

## DAFTAR PUSTAKA

- Accili, Domenico. 2018. "Insulin Action Research and the Future of Diabetes Treatment: The 2017 Banting Medal for Scientific Achievement Lecture." *Diabetes* 67(9):1701–9. doi: 10.2337/dbi18-0025.
- Aggarwal, Bharat B., Subash C. Gupta, and Ji Hye Kim. 2012. "Historical Perspectives on Tumor Necrosis Factor and Its Superfamily: 25 Years Later, a Golden Journey." *Blood* 119(3):651–65. doi: 10.1182/blood-2011-04-325225.
- Ahangarpour, Akram, Ali Akbar Oroojan, Layasadat Khorsandi, Maryam Kouchak, and Mohammad Badavi. 2018. "Antioxidant Effect of Myricitrin on Hyperglycemia-Induced Oxidative Stress in C2C12 Cell." *Cell Stress and Chaperones* 23(4):773–81. doi: 10.1007/s12192-018-0888-z.
- Amine, Hamza, Yacir Benomar, and Mohammed Taouis. 2021. "Palmitic Acid Promotes Resistin-Induced Insulin Resistance and Inflammation in SH-SY5Y Human Neuroblastoma." *Scientific Reports* 11(1):1–12. doi: 10.1038/s41598-021-85018-7.
- Article, Ross, C. Floden, A. Combs, and Ross Article. 2008. "基因的改变NIH Public Access." *Bone* 23(1):1–7. doi: 10.1111/dom.12161.Interaction.
- Asmat, Ullah, Khan Abad, and Khan Ismail. 2016. "Diabetes Mellitus and Oxidative Stress—A Concise Review." *Saudi Pharmaceutical Journal* 24(5):547–53. doi: 10.1016/j.jsps.2015.03.013.
- Balamuniappan, G., M. V Durai, and S. Geetha. 2016. "Phytochemical Screening and Antimicrobial Activity of Leaf, Seed and Central-Fruit-Axis Crude Extract of *Swietenia Macrophylla* King." ~ 181 ~ *Journal of Pharmacognosy and Phytochemistry* 5(3):181–86.
- Banday, Mujeeb Z., Aga S. Sameer, and Saniya Nissar. 2020. "Pathophysiology of Diabetes: An Overview." *Avicenna Journal of Medicine* 10(04):174–88. doi: 10.4103/ajm.ajm\_53\_20.
- Bousquet, Jean, Heather Zar, M. T. Zedda, Mario E. Zernotti, Luo Zhang, Nanshan Zhong, Mihaela Zidarn, and Celia Zubrinich. 2020. "Nrf2-Interacting Nutrients and COVID-19: Time for Research to Develop Adaptation Strategies." *Clinical and Translational Allergy* 10(1):1–18. doi: 10.1186/s13601-020-00362-7.
- Burkart, Alison M., Kelly Tan, Laura Warren, Salvatore Iovino, Katelyn J. Hughes, C. Ronald Kahn, and Mary Elizabeth Patti. 2016. "Insulin Resistance in Human IPS Cells Reduces Mitochondrial Size and Function." *Scientific Reports* 6(March):1–12. doi: 10.1038/srep22788.
- Carta, Gianfranca, Elisabetta Murru, Sebastiano Banni, and Claudia Manca. 2017. "Palmitic Acid: Physiological Role, Metabolism and Nutritional Implications." *Frontiers in Physiology* 8(NOV):1–14. doi: 10.3389/fphys.2017.00902.
- Chen, Jingyang, Yingjian Sun, Shan Huang, Hong Shen, and Yongjie Chen. 2021. "Grub Polypeptide Extracts Protect against Oxidative Stress through the NRF2-ARE Signaling Pathway." *Animal Cells and Systems* 25(6):405–15. doi: 10.1080/19768354.2021.2018043.
- Dağışan, Selen. 2021. "Insulin Structure, Function and Diabetes Models in

- Animals.” *Journal of Experimental and Basic Medical Sciences* 1(3):96–101. doi: 10.5606/jebms.2020.75622.
- Davari, S., S. A. Talaei, H. Alaei, and M. Salami. 2013. “Probiotics Treatment Improves Diabetes-Induced Impairment of Synaptic Activity and Cognitive Function: Behavioral and Electrophysiological Proofs for Microbiome-Gut-Brain Axis.” *Neuroscience* 240(March):287–96. doi: 10.1016/j.neuroscience.2013.02.055.
- DeFronzo, Ralph A., and Devjit Tripathy. 2009. “Skeletal Muscle Insulin Resistance Is the Primary Defect in Type 2 Diabetes.” *Diabetes Care* 32 Suppl 2. doi: 10.2337/dc09-s302.
- Dewanjee, Saikat, Paramita Paul, Tarun K. Dua, Shovonlal Bhowmick, and Achintya Saha. 2020. *Big Leaf Mahogany Seeds: Swietenia Macrophylla Seeds Offer Possible Phytotherapeutic Intervention Against Diabetic Pathophysiology*. Elsevier Inc.
- Dutta, Moumita, Utpal Kumar Biswas, Runu Chakraborty, Piyasa Banerjee, Debasish Maji, Mohan Chandra Mondal, and Utpal Raychaudhuri. 2013. “Antidiabetic and Antioxidant Effect of *Swietenia Macrophylla* Seeds in Experimental Type 2 Diabetic Rats.” *International Journal of Diabetes in Developing Countries* 33(1):60–65. doi: 10.1007/s13410-012-0109-8.
- Federation, International Diabetes, and Chaussee De Hulp. 2015. “Update of Mortality Attributable to Diabetes for the IDF Diabetes Atlas: Estimates for the Year 2013.” *Diabetes Research and Clinical Practice* 109(3):461–65. doi: 10.1016/j.diabres.2015.05.037.
- Fernández-Veledo, Sonia, Rocio Vila-Bedmar, Iria Nieto-Vazquez, and Margarita Lorenzo. 2009. “C-Jun N-Terminal Kinase 1/2 Activation by Tumor Necrosis Factor- $\alpha$  Induces Insulin Resistance in Human Visceral but Not Subcutaneous Adipocytes: Reversal by Liver X Receptor Agonists.” *Journal of Clinical Endocrinology and Metabolism* 94(9):3583–93. doi: 10.1210/jc.2009-0558.
- Fischer, Roman, and Olaf Maier. 2015. “Interrelation of Oxidative Stress and Inflammation in Neurodegenerative Disease: Role of TNF.” *Oxidative Medicine and Cellular Longevity* 2015. doi: 10.1155/2015/610813.
- French, Margaret A., Kalyana Sundram, and M. Thomas Clandinin. 2002. “Cholesterolaemic Effect of Palmitic Acid in Relation to Other Dietary Fatty Acids.” *Asia Pacific Journal of Clinical Nutrition* 11 Suppl 7:S401–7. doi: 10.1046/j.1440-6047.11.s.7.3.x.
- Funnell, Martha Mitchell. 2012. “Understanding Insulin Resistance.” *Nursing* 42(3):62. doi: 10.1097/01.NURSE.0000411421.44527.bf.
- Galicia-Garcia, Unai, Asier Benito-Vicente, Shifa Jebari, Asier Larrea-Sebal, Haziq Siddiqi, Kepa B. Uribe, Helena Ostolaza, and César Martín. 2020. “Pathophysiology of Type 2 Diabetes Mellitus.” *International Journal of Molecular Sciences* 21(17):1–34. doi: 10.3390/ijms21176275.
- Ganesh Yerra, Veera, Geeta Negi, Shyam S. Sharma, and Ashutosh Kumar. 2013. “Potential Therapeutic Effects of the Simultaneous Targeting of the Nrf2 and NF-KB Pathways in Diabetic Neuropathy.” *Redox Biology* 1(1):394–97. doi: 10.1016/j.redox.2013.07.005.
- Gonzalez-Franquesa, Alba, and Mary Elizabeth Patti. 2017. *Insulin Resistance and*

- Mitochondrial Dysfunction*. Vol. 982.
- Guo, Ai, Kai Li, and Qian Xiao. 2020. "Fibroblast Growth Factor 19 Alleviates Palmitic Acid-Induced Mitochondrial Dysfunction and Oxidative Stress via the AMPK/PGC-1 $\alpha$  Pathway in Skeletal Muscle." *Biochemical and Biophysical Research Communications* 526(4):1069–76. doi: 10.1016/j.bbrc.2020.04.002.
- H., Krisnawati, Kallio M.H., and Kanninen M. 2011. "Swietenia Macrophylla King: Ecology, Silviculture and Productivity." *Swietenia Macrophylla King: Ecology, Silviculture and Productivity*. doi: 10.17528/cifor/003395.
- Hossain, Mohammed Kawser, Ahmed Abdal Dayem, Jihae Han, Yingfu Yin, Kyeongseok Kim, Subbroto Kumar Saha, Gwang Mo Yang, Hye Yeon Choi, and Ssang Goo Cho. 2016. "Molecular Mechanisms of the Anti-Obesity and Anti-Diabetic Properties of Flavonoids." *International Journal of Molecular Sciences* 17(4). doi: 10.3390/ijms17040569.
- Hung, Hsin Yi, Keduo Qian, Susan L. Morris-Natschke, Chau Shin Hsu, and Kuo Hsiung Lee. 2012. "Recent Discovery of Plant-Derived Anti-Diabetic Natural Products." *Natural Product Reports* 29(5):580–606. doi: 10.1039/c2np00074a.
- IDF. 2022. "IDF Diabetes Atlas." *Diabetes Atlas 2022*. Retrieved October 10, 2023 (<https://diabetesatlas.org/2022-reports/>).
- Jaganjac, M., O. Tirosh, G. Cohen, S. Sasson, and N. Zarkovic. 2013. "Reactive Aldehydes-Second Messengers of Free Radicals in Diabetes Mellitus." *Free Radical Research* 47(S1):39–48. doi: 10.3109/10715762.2013.789136.
- Kalpna, Kalaivanan, and Kodukkur Viswanathan Pugalendi. 2011. "Antioxidative and Hypolipidemic Efficacy of Alcoholic Seed Extract of Swietenia Macrophylla in Streptozotocin Diabetic Rats." *Journal of Basic and Clinical Physiology and Pharmacology* 22(1–2):11–21. doi: 10.1515/JBCPP.2011.001.
- Khalid, Mariyam, Juma Alkaabi, Moien A. B. Khan, and Abdu Adem. 2021. "Insulin Signal Transduction Perturbations in Insulin Resistance." *International Journal of Molecular Sciences* 22(16):1–17. doi: 10.3390/ijms22168590.
- Kim, Kyung Soo, Yeon Kyung Choi, Mi Jin Kim, Jung Wook Hwang, Kyunghoon Min, Sang Youn Jung, Soo Kyung Kim, Yong Soo Choi, and Yong Wook Cho. 2020. "Umbilical Cord-Mesenchymal Stem Cell-Conditioned Medium Improves Insulin Resistance in C2c12 Cell." *Diabetes and Metabolism Journal* 44(44):260–69. doi: 10.4093/dmj.2019.0191.
- Kimura, Kotohiko, Tiffany L. B. Jackson, and Ru Chih C. Huang. 2023. "Interaction and Collaboration of SP1, HIF-1, and MYC in Regulating the Expression of Cancer-Related Genes to Further Enhance Anticancer Drug Development." *Current Issues in Molecular Biology* 45(11):9262–83. doi: 10.3390/cimb45110580.
- Kono, Yusuke, Akihiro Miyamoto, Serina Hiraoka, Ryosuke Negoro, and Takuya Fujita. 2020. "Mesenchymal Stem Cells Alter the Inflammatory Response of C2C12 Mouse Skeletal Muscle Cells." *Biological and Pharmaceutical Bulletin* 43(11):1785–91. doi: 10.1248/bpb.b20-00536.

- Krentz, Nicole A. J., and Anna L. Gloyn. 2020. "Insights into Pancreatic Islet Cell Dysfunction from Type 2 Diabetes Mellitus Genetics." *Nature Reviews Endocrinology* 16(4):202–12. doi: 10.1038/s41574-020-0325-0.
- Kusumastuti, Siska Andrina, Dwi Aris Agung Nugrahaningsih, and Mae Sri Hartati Wahyuningsih. 2019. "Centella Asiatica (L.) Extract Attenuates Inflammation and Improve Insulin Sensitivity in a Coculture of Lipopolysaccharide (LPS)-Induced 3T3-L1 Adipocytes and RAW 264.7 Macrophages." *Drug Discoveries & Therapeutics* 13(5):261–67. doi: 10.5582/ddt.2019.01052.
- Lau, Wai Kwan, Bey Hing Goh, Habsah Abdul Kadir, Alexander Chong Shu-Chien, Tengku Sifzizul Tengku Muhammad, and Derek J. McPhee. 2015. "Potent PPAR $\gamma$  Ligands from *Swietenia Macrophylla* Are Capable of Stimulating Glucose Uptake in Muscle Cells." *Molecules* 20(12):22301–14. doi: 10.3390/molecules201219847.
- Lee, Jaewon, Dong Gyu Jo, Daeui Park, Hae Young Chung, and Mark P. Mattson. 2014. "Adaptive Cellular Stress Pathways as Therapeutic Targets of Dietary Phytochemicals: Focus on the Nervous System." *Pharmacological Reviews* 66(3):815–68. doi: 10.1124/pr.113.007757.
- Lee, Shin Hae, Shi Young Park, and Cheol Soo Choi. 2022. "Insulin Resistance: From Mechanisms to Therapeutic Strategies." *Diabetes and Metabolism Journal* 46(1):15–37. doi: 10.4093/DMJ.2021.0280.
- Li, H. B., Y. R. Y. Yang, Z. J. Mo, Y. Ding, and W. J. Jiang. 2015. "Silibinin Improves Palmitate-Induced Insulin Resistance in C2C12 Myotubes by Attenuating IRS-1/PI3K/Akt Pathway Inhibition." *Brazilian Journal of Medical and Biological Research* 48(5):440–46. doi: 10.1590/1414-431X20144238.
- Li, Jing, Yu-Shan Mao, Fen Chen, Dong-Xia Xia, and Tin-Qi Zhao. 2021. "Palmitic Acid up Regulates Gal-3 and Induces Insulin Resistance in Macrophages by Mediating the Balance between KLF4 and NF- $\kappa$ B." *Experimental and Therapeutic Medicine* 22(3). doi: 10.3892/etm.2021.10460.
- Limongi Andrade, Ricardo, José Pico-Mendoza, Eduardo Morillo, Johanna Buitrón, Santiago Meneses, Bernardo Navarrete, Miryan Pinoargote, and Basilio Carrasco. 2022. "Molecular Characterization of Mahogany Tree (*Swietenia Macrophylla* King, Meliaceae) in the Remnant Natural Forest of Ecuador." *Neotropical Biodiversity* 8(1):222–28. doi: 10.1080/23766808.2022.2080334.
- Lin, Chih Chung, Chien Chung Yang, Yu Wen Chen, Li Der Hsiao, and Chuen Mao Yang. 2018. "Arachidonic Acid Induces ARE/Nrf2-Dependent Heme Oxygenase-1 Transcription in Rat Brain Astrocytes." *Molecular Neurobiology* 55(4):3328–43. doi: 10.1007/s12035-017-0590-7.
- Lovic, Dragan, Alexia Piperidou, Ioanna Zografou, Haralambos Grassos, Andreas Pittaras, and Athanasios Manolis. 2019. "The Growing Epidemic of Diabetes Mellitus." *Current Vascular Pharmacology* 18(2):104–9. doi: 10.2174/1570161117666190405165911.
- Luo, Wei, Lei Ai, Bo fa Wang, and Yue Zhou. 2019. "High Glucose Inhibits Myogenesis and Induces Insulin Resistance by Down-Regulating AKT Signaling." *Biomedicine and Pharmacotherapy* 120(September):109498. doi:

10.1016/j.biopha.2019.109498.

- Maiti, Anup, Saikat Dewanjee, Goutam Jana, and SubhashC Mandal. 2008. "Hypoglycemic Effect of *Swietenia Macrophylla* Seeds against Type II Diabetes." *International Journal of Green Pharmacy* 2(4):224. doi: 10.4103/0973-8258.44738.
- Maiti, Anup, Saikat Dewanjee, Mintu Kundu, and Subhash C. Mandal. 2009. "Evaluation of Antidiabetic Activity of the Seeds of *Swietenia Macrophylla* in Diabetic Rats." *Pharmaceutical Biology* 47(2):132–36. doi: 10.1080/13880200802436703.
- Malakar, Dhruva, Hruda Nanda Malik, Dinesh Kumar, Sikander Saini, Vishal Sharma, Samreen Fatima, Kamlesh Kumari Bajwa, and Satish Kumar. 2020. "Stem Cells." *Advances in Animal Genomics* 4(2):33–48. doi: 10.1016/B978-0-12-820595-2.00003-5.
- Miao, Lu, and Daret K. St. Clair. 2009. "Regulation of Superoxide Dismutase Genes: Implications in Disease." *Free Radical Biology and Medicine* 47(4):344–56. doi: 10.1016/j.freeradbiomed.2009.05.018.
- Moghadamtousi, Soheil Zorofchian, Bey Hing Goh, Chim Kei Chan, Tara Shabab, and Habsah Abdul Kadir. 2013. "Biological Activities and Phytochemicals of *Swietenia Macrophylla* King." *Molecules* 18(9):10465–83. doi: 10.3390/molecules180910465.
- Mohiti-Ardekani, Javad, Shabodin Asadi, Azra Mohiti Ardakani, Mahban Rahimifard, Maryam Baeri, and Saeideh Momtaz. 2019. "Curcumin Increases Insulin Sensitivity in C2C12 Muscle Cells via AKT and AMPK Signaling Pathways." *Cogent Food and Agriculture* 5(1). doi: 10.1080/23311932.2019.1577532.
- Muller, Patrick Y., and Mark N. Milton. 2012. "The Determination and Interpretation of the Therapeutic Index in Drug Development." *Nature Reviews Drug Discovery* 11(10):751–61. doi: 10.1038/nrd3801.
- Muscogiuri, Giovanna, Adam B. Salmon, Cristina Aguayo-Mazzucato, Mengyao Li, Bogdan Balas, Rodolfo Guardado-Mendoza, Andrea Giaccari, Robert L. Reddick, Sara M. Reyna, Gordon Weir, Ralph A. DeFronzo, Holly Van Remmen, and Nicolas Musi. 2013. "Genetic Disruption of Sod1 Gene Causes Glucose Intolerance and Impairs B-Cell Function." *Diabetes* 62(12):4201–7. doi: 10.2337/db13-0314.
- Muthmainah, Kristanto Yuli Yarso, Bambang Purwanto, Ambar Mudigdo, and Mustofa. 2019. "1,4-Bis-3,4,5-Trimethoxy-Phenyl-Tetrahydro-Furo(3,4-C) Furan From Mahogany (*Swietenia Macrophylla* King) Seed Significantly Reduces Glucose and Malondialdehyde Levels in Diabetic Wistar Rats." *Bali Medical Journal* 8(2):570–75. doi: 10.15562/bmj.v8i2.1227.
- Naghavi, Mohsen, Alan D. Lopez, and Christopher J. L. Murray. 2017. "Global, Regional, and National Age-Sex Specific Mortality for 264 Causes of Death, 1980–2016: A Systematic Analysis for the Global Burden of Disease Study 2016." *The Lancet* 390(10100):1151–1210. doi: 10.1016/S0140-6736(17)32152-9.
- Nonaka, Shiori, Shinpei Kawakami, Hiroko Maruki-Uchida, Sadao Mori, and Minoru Morita. 2019. "Piceatannol Markedly Upregulates Heme Oxygenase-

- 1 Expression and Alleviates Oxidative Stress in Skeletal Muscle Cells.” *Biochemistry and Biophysics Reports* 18(January):100643. doi: 10.1016/j.bbrep.2019.100643.
- O’Neill, Hayley M., Stine J. Maarbjerg, Justin D. Crane, Jacob Jeppesen, Sebastian B. Jørgensen, Jonathan D. Schertzer, Olga Shyroka, Bente Kiens, Bryce J. Van Denderen, Mark A. Tarnopolsky, Bruce E. Kemp, Erik A. Richter, and Gregory R. Steinberg. 2011. “AMP-Activated Protein Kinase (AMPK) B1 $\beta$ 2 Muscle Null Mice Reveal an Essential Role for AMPK in Maintaining Mitochondrial Content and Glucose Uptake during Exercise.” *Proceedings of the National Academy of Sciences of the United States of America* 108(38):16092–97. doi: 10.1073/pnas.1105062108.
- Ohiagu, Franklyn O., Paul C. Chikezie, and Chinwendu M. Chikezie. 2021. “Pathophysiology of Diabetes Mellitus Complications: Metabolic Events and Control.” *Biomedical Research and Therapy* 8(3):4243–57. doi: 10.15419/bmrat.v8i3.663.
- Osuntokun, Oludare Temitope, V. O. Olumekun, A. O. Ajayi, I. O. Omotuyi, and A. Olonisakin. 2020. “Assessment of In-Vitro Antioxidant/Enzymes Inhibitory Potentials of Aframomum Melegueta [Roscoe] K. Schum (Grains of Paradise) Leaf, Stem Bark, Seed Bark and Seed Extracts.” *Archives of Current Research International* 20(April):40–57. doi: 10.9734/acri/2020/v20i230176.
- da Paixão, Ailma O., Anaysa Paola Bolin, João G. Silvestre, and Alice Cristina Rodrigues. 2021. “Palmitic Acid Impairs Myogenesis and Alters Temporal Expression of Mir-133a and Mir-206 in C2c12 Myoblasts.” *International Journal of Molecular Sciences* 22(5):1–15. doi: 10.3390/ijms22052748.
- Pan, Xin Yan, Chunqiao Liu, Xing Wang, Ming Zhao, Zhimei Zhang, Xuemei Zhang, Chao Wang, and Guangyao Song. 2023. “Resveratrol Improves Palmitic Acid-induced Insulin Resistance via the DDIT4/MTOR Pathway in C2C12 Cells.” *Molecular Medicine Reports* 28(4):1–11. doi: 10.3892/mmr.2023.13068.
- Paritala, Vikram, Kishore K. Chiruvella, Chakradhar Thammineni, Rama Gopal Ghanta, and Arifullah Mohammed. 2015. “Phytochemicals and Antimicrobial Potentials of Mahogany Family.” *Revista Brasileira de Farmacognosia* 25(1):61–83. doi: 10.1016/j.bjp.2014.11.009.
- Patel, Tushar P., Komal Rawal, Ashim K. Bagchi, Gauri Akolkar, Nathalia Bernardes, Danielle da Silva Dias, Sarita Gupta, and Pawan K. Singal. 2016. “Insulin Resistance: An Additional Risk Factor in the Pathogenesis of Cardiovascular Disease in Type 2 Diabetes.” *Heart Failure Reviews* 21(1):11–23. doi: 10.1007/s10741-015-9515-6.
- Petersen, Max C., and Gerald I. Shulman. 2018. “Mechanisms of Insulin Action and Insulin Resistance.” *Physiological Reviews* 98(4):2133–2223. doi: 10.1152/physrev.00063.2017.
- Polonsky, Kenneth S., and Charles F. Burant. 2015. *Type 2 Diabetes Mellitus*. Thirteenth. Elsevier Inc.
- Prasetyaningrum, Pekik Wiji, Endah Puji Septisetyani, Ahmad Suyoko, and Adi Santoso. 2021. “Recloning and Characterization of C2C12 Myoblast and Its

- Clonal Derivatives.” *Indonesian Journal of Cancer Chemoprevention* 12(2):99. doi: 10.14499/indonesianjcanchemoprev12iss2pp99-105.
- Prasetyastuti, . Sunarti, Ahmad Hamim Sadewa, Sri Mursiti, and . Mustofa. 2017. “Effects of 7-Hydroxy-2-(4-Hydroxy-3-Methoxyphenyl)-Chromen-4 -One from *Swietenia Macrophylla* King Seed on Oxidized LDL, HOMA Beta and Glucagon like Peptide 1 (GLP-1) Gene Expression in Type 2 Diabetic Rats.” *Asian Journal of Biochemistry* 12(3):85–90. doi: 10.3923/ajb.2017.85.90.
- Prasetyastuti, ., Noviyanty Indjar Gama, and Rahmah Dara Ayunda. 2023. “Corrigendum: Effects of 7-Hydroxy-2-(4-Hydroxy-3-Methoxyphenyl)-Chroman-4-One on Serum Levels of Antioxidant Enzymes in Hyperlipidemic Rats.” *Journal of the Medical Sciences (Berkala Ilmu Kedokteran)* 55(3):99–107. doi: 10.19106/medsci005503202311.
- Prasetyastuti, Rahmah Dara Ayunda, and Sunarti. 2021. “Seven-Hydroxy-2-(4-Hydroxy-3-Methoxyphenyl)-Chromen-4-One Reduces Atherogenic Index and Nrf2 and GPx Gene Expressions in Hyperlipidemic Rats.” *Tropical Journal of Pharmaceutical Research* 18(6):1173–77. doi: 10.4314/TJPR.V18I6.4.
- Putu, Ni, Ermi Hikmawanti, Sofia Fatmawati, Zainal Arifin, and Niken Cahyaningrum. 2021. “The Effect of Pre-Extraction Preparation on Antioxidant Compounds of *Sauropus Androgynus* (L.) Merr. Leaves Extracts.” *Pharmaceutical Sciences and Research* 8(3):128–35. doi: 10.7454/psr.v8i3.1103.
- Rahman, Md Saidur, Khandkar Shaharina Hossain, Sharnali Das, Sushmita Kundu, Elikanah Olusayo Adegoke, Md Aatur Rahman, Md Abdul Hannan, Md Jamal Uddin, and Myung Geol Pang. 2021. “Role of Insulin in Health and Disease: An Update.” *International Journal of Molecular Sciences* 22(12):1–19. doi: 10.3390/ijms22126403.
- Rao, Xiayu, Xuelin Huang, Zhicheng Zhou, and Xin Lin. 2013. “An Improvement of the  $\Delta\Delta$ CT Method for Quantitative Real-Time Polymerase Chain Reaction Data Analysis.” *Biostatistics, Bioinformatics and Biomathematics* 3(3):71–85.
- Rehman, Kanwal, Muhammad Sajid Hamid Akash, Aamira Liaqat, Shagufta Kamal, Muhammad Imran Qadir, and Akhtar Rasul. 2017. “Role of Interleukin-6 in Development of Insulin Resistance and Type 2 Diabetes Mellitus.” *Critical Reviews in Eukaryotic Gene Expression* 27(3):229–36. doi: 10.1615/CritRevEukaryotGeneExpr.2017019712.
- Remedi, M. S., and C. Emfinger. 2016. “Pancreatic  $\beta$ -Cell Identity in Diabetes.” *Diabetes, Obesity and Metabolism* 18(Suppl 1):110–16. doi: 10.1111/dom.12727.
- Röder, Pia V., Bingbing Wu, Yixian Liu, and Weiping Han. 2016. “Pancreatic Regulation of Glucose Homeostasis.” *Experimental & Molecular Medicine* 48(November 2015):e219. doi: 10.1038/emm.2016.6.
- S. Zaman, Gaffar. 2020. “Pathogenesis of Insulin Resistance.” *Cellular Metabolism and Related Disorders*. doi: 10.5772/intechopen.92864.
- Samuel, Varman T., and Gerald I. Shulman. 2016. “The Pathogenesis of Insulin Resistance: Integrating Signaling Pathways and Substrate Flux.” *Journal of Clinical Investigation* 126(1):12–22. doi: 10.1172/JCI77812.

- Scharner, Juergen, and Peter S. Zammit. 2011. "The Muscle Satellite Cell at 50: The Formative Years." *Skeletal Muscle* 1(1):1–13. doi: 10.1186/2044-5040-1-28.
- Schlender, Lisa, Yolanda V. Martinez, Charles Adeniji, David Reeves, Barbara Faller, Christina Sommerauer, Thekriat Al Qur'An, Adrine Woodham, Ilkka Kunnamo, Andreas Sönnichsen, and Anna Renom-Guiteras. 2017. "Efficacy and Safety of Metformin in the Management of Type 2 Diabetes Mellitus in Older Adults: A Systematic Review for the Development of Recommendations to Reduce Potentially Inappropriate Prescribing." *BMC Geriatrics* 17(Suppl 1). doi: 10.1186/s12877-017-0574-5.
- Shoelson, Steven E., Jongsoo Lee, and Allison B. Goldfine. 2006. "Inflammation and Insulin Resistance." *Journal of Clinical Investigation* 116(7):1793–1801. doi: 10.1172/JCI29069.
- Swiderska, E., J. Strycharz, A. Wroblewski, J. Szemraj, and A. Drzewoski J and Sliwinska. 2018. "Role of PI3K/AKT Pathway in Insulin-Mediated Glucose Uptake." 13.
- Tahrani, Abd A. 2017. "Novel Therapies in Type 2 Diabetes: Insulin Resistance." *Practical Diabetes* 34(5):161-166a. doi: 10.1002/pdi.2109.
- Telrandhe, Umesh B., Satish B. Kosalge, Shweta Parihar, Devender Sharma, and Swati N. Lade. 2022. "Phytochemistry and Pharmacological Activities of *Swietenia Macrophylla* King (Meliaceae)." *Scholars Academic Journal of Pharmacy* 11(1):6–12. doi: 10.36347/sajp.2022.v11i01.002.
- Tian, Dai, Yanyan Qiu, Yongkun Zhan, Xiaobo Li, Xiuling Zhi, Xinhong Wang, Lianhua Yin, and Yanxia Ning. 2012. "Overexpression of Steroidogenic Acute Regulatory Protein in Rat Aortic Endothelial Cells Attenuates Palmitic Acid-Induced Inflammation and Reduction in Nitric Oxide Bioavailability." *Cardiovascular Diabetology* 11:1–12. doi: 10.1186/1475-2840-11-144.
- Trist, Benjamin G., James B. Hilton, Dominic J. Hare, Peter J. Crouch, and Kay L. Double. 2021. "Superoxide Dismutase 1 in Health and Disease: How a Frontline Antioxidant Becomes Neurotoxic." *Angewandte Chemie - International Edition* 60(17):9215–46. doi: 10.1002/anie.202000451.
- Tumova, J., M. Andel, and J. Trnka. 2016. "Excess of Free Fatty Acids as a Cause of Metabolic Dysfunction in Skeletal Muscle." *Physiological Research* 65(2):193–207. doi: 10.33549/physiolres.932993.
- Van der Aa, M. P., M. A. J. Elst, E. M. W. van de Garde, E. G. A. H. van Mil, C. A. J. Knibbe, and M. M. J. van der Vorst. 2016. "Long-Term Treatment with Metformin in Obese, Insulin-Resistant Adolescents: Results of a Randomized Double-Blinded Placebo-Controlled Trial." *Nutrition and Diabetes* 6(8):e228-10. doi: 10.1038/NUTD.2016.37.
- Velloso, Licio A., Franco Folli, and Mario J. Saad. 2015. "TLR4 at the Crossroads of Nutrients, Gut Microbiota, and Metabolic Inflammation." *Endocrine Reviews* 36(3):245–71. doi: 10.1210/er.2014-1100.
- Visentin, Denis C., Michelle Cleary, and Glenn E. Hunt. 2020. "The Earnestness of Being Important: Reporting Non-Significant Statistical Results." *Journal of Advanced Nursing* 76(4):917–19. doi: 10.1111/jan.14283.
- Wang, Jingjing, Xun He, and Shiwen Lv. 2023. "Notoginsenoside-R1 Ameliorates

- Palmitic Acid-Induced Insulin Resistance and Oxidative Stress in HUVEC via Nrf2/ARE Pathway.” *Food Science and Nutrition* 11(12):7791–7802. doi: 10.1002/fsn3.3696.
- Wong, Chun Y., Hani Al-Salami, and Crispin R. Dass. 2020. “C2C12 Cell Model: Its Role in Understanding of Insulin Resistance at the Molecular Level and Pharmaceutical Development at the Preclinical Stage.” *Journal of Pharmacy and Pharmacology* 72(12):1667–93. doi: 10.1111/jphp.13359.
- Yang, Ruiyi, Lu Wang, Jie Xie, Xiang Li, Shan Liu, Shengxiang Qiu, Yingjie Hu, and Xiaoling Shen. 2018. “Treatment of Type 2 Diabetes Mellitus via Reversing Insulin Resistance and Regulating Lipid Homeostasis in Vitro and in Vivo Using Cajanonic Acid A.” *International Journal of Molecular Medicine* 42(5):2329–42. doi: 10.3892/ijmm.2018.3836.
- Younus, H. 2018. “Therapeutic Potentials of Superoxide Dismutase.” *International Journal of Health Sciences* 12(3):88–93.
- Yudhani, Ratih D., Yulia Sari, Dwi A. A. Nugrahaningsih, Eti N. Sholikhah, Maftuchah Rochmanti, Abdul K. R. Purba, Husnul Khotimah, Dian Nugrahenny, and Mustofa Mustofa. 2023. “In Vitro Insulin Resistance Model: A Recent Update.” *Journal of Obesity* 2023. doi: 10.1155/2023/1964732.
- Zamora, Monica, and Josep Villena. 2014. “Targeting Mitochondrial Biogenesis to Treat Insulin Resistance.” *Current Pharmaceutical Design* 20(35):5527–57. doi: 10.2174/1381612820666140306102514.
- Zhang, Qiao, Xiangju Kong, Hang Yuan, Hongjun Guan, Ying Li, and Yucun Niu. 2019. “Mangiferin Improved Palmitate-Induced-Insulin Resistance by Promoting Free Fatty Acid Metabolism in HepG2 and C2C12 Cells via PPAR $\alpha$ : Mangiferin Improved Insulin Resistance.” *Journal of Diabetes Research* 2019. doi: 10.1155/2019/2052675.
- Zhang, Yin, Jincheng Chen, Yiming Zeng, Dandan Huang, and Qiuxia Xu. 2019. “Involvement of AMPK Activation in the Inhibition of Hepatic Gluconeogenesis by Ficus Carica Leaf Extract in Diabetic Mice and HepG2 Cells.” *Biomedicine and Pharmacotherapy* 109(June 2018):188–94. doi: 10.1016/j.biopha.2018.10.077.
- Zhao, Li, Liping Yang, and Khalidamir Ahmad. 2023. “Kaempferol Ameliorates Palmitate-Induced Lipid Accumulation in HepG2 Cells through Activation of the Nrf2 Signaling Pathway.” *Human and Experimental Toxicology* 42:1–10. doi: 10.1177/09603271221146780.
- Zhou, Min, William H. Konigsberg, Canhua Hao, Yinbo Pan, Jie Sun, and Xiaojing Wang. 2023. “Bioactivity and Mechanisms of Flavonoids in Decreasing Insulin Resistance.” *Journal of Enzyme Inhibition and Medicinal Chemistry* 38(1). doi: 10.1080/14756366.2023.2199168.
- Zhu, Qiongjun, Qianqian Dong, Xuliang Wang, Tianhe Xia, Yu Fu, Qiaoyu Wang, Rongzhou Wu, and Tingting Wu. 2022. “Palmitic Acid, A Critical Metabolite, Aggravates Cellular Senescence Through Reactive Oxygen Species Generation in Kawasaki Disease.” *Frontiers in Pharmacology* 13(March):1–14. doi: 10.3389/fphar.2022.809157.