

## DAFTAR PUSTAKA

- Ai, J., Wang, N., Yang, M., Du, Z.M., Zhang, Y.C., Yang, B.F. 2005. Development of Wistar rat model of insulin resistance. *World J Gastroenterol*, 11: 3675-3679
- Alvarez, A.R., Peña-Valdivia, C.B. 2009. Structural polysaccharides in xococonostle (*Opuntia matudae*) fruits with different ripening stages. *J PACD*, 11:26-44
- Abunasef, S.K., Amin, H.A., Abdel-Hamid, G.A. 2014. A histological and immunohistochemical study of beta cells in streptozotocin diabetic rats treated with caffeine. *Folia Histochemica et Cytobiologica*, 52 (1): 42-50. doi: 10.5603/FHC.2014.0005
- Albu, J., Heilbronn, L., Kelley, D. and Smith, S. 2010. Metabolic changes following a 1-year diet and exercise intervention in patients with type 2 diabetes. *Diabetes*, 59: 627-633. doi:10.2337/db09-1239
- American Diabetes Association. 2015. Standards of medical care in diabetes. *Diabetes care*, 3(1): 6-99.
- American Diabetes Association. 2013. Standards of medical care in diabetes-2013. *Diabetes Care*, 36 (Suppl 1): S11-S66.
- Apolinario, A.C., de Lima Damasceno, B.P.G., de Macêdo Beltrão, N.E., Pessoa A., Converti, A., da Silva, J.A. 2014. Inulin-type fructans: A review on different aspects of biochemical and pharmaceutical technology, *Carbohydr Polym*, 101: 368-378. <https://doi.org/10.1016/j.carbpol.2013.09.081> PMID: 24299785
- Badan Penelitian dan Pengembangan Kesehatan. Riset Kesehatan Dasar. 2013. Kementerian Kesehatan Republik Indonesia. Jakarta
- Barrière, D.A., Noll, C., Roussy, G., Lizotte, F., Kessai, A., Kirby, K., Belleville, K., Beaudet, N., Longpré, J.M., Carpentier, A.C., Gèraldes, P. & Sarret, P. 2018. Combination of high-fat/highfructose diet and low-dose streptozotocin to model long-term type-2 diabetes complications. *Scientific Reports*, 8: 424
- Caspard, H., Jabbour, S., Hammar, N., Fenici, P., Sheehan, J.J., Kosiborod, M. 2018. Recent trends in the prevalence of type 2 diabetes and the association with abdominal obesity lead to growing health disparities in the USA: An analysis of the NHANES surveys from 1999 to 2014. *Diabetes Obes Metab*, 20(3):667- 671. doi: [10.1111/dom.13143](https://doi.org/10.1111/dom.13143)

- Catanzaro, R., Cuffari, B., Italia, A., *et al.* 2016. Exploring the metabolic syndrome: nonalcoholic fatty pancreas disease. *World J Gastroenterol*; 22: 7660–7675.
- Cerf, M. E. 2013.  $\beta$  cell dysfunction and insulin resistance. *Front. Endocrinol. (Lausanne)*, (4):37
- Chen, L.H., Chien, Y.W., Chang, M.L., Hou, C.C., Chan, C.H., Tang, H.W., Hui-Yu Huang, H.Y. 2018. Taiwanese Green Propolis Ethanol Extract Delays the Progression of Type 2 Diabetes Mellitus in Rats Treated with Streptozotocin/High-Fat Diet. *Nutrients*, 10: 503. doi:10.3390/nu10040503
- Chung, A.P.Y.S., Gurtu, S., Chakravarthi, S., Moorthy, M., and Palanisamy, U.D. 2018. Geraniin Protects High-Fat-Diet Induced Oxidative Stress in Sprague Dawley Rats. *Frontiers in Nutrition*, 5:17. doi: 10.3389/fnut
- Cornu, M. *et al.* 2009. Glucagon-like peptide-1 protects  $\beta$ -cells against apoptosis by increasing the activity of an Igf-2/Igf-1 receptor autocrine loop. *Diabetes*, (58): 1816–1825
- Deepa, M., Anjana, R.M. & Mohan, V. 2017. Role of lifestyle factors in the epidemic of diabetes: lessons learnt from India. *Eur J Clin Nutr*, 71(7): 825-831. doi: 10.1038/ejcn
- DeFronzo, R.A., Ferrannini, E., Zimmet, P., *et al.* 2015. International Textbook of Diabetes Mellitus, 2 Volume Set, 4<sup>th</sup> Edition. Wiley-Blackwell
- Folkerts, J., Stadhouders, R., Redegeld, F.A., Tam, S.Y., Hendriks, R.W., Galli, S.J., and Maurer, M. Effects of Dietary Fiber and Metabolites on Mast Cell Activation and Mast Cell-Associated Diseases. 2018. *Frontiers in Immunology*, 9 (1067) doi: 10.3389/fimmu.2018.01067.
- Fuji, H., Iwasel, M., Ohkuma, T., Ogata-Kaizu, S., Ide, H., Kikuchi, Y., Idewaki, Y., Joudai, T., Hirakawa, Y., Uchida, K., Sasaki, S., Nakamura, U. and T Kitazono, T. 2013. Impact of dietary fiber intake on glycemic control, cardiovascular risk factors and chronic kidney disease in Japanese patients with type 2 diabetes mellitus: the Fukuoka Diabetes Registry. *Nutrition Journal*, (12):159
- Goyal, A., Singh, S., Tandon, N., Gupta, N., Gupta, Y.K. 2014. Effect of atorvastatin on pancreatic beta-cell function and insulin resistance in type 2 diabetes mellitus patients: a randomized pilot study. *Can J Diabetes*, (38): 466–472
- Graaf, C., Donnelly, D., Wootten, D., Lau, J., Sexton, P.M., Miller, L.J., *et al.* 2016. Glucagon-like peptide-1 and its Class B G protein-coupled receptors: a long march to therapeutic successes. *Pharmacol Rev*, (68): 954–1013. doi:10.1124/pr.115.011395.

- Gukovsky, I. and Gukovskaya, A.S. 2015. Impaired Autophagy Triggers Chronic Pancreatitis: Lessons From Pancreas-Specific *Atg5* Knockout Mice. *Gastroenterology*, 148 (3) : 501-505. doi: <http://dx.doi.org/10.1053/j.gastro.2015.01.013>
- He, W., Yuan, T., Choezom, D., Hunkler, H., Annamalai, K., Lupse, B. & Maedler, K. 2018. Ageing potentiates diet-induced glucose intolerance,  $\beta$ -cell failure and tissue inflammation through TLR4. *Scientific Reports*, 8: 2767
- Hughes, S.R., Qureshi, N., Lopez-Nunez, J.C., Jones, M.A., Jarodsky, J. M., Galindo-Lev, L.A., Lindquist, M.R. 2017. Utilization of inulin-containing waste in industrial fermentations to produce biofuels and bio-based chemicals. *World Journal of Microbiol. and Biotech*, 33: 78. doi:10.1007/s11274-017-2241-6
- Idris, H., Hasyim, H., Utama, F. 2017. Analysis of Diabetes Mellitus Determinants in Indonesia: A Study from the Indonesian Basic Health Research 2013. *Acta Med Indones – Indones J Intern Med*, 4(49): 291-298
- Ikarashi, N., Toda, T., Okaniwa, T., Ito, K., Ochiai, W. and Sugiyama, K. 2011. Anti-Obesity and Anti-Diabetic Effects of Acacia Polyphenol in Obese Diabetic KKAYmice Fed High-Fat Diet. *Evidence-Based Complementary and Alternat Med*, 952031. doi: 10.1093/ecam/nep241
- International Diabetes Federation. 2017. *IDF Diabetes Atlas-8<sup>th</sup> Edition*. Belgium
- Jung, U. J. & Choi, M. S. 2014. Obesity and its metabolic complications: the role of adipokines and the relationship between obesity, inflammation, insulin resistance, dyslipidemia and nonalcoholic fatty liver disease. *Int. J. Mol. Sci*, (15) : 6184–6223
- Kaczmarczyk, M.M., Miller, M.J., Freund, G.G. 2012. The health benefits of dietary fiber: beyond the usual suspects of type 2 diabetes mellitus, cardiovascular disease and colon cancer. *Metabolism*, (61):1058–1066.
- Kalra, S. 2014. Alpha glucosidase inhibitors. *J Pak Med Assoc*, 64: 474-476.
- Korsgren, S., Molin, Y., Salmela, K., Lundgren, T., Melhus, A., Korsgren, O. 2012. On the etiology of type 1 diabetes: a new animal model signifying a decisive role for bacteria eliciting an adverse innate immunity response. *Am J Pathol*, 181(5):1735-1748.
- Kumalasari, I.D., Nishi, K., Harmayani E., Raharjo S., Sugahara T. 2014. Immunomodulatory activity of Bengkuang (*Pachyrhizus erosus*) fiber extract in vitro and in vivo. *Cytotechnology*, 66:75–85
- Lin, C. S. *et al.* 2014. Impact of the gut microbiota, prebiotics, and probiotics on human health and disease. *Biomed. J.* (37): 259–268

- Madsen, A.N., Hansen, G., Paulsen, S.J., Lykkegaard, K., Tang-Christensen, M., Hansen, H.S., Levin, B.E., Larsen, P.J., Knudsen, L.B., Fosgerau K., Vrang, N. 2010. Long-Term Characterization Of The Diet-Induced Obese And Diet-Resistant Rat Model: a Polygenetic Rat Model Mimicking The Human Obesity Syndrome. *Journal of Endocrinology*, 206: 287–296. doi: 10.1677/JOE-10-0004
- Maejima, Y., Rita, R.S., Santoso, P., Aoyama, M., Hiraoka Y., Nishimori K., Gantulga D., Shimomura K., Yada T. 2015. Nasal Oxytocin Administration Reduces Food Intake without Affecting Locomotor Activity and Glycemia with c-Fos Induction in Limited Brain Areas. *Neuroendocrinology*, 101:35–44. doi: 10.1159/000371636
- Martel, J., Ojcius, D.M., Chang, C.J., Lin, C.S., Lu, C.C., Yun-Fei Ko, Y. F., Tseng, S.F., Hsin-Chih Lai, H.C. and Young, J. D. 2016. Anti-obesogenic and antidiabetic effects of plants and mushrooms. *Nature*, 142. doi: 10.1038/nrendo
- Marzeline, C.L.N.M., Adi, A.C. 2017. Pengaruh Substitusi Bekatul (*Rice Bran*) dan Bengkuang (*Pachyrhizus erosus*) Terhadap Kadar Energi, Kadar Serat dan Daya Terima Pada Mini Pao. *Amerta Nutr*, 282-290 doi: 10.2473/amnt.V1i4
- Matsuda, A., Makino, N., Tozawa, T., Shirahata, N., Honda, T., Ikeda, Y., Sato, H., Ito, M., Kakizaki, Y., Akamatsu, M., Ueno, Y., Kawata, S. 2014. Pancreatic fat accumulation, fibrosis, and acinar cell injury in the Zucker diabetic fatty rat fed a chronic high-fat diet. *Pancreas*, 43: 735-743 [PMID: 24717823 DOI: 10.1097/MPA.000000000000129]
- Mendonsa, A.M., Chalfant, M.C., Gorden, L.D., VanSaun, M.N. 2015. Modulation of the Leptin Receptor Mediates Tumor Growth and Migration of Pancreatic Cancer Cells. *Plos One*, 10(4): e0126686. doi: 10.1371/journal.pone.0126686
- Mescher, A.L. 2014. *Histologi Dasar Junqueira Text & Atlas*. McGraw-Hill Companies Inc. EGC Medical Publisher. Jakarta
- Mudannayake, D.C., Wimalasiri, K.M.S., Silva, K.F.S.T., Ajlouni, S. 2015. Comparison of properties of new sources of partially purified inulin to those of commercially pure chicory inulin. *J Food Sci*, 80: C950±960. <https://doi.org/10.1111/1750-3841.12857> PMID: 25847760
- Myers, K.C., Bolyard, A.A., Otto, B., Wong, T.E., Jones, A.T., Harris, R.E., Davies, S.M., Dale, D.C., Shimamura, A. 2014. Variable clinical presentation of Shwachman-Diamond syndrome: update from the North American Shwachman-Diamond Syndrome Registry. *J Pediatr*, 164: 866-870 [PMID: 24388329 DOI: 10.1016/j.jpeds.2013.11.039]

- Ng, M., Fleming, T., Robinson, M., Thomson, B., Graetz, N. 2014. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: a systematic analysis for the global burden of disease study 2013. *Lancet*, 384(9945):766-81. doi: [10.1016/s0140-6736\(14\)60460-8](https://doi.org/10.1016/s0140-6736(14)60460-8)
- Norman, A.S.M., Hoque, M.A., Haque, M.M., Pervin, F., Karim, M.R. 2007. Nutritional and anti nutritional components in *Pachyrhizus erosus* L. tuber. *Food Chem*,102:1112–1118. doi: [10.1016](https://doi.org/10.1016)
- Nurhamidah. 2016. *Pengaruh Pemberian Ekstrak Bengkuang (Pachyrhizus erosus) Terhadap Kadar Gula Darah, Kadar Immunoglobulin A (IgA) dan Vili Usus pada Tikus Putih (Rattus Norvegicus) Diabetes Mellitus*. Universitas Andalas. Padang
- Ou, H.Y., Wang, C.Y., Yang, Y.C, *et al.* 2013. The association between nonalcoholic fatty pancreas disease and diabetes. *PLoS One*, 8: e62561
- Pandey, A., Chawla, S. & Guchhait, P. 2015. Type-2 diabetes: Current understanding and future perspectives. *IUBMB Life*, 67: 506–513. doi: [10.1002/iub.1396](https://doi.org/10.1002/iub.1396)
- Park, C.J. & Han, J.S. 2015. Hypoglycemic Effect of Jicama (*Pachyrhizus erosus*) Extract on Streptozotocin-Induced Diabetic Mice. *Prev. Nutr. Food Sci*, 20(2):88-93. doi: [10.3746/pnf](https://doi.org/10.3746/pnf)
- Park, C.J., Lee, H.A., Han, J.S. 2015. Jicama (*Pachyrhizus erosus*) extract increases insulin sensitivity and regulates hepatic glucose in C57BL/Ksj-db/db mice. *J. Clin. Biochem. Nutr*, 58(1): 56-63. doi: [10.3164/jcfn.15-59](https://doi.org/10.3164/jcfn.15-59)
- Pasqualetti, V., Altomare, A., Guarino, M.P.L., Locato, V., Cocca, S., Cimini, S., *et al.* 2014. Antioxidant activity of inulin and its role in the prevention of human colonic muscle cell impairment induced by lipopolysaccharide mucosal exposure. *Plos One*, 9: e98031. <https://doi.org/10.1371/journal.pone.0098031> PMID: 24837182
- Petkova, N.T., Ognyanov, M., Todorova, M., Denev, P. 2015. Ultrasound-assisted extraction and characterisation of inulin-type fructan from roots of elecampane (*Inula helenium* L.). *Acta Scientifica Naturalis*, 1: 225±235.
- Poitout, V., Amyot, J., Semache, M., *et al.* 2010. Glucolipototoxicity of the pancreatic beta cell. *Biochim Biophys Acta*, 1801: 289–298
- Post, R.E., Mainous, A.G. III, King, D.E., Simpson, K.N. 2012. Dietary fiber for the treatment of type 2 diabetes mellitus: a meta-analysis. *J Am Board Fam Med*, (25): 16–23.
- Ramdhave, A. S., Ojha, S., Nandave, M. 2017. Energy intake correlates with the levels of fatty acid synthase and insulin-like growth factor-1 in male and female C57BL/6 mice. *Am J Transl Res*, 9(3):830-844

- Rasch, R. & Dørup, J. 1997. Quantitative morphology of the rat kidney during diabetes mellitus and insulin treatment. *Diabetologia*, 40: 802–809
- Rodríguez, R., Jiménez, A., Fernández-Bolaños, J., Guillén, R., Heredia, A. 2006 Dietary fibre from vegetable products as source of functional ingredients. *Trends Food Sci Tech*, 17:3–15
- Ronkainen, J., Huusko, T.J., Soininen, R., Mondini, E., Cinti, F., Makela, K.A., Kovalainen, M., Herzig, K.H., Jarvelin, M.R., Sebert, S., Savolainen, M.J., Salonurmi, T. 2015. Fat mass- and obesity-associated gene Fto affects the dietary response in mouse white adipose tissue. *Scie. Report*, 5:9233.doi: 10.1038/srep09233
- Saisho, Y. 2016. Pancreas Volume and Fat Deposition in Diabetes and Normal Physiology: Consideration of the Interplay Between Endocrine and Exocrine Pancreas. *The Review of Diabetic Studies*, 13 : 2-3
- Saisho, Y., Butler, A.E., Meier, J.J., *et al.* 2007. Pancreas volumes in humans from birth to age one hundred taking into account sex, obesity, and presence of type-2 diabetes. *Clin Anat*, 20: 933–942
- Santoso, A. 2011. Serat Pangan (Dietary Fiber) Dan Manfaatnya Bagi Kesehatan. *Magistra*, 75: 23
- Shan, R., Duan, W., Liu, L., Qi, J., Gao, J., Zhang, Y., Du, S., Han, T., Pang, X., Sun, C. and Wu, X. 2018. Low-Carbohydrate, High-Protein, High-Fat Diets Rich in Livestock, Poultry and Their Products Predict Impending Risk of Type 2 Diabetes in Chinese Individuals that Exceed Their Calculated Caloric Requirement. *Nutrients*, (10): 77. doi:10.3390/nu10010077
- Shang, H. M., Zhou, H. Z., Yang, J. Y., Li, R., Hui Song, H., Hong-Xin Wu, H. X. 2018. *In vitro* and *in vivo* antioxidant activities of Inulin. *Plos One* | <https://doi.org/10.1371/journal.pone.0192273>
- Singhal, G., Fisher, F.M., Chee, M.J., Tan, T.G., El Ouaamari, A., Adams, A.C., Najarian, R., Kulkarni, R.N., Benoist, C., Flier, J.S., Flier, E.M. 2016. Fibroblast Growth Factor 21 (FGF21) Protects against High Fat Diet Induced Inflammation and Islet Hyperplasia in Pancreas. *Plos One* | doi:10.1371/journal.pone.0148252
- Smeltzer, S.C., Bare, B.G., Hinkle, J.L., & Cheever, K.H. 2010. *Textbook of medical surgical nursing Brunner & Suddarth's*. (11th.ed.). Lippincott William & Wilkins. Philadelphia

- Steven, S., Hollingsworth, K.G., Small, P.K., *et al.* 2016. Weight Loss Decreases Excess Pancreatic Triacylglycerol Specifically in Type 2 Diabetes. *Diabetes Care*, 39: 158–165
- Sudoyo, A.W., Setiyohadi, B., Alwi I., Simadibrata, M., Setiati, S., (2009). *Ilmu Penyakit Dalam*. Departemen Ilmu Penyakit Dalam Fakultas Kedokteran Universitas Indonesia. Jakarta
- Szczepaniak, L.S., Victor, R.G., Mathur, R., Nelson, M.D., Szczepaniak, E.W., Tyer, N., Chen, I., Unger, R.H., Bergman, R.N., Lingvay, I. 2012. Pancreatic steatosis and its relationship to  $\beta$ -cell dysfunction in humans: racial and ethnic variations. *Diabetes Care*, 35: 2377-2383 [PMID: 22968187 DOI: 10.2337/dc12-0701]
- Thapthimthong, T., Kasemsuk, T., Sibmoo, N., Unchern, S. 2016. Platelet inhibitory effects of juices from *Pachyrhizus erosus* L. root and *Psidium guajava* L. fruit: a randomized controlled trial in healthy volunteers. *BMC Complementary and Alternative Medicine*, 16: 269. doi: 10.1186/s12906-016-1255-1
- Torres-Villalobos, G., Hamdan-Perez, N., Tovar, A. R., Ordaz-Nava, G. 2015. Combined high-fat diet and sustained high sucrose consumption promotes NAFLD in a murine model. *Annals of hepatology*, (14)3: 540-546.
- Vetterli, L., Carobbio, S., Frigerio, F., Karaca, M., Maechler, P. 2016. The Amplifying Pathway of the  $\alpha$ -Cell Contributes to Diet-induced Obesity. *The Journal of Biological Chemistry*, 291(25) pp. 13063–13075
- Wang, Z.Q., Yu, Y., Zhang, X.H., Floyd, E.Z., Bourdreau, A., Lian, K., Lian, K., Cefalu, W.T. 2012. Comparing the effects of nano-sized sugarcane fiber with cellulose and psyllium on hepatic cellular signaling in mice. *Inter.J. of Nanomedicine*,(7): 2999–3012. doi: 10.2147/IJN.S30887
- Weir, G.C., Bonner-Weir, S. 2007. A dominant role for glucose in beta cell compensation of insulin resistance. *J Clin Invest.*, 117(1):81–83
- Weir, G.C., Bonner-Weir, S. 2013. Islet beta cell mass in diabetes and how it relates to function, birth, and death. *Ann N Y Acad Sci*, 1281:92-105.
- World Health Organization. 2014. *Global database on body mass index. An interactive surveillance tool for monitoring nutrition transition*. Geneva:WHO
- Wu, Y., Liu, C., Sun, H., Vijayakumar, A., Gignoul, P. R., Qiao, R., Oppenheimer, J., Yakar, S. and LeRoith, D. 2011. Growth hormone receptor regulates  $\beta$  cell hyperplasia and glucose-stimulated insulin secretion in obese mice. *The Journal of Clinical Investigation*, 6 (12)

Xu, A., Wang, Y.& Lam, K.S.L. 2007 *Adiponektin*. Dalam: Fantuzzi,G and Mazzone, T. *Nutrition & Health: Adipose Tissue and Adipokines in Health and Disease*. New Jersey Humana Press. Totowa  
Gukovsky, I., Li, N., Todoric, J., Gukovskaya, A., Karin, M. 2013. Inflammation, autophagy, and obesity: Common features in the pathogenesis of pancreatitis and pancreatic cancer. *Gastroenterology*, 144(6):1199-1209.

