

DAFTAR PUSTAKA

- Abo-elmatty Dina M, Essawy SS, Badr JM, Sterner O, 2013. Antioxidant and anti-inflammatory effects of *Urtica pilulifera* extracts in type2 diabetic rats. *Journal of Ethnopharmacology*; vol. 145(1): pp. 269–277.
- Agrawal RP, Ola V, Bishnoi P, Gothwal S, sirohi P, Agrawal R, 2014. Prevalence of Micro and Macrovascular Complications and their Risk Factors in Type-2 Diabetes Mellitus. *Journal of the association of physicians of india*; vol. 62: pp. 504-508.
- Akkarachiyasit S, Charoenlertkul P, Yibchok-anun S, Adisakwattana S, 2010. Inhibitory activities of cyaniding and its glycosides and synergistic effect with acarbose against intestinal a-glucosidase and pancreatic a-amylase. *Int. J. Mol. Sci*; vol 11: pp.3387–3396
- Akpan HD, Ekaidem I, 2015. Modulation of Immunological and Hematological Disturbances of Diabetes Mellitus by Diets Containing Combined Leaves of *Vernonia amygdalina* and *Gongronema latifolium*. *British Journal of Applied Science & Technology*. 6(5): 534-44.
- Aktas G, Sit M, Dikbas O, et al. 2017, Elevated neutrophil-to-lymphocyte ratio in the diagnosis of Hashimoto's thyroiditis. *Rev Assoc Med Bras*;63(12):1065–1068.
- American Diabetes Association consensus statement, 2001. Postprandial Blood Glucose. *Diabetes Care*; vol. 24(4): pp. 775–778.
- Armanto J, Reaven G, Ruby R. 2015. Triglycerides/high-density lipoprotein cholesterol concentration ratio identifies accentuated cardio-metabolic risk. *American Association of Clinical Endocrinologists*:1-18
- Azab B, Zaher M, Weiserbs KF, et al., 2010. Usefulness of neutrophil to lymphocyte ratio in predicting short- and long-term mortality after non-ST-elevation myocardial infarction. *Am J Cardiol*; 106:470–6.
- B Purwanto, P Liben. Model Hewan Coba untuk Penelitian Diabetes. *Seri protokol penelitian hewan coba* , (2014) : 27-30.
- Baynest HW, 2015. Classification, Pathophysiology, Diagnosis and Management of Diabetes. *Journal of Diabetes and Metabolism*; vol. 6, issue 5.
- Beeton C, Garcia A, Chandy KG. Drawing blood from rats through the saphenous vein and by cardiac puncture. *J Vis Exp*. 2007;(7):266. doi:10.3791/266
- Belwal, Tarun, Seyed F, Seyed M, Solomon H, 2017. Dietary Anthocyanin and Insulin Resistance: When Food Becomes a Medicine. *Nutrients* 2017, vol.9: pp. 1111
- BPS, 2017. Statistik Tanaman Hias Indonesia. *Badan Pusat Statistik Indonesia*. Halaman: 11-18.

- Cavalot F, *et al.* 2011. Postprandial Blood Glucose Predicts Cardiovascular Events and All-Cause Mortality in Type 2 Diabetes in a 14-Year Follow-Up: Lessons from the San Luigi Gonzaga Diabetes Study. *Diabetes Care*; vol. 34(10): pp. 2237–2243.
- Charan J, Biswas T, 2013. How to calculate sample size for different study designs in medical research? *Indian Journal of Psychological Medicine*; vol. 35: pp.121. doi:10.4103/0253-7176.116232
- Chatterjee S, Davies MJ, 2015. Current management of diabetes mellitus and future directions in care. *Postgrad Med J* ;0:1–10. doi:10.1136/postgradmedj-2014-133200
- Chen L, Chen R, Wang H, Liang F, 2015. Mechanisms Linking Inflammation to Insulin Resistance. *International Journal of Endocrinology*. <http://dx.doi.org/10.1155/2015/508409>
- Das UN, 2017. Is There a Role for Bioactive Lipids in the Pathobiology of Diabetes Mellitus? *Frontiers in Endocrinology*, 8. doi:10.3389/fendo.2017.00182
- Decroli Eva, 2019. *Diabetes Mellitus tipe 2*. Pusat Penerbitan Bagian Ilmu Penyakit Dalam Fakultas Kedokteran Universitas Andalas, Padang.
- Dumitrescu R, Mehedintu C, Briceag I, Purcarea VL, Hudita D, 2015. Metformin-clinical pharmacology in PCOs. *Journal of medicine and life*; vol.8, issue 2: pp. 187–192.
- Felgines C, Texier O, Besson C, Lyan B, Lamaison JL, Scalbert A, 2007. Strawberry pelargonidin glycosides are excreted in urine as intact glycosides and glucuronidated pelargonidin derivatives in rats. *Brit.J. Nutr*; vol. 98: pp. 1126–1131.
- Furman BL, 2015. Streptozotocin-induced diabetic models in mice and rats. *Curr. Protoc. Pharmacol*; 70:5.47.1–5.47.20. doi: 10.1002/0471141755
- Gheibi S, Kashfi K, Ghasemi A, 2017. A practical guide for induction of type-2 diabetes in rat: Incorporating a high-fat diet and streptozotocin. *Biomedicine & Pharmacotherapy*; vol.95: pp.605–613.
- Gholamhoseinian A, H.Fallah H, Sharififar F, 2009. Inhibitory effect of methanol extract of *Rosa damascena* mill. flowers on α -glucosidase activity and postprandial hyperglycemia in normal and diabetic rats. *Phytomedicine*; vol.16: pp. 935–941.
- Gholamhoseinian A, Shahouzehi B, Sharififar F, 2010. Inhibitory effect of some plant extracts on pancreatic lipase. *Int J Pharmacol*; vol 6: pp.705–711
- Gholamhoseinian A, Sharifi-Far F, Shahouzehi B, 2010. Inhibitory activity of some plant methanol extracts on 3-Hydroxy-3-Methylglutaryl coenzyme a reductase. *Int J Pharmacol*; vol 6: pp.705–711

- Giannini C, Santoro N, Caprio S, Kim G, *et al.*, 2011. The triglycerideto-HDL cholesterol ratio: association with insulin resistance in obese youths of different ethnic backgrounds. *Diabetes Care* ; 34(8):1869-74.
- Girona J, Amigo N, Ibarretxe D, Plana N, Borjabad CR, Heras M, Ferre R. 2019. HDL triglycerides: a new marker of metabolic and cardiovascular risk. *Int J Mol Sci*; 20(3151):1-10.
- Gong S, Gao X, Xu F, Shang Z, Li S, Chen W, Yang J, Li J. 2018. Association of lymphocyte to monocyte ratio with severity of coronary artery disease. *Medicine*: 97(43)
- Guo H, Xia M, Zou T, Ling W *et al.*, 2012. Cyanidin 3-glucoside attenuates obesity-associated insulin resistance and hepatic steatosis in high-fat diet-fed and db/db mice via the transcription factor FoxO1. *The Journal of Nutritional Biochemistry*, 23(4), 349–360
- González-Chávez A, Simental-Mendieta LE, Elizondo-Argueta S. 2011. Elevated triglycerides/HDL-cholesterol ratio associated with insulin resistance. *Cir Cir*. 2011; 79:126-31.
- Goyal SN, Reddy NM, Patil KR, Nakhate KT *et al.*, 2016. Challenges and issues with streptozotocin-induced diabetes – A clinically relevant animal model to understand the diabetes pathogenesis and evaluate therapeutics. *Chemico-Biological Interactions*. 244: 49–63.
- Han J, Kaufman RJ, 2016. The role of ER stress in lipid metabolism and lipotoxicity. *Journal of Lipid Research*. 57:1329–1338.
- Hillson R, 2015. Diabetes and the blood – white cells and platelets. *PRACTICAL DIABETES*; vol. 32: pp. 159-160.
- Horbowicz M., Kosson R., Grzesiuk A, Dębski H. 2008. Anthocyanins of fruits and vegetables-their occurrence, analysis and role in human nutrition. *Veget. Crops Res. Bull*; vol.6: pp. 5-22.
- Hou DX, Yanagita T, Uto T, Masuzaki S, Fujii M, 2005. Anthocyanidins inhibit cyclooxygenase-2 expression in LPS-evoked macrophages: structure-activity relationship and molecular mechanism involved. *Biochem. Pharmacol*; vol. 70: pp. 417-425.
- Huang W, Huang J, Liu Q, Lin F, He Z, Zeng Z, He L, 2014. Neutrophil-lymphocyte ratio is a reliable predictive marker for early-stage diabetic nephropathy. *Clinical Endocrinology*; vol.82(2): pp. 229–233. doi:10.1111/cen.12576
- Hussain M, Babar MZM, Akhtar L, Hussain MS, 2017. Neutrophil lymphocyte ratio (NLR): A well assessment tool of glycemic control in Type-2 diabetic patients. *Pak J Med Sci*; vol. 33: pp. 1366-1370.

- Ikeda T, Iwata K, Murakami H, 2000. Inhibitory effect of metformin on intestinal glucose absorption in the perfused rat intestine. *Biochemical Pharmacology*. vol 59(7): pp. 887–890
- International Diabetes Federation, 2017. IDF DIABETES ATLAS, eighth edition. *INTERNATIONAL DIABETES FEDERATION*; vol. 8: pp.1-144.
- Jocken JWE, 2007. Adipose Triglyceride Lipase and Hormone-Sensitive Lipase Protein Expression Is Decreased in the Obese Insulin-Resistant State. *The Journal of Clinical Endocrinology & Metabolism*, 92(6), 2292–2299.
- Julianto TS, 2016. *Minyak Atsiri Bunga Indonesia*. Publikasi: Yogyakarta. Hal: 115-116.
- Kahn SE, Cooper ME, Del Prato S, 2014. Pathophysiology and treatment of type 2 diabetes: Perspectives on the past, present, and future. *Lancet*; vol. 383.
- Khairani, Elsa yuniarti, Ramadhan sumarmin, 2018. pengaruh ekstrak kulit manggis (*Garcinia Mangoastania L*) terhadap histology pancreas mencit (*mus musculus L*) swiss Webster yang diinduksi sukrosa, *Exact*, vol.19, No.1
- Kim YM, Jeong YK, Wang MH, et al. 2005. . Inhibitory effect of pine extract on alpha-glucosidase activity and postprandial hyperglycemia. *Nutrition*. 21: 756–761.
- Katzung BG, 2018. *Basic and Clinical Pharmacology*, 14th ed. New York: McGraw-Hill.
- Kocak MZ, Aktas G, Duman TT, Atak BM, Kurtkulagi O *et al.*, 2020. Monocyte lymphocyte ratio As a predictor of Diabetic Kidney Injury in type 2 Diabetes mellitus; The MADKID Study. *Journal of Diabetes & Metabolic Disorders*.
- Lee JS, Kim NY, Na SH, Youn YH, Shin CS. 2018. Reference values of neutrophil-lymphocyte ratio, lymphocyte-monocyte ratio, platelet-lymphocyte ratio, and mean platelet volume in healthy adults in South Korea. *Medicine*, 97(26).
- Lin HJ, *et al.* 2009. Postprandial Glucose Improves the Risk Prediction of Cardiovascular Death Beyond the Metabolic Syndrome in the Nondiabetic Population. *Diabetes Care*; vol.32(9): pp.1721–1726. doi:10.2337/dc08-2337
- Liu G, Zhang S, Hu H, Liu T, Huang J. 2020. The role of neutrophil-lymphocyte ratio and lymphocyte–monocyte ratio in the prognosis of type 2 diabetics with COVID-19. *Scottish Medical Journal*; 65(4):154-160
- LIPI, 2015. *Indonesia Memiliki 7500 Tanaman Obat*, diunduh 6 Januari 2020 jam 20.42wib, <<http://lipi.go.id/berita/single/Indonesia-Miliki-7500-Tanaman-Obat/11540>>.

- Lotfy M, Adeghate J, Kalasz H, Singh J, Adeghate E, 2017. A Chronic Complications of Diabetes Mellitus: A Mini Review. *Current Diabetes Reviews*; vol. 13: pp. 3-10.
- Lou M, Luo P, Tang R, Peng Y, Yu S, Huang W, He L, 2015. Relationship between neutrophil-lymphocyte ratio and insulin resistance in newly diagnosed type 2 diabetes mellitus patients. *BMC Endocrine Disorders*; vol. 15.
- Mazza GJ, 2007. Anthocyanins and heart health. *Ann. Ist. Super.Sanità*; vol. 43: pp. 369-374.
- Miguel, 2011. Anthocyanins: Antioxidant and/or anti-inflammatory activities. *Journal of Applied Pharmaceutical Science*; vol 01: pp.07-15
- Mohammadi A, Fallah H, Gholamhosseinian A, 2017. Antihyperglycemic Effect of Rosa Damascena is Mediated by PPAR. γ Gene Expression in Animal Model of Insulin Resistance. *Iranian Journal of Pharmaceutical Research*; vol. 16, no 3: pp. 1080-1088.
- Nayebi N, Khalili N, Kamalinejad M, Emtiazy M, 2017. A systematic review of the efficacy and safety of Rosa damascena Mill. with an overview on its phytopharmacological properties. *Complementary Therapies in Medicine*; vol. 34: pp. 129-140.
- Odegaard JI, Chawla A. 2012. Connecting type 1 and type 2 diabetes through innate immunity. *Cold Spring Harbor perspectives in medicine*: 2(3)
- Ozder Aclan, 2014. *Lipid profile abnormalities seen in T2DM patients in primary healthcare in Turkey: a cross-sectional study*. Ozder Lipids in Health and Disease; vol. 13.
- Ozougwu O, 2013. The pathogenesis and pathophysiology of type 1 and type 2 diabetes mellitus. *J Physiol Pathophysiol*; vol. 4: pp. 46–57.
- Ojha A, Ojha U, Mohammed R., Chandrashekar A, Ojha H, 2019. Current perspective on the role of insulin and glucagon in the pathogenesis and treatment of type 2 diabetes mellitus. *Clinical Pharmacology: Advances and Applications*; vol. 11: pp. 57-65.
- Oyedemi SO, Adewusi EA, Aiyegoro OA, Akinpelu DA, 2011. Antidiabetic and haematological effect of aqueous extract of stem bark of *Azela africana* (Smith) on streptozotocin-induced diabetic Wistar rats. *Asian Pacific J. Trop. Biomed* : pp. 353-358.
- Passamonti S, Vrhovsek U, Vanzo A, Mattivi F, 2003. The stomach as a site for anthocyanins absorption from food. *FEBS Lett*; vol. 544: pp. 210-213
- Perkumpulan Endokrinologi Indonesia (PERKENI), Diabetes Mellitus, Konsensus Pengelolaan dan Pencegahan DM tipe 2 di Indonesia, Jakarta, 2015; 1–6.

- Posul E, Yilmaz B, Aktas G, et al. 2015. neutrophil-to-lymphocyte ratio predict active ulcerative colitis? *Wien Klin Wochenschr.*;127(7–8):262–265.
- Prameswari OM, Wijanarko SB, 2014. Uji efek ekstrak air daun pandan wangi terhadap penurunan kadar glukosa darah dan histopatologi tikus diabetes. *Jurnal pangan dan agroindustri* Vol.2 No 2 PP.16-27, April 2014
- Priska M, Peni N, Carvallo L, Dala Ngapa Y, 2018. Review: Antosianin dan Pemanfaatannya. *Cakra Kimia*; vol 6 edisi 2: pp. 79-97.
- Rajkovic N, Zamaklar M, Lalic K, Jotic A, Lukic L, Milicic T, Singh S, Stosic L, Lalic NM. 2014. Relationship between Obesity, Adipocytokines and Inflammatory Markers in Type 2 Diabetes: Relevance for Cardiovascular Risk Prevention. *International Journal of Environmental Research and Public Health*: 11(4):4049-4065
- Rimbun, 2015. *Profil Glukosa Darah Luas Pulau Langerhans dan Ekspresi Reseptor Insulin Otot pada berbagai Model Diabetes Mellitus Tipe 2*. (Tesis). Fakultas Kedokteran Universitas Airlangga Surabaya.
- Rukmana R., 1995. *Mawar. Seri Bunga Potong*. Penerbit Kanisius. Yogyakarta.
- Scazzocchio B, Vari R, Filesì C, et al., 2011. Cyanidin-3-O--Glucoside and Protocatechuic Acid Exert Insulin-Like Effects by Upregulating PPAR Activity in Human Omental Adipocytes. *Diabetes*, 60(9), 2234–2244.
- Sherwood L, 2014. *Fisiologi Manusia dari Sel ke Sistem*, Edisi 8. EGC, Jakarta.
- Shi L, Qin X, Wang H. 2017. Elevated neutrophil-to-lymphocyte ratio and monocyte-to-lymphocyte ratio and decreased platelet-to lymphocyte ratio are associated with poor prognosis in multiple myeloma. *Oncotarget*; 8(12):18792–18801.
- Shiny A, et al. 2014. Association of Neutrophil-Lymphocyte Ratio with Glucose Intolerance: An Indicator of Systemic Inflammation in Patients with Type 2 Diabetes. *Diabetes Technology & Therapeutics*; 16(8): pp. 524–530. doi:10.1089/dia.2013.0264.
- Singh VP, Bali A, Singh N, Jaggi AS, 2014. Advanced Glycation End Products and Diabetic Complications. *Korean J Physiol Pharmacol*; Vol: 18.
- Skovsø S, 2014. Modeling type 2 diabetes in rats using high fat diet and streptozotocin. *Journal of Diabetes Investigation*; vol. 5(4): pp. 349–358. doi: 10.1111/jdi.12235.
- Suartha IN, Swantara IM, Rita WS, 2016. Ekstrak etanol dan fraksi heksan buah pare (*Momordica charantia*) sebagai penurun kadar glukosa darah tikus diabetes. *Jurnal veteriner* vol.17 No 1: 30-36

- Sudoyo AW, Setiyohadi B, Alwi I, Simadibrata M, Setiati S, 2016. *Buku Ajar Ilmu Penyakit Dalam*. Jilid III Edisi VI. Jakarta : Interna Publishing, hal.1877 – 1884.
- Talavéra S, Felgines C, Texier O, Besson C, Manach C, Lamaison JL, Rémésy C, 2004. Anthocyanins are efficiently absorbed from the small intestine in rats. *J. Nutr* ; vol. 134: pp. 2275-2279.
- Tsalamandris S, Antonopoulos AS, Oikonomou E, Papamikroulis GA, Vogiatzi G, 2019. The Role of Inflammation in Diabetes: Current Concepts and Future Perspectives. *European Cardiology Review*; 14(1). doi:10.15420/ecr.2018.33.1
- Tsutomu H. 2018. Pathophysiology of diabetic dyslipidemia. *J Atheroscler Thromb*; 25: 771-82.
- Ulu SM, Dogan M, Ahsen A, Altug A, Demir K, Acartürk G, Inan S, 2013. Neutrophil-to-Lymphocyte Ratio as a Quick and Reliable Predictive Marker to Diagnose the Severity of Diabetic Retinopathy. *Diabetes Technology & Therapeutics*; vol. 15: pp. 942–947. doi:10.1089/dia.2013.0097
- Vahit D, Mehmet KA, Samet Y, Hüseyin E. 2017. Assessment of monocyte to high density lipoprotein cholesterol ratio and lymphocyte-to-monocyte ratio in patients with metabolic syndrome. *Biomarkers in Medicine*, 11(7), 535–540
- Velioglu, Mazza G, 1991. Characterization of Flavonoids in Petals of *Rosa damascena* by HPLC and Spectral Analysis. *J Agric. Food Chem*; vol.39: pp. 463-467.
- Verdoia M, *et al.* 2015. Impact of diabetes on neutrophil-to-lymphocyte ratio and its relationship to coronary artery disease. *Diabetes Metab.* <http://dx.doi.org/10.1016/j.diabet.2015.01.001>
- Veronelli A, Laneri M, Ranieri R, Koprivec D, Vardaro D, Paganelli M, Pontiroli, AE, 2004. White Blood Cells in Obesity and Diabetes: Effects of weight loss and normalization of glucose metabolism. *Diabetes Care*; 27(10): pp. 2501–2502. doi:10.2337/diacare.27.10.2501
- Vitaglione P, Donnarumma G, Napolitano A, Galvano F, Gallo A. 2007. Protocatechuic Acid Is the Major Human Metabolite of Cyanidin-Glucosides, *The Journal of Nutrition*, Volume 137, Issue 9: Pages 2043–2048,
- Walcher D, Kummel A, Kehrle B, Bach H, Grub M, DurstR, Hombach V, Marx N, 2006. LXR activation reduces pro-inflammatory cytokine expression in human CD4-positive lymphocytes. *Arterioscler.Thromb. Vasc. Biol*; Vol 26: pp. 1022-1028.
- Wang J, Qing-Wen Zhu, Xiao-Yan Cheng *et al.*, 2020. Clinical significance of neutrophil–lymphocyte ratio and monocyte–lymphocyte ratio in women with hyperglycemia. *Postgraduate Medicine*, DOI: 10.1080/00325481.2020.1764235

- World Health Organization, 2016. *Global Report on Diabetes*, World Health Organization, Switzerland.
- Wu Y, Chen Y, Yang X, et al. 2016. Neutrophil-to-lymphocyte ratio (NLR) and platelet-to-lymphocyte ratio (PLR) were associated with disease activity in patients with systemic lupus erythematosus. *Int Immunopharmacol*;36:94–99.
- WHO Mortality Database [online database]. Geneva: *World Health Organization*, diakses 12 Desember 2019 jam 13.00, http://apps.who.int/healthinfo/statistics/mortality/causeofdeath_query/
- Xia C, Rao X, Zhong J, 2017. Role of T Lymphocytes in Type 2 Diabetes and Diabetes-Associated Inflammation. *Journal of Diabetes Research*: 1–6.
- Young KA, Maturu A, Lorenzo C, Langefeld CD *et al.*, 2019. The triglyceride to high density lipoprotein cholesterol (TG/HDL-C) ratio as a predictor of insulin resistance, β -cell function, and diabetes in hispanics and african americans. *Journal of Diabetes and Its Complications*; 33(2):118-22.
- Yue S, Zhang J, Wu J, *et al.*, 2015. Use of the monocyte-to-lymphocyte ratio to predict diabetic retinopathy. *Int J Environ Res Public Health*.12(8):10009–10019.
- Zaccardi F, Webb DR., Yates T, Davies MJ, 2015. Pathophysiology of type 1 and type 2 diabetes mellitus: a 90-year perspective. *Postgraduate Medical Journal*; vol. 92: pp. 63–69. doi:10.1136/postgradmedj-2015-13328
- Zahedi-Amiri Z, Taravati A, Hejazian L B, 2018. Protective Effect of Rosa damascena Against Aluminum Chloride-Induced Oxidative Stress. *Biological Trace Element Research*. doi:10.1007/s12011-018-1348-4