

## 膵島生物学研究グループの原著論文

### <2022-2023年>

1. Comprehensive Overview of Disease Models for Wolfram Syndrome: Towards Effective Treatments. Shuntaro Morikawa, Katsuya Tanabe, Naoya Kaneko, Nozomi Hishimura, Akie Nakamura. *Mammalian Genome : official journal of the International Mammalian Genome Society* 35(1) 1-12. 2024.
2. Selective proteasome degradation of the C-terminal truncated human WFS1 mutants in the pancreatic beta-cells. Hiraku Tokuma, Daisuke Sakano, Katsuya Tanabe, Yukio Tanizawa, Nobuaki Shiraki and Shoen Kume. *FEBS Open Biol.* in press 2023
3. Hachimijiogan, a traditional herbal medicine, modulates adipose cell function and ameliorates diet-induced obesity and glucose intolerance in mice. Kagawa S, Tanabe K, Hiromura M, Ogawa K, Koga T, Maeda T, Amo-Shiinoki K, Ochi H, Ichiki Y, Fukuyama S, Suzuki S, Suizu N, Ohmine T, Hamachi S, Tsuneki H, Okuya S, Sasaoka T, Yukio Tanizawa Y and Nagashima F. *Frontiers in Pharmaceuticals.* 2023; 14: 1167934. doi: 10.3389/fphar.2023.1167934
4. A case of multiple glucagonomas with no clinical manifestations of excess glucagon despite hyperglucagonemia. Amano S, Suenaga S, Hamamoto K, Yada S, Tsuyama T, Shinoda S, Tanaka Y, Takemoto Y, Harada E, Tanabe K, Asahara S, Hoshii K, Takami T. *DEN Open.* 2023; 3(1): e230. doi: 10.1002/deo2.230
5. Gsk-3-Mediated Proteasomal Degradation of ATF4 Is a Proapoptotic Mechanism in Mouse Pancreatic  $\beta$ -Cells. Nagao Y, Amo-Shiinoki K, Nakabayashi H, Hatanaka M, Kondo M, Matsunaga K, Emoto M, Okuya S, Tanizawa Y, Tanabe K. *Int J Mol Sci.* 2022 Nov 5;23(21):13586. doi: 10.3390/ijms232113586.

### <2020-2021年>

6. Islet cell dedifferentiation is a pathologic mechanism of long-standing progression of type 2 diabetes. Amo-Shiinoki K, Tanabe K, Hoshii Y, Matsui H, Harano R, Fukuda T, Takeuchi T, Bouchi R, Takagi T, Hatanaka M, Takeda K, Okuya S, Nishimura W, Kudo A, Tanaka S, Tanabe M, Akashi T, Yamada T, Ogawa Y, Ikeda E, Nagano H, Tanizawa Y. *JCI Insight.* 2021; 6(1):e143791. doi: 10.1172/jci.insight.143791.

7. Importance of Intestinal Environment and Cellular Plasticity of Islets in the Development of Postpancreatectomy Diabetes. Fukuda T, Bouchi R, Takeuchi T, Amo-Shiinoki K, Kudo A, Tanaka S, Tanabe M, Akashi T, Hirayama K, Odamaki T, Igarashi M, Kimura I, Tanabe K, Tanizawa Y, Yamada T, Ogawa Y. *Diabetes Care*. 2021; 44(4):1002-1011. doi: 10.2337/dc20-0864.
8. Deficiency of WFS1 leads to the impairment of AVP secretion under dehydration in male mice. Kurimoto J, Takagi H, Miyata T, Hodai Y, Kawaguchi Y, Hagiwara D, Suga H, Kobayashi T, Sugiyama M, Onoue T, Ito Y, Iwama S, Banno R, Tanabe K, Tanizawa Y, Arima H. *Pituitary*. 2021 Mar 5. doi: 10.1007/s11102-021-01135-6.
9. A patient with sudden hearing loss induced by propylthiouracil. Tanabe K, Nishimura S, Sugahara K, Yamashita H, Tanizawa Y. *Heliyon*. 2021;7(2):e06196.  
doi: 10.1016/j.heliyon.2021.e06196.

#### <2018-2019 年>

10. Activation of GLP-1 receptor signalling alleviates cellular stresses and improves beta cell function in a mouse model of Wolfram syndrome. Kondo M, Tanabe K, Amo-Shiinoki K, Hatanaka M, Morii T, Takahashi H, Seino S, Yamada Y, Tanizawa Y. *Diabetologia*. 2018;61(10):2189-2201. doi: 10.1007/s00125-018-4679-y.
11. Factors predicting early postpartum glucose intolerance in Japanese women with gestational diabetes mellitus: decision-curve analysis. Kondo M, Nagao Y, Mahbub MH, Tanabe T, Tanizawa Y. *Diabet Med*. 2018;35(8):1111-1117. doi: 10.1111/dme.13657.

#### <2016-2017 年>

12. Loss of mTORC1 signalling impairs  $\beta$ -cell homeostasis and insulin processing. Blandino-Rosano M, Barbaresso R, Jimenez-Palomares M, Bozadjieva N, Werneck-de-Castro JP, Hatanaka M, Mirmira RG, Sonenberg N, Liu M, Ruegg MA, Hall MN, Bernal-Mizrachi E. *Nat Commun*. 2017;12(8):16014. doi: 10.1038/ncomms16014.
13. Interorgan Crosstalk Contributing to  $\beta$ -Cell Dysfunction. Tanabe K, Amo-Shiinoki K, Hatanaka M, Tanizawa Y. *J Diabetes Res*. 2017;3605178. doi: 10.1155/2017/3605178.
14. Chronic high fat feeding restricts islet mRNA translation initiation independently of ER stress via DNA damage and p53 activation. Hatanaka M, Anderson-Baucum E, Lakhter A, Kono T, Maier B, Tersey SA, Tanizawa Y, Evans-Molina C, Mirmira RG, Sims EK. *Sci Rep*.

2017;7(1):3758. doi: 10.1038/s41598-017-03869-5.

15. Sequential cleavage of insulin receptor by calpain 2 and  $\gamma$ -secretase impairs insulin signalling. Yuasa T, Amo-Shiinoki K, Ishikura S, Takahara M, Matsuoka T, Kaneto H, Kuroda A, Matsuhisa M, Hashida S. *Diabetologia*. 2016;59(12):2711-2721. doi: 10.1007/s00125-016-4102-5.

<2014-2015年>

16. Wolfram syndrome: clinical features, molecular genetics of WFS1 gene. Tanabe K, Matsunaga K, Hatanaka M, Akiyama M, Tanizawa Y. *Nihon Rinsho*. 2015;73(2):341-9.
17. Wolfram syndrome in the Japanese population; molecular analysis of WFS1 gene and characterization of clinical features. Matsunaga K, Tanabe K, Inoue H, Okuya S, Ohta Y, Akiyama M, Taguchi A, Kora Y, Okayama N, Yamada Y, Wada Y, Amemiya S, Sugihara S, Nakao Y, Oka Y, Tanizawa Y. *PLoS One*. 2014;9(9):e106906. doi: 10.1371/journal.pone.0106906.
18. Palmitate induces mRNA translation and increases ER protein load in islet  $\beta$ -cells via activation of the mammalian target of rapamycin pathway. Hatanaka M, Maier B, Sims EK, Templin AT, Kulkarni RN, Evans-Molina C, Mirmira RG. *Diabetes*. 2014;63(10):3404-15. doi: 10.2337/db14-0105. Epub 2014 May 16. PMID: 24834975
19. Maintenance of Pdx1 mRNA translation in islet  $\beta$ -cells during the unfolded protein response. Templin AT, Maier B, Tersey SA, Hatanaka M, Mirmira RG. *Mol Endocrinol*. 2014;28(11):1820-30. doi: 10.1210/me.2014-1157.
20. A sibling case of Wolfram syndrome with a novel mutation Y652X in WFS1. Iwasaki N, Fukawa K, Matsuo M, Urano M, Watanabe M, Ono Y, Tanabe K, Tanizawa Y, Ogata M, Ide R, Takizawa M, Nagata S, Osawa M, Uchigata Y, Saito K. *Diabetology International*. 2014;5(2) 148-153 doi.org/10.1007/s13340-013-0145-8
21. Dietary combination of sucrose and linoleic acid causes skeletal muscle metabolic abnormalities in Zucker fatty rats through specific modification of fatty acid composition. Ohminami H, Amo K, Taketani Y, Sato K, Fukaya M, Uebano T, Arai H, Koganei M, Sasaki H, Yamanaka-Okumura H, Yamamoto H, Takeda E. *J Clin Biochem Nutr*. 2014;55(1):15-25. doi: 10.3164/jcbn.14-11.

22. Development of in vitro model of insulin receptor cleavage induced by high glucose in HepG2 cells. Yuasa T, Amo K, Ishikura S, Nagaya H, Uchiyama K, Hashida S, Ebina Y. *Biochem Biophys Res Commun*. 2014;445(1):236-43. doi:10.1016/j.bbrc.2014.01.187.

<2012-2013年>

23. Translational control of inducible nitric oxide synthase by p38 MAPK in islet  $\beta$ -cells. Nishiki Y, Adewola A, Hatanaka M, Templin AT, Maier B, Mirmira RG. *Mol Endocrinol*. 2013 ;27(2):336-49. doi: 10.1210/me.2012-1230.
24. Roles of endoplasmic reticulum stress and oxidative stress in developing islet beta cell dysfunction. Tanabe K, Tanizawa Y. *Nihon Rinsho*. 2012;70 Suppl 3:118-22.
25. Divergent compensatory responses to high-fat diet between C57BL6/J and C57BLKS/J inbred mouse strains. Sims EK, Hatanaka M, Morris DL, Tersey SA, Kono T, Chaudry ZZ, Day KH, Moss DR, Stull ND, Mirmira RG, Evans-Molina C. *Am J Physiol Endocrinol Metab*. 2013;305(12):E1495-511. doi:10.1152/ajpendo.00366.2013.
26. Induction of the hepatic stearoyl-CoA desaturase 1 gene in offspring after isocaloric administration of high fat sucrose diet during gestation. Wanjiha VW, Ohminami H, Taketani Y, Amo K, Yamanaka-Okumura H, Yamamoto H, Takeda E. *J Clin Biochem Nutr*. 2013 ;53(3):150-7. doi: 10.3164/jcbn.13-48.
27. Liver X receptor negatively regulates fibroblast growth factor 21 in the fatty liver induced by cholesterol-enriched diet. Uebanso T, Taketani Y, Yamamoto H, Amo K, Tanaka S, Arai H, Takei Y, Masuda M, Yamanaka-Okumura H, Takeda E. *J Nutr Biochem*. 2012;23(7):785-90. doi: 10.1016/j.jnutbio.2011.03.023.

<2010-2011年>

28. Diet-induced adipose tissue inflammation and liver steatosis are prevented by DPP-4 inhibition in diabetic mice. Shirakawa J, Fujii H, Ohnuma K, Sato K, Ito Y, Kaji M, Sakamoto E, Koganei M, Sasaki H, Nagashima Y, Amo K, Aoki K, Morimoto C, Takeda E, Terauchi Y. *Diabetes*. 2011 ;60(4):1246-57. doi: 10.2337/db10-1338.
29. Effects of xylitol on metabolic parameters and visceral fat accumulation. Amo K, Arai H, Uebanso T, Fukaya M, Koganei M, Sasaki H, Yamamoto H, Taketani Y, Takeda E. *J Clin*

Biochem Nutr. 2011;49(1):1-7. doi: 10.3164/jcbn.10-111.

30. Protective effects of dipeptidyl peptidase-4 (DPP-4) inhibitor against increased  $\beta$  cell apoptosis induced by dietary sucrose and linoleic acid in mice with diabetes. Shirakawa J, Amo K, Ohminami H, Orime K, Togashi Y, Ito Y, Tajima K, Koganei M, Sasaki H, Takeda E, Terauchi Y. *J Biol Chem*. 2011;22;286(29):25467-76. doi: 10.1074/jbc.M110.217216.
31. Paradoxical regulation of human FGF21 by both fasting and feeding signals: is FGF21 a nutritional adaptation factor? Uebanso T, Taketani Y, Yamamoto H, Amo K, Ominami H, Arai H, Takei Y, Masuda M, Tanimura A, Harada N, Yamanaka-Okumura H, Takeda E. *PLoS One*. 2011;6(8):e22976. doi: 10.1371/journal.pone.0022976.
32. Wolfram syndrome 1 gene (WFS1) product localizes to secretory granules and determines granule acidification in pancreatic beta-cells. Hatanaka M, Tanabe K, Yanai A, Ohta Y, Kondo M, Akiyama M, Shinoda K, Oka Y, Tanizawa Y. *Hum Mol Genet*. 2011;20(7):1274-84. doi: 10.1093/hmg/ddq568.
33. Glucose and fatty acids synergize to promote B-cell apoptosis through activation of glycogen synthase kinase 3 $\beta$  independent of JNK activation. Tanabe K, Liu Y, Hasan SD, Martinez SC, Cras-Méneur C, Welling CM, Bernal-Mizrachi E, Tanizawa Y, Rhodes CJ, Zmuda E, Hai T, Abumrad NA, Permutt MA. *PLoS One*. 2011;6(4):e18146. doi: 10.1371/journal.pone.0018146.
34. Conditional ablation of Gsk-3 $\beta$  in islet beta cells results in expanded mass and resistance to fat feeding-induced diabetes in mice. Liu Y, Tanabe K, Baronnier D, Patel S, Woodgett J, Cras-Méneur C, Permutt MA. *Diabetologia*. 2010;53(12):2600-10. doi: 10.1007/s00125-010-1882-x.

#### <2009年以前>

35. Dietary phosphorus acutely impairs endothelial function. Shuto E, Taketani Y, Tanaka R, Harada N, Isshiki M, Sato M, Nashiki K, Amo K, Yamamoto H, Higashi Y, Nakaya Y, Takeda E. *J Am Soc Nephrol*. 2009;20(7):1504-12. doi: 10.1681/ASN.2008101106.
36. Hypocaloric high-protein diet improves fatty liver and hypertriglyceridemia in sucrose-fed obese rats via two pathways. Uebanso T, Taketani Y, Fukaya M, Sato K, Takei Y, Sato T, Sawada N, Amo K, Harada N, Arai H, Yamamoto H, Takeda E. *Am J Physiol Endocrinol*

Metab. 2009;297(1):E76-84. doi:10.1152/ajpendo.00014.2009.

37. Increased insulin demand promotes while pioglitazone prevents pancreatic beta cell apoptosis in Wfs1 knockout mice. Akiyama M, Hatanaka M, Ohta Y, Ueda K, Yanai A, Uehara Y, Tanabe K, Tsuru M, Miyazaki M, Saeki S, Saito T, Shinoda K, Oka Y, Tanizawa Y. Diabetologia. 2009;52(4):653-63. doi: 10.1007/s00125-009-1270-6.
38. Genetic deficiency of glycogen synthase kinase-3beta corrects diabetes in mouse models of insulin resistance. Tanabe K, Liu Z, Patel S, Doble BW, Li L, Cras-Méneur C, Martinez SC, Welling CM, White MF, Bernal-Mizrachi E, Woodgett JR, Permutt MA. PLoS Biol. 2008;6(2):e37. doi: 10.1371/journal.pbio.0060037.
39. Inhibition of Foxo1 protects pancreatic islet beta-cells against fatty acid and endoplasmic reticulum stress-induced apoptosis. Martinez SC, Tanabe K, Cras-Méneur C, Abumrad NA, Bernal-Mizrachi E, Permutt MA. Diabetes. 2008;57(4):846-59. doi: 10.2337/db07-0595.
40. Mice with beta cell overexpression of glycogen synthase kinase-3beta have reduced beta cell mass and proliferation. Liu Z, Tanabe K, Bernal-Mizrachi E, Permutt MA. Diabetologia. 2008 ;51(4):623-31. doi: 10.1007/s00125-007-0914-7.
41. Endoplasmic reticulum stress induces Wfs1 gene expression in pancreatic beta-cells via transcriptional activation. Ueda K, Kawano J, Takeda K, Yujiri T, Tanabe K, Anno T, Akiyama M, Nozaki J, Yoshinaga T, Koizumi A, Shinoda K, Oka Y, Tanizawa Y. Eur J Endocrinol. 2005;153(1):167-76. doi: 10.1530/eje.1.01945.
42. Differences in the contribution of HLA-DR and -DQ haplotypes to susceptibility to adult- and childhood-onset type 1 diabetes in Japanese patients. Murao S, Makino H, Kaino Y, Konoue E, Ohashi J, Kida K, Fujii Y, Shimizu I, Kawasaki E, Fujiyama M, Kondo S, Tanaka K, Tarumi Y, Seto I, Kato K, Ohno K, Kusunoki Y, Ebisui O, Takada Y, Tanabe K, Takemoto K, Onuma H, Nishimiya T, Osawa H. Diabetes. 2004;53(10):2684-90. doi: 10.2337/diabetes.53.10.2684.