Curriculum Vitae   Sung-Gwon Lee, Ph.D.

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Laboratory of Genetics and Physiology, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), US National Institutes of Health (NIH), Bethesda, USA
(PI: Lothar Hennighausen, Ph.D.)

EDUCATION

2018.3 – 2023.2	**Integrated Ph.D. Program**, Biological Sciences and Technology	

Chonnam National University, Gwangju, South Korea
Advisor: Dr. Chungoo Park

2013.1 – 2014.12 **Military service** (Republic of Korea Navy)

2012.3 – 2018.2 **B.S.**, School of Biological Sciences and Technology
Major: Biological Sciences
Minor: Software Engineering
Chonnam National University, Gwangju, South Korea

RESEARCH EXPERIENCE

2023.9 – **Post-doctoral fellow,** Laboratory of Genetics and Physiology, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), US National Institutes of Health (NIH), Bethesda, USA
PI: Lothar Hennighausen, Ph.D.

HONORS AND AWARDS

KRIBB Best Research Award, The Korean Society for Biochemistry and Molecular Biology International Conference, 2017
'Analysis of transcriptome complexity and dynamics gene expression patterns during the neural differentiation of murine embryonic stem cells'

Best Poster Award, International Conference of the Genetics Society of Korea, 2017
'The dynamic alteration of global gene expression during neural differentiation of murine embryonic stem cells'

RESEARCH INTERESTS

Computational biology, Transcriptomics, Genomics, Infectious diseases

PUBLICATIONS

[Google scholar profiles]
(https://scholar.google.co.kr/citations?user=3djAHK8AAAAJ&hl)

Note: Publication with the first author is highlighted with a blue color.
# These authors equally contributed this work.

18. **Lee S.-G.,** Furth P.A., Hennighausen L. Lee H.K. (2024) Variant- and Vaccination-Specific Alternative Splicing Profiles in SARS-CoV-2 Infections. *iScience.* 27(3):109177

17. #Kim I.S., **#Lee S.-G.,** #Shin S.G., Jeong H., Sohn K.M., Park K.-S., Silwal P., Cheon S., Kim J., Kym S., Kim Y.-S., Jo E.-K., Park C. (2022) Dysregulated thrombospondin 1 and miRNA-29a-3p in severe COVID-19. *Scientific Reports.* 12(1):21227

16. #Kwak H.-J., **#Lee S.-G.,** #Park S.-C., Kim J.-H., Weisblat D.A., Park C., Cho S.-J. (2022) Head transcriptome profiling of glossiphoniid leech (*Helobdella austinensis*) reveals clues about of proboscis development. *Open Biology.* 12(3): 210298

15. Cheon S., **Lee S.-G.,** Hong H.H., Lee H.-G., Kim K.Y., Park C. (2021) A guide to phylotranscriptomic analysis for phycologists. *Algae.* 36(4): 333-340

14. #Oh J., **#Lee S.-G.,** Park C. (2021) PIC-Me: Paralogs and Isoforms Classifier based on Machine-learning approaches. *BMC Bioinformatics.* 22(Suppl 11): 311

13. **Lee S.-G.,** Na D., Park C. (2021) Comparability of reference-based and reference-free transcriptome analysis approaches at the gene expression level. *BMC Bioinformatics.* 22(Suppl 11): 310

12. Kim K., Islam M., Jung H.-W., Lim D., Kim K., **Lee S.-G.,** Park C., Lee J.C., Shin M. (2021) ppGpp signaling plays a critical role in biofilm formation and virulence of *Acinetobacter baumannii*. *Virulence*. 12(1): 2122-2132 https://doi.org/10.1080/21505594.2021.1961660

11. #Kim H.J., #Kim I.S., **#Lee S.-G.,** Kim Y.J., Silwal P., Kim J.Y., Kim J.K., Seo W., Chung C., Cho H.K., Huh H.J., Shim S.C., Park C., Jhun B.W., Jo E.-K. (2021) MiR144-3p is associated with pathologic inflammation in the patients infected with *Mycobacterium abscessus* complex. *Experimental & Molecular Medicine*. 53: 136–149

10. #Sohn K.M., **#Lee S.-G.,** #Kim H.J., Cheon S., Jeong H., Lee J., Kim I.S., Silwal P., Kim Y.J., Paik S., Chung C., Park C., Kim Y.-S., Jo E.-K. (2020) COVID-19 Patients Upregulate Toll-like Receptor 4-mediated Inflammatory Signaling That Mimics Bacterial Sepsis. *Journal of Korean Medical Science.* 35(38): e343

9. #Cho N., **#Lee S.-G.,** #Kim J.O., Kim Y.-A., Kim E.-M., Park C., Ji J.-H., Kim K.K. (2020) Identification of Differentially Expressed Genes Associated with Extracellular Matrix Degradation and Inflammatory Regulation in Calcific Tendinopathy Using RNA Sequencing. *Calcified Tissue International.* 107(5): 489-498

8. Lim D., Kim H.K., Jeong J.-H., Jung Y.S., Lee S.E., Jang H.-C., Jung S.-I., Choi H.-S., Rhee J.H., **Lee S.-G.,** Park C., Song M., Choy H.E. (2020) Lipocalin2 induced by bacterial flagellin protects mice against cyclophosphamide mediated neutropenic sepsis. *Microorganisms.* 8(5): 646

7. Kim Y.E., Won M., **Lee S.-G.,** Park C., Song C.H., Kim K.K. (2019) RBM47-regulated alternative splicing of TJP1 promotes actin stress fiber assembly during epithelial-to-mesenchymal transition. *Oncogene.* 38(38): 6521-6536

6. Jo J., Choi S., Oh J., **Lee, S.-G.,** Choi S.Y., Kim K.K., Park C. (2019) Conventionally used reference genes are not outstanding for normalization of gene expression in human cancer research. *BMC Bioinformatics.* 20: 245

5. #Hong H.H., **#Lee S.-G.,** Jo J., Oh J., Cheon S., Lee H.-G., Park C. (2019) Identification and sequencing of the gene encoding DNA methyltransferase 3 (DNMT3) from sea cucumber, *Apostichopus japonicus*. ***Molecular Biology Reports.*** (Epub): 1-10

4. #Lee J., **#Lee S.-G.,** Kim K.K., Lim Y.J., Choi J.A., Cho S.N., Park C., Song C.H. (2019) Characterization of genes differentially expressed in macrophages by virulent and attenuated *Mycobacterium tuberculosis* through RNA-Seq analysis. ***Scientific Reports.*** 9(1)*:* 4027.

3. #Park, C., #Han, Y.-H., **#Lee S.-G.,** Ryu, K.-B., Oh, J., Kern, E.M.A., Park, J.-K., Cho, S.-J. (2018) The developmental transcriptome atlas of the spoon worm *Urechis unicinctus* (Echiurida: Annelida). ***GigaScience.*** giy007.

2. Jo, J., Choi, H., **Lee, S.-G.,** Oh, J., Lee, H.-G., Park, C. (2017) Draft genome sequences of *Pseudoalteromonas tetraodonis* CSB01KR and *Pseudoalteromonas lipolytica* CSB02KR, isolated from the gut of the sea cucumber *Apostichopus japonicus*. ***Genome Announcements.*** vol. 5, no. 28, e00627-17.

1. Jo, J., Oh, J., Lee, H.-G., Hong, H.-H., **Lee, S.-G.,** Cheon, S., Kern, E. M. A., Jin, S., Park, J.-K., Cho, S.-J., Park, C. (2017) Draft genome of the sea cucumber *Apostichopus japonicus* and genetic polymorphism among color variants. ***GigaScience****.* giw006.

Presentations at International Conference

Lee, S.-G., Furth P.A., Hennighausen L. Lee H.K. Variant- and Vaccination-Specific Alternative Splicing Profiles in SARS-CoV-2 Infections. **NIH/FDA COVID-19 Research Workshop.** NIAID Conference Center Grand Hall, Rockville, Maryland, USA, 2023

Lee, S.-G., Park, C. Large-scale gene duplication events in dinoflagellate lineages. **23rd International Seaweed Symposium (ISS 2019)**. Jeju island, Korea, 2019.

Lee, S.-G., Na D., Park, C. Comparability of reference-based and reference-free transcriptome analysis approaches at the gene expression level. **The 14th International Workshop on Data and Text Mining in Biomedicine (DTMBio 2020)**. Galway, Ireland, 2020.

Lee, S-G., Park, C. Machine learning methods for predicting DNA- and RNA-binding proteins reveal that protein domains are not the main contributors to identify nucleic acid-binding proteins. **Genetoberfest 2023**. Technical University of Munich, Germany, 2023.