

Curriculum Vitae

Tae-Hee Kim, Ph.D.

1. EDUCATION

Degrees

- 1999 – 2006 Ph.D., Cell Biology and Genetics, Cornell University and Sloan-Kettering Institute, New York, New York, USA. Supervisor(s): Dr. Lee Niswander
- 1997 – 1999 M.Sc., Biology, University of Illinois at Urbana Champaign, Urbana Champaign, Illinois, USA. Supervisor(s): Dr. Bettina Francis and Michael Plewa
- 1991 – 1996 B.Sc., Biology, Sungkyunkwan University, Suwon, Gyonggi-do, South Korea.

Postgraduate, Research and Specialty Training

- 2007 – 2014 Post doctoral fellow and instructor, Gut stem cells and disease, Medical Oncology, Harvard University and Dana-Farber Cancer Institute, Boston, Massachusetts, USA. Supervisor(s): Dr. Ramesh Shivdasani

2. EMPLOYMENT

Current Appointments

- 2022 – present Associate Professor, Molecular Genetics, University of Toronto, Toronto, Ontario, Canada
- 2021 – present Senior Scientist, Developmental and Stem Cell Biology, The Hospital for Sick Children, Toronto, Ontario, Canada.

Previous Appointments

- 2014 – 2022 Assistant Professor, Molecular Genetics, University of Toronto, Toronto, Ontario, Canada.
- 2014 – 2021 Scientist, Developmental and Stem Cell Biology, The Hospital for Sick Children, Toronto, Ontario, Canada.
- 2011 – 2014 Instructor, Gut stem cells and disease, Medicine, Harvard Medical School, Boston, Massachusetts, USA.

3. SELECTED RESEARCH PUBLICATIONS

1. Loe AKH*, Rao-Bhatia A*, Wei Z*, Kim JE, Guan B, Qin Y, Hog M, Kwak H, Liu X, Zhang L, Wrana JL, Guo H#, **Kim T-H**#. YAP targetome reveals activation of SPEM in gastric pre-neoplastic progression and regeneration. Accepted in principle, *Cell Reports* 2023 Dec 26;42(12):113497.
2. Smith RJ*, Liang M*, Loe AKH, Yung T, Kim JE, Hudoshn M, Wilson MD, **Kim T-H** (* equal contribution). Epigenetic control of cellular crosstalk defines gastrointestinal organ fate and function. *Nature Communications* 2023 Jan 30;S41467-023-36338-2.
3. Kim JE, Fei L, Horne R, Lee D, Loe AK, Miyake H, Ayar E, Kim DK, Surette MG, Philpott DJ, Sherman P, Guo G, Pierro A, **Kim T-H**. Gut microbiota promotes stem cell differentiation through macrophage and mesenchymal niches in early postnatal development. *Immunity* 2022 Dec 13;55(12):2300-2317.
–Featured in *SickKids news*, previewed by *Immunity*, and selected by 2022 December's Top Science in Canada.
4. Smith RJ*, Zhang H*, Hu SS*, Yung T, Francis F, Lee L, Onaitis MW, Dirks PB, Zhang C#, **Kim T-H**# (* equal contribution; # co-corresponding authors). Single cell chromatin profiling of the primitive gut tube reveals

regulatory dynamics underlying lineage fate decisions. *Nature Communications* 2022 May 26;13(1):2965.
–Featured in *CBS19 news*, *Nature Portfolio Health Community*, *Bioengineer.org*, *EurekAlert!*, *ScienMag*, *Verve times*, *Phys.org*, *Swift Telecast*, and *UVA Health system news room*.

5. Baghdadi MB, Ayyaz A, Coquenlorge S, Chu B, Kumar S, Streutker C, Wrana JL, **Kim T-H**. Enteric glial cell heterogeneity regulates intestinal stem cell niches. *Cell Stem Cell* 2022 29(1):86-100.
–Previewed by *Cell Stem Cell*, featured in *University of Toronto Molecular Genetics department news*, “*the role of gut brain cells in IBD*”, and recommended by *Faculty Opinions*.
6. Loe AKH*, Francis R*, Seo J, Kim JE, Hakim SW, Kim J, He HH, Guo H#, **Kim T-H**# (* equal contribution; # co-corresponding authors). Uncovering the dosage-dependent roles of Arid1a in gastric tumorigenesis for combinatorial drug therapy. *Journal of Experimental Medicine* 2021 Jun 7;218(6):e20200219.
–Featured in *Ebiotrade news*.
7. Kim JE, Fei L, Yin WC, Coquenlorge S, Rao-Bhatia A, Zhang X, Shi SSW, Lee JH, Hahn NA, Rizvi W, Kim KH, Sung HK, Hui CC, Guo G, **Kim T-H**. Single cell and genetic analyses reveal conserved cell populations and signaling mechanisms of gastrointestinal stromal niches. *Nature Communications* 2020 11, 334.
8. Rao-Bhatia A, Zhu M, Yin WC, Coquenlorge S, Zhang X, Woo JH, Dean CH, Liu A, Hui CC, Shivdasani RA, McNeill H, Hopyan S, **Kim T-H**. Hedgehog-activated Fat4 and planar cell polarity pathways mediate mesenchymal clustering and villus formation in gut development. *Developmental Cell* 2020 Mar 09;52(5) p647-658.
–Featured in *SickKids news*, “*Intestinal intelligence*”, and recommended by *Faculty Opinions*.
9. Francis R*, Guo H*, Ahmed M, Yung T, Dirks PB, He HH#, **Kim T-H**# (* equal contribution; # co-corresponding authors). Gastrointestinal transcription factors drive lineage-specific developmental programs in organ specification and cancer. *Science Advances* 2019;Vol 5, no 12, eaax8898.
–Featured in *University Health Network news*, “*Cancer’s gut reaction*”.
10. Yung T*, Poon F*, Liang M, Coquenlorge S, McGaugh EC, Hui CC, Wilson, MD, Nostro MC#, **Kim T-H**# (* equal contribution; # co-corresponding authors). SUFU- and SPOP-mediated downregulation of Hh signaling promotes beta cell differentiation through organ-specific niche signals. *Nature Communications* 2019;10(1):4647.
–Featured in *Editors’ Highlights*, *University Health Network news*, “*Making cells to treat diabetes*”, and recommended by *Faculty of 1000*.
11. Coquenlorge S*, Yin WC*, Yung T, Pan J, Zhang X, Mo R, Belik J, Hui CC, **Kim T-H** (* equal contribution). GLI2 modulated by SUFU and SPOP induces intestinal stem cell niche signals in development and tumorigenesis. *Cell Reports* 2019;27(10):3006-3018.
12. **Kim T-H***, Saadatpour A*, Guo G, Saxena M, Cavazza A, Desai N, Jadhav U, Jiang L, Rivera MN, Orkin SH, Yuan GC#, Shivdasani RA# (* equal contribution; # co-corresponding authors). Single-cell transcript profiles reveal multilineage priming in early progenitors derived from Lgr5+ intestinal stem cells. *Cell Reports* 2016;16(8):2053-2060.
13. **Kim T-H**, Li F, Ferreiro-Neira I, Ho L-L, Luyten A, Nalapareddy K, Liu XS, Verzi M, Shivdasani RA. Broadly permissive intestinal chromatin underlies lateral inhibition and cell plasticity. *Nature* 2014 Feb 27;506(7489):511-5.
–Recommended by *Faculty of 1000*.
14. **Kim T-H**, Escudero S, Shivdasani RA. Intact function of Lgr5-expressing stem cells in the absence of Paneth cells. *Proc Natl Acad Sci U S A* 2012;109(10):3932-7.
15. **Kim T-H**, Goodman J, Anderson K, Niswander L. Phactr4 regulates neural tube closure by controlling PP1, Rb phosphorylation and cell cycle progression. *Developmental Cell* 2007;13:87-102.
–Featured in *BRIC Hanbitsa interview*.