

# Keun Hong Son, Ph.D.

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 [0000-0002-2583-6272](https://orcid.org/0000-0002-2583-6272)  [Google Scholar](https://scholar.google.com/citations?user=0000-0002-2583-6272)  [@keun-hong](https://www.youtube.com/@keun-hong)

Updated: May 25, 2026

## RESEARCH INTERESTS

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I am an Evolutionary Biologist integrating comparative genomics and multi-omics approaches to investigate disease resistance and susceptibility across species.

### Evolutionary Animal Genomics

cross-species and -breed, genomic innovation

### Comparative Cancer & Aging Biology

disease resistance & susceptibility

### Computational Multi-Omics

genome, transcriptome, epigenome, proteome, AI (ML & DL)

## EDUCATION

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### Ph.D., Veterinary Biomedical Sciences

College of Veterinary Medicine, Seoul National University, Seoul, KR

03/2019 - 08/2025

### M.S., Microbiology and Biotechnology

College of Natural Sciences, Dankook University, Cheonan, KR

03/2016 - 02/2018

### B.S., Microbiology and Biotechnology

College of Natural Sciences, Dankook University, Cheonan, KR

03/2010 - 02/2016

### Military Service (Sergeant, Medic)

1st Brigade, Aviation Operations Command, Republic of Korea Army

11/2011 - 09/2013

## RESEARCH EXPERIENCE

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### Postdoctoral Research Fellow, Jae-Hyun Yang

Regenerative Medical Research Institute for Aging-related Diseases (reMRI), KAIST, Daejeon, KR

*Research topics: evolution of aging-resistance features in mammals*

05/2026 - present

### Graduate Research Associate, Je-Yoel Cho

Comparative Medicine Disease Research Center (CDRC), Seoul National University, Seoul, KR

*Research topics: cross-species and -breed, cancer genomics, dog epigenomics*

03/2019 - 08/2025

### Collaborative Research Fellow, Je-Yoel Cho

College of Veterinary Medicine, Seoul National University, Seoul, KR

*Research topics: dog epigenomics, cancer biomarkers*

06/2017 - 02/2019

### Collaborative Research Fellow, Jueng Soo You

Research Institute of Medical Science, Konkuk University, Seoul, KR

*Research topics: cancer mechanism, chromatin remodeler (SWI/SNF complexes)*

03/2017 - 02/2019

### Collaborative Research Fellow, Suk Woo Nam

College of Medicine, Catholic University, Seoul, KR

*Research topics: cancer mechanism, histone modification, miRNA-editing*

03/2017 - 02/2018

### Graduate Research Associate, Keunsoo Kang

College of Natural Sciences, Dankook University, Cheonan, KR

*Research topics: bioinformatics, epigenomics, regulatory elements*

03/2016 - 02/2018

### Undergraduate Researcher, Keunsoo Kang

College of Natural Sciences, Dankook University, Cheonan, KR

*Research topics: bioinformatics, epigenomics, transcription factors*

12/2014 - 02/2016

## PUBLICATIONS

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† indicates equal contribution

### First-Authored Publications

1. **Son KH** and Cho J (2025). “Gencube: Centralized retrieval and integration of multi-omics resources from leading databases.”  
*Bioinformatics*
2. **Son KH**†, Aldonza MBD†, Nam AR†, Lee K, Lee J, Shin K, Kang K, and Cho J (2023). “Integrative mapping of the dog epigenome: reference annotation for comparative intertissue and cross-species studies.”  
*Science Advances*
3. Hong SH†, **Son KH**†, Ha SY, Wee TI, Choi SK, Won JE, Han HD, Ro Y, Park Y, Eun JW, Nam SW, Han J, Kang K, and You JS (2021). “Nucleoporin 210 Serves a Key Scaffold for SMARCB1 in Liver Cancer.”  
*Cancer Research*
4. **Son K**†, Yu S†, Shin W, Han K, and Kang K (2018). “A Simple Guideline to Assess the Characteristics of RNA-Seq Data.”  
*BioMed Research International*

### Co-Authored Publications

1. Lee J, Lee D, Shin K, **Son KH**, and Cho J (2025). “CEBPD Regulates CD47 and MAP4K4 via Chromatin Accessibility in Canine Mammary Tumor Monocytes.”  
*Scientific Reports*
2. Kim C, Lee K, **Son KH**, Shin T, and Cho J (2024). “Extracellular vesicle-mediated transfer of miRNA-1 from primary tumor repress distant metastasis growth.”  
*Experimental & Molecular Medicine*
3. Kim HS†, Na MJ†, **Son KH**, Yang HD, Kim SY, Shin E, Ha JW, Jeon S, Kang K, Moon K, Park WS, and Nam SW (2023). “ADAR1-dependent miR-3144-3p editing simultaneously induces MSI2 expression and suppresses SLC38A4 expression in liver cancer.”  
*Experimental & Molecular Medicine*
4. Yoon Y†, You JS†, Kim T, Ahn WJ, Kim MJ, **Son KH**, Ricarte D, Ortiz D, Lee S\*, and Lee H (2022). “Senescence and impaired DNA damage responses in alpha-synucleinopathy models.”  
*Experimental & Molecular Medicine*
5. Kim SY, Shen Q, **Son K**, Kim HS, Yang HD, Na MJ, Shin E, Yu S, Kang K, You JS, Yu K, Jeong SM, Lee EK, Ahn YM, Park WS, and Nam SW (2021). “SMARCA4 oncogenic potential via IRAK1 enhancer to activate Gankyrin and AKR1B10 in liver cancer.”  
*Oncogene*
6. Lee K†, Park H†, **Son KH**, Shin T, and Cho J (2018). “Transcriptome Signatures of Canine Mammary Gland Tumors and Its Comparison to Human Breast Cancers.”  
*Cancers*

## PRESENTATIONS

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### Oral Presentations

**SNU College of Veterinary Medicine Education, Research & Development (ERD) Day.** Gencube: Centralized retrieval and integration of omics data from leading databases.

15 November 2024, Seoul, KR

**Federation of Asian Veterinary Associations Congress (FAVA).** Gencube: Efficient Retrieval, Download, and Unification of Genomic Data from Leading Biodiversity Databases.

27 October 2024, Gangwon-do, KR

**SNU College of Veterinary Medicine Education, Research & Development (ERD) Day.** Integrative mapping of the dog epigenome: Reference annotation for comparative intertissue and cross-species studies.

16 December 2022, Seoul, KR

**International Conference of the Korean Society for Molecular and Cellular Biology (KSMCB).** Integrative mapping of the dog epigenome: Reference annotation for comparative intertissue and cross-species studies.

30 September 2022, Jeju, KR

## Poster Presentations

**Korean Society for Molecular and Cellular Biology (KSMCB) Epigenomics Division Symposium.** Problemregion: Integrative pipeline and database for identifying anomalous regions in genome assemblies across diverse species.  
11 December 2024, Gangwon-do, KR

**Federation of Asian Veterinary Associations Congress (FAVA).** Blackcube: Integrative blacklist and greenscreen database for genome assemblies of diverse model species.  
27 October 2024, Daejeon, KR

**International Conference of the Korean Society for Molecular and Cellular Biology (KSMCB).** Integrative mapping of the dog epigenome: Reference annotation for comparative intertissue and cross-species studies.  
30 September 2022, Jeju, KR

**Korea Genome Organization (KOGO) Winter Symposium.** Systematic analysis of genome-wide transcription factor binding sites in multiple cell lines.  
05 February 2015, Gangwon-do, KR

## Invited Talks

**Center for Genome Engineering, Institute for Basic Science.** Comparative Multi-omics Across Diverse Species: Paving the Way for Genomic Innovations.  
05 August 2025, Daejeon, KR

**Advanced Comparative Medicine (Graduate Course), College of Veterinary Medicine, Seoul National University.** Comparative mammalian and dog genomics.  
25 October 2023, Seoul, KR

**Academic Webinar by the Biological Research Information Center (BRIC).** Integrative mapping of the dog epigenome: Reference annotation for comparative intertissue and cross-species studies.  
12 October 2023, Online

**The 1st THE HOOK One-Day Camp (AI+BIO) for High School Students.** Comparative genomics for genomic innovation.  
15 August 2023, Seoul, KR

## HONORS AND AWARDS

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<b>Best Scientific Presentation Award</b> Federation of Asian Veterinary Associations Congress (FAVA)	2024
<b>Selected for "People Who Brightened Korea" (BRIC Honoree)</b> Biological Research Information Center (BRIC)	2023
<b>Young Scientist Award</b> International Conference of the Korean Society for Molecular and Cellular Biology (KSMCB)	2022

## SCHOLARSHIPS

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<b>InnoCORE</b> Regenerative Medical Research Institute for Aging-related Diseases (reMRI), KAIST	2026.5 – present
<b>Brain Korea 21 Plus</b> Seoul National University	2019.1 – 2022.2 KRW 51,200,000
<b>Research Support</b> Dankook University	2016.1 & 2017.1 KRW 4,125,000
<b>Fostering Excellence in Science and Engineering</b> Dankook University	2015.1 KRW 2,212,000
<b>Chem-Bio Global Talent Development</b> Dankook University	2014.2 & 2015.2 KRW 2,000,000
<b>Academic Excellence</b> Dankook University	2014.2 – 2015.2 KRW 3,984,000

## MEDIA HIGHLIGHTS & PRESS COVERAGE

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- "Scientists unlock the dog epigenome", highlight by [AAAS EurekAlert](#) 2023
- "Researchers create EpiC Dog, a reference tool for canine epigenetics", science communication article by Justin Jackson in [Phys.org](#) 2023
- "Prof. Jueng Soo You's team at Konkuk University College of Medicine identifies the genetic mechanism underlying liver cancer development", science communication article by Seung-Hwan Lee in [The University Journal](#) 2021

## TEACHING AND MENTORING EXPERIENCE

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- Teaching Assistant; Biochemistry** 03/2019 - 08/2022  
Seoul National University, Seoul, KR
- Teaching Assistant; Environment-Bio Experiment** 09/2017 - 02/2018  
Department of Microbiology, Dankook University, Cheonan, KR
- Teaching Assistant; Biological Statistics using SPSS** 03/2017 - 08/2017  
Department of Microbiology, Dankook University, Cheonan, KR
- Graduate Assistant** 03/2016 - 02/2017  
Department of Microbiology, Dankook University, Cheonan, KR

## PROFESSIONAL ACTIVITIES

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### Editorial Roles

- Topic Editor, Frontiers in Genome Editing** 2025 – Present  
"Epigenome Editing to Overcome Hormone Therapy Resistance in Breast Cancer"

### Peer Review

- Nature Communications (Ad hoc, 1 manuscript)
- International Journal of Molecular Sciences (1)
- Gene (1)
- Genes & Genomics (2)

### Technical & Administrative Appointments

- Facility Manager** 2021 – 2023  
Comparative Medicine Disease Research Center (CDRC), Seoul National University
- Website Administrator** 2020 – 2025  
CDRC, Seoul National University
- NAS Server Administrator** 2020 – 2025  
CDRC, Seoul National University

## ADDITIONAL SKILLS

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- Programming** Python, R, Bash
- Pipeline and Tool Management** Nextflow & nf-core, Git, Conda, Docker, Singularity
- Multi-omics data processing** Genome (WGS & WES), Transcriptome (bulk & single-cell RNA-seq), Epigenome (TF & histone ChIP-seq, MBD-seq, ATAC-seq, CLIP-seq), 3D chromatin structure (ChIA-PET), Proteome (LC-MS/MS)
- Field Work** >300 vaccine and therapeutic injections administered to human subjects; >50 intravenous (IV) lines placed in human patients (as a military medic)
- Bench Work** >200 hours of organoid and cell culture; >50 isolations of PBMCs from blood samples; Hypoxia culture (H35 Hypoxystation); Microscopy (EVOS M7000); Automated liquid handling (epMotion 5075 VAC)
- Molecular Biology** qPCR, cloning, transfection & transduction, Western blot

## PROFESSIONAL MEMBERSHIPS

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<b>Federation of Asian Veterinary Associations (FAVA)</b> Student Member	2024 - present
<b>American Society for Cancer Research (AACR)</b> Associate Member	2024 - present
<b>Human Cell Atlas</b> Collaborating Member	2022 – present
<b>K-BIOX</b> Collaborating Member	2022 – present
<b>Korean Society for Molecular and Cellular Biology (KSMCB)</b> Student Member	2022 – present
<b>The Korean Human Proteome Organization (KHUPO)</b> Student Member	2021 - present
<b>Korean Society of Veterinary Science</b> Associate Member	2021 - present
<b>Korea Genome Organization (KOGO)</b> Student Member	2016 - present
<b>Korean Society for Biochemistry and Molecular Biology (KSBMB)</b> Student Member	2015 - present

## REFERENCES

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1. **Je-Yoel Cho** (Ph.D advisor); [jeicho@snu.ac.kr](mailto:jeicho@snu.ac.kr)  
Dean, College of Veterinary Medicine, Seoul National University
2. **Keunsoo Kang** (M.S. advisor; PhD thesis committee jury); [kangk1204@dankook.ac.kr](mailto:kangk1204@dankook.ac.kr)  
Associate Professor, Department of Microbiology, College of Natural Sciences, Dankook University
3. **Jueng Soo You** (Collaborator; PhD thesis committee jury); [jsyou@kku.ac.kr](mailto:jsyou@kku.ac.kr)  
Professor, Research Institute of Medical Science, Konkuk University
4. **Suk Woo Nam** (Collaborator); [swnam@catholic.ac.kr](mailto:swnam@catholic.ac.kr)  
Professor, Department of Pathology, College of Medicine, Catholic University