

DAFTAR PUSTAKA

Abdollahi, M., & Hosseini, A. 2014. Streptozotocin. *Encyclopedia of Toxicology* 3rd Ed. pp 402—404.

Afrin, M, R., Arumugam, S., Wahed, M.I.I., Pitchaimani, V., Karuppagounder, V., Sreedhar, R., *et al.*, 2016. Attenuation of Endoplasmic Reticulum Stress-Mediated Liver Damage. *The American Journal of Chinese Medicine* **44**(1): 87—101.

Akbarzadeh, A., Norouzian, D., Mehrabi, M. R., Jamshidi, S., Farhangi, A., Verdi, A. A., *et.al.* 2007. Induction of diabetes by Streptozotocin in rats. *Indian Journal of Clinical Biochemistry*, **22**(2): 60—64.

Al-Megrin, W.A., El-Khadragy, M.F., Hussein, M.H., Mahgoub, S., Mohsen, D.M.A., Taha, H., *et al.*, 2020. Green Coffea arabica Extract Ameliorates Testicular Injury in High-Fat Diet/Streptozotocin-Induced Diabetes in Rats. *Journal of Diabetes Research*: 1—13.

Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., & Walter, P. 2008. *Molecular Biology of The Cell* 5th Ed. Garland Science, USA: xxxi+1600 hlm.

Ali, O. 2010. Type 1 Diabetes Mellitus: Epidemiology, Genetics, Pathogenesis, and Clinical Manifestations. In: L., Poretzky (Ed.): *Principles of Diabetes Mellitus*, pp: 181—202. Springer, New York.

American Diabetes Association. 2012. Diagnosis and Classification of Diabetes Mellitus. *Diabetes Care* **35**(1): 64—71.

Anken, E., & Sitia, R. 2016. The Endoplasmic Reticulum. *Encyclopedia of Cell Biology* **2**: 156—167.

Arfian, N., Wahyudi, D. A. P., Zulfatina, I. B., Citta, A. N., Anggorowati, N., Multazam, *et al.* 2019. Chlorogenic Acid Attenuates Kidney Ischemic/Reperfusion Injury via Reducing Inflammation, Tubular Injury, and Myofibroblast Formation.: 1—10.

Bagdas, D., Etoz, B.C., Gul, Z., Ziyank, S., Inan, S., Tura- cozen, O., *et al.*, 2015. In vivo systemic chlorogenic acid therapy under diabetic conditions: Wound healing effects and cytotoxicity/genotoxicity profile. *Food Chem Toxicol.* **81**: 54—61.

Bhasin, S., & Jameson, J.L. 2010. Disorders of the testes and male reproductive system. In Jameson, J.L (Ed), *Harrisons's Endocrinology*, 2nd Ed, pp. 156—179. The McGraw-Hill Companies, United States.

Bogin, B. 2011. Puberty and Adolescence: An Evolutionary Perspective. *Encyclopedia of Adolescence* 1: 275—286.

Bras, M.L., Clément M.V., Pervaiz, S., Brenner, C. 2005. Reactive oxygen species and the mitochondrial signaling pathway of cell death. *Histol Histopathol.* **20**(1):205—219.

Brey, I.R., & Bartenschlager, R. 2016. Endoplasmic Reticulum: The Favorite Intracellular Niche for Viral Replication and Assembly. *Viruses* **8**(160): 1—26.

Chen, Z., Wen, D., Wang, F., Wang, C., & Yang, L. 2019. Curcumin protects against palmitic acid-induced apoptosis via the inhibition of endoplasmic reticulum stress in testicular Leydig cells. *Reproductive Biology and Endocrinology* **17**(71): 1—10.

Chrousos, G.P. 2012. The Gonadal Hormones and Inhibitors. In Katzung B.G., Masters S.B., & Trevor A.J. *Basic & Clinical Pharmacology*, 12th Ed, pp. 715—741. United State: Mc-Graw Hill Companies.

Chung, K.W., Chung, H.M., & Halliday, N.L. 2014. *Gross Anatomy*, 8th ed, pp. ix+527 hlm. Philadelphia: Wolter Kluwer Health.

Costabile, R. 2013. Anatomy and Physiology of the Male Reproductive System. In: Goldstein, M., & Schlegel, P.N: *Surgical and Medical Management of Male Infertility*, pp: 1—10. Cambridge University Press, Cambridge.

Decroli, E. 2019. *Diabetes mellitus tipe 2*. Pusat Penerbitan Bagian Ilmu Penyakit Dalam, Padang.

Desmukh, C.D., & Jain, A. 2015. Diabetes Mellitus: A Review. *Int. J. Pure App. Biosci.* **3**(3): 224—230.

Dimakopoulou, A., Jayasena, C. N., Radia, U. K., Algefari, M., Minhas, S., Oliver, N., & Dhillon, W. S. 2019. Animal Models of Diabetes-Related Male Hypogonadism. *Frontiers in Endocrinology* **10** (628): 1—4.

Ding, C., Wang, Q., Hao, Y., Ma, X., Wu, L., Li, W., *et.al.* 2016. Vitamin D supplement improved testicular function in diabetic rats. *Biochem Biophys Res Comm* **473**: 161—167.

Durairajanayagam, D., Agarwal, A., & Ong, C. 2015. Causes, effects and molecular mechanisms of testicular heat stress. *Reproductive BioMedicine Online* **30**(1):14—27.

El-Khadragy, M. F., AL-Megrin, W. A., Alomar, S., Alkhuriji, A. F., Metwally, D. M., Mahgoub, S., *et.al.* 2020. Chlorogenic acid abates male reproductive dysfunction in arsenic-exposed mice via attenuation of testicular oxido-inflammatory stress and apoptotic responses. *Chemico-Biological Interactions*, 1—21.

Fiorentino, T.V., Priolella, A., Zuo, P., & Folli, F. 2013. Hyperglycemia-induced Oxidative Stress and its Role in Diabetes Mellitus Related Cardiovascular Disease. *Current Pharmaceutical Design* **19**: 5695—5703.

Fonseca, V., & Kalarickal, J.J., 2010. Type 2 Diabetes Mellitus: Epidemiology, Genetics, Pathogenesis, and Clinical Manifestations. In: L., Poretsky (Ed.): *Principles of Diabetes Mellitus*, pp: 203—220. Springer, New York.

Ghosh, S., Chowdurry, S., Das, A.K., & Sil, P.C. 2019. Taurine ameliorates oxidative stress induced inflammation and ER stress T mediated testicular damage in STZ-induced diabetic Wistar rats. *Food and Chemical Toxicology* **124**: 64—80.

Graham, M.L., Janecek, J.L. Kittredge, J.A., Hering, B.J., & Schuurman, H.J. 2011. The Streptozotocin-Induced Diabetic Nude Mouse Model: Differences between Animals from Different Sources. *Comparative Medicine* **61**(4): 356—360.

Guzel, E., Arlier, S., Kayisli, O.G., Tabak, M.S., Ekiz, T., Semerci, N., *et al.*, 2017. Endoplasmic Reticulum Stress and Homeostasis in Reproductive Physiology and Pathology. *Int. J. Mol. Sci.* **18** (792): 1—25.

Hall, J.E. 2011. *Guyton and Hall Textbook of Medical Physiology*. 12th ed. Saunders Elsevier., USA: 1043 hlm.

Hosseini, M., Shaygannia, E., Rahmani, M., Eskandari, A., Golsefid, A. A., Tavalae, M., *et al.* 2020. Endoplasmic Reticulum Stress (ER Stress) and Unfolded Protein Response (UPR) Occur in a Rat Varicocele Testis Model. *Oxidative Medicine and Cellular Longevity* : 1—11.

Ilacqua, A., Francomano, D., & Aversa, A. 2018. The Physiology of the Testis. *Principles of Endocrinology and Hormone Action*: 449—455.

Jeon, J.S., Kim, H.T., Jeong, I.H., Hong, S.R., Oh, M.S., Yoon, M.H., *et al.*, 2019. Contents of chlorogenic acids and caffeine in various coffee-related products. *Journal of Advanced Research* **17**: 85—94.

Johnston, K. L., Clifford, M. N., & Morgan, L. M. 2003. Coffee acutely modifies gastrointestinal hormone secretion and glucose tolerance in humans: glycemic effects of chlorogenic acid and caffeine. *The American Journal of Clinical Nutrition*, **78**(4): 728—733.

Kaneshi, F., Nasrolahi, O., Azizi, S., & Nejati, V. 2013. Sesame effects on testicular damage in streptozotocin-induced diabetes rats. *AJP* **3**(4): 347—355.

Karna, K.K., Shin, Y.S., Choi, B.R., Kim, H.K., & Park, J.K. 2019. The Role of Endoplasmic Reticulum Stress Response in Male Reproductive Physiology and Pathology: A Review. *The World Journal of Men's Health*: 1—11.

Keyhanmanesh, R., Hamidian, G., Alipour, M. R., Ranjbar, M., & Oghbaei, H. 2018. Protective effects of sodium nitrate against testicular apoptosis and spermatogenesis impairments in streptozotocin-induced diabetic male rats. *Life Sciences* **211**: 63—73.

Kim, J.-H., Park, S.-J., Kim, T.-S., Park, H.-J., Park, J., Kim, B. K., *et al.*, 2013. Testicular hyperthermia induces Unfolded Protein Response signaling activation in

spermatocyte. *Biochemical and Biophysical Research Communications* **434**(4): 861—866.

King, G.L., & Loeken, M.R. 2004. Hyperglycemia-induced oxidative stress in diabetic complications. *Histochem Cell Biol* **122**: 333—338.

Leu, J.P., & Zonszein, J. 2010. Diagnostic Criteria and Classification of Diabetes. In: L., Poretsky (Ed.): *Principles of Diabetes Mellitus*, pp: 107—116. Springer, New York.

Liang, N., & Kitts, D.D. 2016. Role of Chlorogenic Acids in Controlling Oxidative and Inflammatory Stress Conditions. *Nutrients* **8**(16): 1—20.

Liu, H., Lin, S., Lv, Q., Yang, Q., Wu, G., Hu, J. *et.al.* 2017. Taurine recovers testicular steroidogenesis and spermatogenesis in streptozotocin-induced diabetic rats. *In Taurine* **10**: 801—811.

Liu, J., Jin, X., Yu, C.-H., Chen, S.-H., Li, W.-P., & Li, Y.-M. 2010. Endoplasmic reticulum stress involved in the course of lipogenesis in fatty acids-induced hepatic steatosis. *Journal of Gastroenterology and Hepatology* **25**(3): 613—618.

Ma, Y., Gao, M., Liu, D. 2015. Chlorogenic Acid Improves High Fat Diet-Induced Hepatic Steatosis and Insulin Resistance in Mice. *Pharm Res.* **32**(4):1200—1209.

Meng, S., Cao, J., Feng, Q., Peng, J., Hu, Y. 2013. Roles of Chlorogenic Acid on Regulating Glucose and Lipids Metabolism: A Review. *Evidence-Based Complementary and Alternative Medicine*: 1—11.

Moore, K., & Hollien, J. 2015. Ire1-mediated decay in mammalian cells relies on mRNA sequence, structure, and translational status. *Mol Biol. Cell* **26**(16): 2873—2884.

Morishima, N., Nakanishi, K., Takenouchi, H., Shibata, T., & Yasuhiko, Y. 2002. An Endoplasmic Reticulum Stress-specific Caspase Cascade in Apoptosis. *J. Biol. Chem.* **277**(37): 34287—34294.

Naveed, M., Hejazi, V., Abbas, M., Kamboh, A.A., Khan, G.J., Shumzaid, M., *et al.*, 2018. Chlorogenic acid (CGA): A pharmacological review and call for further research. *Biomedicine & Pharmacotherapy* **97**: 67—74.

Nna, V.U., Bakar, A.B.A., Ahmad, A., & Mohamed, M. 2018. Diabetes-induced testicular oxidative stress, inflammation, and caspase-dependent apoptosis: the protective role of metformin. *Archives of physiology and biochemistry*: 1—13.

Okur, M.E., Karantas, I.D., & Siafaka, P.I. 2017. Diabetes Mellitus: A Review on Pathophysiology, Current Status of Oral Medications and Future Perspectives. *Acta Pharm. Sci.* **55**(1): 61—82.

Rashid, K., & Sil, P.C. 2015. Curcumin ameliorates testicular damage in diabetic rats by suppressing cellular stress-mediated mitochondria and endoplasmic

reticulum-dependent apoptotic death. *Biochimica et Biophysica Acta* **1852**: 70—82.

Ricci, G., Catizone, A., Esposito, R., Pisanti, F. A., Vietri, M. T., & Galdieri, M. 2009. Diabetic rat testes: morphological and functional alterations. *Andrologia*, **41**(6), 361—368.

Scwarz, D.S., & Blower, M.D. 2016. The endoplasmic reticulum: structure, function and response to cellular signaling. *Cell. Mol. Life Sci.* **73**: 79—94.

Shati, A.A. 2019. Resveratrol improves sperm parameter and testicular apoptosis in cisplatin-treated rats: Effects on ERK1/2, JNK, and Akt pathways. *Syst Biol Reprod Med* **65**(3): 236—249.

Sherwood, L. 2010. *Human Physiology From Cells to Systems*. 7th ed. California: Brooks/Cole Cengage Learning: xxi+798 hlm.

Shrilatha, B.M. 2007. Early oxidative stress in testis and epididymal sperm in streptozotocin-induced diabetic mice: Its progression and genotoxic consequences. *Reproductive Toxicology*, **23**(4): 578—587.

Sigma-Aldrich. 2020. 1 hlm. Chlorogenic acid. <https://www.sigmaaldrich.com/catalog/product/aldrich/c3878?lang=en®ion=ID>, diakses 14 Desember 2020, Pk. 18.45.

Stefanello, N., Schmatz, R., Pereira, L.B., Rubin, M.A., Rocha, J.B.T., Facco, G., *et al.*, 2013. Effects of chlorogenic acid, caffeine, and coffee on behavioral and biochemical parameters of diabetic rats. *Mol Cell Biochem*: 1—10.

Tousch, D., Lajoix, A.D., Hosy, E., Milhau, J.A., Ferrare, K., Jahannault, C., *et al.*, 2008. Chicoric acid, a new compound able to enhance insulin release and glucose uptake. *Biochemical and Biophysical Research Communications* **377**: 131—135.

Vardi, N., Parlakpinar, H., Ates, B., & Otlu, A. 2010. The Preventive Effects of Chlorogenic Acid Against to Testicular Damage Caused by Methotrexate. *Turkiye Klinikleri J Med Sci.* **30**(2):507—513.

Varghese, A., Deepinder, F., Chandra, A., Jeat, A.W., Pathan, F., Agarwal, A. 2010. Chapter 1: Anatomy and Physiology of Male Gametogenesis. *Andrology Laboratory Manual* : 1—14.

Wang, M., Wey, S., Zhang, Y., Ye, R., & Lee, A.S. 2009. Role of the Unfolded Protein Response Regulator GRP78=BiP in Development, Cancer, and Neurological Disorders. *Antioxid. Redox Signal.* **11**(9): 2307—2316.

Wang, Y., Zhang, Z., Guo, W., Sun, W., Miao, X Wu, H., *et al.*, 2014. Sulforaphane reduction of testicular apoptotic cell death in diabetic mice is associated with the upregulation of Nrf2 expression and function. *Am J Physiol Endocrinol Metab* **307**: 14—23.

Wu, J., & Yan, L.J. 2015. Streptozotocin-induced type 1 diabetes in rodents as a model for studying mitochondrial mechanisms of diabetic β cell glucotoxicity. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy* **8**:181—188.

Wu, J., He, G.T., Zhang, W.J, Xu, J., Huang Q.B. 2016. IRE1 α signaling pathways involved in mammalian cell fate determination. *Cell Physiol Biochem* **38**: 847—858.

Wu, K.K., & Huan, Y. 2008. Streptozotocin-Induced Diabetic Models in Mice and Rats. *Curr. Protoc. Pharmacol.* **40**: 1—13.

Yan, L.J. 2014. Pathogenesis of Chronic Hyperglycemia: From Reductive Stress to Oxidative Stress. *Journal of Diabetes Research* : 1—11.

Yan, Y., Zhou, X., Guo, K., Zhou, F., & Yang, H. 2020. Use of Chlorogenic Acid against Diabetes Mellitus and Its Complications. *Journal of Immunology Research*. 1—6.

Zajac, J., Shresta, A., Patel, P., & Poretsky, L. 2010. The Main Events in the History of Diabetes Mellitus. In: L., Poretsky (Ed.): *Principles of Diabetes Mellitus*, pp: 3—17. Springer, New York.

Zhang, Y., Miao, L., Zhang, H., Wu, G., Zhang, Z., & Lv, J. 2018. Chlorogenic acid against palmitic acid in endoplasmic reticulum stress-mediated apoptosis resulting in protective effect of primary rat hepatocytes. *Lipids in Health and Disease* **17**(270): 1—8.

Zhang, Y., Zhang, H., Zhao, Z., Lv, M., Jia, J., Zhang, L., *et al.*, 2015. Enhanced expression of glucose-regulated protein 78 correlates with malondialdehyde levels during the formation of liver cirrhosis in rats. *Experimental and Therapeutic Medicine* **10**: 2119—2125.

Zhao, H., Ma, N., Liu, Z., Wang, T., Yuan, C., He, Y., *et.al.* 2018. Protective effect of Wuzi Yanzong recipe on testicular dysfunction through inhibition of germ cell apoptosis in ageing rats via endoplasmic reticulum stress. *Andrologia*: 1—13.

Zhao, L. & Ackerman, S.L. 2006. Endoplasmic reticulum stress in health and disease. *Curr Opin Cell Biol* **18**: 444—452.