

Curriculum Vitae

Full name Heung Kyu Lee

Current Position Professor

Department Biological Sciences

Affiliation Korea Advanced Institute of Science and Technology (KAIST)

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Education

2009 Ph.D. in Immunobiology, Yale University, New Haven, CT, USA
1998 M.S. in Biotechnology, Yonsei University, Seoul, Korea
1995 B.E. in Food Science and Technology, Dongguk University, Seoul, Korea

Professional Experience

Positions and Employment

Dec/2023 – present Professor, Department of Biological Sciences, KAIST, Daejeon, Korea
Dec/2023 – present Affiliated Professor, Graduate School of Medical Science and Engineering, KAIST, Daejeon, Korea
Apr/2017 - present Affiliated Professor of KAIST Institute for Health Science and Technology, KAIST, Daejeon, Korea
Mar/2022 – Nov/2023 Professor, GSMSE, KAIST, Daejeon, Korea
Mar/2022 – Nov/2023 Affiliated Professor, Dept. Biological Sciences, KAIST, Korea
Feb/2017 - Mar/2021 Chair, Institutional Animal Care and Use Committee of KAIST
Mar/2018 - Feb/2022 Associate Professor (tenured) of GSMSE, KAIST, Daejeon, Korea
Nov/2009 - Feb/2018 Assistant and Associate Professor of GSMSE, KAIST, Korea
Mar/2009 - Oct/2009 Post-doctoral Associate of Immunobiology, Yale University, New Haven, CT (Mentor: Ruslan Medzhitov, Ph.D.)
Sep/2004 - Feb/2009 Graduate Research Assistant of Immunobiology, Yale University, New Haven, CT (Mentor: Akiko Iwasaki, Ph.D.)

Awards and Honors

2023 National R&D Excellence Performance Award by Ministry of Science and ICT.
2022 Top 100 National R&D Excellence Performance in 2022 by Ministry of Science and ICT.
2020 Samsung Humantech Gold Awardee Mentoring Award by Samsung Electronics Co.
2017 Best Paper Award by Korean Association of Immunologists
2017 KAIST's TOP10 Research Achievements of 2016 Award by KAIST
2016 26th KOFST Best Paper Award by The Korean Federation of Science and Technology Societies (KOFST)

Publications (10 selected)

1. Jaeho Kim, Yumin Kim, Jeoungwoo La, Won Hyung Park, Hyun-Jin Kim, Sang Hee Park, Keun Bon Ku, Byeong Hoon Kang, Juhee Lim, Myoung Seung Kwon, **Heung Kyu Lee**, Supplementation with a high-glucose drink stimulates anti-tumor immune responses to glioblastoma via gut microbiota modulation. 6 September, *Cell Reports*, 2023, <https://doi.org/10.1016/j.celrep.2023.113220>
2. Hi Eun Jung, Keun Bon Ku, Byeong Hoon Kang, Jang Hyun Park, Hyeon Cheol Kim, Kyun-Do Kim, and **Heung Kyu Lee**, Intranasal delivery of an adenovirus-vector vaccine co-expressing a modified spike protein and a genetic adjuvant confers lasting mucosal immunity against SARS-CoV-2. *Antiviral Research*, 14 June, 2023, <https://doi.org/10.1016/j.antiviral.2023.105656>

3. Jiung Jeong, In Kang, Yumin Kim, Keun Bon Ku, Jang Hyun Park, Hyun-Jin Kim, Chae Won Kim, Jeongwoo La, Hi Eun Jung, Hyeon Cheol Kim, Young Joon Choi, Jaeho Kim, Joon Kim, **Heung Kyu Lee**. Regulation of c-SMAC formation and AKT-mTOR signaling by the TSG101-IFT20 axis in CD4⁺ T cells. Cellular and Molecular Immunology. 7 April, 2023 <https://doi.org/10.1038/s41423-023-01008-x>
4. Hyun-Jin Kim, Jang Hyun Park, Hyeon Cheol Kim, Chae Won Kim, In Kang, Heung Kyu Lee. Blood monocyte-derived CD169⁺ macrophages contribute to antitumor immunity against glioblastoma. Nature Communications 13, 6211 (2022). <https://doi.org/10.1038/s41467-022-34001-5>
5. Jang Hyun Park, In Kang, Hyeon Cheol Kim, Yonghoon Lee, Sung Ki Lee, **Heung Kyu Lee**. Obesity enhances antiviral immunity in the genital mucosa through a microbiota-mediated effect on $\gamma\delta$ T cells. Cell Reports. Vol. 41, 6, 111594, Nov. 08, 2022 <https://doi.org/10.1016/j.celrep.2022.111594>
6. Park JH, Kim HJ, Kim CW, Kim HC, Jung Y, Lee HS, Lee YA, Ju YS, Oh JE, Park SH, Lee JH, Lee SK, **Lee HK**. Tumor hypoxia represses $\gamma\delta$ T cell-mediated antitumor immunity against brain tumors. Nature Immunology. 2021 Mar;22(3):336-346. doi: 10.1038/s41590-020-00860-7. Epub 2021 Feb 11. <https://doi.org/10.1038/s41590-020-00860-7> Introduced in **News & Views**, Antitumor T cells need oxygen to function. Nature Immunology 2021 Feb 11.
7. Oh DS*, Park JH*, Kim HJ, **Lee HK**. Autophagic protein ATG5 controls anti-viral immunity via glycolytic reprogramming of dendritic cells against respiratory syncytial virus infection. Autophagy. 2020 August 28;1-17. <https://doi.org/10.1080/15548627.2020.1812218>
8. Oh DS, **Lee HK**. Autophagy protein ATG5 regulates CD36 expression and anti-tumor MHC class II antigen presentation in dendritic cells. Autophagy. 2019. Dec;15(12):2091-2106. epub Apr 6 <https://doi.org/10.1080/15548627.2019.1596493>
9. Oh JE, Oh DS, J HE, **Lee HK**. A mechanism for the induction of type 2 immune responses by a protease allergen in the genital tract. Proc. Natl. Acad. Sci. U. S. A. 2017 Feb 14;114(7):E1188-E1195. <https://doi.org/10.1073/pnas.1612997114>
10. Oh JE, Kim B, Chang DH, Kwon M, Lee SY, Kang D, Kim JY, Hwang I, Yu JW, Nakae S, **Lee HK**. Dysbiosis-induced IL-33 contributes to impaired antiviral immunity in the genital mucosa. Proc. Natl. Acad. Sci. U. S. A. 2016 Feb 9;113(6):E762-71. <https://doi.org/10.1073/pnas.1518589113>
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