

# Mari Iwase

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## Education:

- **Ph.D.** (2016□ 2020)  
Graduate School of Agriculture, Kyoto University, Japan  
Dissertation: Studies on the endogenous and exogenous uncoupling protein 1 expression regulatory substances
- **M.S.** (2014□ 2016) / **B.S.** (2010□ 2014)  
Faculty of Agriculture, Kindai University, Japan.  
Dissertation: Effect of Kaki (Japanese persimmon) Polyphenols on Glucose Absorption

## Employment:

- **Washington University in St. Louis** School of Medicine, Postdoc, 2020□ 2023
- **Kyoto University**, Graduate School of Agriculture, Postdoc, 2020

## Technical Skill:

### **Recombinant DNA experiment**

- Cloning of interest genes
- Plasmid construction
- Expression of recombinant fusion-protein using E.coli

### **Cell-based analyses**

- Real-time PCR
- Immunoblotting
- Enzyme-linked immunosorbent assay (ELISA)
- Transfection and cloning of stably transfected cell line
- Oxygen consumption measurement (Seahorse)

### **Cell culture**

- Adipocyte cell line (iWAT primary cells, 3T3-L1 cells)
- Brown adipocyte cell line (HB2 cells)
- Mesenchymal stem cell line (C3H10T1/2 cells)

### **Animal experiments**

- Breeding transgenic and knockout mice (including genotyping and primer design)
- Dissection and blood sampling from tail vein
- Histological section (paraffin section: IHC and H&E)
- Organ analysis (DNA, RNA and protein expression)
- Intraperitoneal injection/ Per os
- Glucose/ insulin tolerance test
- Rectal temperature measurement
- Blood chemical parameter measurement

## Academic Award:

- Young Investigator Award, The 7<sup>th</sup> International Conference on Food Factors, Kobe, Japan, 2019.
- Best Presentation Award, The 72<sup>nd</sup> Japan Society of Nutrition and Food Science, Okayama, Japan, 2018
- TGBM poster award, The 2<sup>nd</sup> Society for Triglyceride Biology and Medicine, Nara, Japan, 2018.
- Excellent academic award, Kindai University, Japan, 2014

## Publications:

### **Journals**

- ◆ C. Zhu, **M. Iwase**, Z. Li, F. Wang, A. Quinet, A. Vindigni, J. Shao, Profilin-1 regulates DNA replication forks in a context-dependent fashion by interacting with SNF2H and BOD1L, *Nat Commun.* 13 (2022) 6531.
- ◆ H. Takahashi, M. Tokura, S. Kawarasaki, H. Nagai, **M. Iwase**, K. Nishitani, H. Okaze, S. Mohri, T. Ito, T. Ara, H.F. Jheng, W. Nomura, T. Kawada, K. Inoue, T. Goto, Metabolomics reveals inosine 5'-monophosphate is increased during mice adipocyte browning, *J Biol Chem.* 298 (2022) 102456.
- ◆ K. Takemori, K. Akaho, **M. Iwase**, M. Okano, T. Kometani, Effects of Persimmon Fruit Polyphenols on Postprandial Plasma Glucose Elevation in Rats and Humans, *J Nutr Sci Vitaminol (Tokyo).* 68 (2022) 331-341.
- ◆ S. Kawarasaki, H. Sawazaki, H. Iijima, S.P. Ng, J. Kwon, S. Mohri, **M. Iwase**, H.F. Jheng, H. Takahashi, W. Nomura, K. Inoue, T. Kawada, T. Goto, Comparative Analysis of the Preventive Effects of Canagliflozin, a Sodium-Glucose Co-Transporter-2 Inhibitor, on Body Weight Gain Between Oral Gavage and Dietary Administration by Focusing on Fatty Acid Metabolism, *Diabetes Metab Syndr Obes.* 13 (2020) 4353-4359.
- ◆ **M. Iwase**, S. Tokiwa, S. Seno, T. Mukai, Y.S. Yeh, H. Takahashi, W. Nomura, H.F. Jheng, S. Matsumura, T. Kusudo, N. Osato, H. Matsuda, K. Inoue, T. Kawada, T. Goto, Glycerol kinase stimulates uncoupling protein 1 expression by regulating fatty acid metabolism in beige adipocytes, *J Biol Chem.* 295(2020) 7033-7045.
- ◆ **M. Iwase**, S. Sakai, S. Seno, Y.S. Yeh, T. Kuo, H. Takahashi, W. Nomura, H.F. Jheng, P. Horton, N. Osato, H. Matsuda, K. Inoue, T. Kawada, T. Goto, Long non-coding RNA 2310069B03Rik functions as a suppressor of Ucp1 expression under prolonged cold exposure in murine beige adipocytes, *Biosci Biotechnol Biochem.* 84 (2020) 305-313.
- ◆ H. Hara, H. Takahashi, S. Mohri, H. Murakami, S. Kawarasaki, **M. Iwase**, N. Takahashi, M. Sugiura, T. Goto, T. Kawada,  $\beta$ -Cryptoxanthin Induces UCP-1 Expression via a RAR Pathway in Adipose Tissue, *J Agric Food Chem.* 67 (2019) 10595-10603.
- ◆ Y.S. Yeh, H.F. Jheng, **M. Iwase**, M. Kim, S. Mohri, J. Kwon, S. Kawarasaki, Y. Li, H. Takahashi, T. Ara, W. Nomura, T. Kawada, T. Goto, The Mevalonate Pathway Is Indispensable for Adipocyte Survival, *iScience* 9 (2018) 175-191.
- ◆ J.Y. An, H.F. Jheng, H. Nagai, K. Sanada, H. Takahashi, **M. Iwase**, N. Watanabe, Y.I. Kim, A. Teraminami, N. Takahashi, R. Nakata, H. Inoue, S. Seno, H. Matsuda, T. Kawada, T. Goto, A phytol-enriched diet activates PPAR $\alpha$  in the liver and brown adipose tissue to ameliorate obesity-induced metabolic abnormalities, *Mol Nutr Food Res.* 62 (2018) e1700688.
- ◆ R. Ohue-Kitano, Y. Yasuoka, T. Goto, N. Kitamura, S.B. Park, S. Kishino, I. Kimura, M. Kasubuchi, H. Takahashi, Y. Li, Y.S. Yeh, H.F. Jheng, **M. Iwase**, M. Tanaka, S. Masuda, T. Inoue, H. Yamakage, T. Kusakabe, F. Tani, A. Shimatsu, N. Takahashi, J. Ogawa, N. Satoh-Asahara, T. Kawada, alpha-Linolenic acid-derived metabolites from gut lactic acid bacteria induce

differentiation of anti-inflammatory M2 macrophages through G protein-coupled receptor 40, *FASEB J* 32 (2018) 304-318.

- ◆ **M. Iwase**, T. Yamamoto, K. Nishimura, H. Takahashi, S. Mohri, Y. Li, H.F. Jheng, W. Nomura, N. Takahashi, C.S. Kim, R. Yu, M. Taniguchi, K. Baba, S. Murakami, T. Kawada, T. Goto, Suksdorfins Promotes Adipocyte Differentiation and Improves Abnormalities in Glucose Metabolism via PPAR $\gamma$  Activation, *Lipids* 52 (2017) 657-664.
- ◆ T. Goto, M. Hirata, Y. Aoki, **M. Iwase**, H. Takahashi, M. Kim, Y. Li, H.F. Jheng, W. Nomura, N. Takahashi, C.S. Kim, R. Yu, S. Seno, H. Matsuda, M. Aizawa-Abe, K. Ebihara, N. Itoh, T. Kawada, The hepatokine FGF21 is crucial for peroxisome proliferator-activated receptor- $\alpha$  agonist-induced amelioration of metabolic disorders in obese mice, *J Biol Chem.* 292 (2017) 9175-9190.

## **Conferences:**

### **Presentation**

- **M. Iwase**, C. Zhu, J. Shao, Stabilization of stressed DNA replication forks by VCP, The 3rd annual Siteman Cancer Research Symposium, December 9, 2022, St. Louis, U.S.A
- **M. Iwase**, C. Zhu, J. Shao, Stabilization of stressed DNA replication forks by phospho-Ser<sup>784</sup>-VCP, The Inaugural Retreat of the Center for Genome Integrity, April 21-22, 2022, St. Louis, U.S.A
- **M. Iwase**, S. Tokiwa, S. Seno, T. Mukai, H. Takahashi, W. Nomura, H.F. Jheng, T. Kusudo, N. Osato, H. Matsuda, K. Inoue, T. Kawada, T. Goto, "Study on the relationship between fatty acid metabolism and thermogenic function of white adipocytes," The 7<sup>th</sup> International Conference on Food Factor, Dec. 1-5, 2019, Kobe, Japan
- **M. Iwase**, S. Tokiwa, S. Seno, T. Mukai, H. Takahashi, W. Nomura, H.F. Jheng, T. Kusudo, N. Osato, H. Matsuda, K. Inoue, T. Kawada, T. Goto, "Regulation mechanism of Ucp1 expression of glycerol kinase in adipose tissue," The 40<sup>th</sup> Annual Meeting of Japan Society for the Study of Obesity, Nov. 2-3, 2019, Tokyo, Japan
- **M. Iwase**, S. Tokiwa, S. Seno, T. Mukai, H. Takahashi, W. Nomura, H.F. Jheng, T. Ara, T. Kusudo, N. Osato, H. Matsuda, T. Kawada, T. Goto, "Role of glycerol kinase in the browning of white adipose tissue," The 73<sup>rd</sup> Japan Society of Nutrition and Food Science, May 18-19, 2019, Shizuoka, Japan
- **M. Iwase**, S. Tokiwa, H. Takahashi, W. Nomura, H.F. Jheng, T. Ara, N. Osato, S. Seno, H. Matsuda, T. Kawada, T. Goto, "Role of glycerol kinase in brown adipocyte function," The 1<sup>st</sup> Japanese Society for Food Science and Technology Kansai branch meeting, Nov. 22, 2018, Kyoto, Japan
- **M. Iwase**, M. Hirata, H. Takahashi, H.F. Jheng, W. Nomura, T. Ara, N. Takahashi, S. Seno, H. Matsuda, M. Abe, K. Ebihara, N. Itoh, T. Kawada, T. Goto, "Amelioration effect of metabolic abnormality through FGF21 at intake of PPAR $\alpha$  agonist," The 2<sup>nd</sup> Society for Triglyceride Biology and Medicine, Nov. 17, 2018, Nara, Japan
- **M. Iwase**, M. Hirata, H. Takahashi, H.F. Jheng, W. Nomura, N. Takahashi, T. Kawada, T. Goto, "Peroxisome proliferator-activated receptor- $\alpha$  agonist treatment ameliorates obesity and obesity-related glucose metabolism disorders in obese mice via FGF21," 25<sup>th</sup> European Congress on Obesity May 23-26, 2018, Vienna, Austria
- **M. Iwase**, M. Hirata, H. Takahashi, H.F. Jheng, W. Nomura, T. Ara, N. Takahashi, S. Seno, H. Matsuda, M. Abe, K. Ebihara, N. Itoh, T. Kawada, T. Goto, "FGF21 is important for peroxisome proliferator activated receptor alpha agonist-induced amelioration of metabolic disorders in obese mice," The 72<sup>nd</sup> Japan Society of Nutrition and Food Science, May 11-13, 2018, Okayama, Japan
- **M. Iwase**, S. Sakai, S. Seno, T. Kuo, H. Takahashi, W. Nomura, H.F. Jheng, T. Ara, P. Horton, N. Osato, H. Matsuda, T. Kawada, T. Goto, "Search and function analysis of non-coding RNA controlling Ucp1 expression" The 2018 Annual Conference of the Japan Society for Bioscience, Biotechnology and Agrochemistry, Mar. 15-18, 2018, Nagoya, Japan
- **M. Iwase**, K. Nishimura, H. Takahashi, N. Takahashi, M. Taniguchi, K. Baba, S. Murakami, T. Kawada, T. Goto, "Effects of suksdorfins on adipocyte differentiation and glucose and lipid metabolism disorders," The 38<sup>th</sup> Annual Meeting of Japan Society for the Study of Obesity, Oct. 7-8, 2017, Osaka, Japan
- **M. Iwase**, K. Nishimura, H. Takahashi, N. Takahashi, M. Taniguchi, K. Baba, S. Murakami, T. Goto, T. Kawada, "Suksdorfins improves metabolic abnormalities," The 71<sup>st</sup> Japan Society of Nutrition and Food Science, May 19-21, 2017, Okinawa, Japan
- **M. Iwase**, K. Nishimura, H. Takahashi, N. Takahashi, M. Taniguchi, K. Baba, S. Murakami, T. Goto, T. Kawada, "Suksdorfins promotes adipocyte differentiation and improves abnormalities in glucose metabolism," The 2017 Annual Conference of the Japan Society for Bioscience, Biotechnology and Agrochemistry, Mar. 18-20, 2017, Kyoto, Japan