kim S, Shin YC, Kim TY, Kim Y, Lee YS, Lee SH, Kim MN, O E, Kim KS and Kweon MN. Mucin degrader *Akkermansia muciniphila* accelerates intestinal stem cell-mediated epithelial development. *Gut Microbes*, 2021, 13:1-20
- 13) Ko HJ, Hong SW, Verma R, Jung J, Lee M, Kim N, Kim D, Surh CD, Kim KS, Rudra D, Im SH. Dietary Glucose Consumption Promotes RALDH Activity in Small Intestinal CD103⁺CD11b⁺ Dendritic Cells. 2020, Aug 11, 11:1897.
- 14) Kawabe T, Yi J, Kawajiri A, Hilligan K, Fang D, Ishii N, Yamane H, Zhu J, Jankovic D, Kim KS, Trinchieri G, Sher A. Requirements for the differentiation of innate T-bet high memory-phenotype CD4⁺ T lymphocytes under steady state. *Nature communications*, 2020, Jul 6, 11:3366
- 15) Hara S, Sasaki T, Satoh-Takayama N, Kanaya T, Kato T, Takikawa Y, Takahashi M, Tachibana N, Kim KS, Surh CD, Ohno H. Dietary Antigens Induce Germinal Center Responses in Peyer's Patches and Antigen-Specific IgA Production. 2019, Oct 15, 10:2432
- 16) Lee S, Kim H, You G, Kim YM, Lee S, Le VH, Kwon O, Im SH, Kim YM, Kim KS, Sung YC, Kim KH, Surh CD, Park Y, Lee SW. Bone marrow CX3CR1⁺ mononuclear cells relay a systemic microbiota signal to control hematopoietic progenitors in mice. *Blood*, 2019, Oct 17, 134:1312
- 17) Hong SW*, O E, Lee JY, Lee M, Han D, Ko HJ, Sprent J, Surh CD and Kim KS*. Food antigens drive spontaneous IgE elevation in the absence of commensal microbiota. *Science Advances*, 2019, May 22, 5:eaaw1507 (*co-corresponding author)
- 18) Hong SW*, O E*, Lee JY, Yi J, Cho K, Kim J, Kim D, Surh CD and Kim KS. Interleukin-2/antibody complex expanding Foxp3⁺ regulatory T cells exacerbates Th2-mediated allergic airway inflammation. *BMB reports*, 2019, Mar

19, 52:283 (* co-first author)

- 19) Suh SH, Choe K, Hong SP, Jeong SH, Mäkinen T, Kim KS, Alitalo K, Surh CD, Koh GY, Song JH. Gut microbiota regulates lacteal integrity by inducing VEGF-C in intestinal villus macrophages. *EMBO Reports*, 2019, Apr 20:e46927
- 20) Yi J, Jung JS, Hong SW, Lee JY, Han DH, Kim KS, Sprent J and Surh CD. Unregulated APC activation by T cells breaks self-tolerance. *PNAS*, 2019, Jan 15, 116:1007-1016
- 21) Lee YS, Kim TY, Kim Y, Lee SH, Kang SW, Yang JY, Back IJ, Sung YH, Hwang SW, Kim KS, Liu S, Kamada N and Kweon MN. Microbiota -derived lactate accelerates intestinal stem cell -mediated epithelial development. *Cell host & microbes*, 2018, Dec 12, 24:833-846
- 22) Verma R, Lee CH, Jeun EJ, Yi J, Kim KS, Ghosh A, Lee CG, Kang HJ, Kim GC, Jun CD, Jan G, Surh CH, Jung JY, Sprent J, Rudra D, Castro CD, Molinaro A, Surh CD and Im SH. Cell surface polysaccharides of *Bifidobacterium bifidum* induce functional Foxp3⁺ regulatory T cells, *Science Immunology*, 2018, Oct 19, 3:eaat6975
- 23) Kim JH, Lee JY, Cho KJ, Hong SW, Kim KS, Sprent J, Im SH, Surh CD and Cho JH. Spontaneous proliferation of CD4⁺ T cells in RAG-deficient hosts promotes antigen -independent but IL -2-dependent strong proliferative response of naïve CD8⁺ T cells, *Frontier Immunology*, 2018, Aug 23, 23:9:1907
- 24) Martin CE, Spasova DS, Frimpong-Boateng K, Kim H, Lee M, Kim KS, Surh CD. Interleukin -7 homeostasis is maintained by a potent hematopoietic cytokine sink comprised of innate lymphoid cells and T cells, *Immunity*, 2017 Jul 18, 47:171-182 (as a senior scientist, I revealed the FOXO-1 mediated molecular mechanisms for the differential regulation of IL-7 receptor in innate lymphoid cells and T cells)
- 25) Han D, Walsh MC, Kim KS, Hong SW, Lee J, Yi J, Rivas G, Choi Y, Surh CD. Dendritic cell expression of the signaling molecule TRAF6 is required for immune tolerance in the lung. *International Immunology*, 2017 Feb 1, 29:71 -78.
- 26) Hong CP, Park A, Yang BG, Yun CH, Kwak MJ, Lee GW, Kim JH, Jang MS, Lee EJ, Jeun EJ, You G, Kim KS, Choi Y, Park JH, Hwang D, Im SH, Kim JF, Kim YK, Seoh JY, Surh CD, Kim YM, Jang MH. Gut -specific Delivery of T-helper 17 cells Reduces Obesity and Insulin Resistance in Mice. *Gastroenterology*, 2017 Jun; 152:1998 -2010
- 27) Kim KS, Hong SW, Han D, Yi J, Jung J, Yang BG, Lee JY, Lee M, Surh CD. Dietary Antigens limit mucosal immunity by inducing regulatory T cells in the small intestine. *Science*, 2016, 351:858 -863. (Recommended by Faculty of 1000 and introduced as a perspective in *Science* and highlighted in *Nature Review of Immunology*, selected as Featured paper in 2016 by Society for Mucosal immunology, and selected as “2016 BRIC TOP5’s” in basic academic part by the Biological Research Information Center (BRIC) in Korea)
- 28) Han D, Walsh MC, Kim KS, Hong SW, Lee J, Yi J, Rivas G, Surh CD, Choi Y. Microbiota-independent ameliorative effects of antibiotics on spontaneous th2 -associated pathology of the small intestine. *PLoS One*. 2015 Feb 17;10(2):e0118795.
- 29) Song MY, Hong CP, Park SJ, Kim JH, Yang BG, Park Y, Kim SW, Kim KS, Lee JY, Lee SW, Jang MH, Sung YC. Protective effects of Fc -fused PD-L1 on two different animal models of colitis. *Gut*, 2015 Feb;64(2):260 -71.
- 30) Ahn GO, Seita J, Hong BJ, Kim YE, Bok S, Lee CJ, Kim KS, Lee JC, Leeper NJ, Cooke JP, Kim HJ, Kim IH, Weissman IL, Brown JM. Transcriptional activation of hypoxia -inducible factor -1 (HIF-1) in myeloid cells promotes angiogenesis through VEGF and S100A8. *Proc Natl Acad Sci U S A*. 2014 Feb 18;111(7):2698-703.
- 31) Kim DJ, Kim KS, Song MY, Seo SH, Kim SJ, Yang BG, Jang MH, Sung YC. Delivery of IL -12p40 ameliorates DSS-induced colitis by suppressing IL -17A expression and inflammation in the intestinal mucosa. *Clin Immunol*. 2012;144(3):190-9 (co-first author)
- 32) Ahn SS, Jeon BY, Kim KS, Kwack JY, Lee EG, Park KS, Sung YC, Cho SN. Mtb32 is a promising tuberculosis antigen for DNA vaccination in pre - and post-exposure mouse models. *Gene Ther*, 2012, May;19(5):570-5
- 33) Choi DH, Kim KS, Yang SH, Chung DH, Song B, Sprent J, Cho JH, Sung YC. Dendritic cell internalization of alpha-galactosylceramide from CD8 T cells induce potent antitumor CD8 T cell responses. *Cancer Res*. 2011, Dec;71(24):7442-51
- 34) Choi BK, Kim YH, Choi JH, Kim CH, Kim KS, Sung YC, Lee YM, Moffet JR, Kwon BS. Unified immune modulation by 4 -1BB triggering leads to diverse effects on disease progression in vivo. *Cytokine*. 2011 Sep;55(3):420 -8
- 35) Seo SH, Kim KS, Park SH, Suh YS, Kim SJ, Sung YC, The effects of mesenchymal stem cells injected via

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JUNE 25 (Thu.) - 27 (Sat.), 2026 | COEX, SEOUL, KOREA



different routes on modified IL-12-mediated antitumor activity. *Gene Ther.* 2011, May;18(5):488-95.

- 36) Kim KS, Jin DB, Ahn SS, Park KS, Seo SH, Suh YS, Sung YC. HIV-1 protease has a genetic T-cell adjuvant effect which is negatively regulated by proteolytic activity. *J Virol.* 2010 Aug;84(15):7743-9.
- 37) Ochieng W, Sauermann U, Schulte R, Suh YS, Kim KS, Sung YC, Hunsmann G, Stahl-Hennig C, Sopper S. Susceptibility to Simian immunodeficiency virus ex vivo predicts outcome of a prime-boost vaccine after SIVmac239 challenge. *J Acquir Immune Defic Syndr.* 2009 Oct 1;52(2):162-9.
- 38) Schulte R, Suh YS, Sauermann U, Ochieng W, Sopper S, Kim KS, Ahn SS, Park KS, Stolte-Leeb N, Hunsmann G, Sung YC, Stahl-Hennig C. Mucosal prior to systemic application of recombinant adenovirus boosting is more immunogenic than systemic application twice but confers similar protection against SIV-challenge in DNA vaccine-primed macaques. *Virology.* 2009 Jan 20;383(2):300-9.
- 39) Suh YS, Park KS, Sauermann U, Kim KS, Ahn SS, Franz M, Schulte R, Wilfingseder D, Stoiber H, Uberla K, Hunsmann G, Stahl-Hennig C, Sung YC. Prolonged survival of vaccinated macaques after oral SIVmac239 challenge regardless of viremia control in the chronic phase. *Vaccine.* 2008 Dec 2;26(51):6690-8.
- 40) Stahl-Hennig C, Suh YS, Park KS, Sauermann U, Kim KS, Ahn S, Franz M, Schulte R, Stolte-Leeb N, Hunsmann G, Sung YC. Immunogenicity of a DNA prime and recombinant adenovirus boost regime significantly varies between rhesus macaques of Chinese and Indian origins. *J Med Primatol.* 2007 Aug;36(4-5):195-205.

II. Review articles

- 1) Kim KS. Regulation of T cell repertoires by commensal microbiota. *Frontiers in Cellular and Infection Microbiology*, 2022, 12:1004339.
- 2) Hong SW, Kim KS, Surh CD. Beyond Hygiene: Commensal Microbiota and Allergic Diseases. *Immune Network*, 2017 Feb; 17:48-59 (co-first author)
- 3) Kim KS, Surh CD. Induction of Immune tolerance to dietary antigens. *Adv. Exp. Med. Biol.*, 2015;850:93-118