BIOGRAPHICAL SKETCH

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NAME: Hanbin Jeong

eRA COMMONS USER NAME (credential, e.g., agency login): JEONGHANBIN

POSITION TITLE: Postdoctoral Fellow

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Ulsan National Institute of Science and Technology, Ulsan, Republic of Korea	B.S.	02/2014	Biological sciences
Ulsan National Institute of Science and Technology, Ulsan, Republic of Korea	Ph.D.	02/2019	Structural Biology
Ulsan National Institute of Science and Technology, Ulsan, Republic of Korea	Postdoc	02/2021	Structural Biology
Vollum Institute, Oregon Health and Science University, USA	Postdoc	Present	Membrane proteins

A. Personal Statement

My research career began when I joined Dr. Changwook Lee's structural biology lab at UNIST, Republic of Korea as an undergraduate research student. My project focused on studying the functions of ER-associated protein degradation (ERAD) by elucidating molecular structure of SEL1L-HRD1 complex from mouse. During this period, I learned basic molecular biological and biochemical techniques such as cloning, protein purification, and crystallography and became interested in the structural biology. I entered the same lab as a graduate student and kept working on structural biology. I had been studying the protein complexes at the membrane contact sites between organelles, especially, the ER-Mitochondrial encounter structures (ERMES) as well as Nucleus-Vacuole Junction (NVJ) in yeast. As working on these projects, I got trained in the determination of 3D structures using X-ray crystallography of macromolecular protein complex structures and biochemical analyses. After earning Ph.D., I joined Dr. Eric Gouaux's lab and have been studying molecular mechanism of mechanosensory transduction channel of hair cell in inner ear.

B. Positions, Scientific Appointments, and Honors

2021. 4. – Present **Postdoctoral Fellow**, Vollum Institute/HHMI
Oregon Health and Science University, USA
Advisor: Dr. Eric Gouaux, Ph.D.

2019. 2. – 2021. 2. **Postdoctoral Fellow**, School of Life Sciences,
UNIST, Ulsan, Republic of Korea
Advisor: Dr. Changwook Lee, Ph.D.

2014. 3. – 2019. 2. **Ph.D.** in School of Life Sciences,
UNIST, Ulsan, Republic of Korea
Advisor: Dr. Changwook Lee, Ph.D.

2010. 3. – 2014. 2. **B.S.** in School of Life Sciences,
UNIST, Ulsan, Republic of Korea

Honors and awards

2014. 3. – 2019. 2. Global Ph.D. Fellowship Program, National Research Foundation of Korea. ($30,000/year)

2017. 9. KSMCB AMOREPACIFIC Great Global Next Generation Research Award. Korean Society for Molecular and Cell Biology. ($2,000)

2017. 7. Young Scientist Award, Korean Society for Structural Biology.

Equipment / Skills

- X-ray crystallography
- Isothermal titration calorimetry (ITC)
- Recombinant DNA technology
- Fast protein liquid chromatography (FPLC)
- Analytical Ultracentrifugation (AUC)
- Protein expression and purification

Teaching Assistant Experience

- Biochemistry I (BIO211) 2014 1st semester
- Biochemistry II (BIO221) 2014 2nd semester
- Biochemistry Laboratory (BIO261) 2014 1st & 2nd semester
- Molecular Biology Laboratory (BIO202) 2015 1st semester

C. Contributions to Science

1. Clark S*, **Jeong H***, Posert R, Goehring A, Gouaux E. The structure of the Caenorhabditis elegans TMC-2 complex suggests roles of lipid-mediated subunit contacts in mechanosensory transduction. Proceedings of the National Academy of Sciences. 2024 Feb 20;121(8):e2314096121.

2. Clark S, **Jeong H**, Goehring A, Kang Y, Gouaux E. Large-scale growth of C. elegans and isolation of membrane protein complexes. Nature Protocols. 2023 Sep;18(9):2699-716.

3. **Jeong H***, Clark S*, Goehring A, Dehghani-Ghahnaviyeh S, Rasouli A, Tajkhorshid E, Gouaux E. Structures of the TMC-1 complex illuminate mechanosensory transduction. Nature. 2022 Oct 27;610(7933):796-803.

4. Park J*, Kim HI*, **Jeong H**, Lee M, Jang SH, Yoon SY, Kim H, Park ZY, Jun Y, Lee C. Quaternary structures of Vac8 differentially regulate the Cvt and PMN pathways. Autophagy. 2020 Jun 2;16(6):991-1006.

5. Park J*, Lee SY*, **Jeong H**, Kang MG, Van Haute L, Minczuk M, Seo JK, Jun Y, Myung K, Rhee HW, Lee C. The structure of human EXD2 reveals a chimeric 3′ to 5′ exonuclease domain that discriminates substrates via metal coordination. Nucleic Acids Research. 2019 Jul 26;47(13):7078-93.

6. **Jeong H**, Park J, Jun Y, Lee C. Crystal structures of Mmm1 and Mdm12–Mmm1 reveal mechanistic insight into phospholipid trafficking at ER-mitochondria contact sites. Proceedings of the National Academy of Sciences. 2017 Nov 7;114(45):E9502-11.

7. Park HK*, **Jeong H***, Ko E, Lee G, Lee JE, Lee SK, Lee AJ, Im JY, Hu S, Kim SH, Lee JH. Paralog specificity determines subcellular distribution, action mechanism, and anticancer activity of TRAP1 inhibitors. Journal of Medicinal Chemistry. 2017 Sep 14;60(17):7569-78.

8. Lee H, **Jeong H**, Choe J, Jun Y, Lim C, Lee C. The crystal structure of human Rogdi provides insight into the causes of Kohlschutter-Tönz Syndrome. Scientific Reports. 2017 Jun 21;7(1):3972.

9. **Jeong H***, Park J*, Kim HI, Lee M, Ko YJ, Lee S, Jun Y, Lee C. Mechanistic insight into the nucleus–vacuole junction based on the Vac8p–Nvj1p crystal structure. Proceedings of the National Academy of Sciences. 2017 Jun 6;114(23):E4539-48.

10. **Jeong H***, Park J*, Lee C. Crystal structure of Mdm12 reveals the architecture and dynamic organization of the ERMES complex. EMBO reports. 2016 Dec;17(12):1857-71.

11. **Jeong H**, Sim HJ, Song EK, Lee H, Ha SC, Jun Y, Park TJ, Lee C. Crystal structure of SEL1L: Insight into the roles of SLR motifs in ERAD pathway. Scientific reports. 2016 Feb 9;6(1):20261.

12. Lee C*, Park HK*, **Jeong H**, Lim J, Lee AJ, Cheon KY, Kim CS, Thomas AP, Bae B, Kim ND, Kim SH. Development of a mitochondria-targeted Hsp90 inhibitor based on the crystal structures of human TRAP1. Journal of the American Chemical Society. 2015 Apr 8;137(13):4358-67.

13. **Jeong H**, Lee H, Lee C. Crystallization and preliminary X-ray diffraction analysis of the Sel1-like repeats of SEL1L. Acta Crystallographica Section F: Structural Biology Communications. 2014 Dec 1;70(12):1624-7.

14. **Jeong H**, Kang BH, Lee C. Crystallization and preliminary X-ray diffraction analysis of Trap1 complexed with Hsp90 inhibitors. Acta Crystallographica Section F: Structural Biology Communications. 2014 Dec 1;70(12):1683-7.