



Yunkyeong Lee

Postdoctoral Scholar, Endocrinology and Metabolism

Bio

BIO

Yun is a postdoctoral research scholar in Dr. Anna Gloyn lab (Translational Genomics of Diabetes Lab). Since she joined the lab in August 2022, she has been involved in projects investigating type 2 diabetes (T2D) susceptible genes and their molecular mechanisms for pancreatic beta cell dysfunction under the mentorship of Dr. Gloyn. In particular, she is interested in how T2D effector transcripts alter the autophagy/mitophagy pathways in human pancreatic beta cells and how this may lead to beta cell failure, mitochondrial dysfunction and T2D pathology. She has been also using CRISPR knock-in genome editing in human induced pluripotent stem cell and its derivatives to reveal loss of function variant that causes transient neonatal diabetes.

During her PhD, she focused on the roles of an epigenetic regulator and its molecular machineries in the pathogenesis of non-alcoholic fatty liver disease (NAFLD). Besides, she studied the correlation between endoplasmic reticulum (ER) stress-mediated unfolded protein response (UPR) signalling and autophagy, and further their effects on various cells using some plant extracts. Her research goal is to expand our knowledge about the cellular and molecular mechanisms of T2D and explore therapeutic targets and/or strategies.

HONORS AND AWARDS

- Finalist for a Poster Award, The 15th Annual Pediatrics Research Retreat 2024 (Apr 2024)
- Keystone Symposia Scholarship (\$1,200), Keystone Symposia & NIH NIDDK (Aug 2022)
- Best Poster Award, The Korean Society for Integrative Biology Conference (Dec 2021)
- Keystone Financial Aid-Scholarship Program, Keystone Symposia (June 2021)
- Brain Korea 21 Scholarship, Brain Korea 21 Program (Mar 2017-Feb 2019)

STANFORD ADVISORS

- Anna Gloyn, Postdoctoral Faculty Sponsor

Research & Scholarship

LAB AFFILIATIONS

- Anna Gloyn, Translational Genomics of Diabetes Lab (8/15/2022)

Publications

PUBLICATIONS

- **PAX4 loss of function increases diabetes risk by altering human pancreatic endocrine cell development.** *Nature communications*
Lau, H. H., Krentz, N. A., Abaitua, F., Perez-Alcantara, M., Chan, J. W., Ajeian, J., Ghosh, S., Lee, Y., Yang, J., Thaman, S., Champon, B., Sun, H., Jha, et al
2023; 14 (1): 6119

- **Kazinol C from *Broussonetia kazinoki* stimulates autophagy via endoplasmic reticulum stress-mediated signaling** *ANIMAL CELLS AND SYSTEMS*
Lee, Y., Kwon, J., Jeong, J., Ryu, J., Kim, K.
2022; 26 (1): 28-36
- **Inhibition of autophagy sensitizes lignan-induced endoplasmic reticulum stress-mediated cell death** *BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS*
Kwon, J., Lee, Y., Jeong, J., Ryu, J., Kim, K.
2020; 526 (2): 300-305

PRESENTATIONS

- CALCOCO2 orchestrates insulin content by modulating autophagy and mitochondrial functions in human pancreatic b-cells - Stanford Research Park Research Symposium (October 19, 2023)
- Determining the impact of CALCOCO2 loss on human beta-cell function supports a role of autophagy in type 2 diabetes - 7th Annual Frontiers in Diabetes Research Symposium (April 28, 2023)
- Suppression of X phosphorylation can be a potential therapeutic target for non-alcoholic fatty liver disease (NAFLD) by robustly reducing hepatic excess lipids - Stanford Research Park Research Symposium (October 21, 2022)
- Suppression of X phosphorylation can be a potential therapeutic target for non-alcoholic fatty liver disease (NAFLD) by robustly reducing hepatic excess lipids - Bay Area Metabolism Meeting (September 8, 2022)
- Suppression of X phosphorylation can be a potential therapeutic target for non-alcoholic steatohepatitis (NASH) by robustly reducing hepatic excess lipids - Keystone Symposia on Inter Organ Crosstalk in NASH (August 7, 2022 - August 10, 2022)
- Epigenetic regulation of X, a game changer in hepatic lipid metabolic pathways - The Korean Society for Integrative Biology Conference (December 20, 2021 - December 22, 2021)
- Impairment of X phosphorylation ameliorates the pathogenesis of non-alcoholic fatty liver diseases - Cold Spring Harbor Laboratory Conference on Mechanisms of Metabolic Signaling, Virtual (October 26, 2021 - October 29, 2021)
- The natural compound Kazinol C induces autophagy via endoplasmic reticulum (ER) stress-mediated signalling - FASEB Conference on The Endoplasmic Reticulum: Structure, Function, and Disease, Virtual (June 16, 2021 - June 17, 2021)
- The natural compound Kazinol C induces autophagy by regulating an endoplasmic reticulum (ER) stress response to maintain cellular homeostasis - Keystone Symposia's eSymposia on Targeted Protein Degradation: From Small Molecules to Complex Organelles (June 7, 2021 - June 8, 2021)
- Studies on the autophagy-lysosome pathway through which Ferulate degrade FoxM1 and its role on the reduction of cancer cell growth - EMBO Conference: Autophagy (September 25, 2017 - September 29, 2017)