

DAFTAR PUSTAKA

- An, J., Wang, Q., Yi, S., Liu, X., Jin, H., Xu, J., Wen, G., Zhu, J. & Tuo, B. 2022. The source of the fat significantly affects the results of high-fat diet intervention. *Scientific Reports*, 12(1): 1–11.
- Aprira. 2022. Penggunaan Ekstrak Buah Kecubung Sebagai Agen Eutanasia Mencit Putih (Mus Musculus). *Jurnal Pengelolaan Laboratorium Sains dan Teknologi*, 2(1): 28–34.
- Arneth, B. 2024. Mechanisms of Insulin Resistance in Patients with Obesity. *Endocrines*, 5(2): 153–165.
- Barchetta, I., Cimini, F.A., Dule, S. & Cavallo, M.G. 2022. Dipeptidyl Peptidase 4 (DPP4) as A Novel Adipokine: Role in Metabolism and Fat Homeostasis. *Biomedicines*, 10(9).
- Cao, S., Liu, M., Han, Y., Li, S., Zhu, X., Li, D., Shi, Y. & Liu, B. 2024. Effects of Saponins on Lipid Metabolism: The Gut-Liver Axis Plays a Key Role. *Nutrients*, 16(10): 1–20.
- Chakhtoura, M., Haber, R., Ghezzawi, M., Rhayem, C., Tcheroyan, R. & Mantzoros, C.S. 2023. Pharmacotherapy of obesity: an update on the available medications and drugs under investigation. *eClinicalMedicine*, 58. www.thelancet.com.
- Eli, A.P.N., Nurhikmawati, Irmayanti, Safei, I. & Syamsu, R.F. 2023. Hubungan Aktivitas Fisik dengan Kejadian Overweight pada Tenaga Kependidikan di Universitas Muslim Indonesia. *Fakumi Medical Journal: Jurnal Mahasiswa Kedokteran*, 2(12): 914–922.
- Elizalde-Romero, C.A., Leyva-López, N., Contreras-Angulo, L.A., Cabanillas Ponce de-León, R., Rodriguez-Anaya, L.Z., León-Félix, J., Heredia, J.B., Beltrán-Ontiveros, S.A. & Gutiérrez-Grijalva, E.P. 2024. Current Evidence of Natural Products against Overweight and Obesity: Molecular Targets and Mechanisms of Action. *Receptors*, 3(3): 362–379.
- Familianti, R.J., Sari, I. & Bastian. 2021. Perbedaan Kadar Trigliserida Pada Sampel Darah Segera Disentrifugasi Dan Sampel Darah Dibekukan Selama 20 Menit Sebelum Disentrifugasi. *Surabaya: The Journal of Muhamadiyah Medical Laboratory Technologist*, 2(4): 120–126.
- Fraga-Corral, M., Otero, P., Echave, J., Garcia-Oliveira, P., Carpena, M., Jarbou, A., Nuñez-Estevez, B., Simal-Gandara, J. & Prieto, M.A. 2021. By-Products of Agri-Food Industry as Tannin-Rich Sources: A Review of Tannins' Biological Activities and Their Potential for Valorization. *Foods*, 10(1): 1–22.
- Ghasemi, A., Jeddi, S. & Kashfi, K. 2021. THE LABORATORY RAT: AGE AND BODY WEIGHT MATTER. *EXCLI Journal*, 20: 1431–1445.
- Ginting, J.G. 2022. Metabolit Sekunder Ekstrak Etanol Daun Sukun [Artocarpus altilis(Parkinson) Fosberg] dan Potensinya Sebagai Obat. *Journal of Natural Sciences*, 3(3): 145–154. <http://mahesainstitute.web.id/ojs2/index.php/jonas>.
- Gobel, M., Halid, S.A., Sugiarto & Rugayah, N. 2022. Profil Asam Lemak, Rasio Asam Lemak Jenuh : Asam Lemak Tidak Jenuh Rantai Tunggal : Asam Lemak Tidak Jenuh Rantai Jamak Pada Nugget Ayam yang Diformulasikan Dengan Minyak Kedelai. *Jurnal Pengolahan Pangan*, 7(1): 26–32.

- Green, B.D., Irwin, N., Duffy, N.A., Gault, V.A., O'Harte, F.P.M. & Flatt, P.R. 2006. Inhibition of dipeptidyl peptidase-IV activity by metformin enhances the antidiabetic effects of glucagon-like peptide-1. *European Journal of Pharmacology*, 547(1–3): 192–199.
- Guo, X., Feng, H., Cai, L., Zheng, J. & Li, Y. 2024. DPP-IV as a potential candidate in anti-obesity and obesity-related diseases treatment. *Biomedicine and Pharmacotherapy*, 180(September): 117464. <https://doi.org/10.1016/j.biopha.2024.117464>.
- Gusti, N., Diantari, A., Yunita, D., Aurelia, M., Tutonugi, A., Tokan, T.H., Oktavianti, T.K., Dika, F., Riswanto, O. & Setyaningsih, D. 2023. Potensi Tanaman Sukun (*Artocarpus altilis*) Sebagai Agen Antiinflamasi dan Antidiabetes. , 36(2): 31–40.
- Halim, R., Danquah, M.K. & Webley, P.A. 2012. Extraction of Oil From Microalgae for Biodiesel Production: A review. *Biotechnology Advances*, 30(3): 709–732.
- Hall, J.E. 2016. *Guyton and Hall Textbook of Medical Physiology*. 13th ed. Philadelphia: Elsevier.
- Hasneli, Putri, Y.I., Putri, Y.H., Kasmiyetti & Safyanti. 2024. Pola Konsumsi Lemak Jenuh, Lemak Tak Jenuh dan Serat Pada Penderita Penyakit Jantung Koroner di RSUD Sungai Dareh. *Jurnal Sehat Mandiri*, 19: 333–346.
- Huang, P.K., Lin, S.R., Chang, C.H., Tsai, M.J., Lee, D.N. & Weng, C.F. 2019. Natural phenolic compounds potentiate hypoglycemia via inhibition of Dipeptidyl peptidase IV. *Scientific Reports*, 9(1).
- Jariah, A., Jafar, N., Bahar, B., Salam, A., Wahiduddin & Amiruddin, R. 2024. Effect of Breadfruit (*Artocarpus Altilis*) Leaf Extract on Blood Pressure in Obese Adults in Makassar, Indonesia. *Biomedical and Pharmacology Journal*, 17(1): 369–375.
- Junejo, J.A., Zaman, K., Ali, M. & Rudrapal, M. 2020. New flavonoid with antidiabetic and antioxidant potential from *tetrastigma angustifolia* (Roxb.) deb leaves. *Brazilian Journal of Pharmaceutical Sciences*, 56: 1–15.
- Karise, I., Bargut, T.C., del Sol, M., Aguila, M.B. & Mandarim-de-Lacerda, C.A. 2019. Metformin enhances mitochondrial biogenesis and thermogenesis in brown adipocytes of mice. *Biomedicine and Pharmacotherapy*, 111: 1156–1165.
- Katzung, B.G., Hall, M.K. & Trevor, A.J. 2019. *Katzung & Trevor's pharmacology : examination & board review*. 12th ed. McGraw-Hill Education.
- Kurniawati, I.F. & Sutoyo, S. 2021. Potesi Bunga Tanaman Sukun (*Artocarpus Altilis* [Park.1] Fosberg) Sebaai Bahan Antioksidan Alami. *Journal of Chemistry*, 10: 1–11.
- Kusumo, A.Z., Danuwarsa & Utami, M. 2023. Analysis of Fat and Saturated Fatty Acids on Boiled Corn at Center for Agricultural Postharvest Research and Development. *Indonesian Journal of Chemical Research*, 8(2): 18–27.
- Lamers, D., Famulla, S., Wronkowitz, N., Hartwig, S., Lehr, S., Ouwens, D.M., Eckardt, K., Kaufman, J.M., Ryden, M., Müller, S., Hanisch, F.G., Ruige, J., Arner, P., Sell, H. & Eckel, J. 2011. Dipeptidyl peptidase 4 is a novel adipokine potentially linking obesity to the metabolic syndrome. *Diabetes*, 60(7): 1917–1925.

- Magistri, P.M., Yaswir, R. & Alioes, Y. 2016. Pengaruh Pemberian Berbagai Olahan Telur terhadap Kadar Kolesterol Total Darah Mencit. *Jurnal Kesehatan Andalas*, 5(3): 534–539. <http://jurnal.fk.unand.ac.id>.
- Makrilakis, K. 2019. The role of dpp-4 inhibitors in the treatment algorithm of type 2 diabetes mellitus: When to select, what to expect. *International Journal of Environmental Research and Public Health*, 16(15).
- Mallick, R., Basak, S., Das, R.K., Banerjee, A., Paul, S., Pathak, S. & Duttaroy, A.K. 2024. Fatty Acids and their Proteins in Adipose Tissue Inflammation. *Cell Biochemistry and Biophysics*, 82(1): 35–51.
- Melati, F.D.P., Widiyanti, F.L. & Inayah. 2021. Asupan Lemak Jenuh dengan Kadar Kolesterol Low-Density Lipoprotein pada Kelompok Lanjut Usia. *Jurnal Nurisia*, 23(1): 44–51.
- Melyana, C.P., Rejeki, P.S., Mudjanarko, S.W., Herawati, L. & Al-Arif, M.A. 2021. Effect of High Fat Diet on Body Weight, Visceral Fat Weight, and PPAR γ Expressions on Visceral Fat in Mice. *Folia Medica Indonesiana*, 57(3): 186–191.
- Mongi, R.E., I Simbala, H.E. & de Queljoe, E. 2019. UJI AKTIVITAS PENURUNAN KADAR GULA DARAH EKSTRAK ETANOL DAUN PINANG YAKI (*Areca vestiaria*) TERHADAP TIKUS PUTIH JANTAN GALUR WISTAR (*Rattus norvegicus*) YANG DIINDUKSI ALOKSAN. *Pharmakon*, 8: 449–456.
- Nirwana, N.H.P., Sugiarto, A.T., Laili, I.N., Wulandari, P., Faizin, A.A.I. & Dzulkarnain, S.A. 2023. Peran Lipid Pada Reseptor X Hati (LXR). *Indonesian Chemistry and Application Journal*, 6(2): 1–8.
- Nurmawati, T. 2016. Hubungan Berat Badan dan Kadar Kolesterol Darah Tikus Putih (*Rattus Norvegicus*) setelah diberikan Diet Tinggi Lemak. *Jurnal Ners dan Kebidanan (Journal of Ners and Midwifery)*, 3(3): 202–206.
- Palupi, D.H.S., Retnoningrum, D.S., Iwo, M.I. & Soemardji, A.A. 2020. Leaf extract of *artocarpus altilis* [park.] fosberg has potency as antiinflammatory, antioxidant, and immunosuppressant. *Rasayan Journal of Chemistry*, 13(1): 636–646.
- Pechmann, L.M., Pinheiro, F.I., Andrade, V.F.C. & Moreira, C.A. 2024. The multiple actions of dipeptidyl peptidase 4 (DPP-4) and its pharmacological inhibition on bone metabolism: a review. *Diabetology and Metabolic Syndrome*, 16(1): 1–21.
- Pescador, N., Francisco, V., Vázquez, P., Esquinas, E.M., González-Páramos, C., Valdecantos, M.P., García-Martínez, I., Urrutia, A.A., Ruiz, L., Escalona-Garrido, C., Foretz, M., Viollet, B., Fernández-Moreno, M.Á., Calle-Pascual, A.L., Obregón, M.J., Aragonés, J. & Valverde, Á.M. 2021. Metformin reduces macrophage HIF1 α -dependent proinflammatory signaling to restore brown adipocyte function in vitro. *Redox Biology*, 48.
- Peuohaq, L.A., Jambormias, E. & Kesaulya, H. 2023. Karakteristik Morfologi Tanaman Sukun (*Artocarpus altilis* Forst) Di Kabupaten Seram Bagian Barat. *JURNAL PERTANIAN KEPULAUAN*, 7(2): 64–71.
- Pradigdo, S.F., Nugraheni, S.A. & Putri, R.N. 2023. Lifestyle As a Factor for Overweight in Adolescents. *Amerta Nutrition*, 7(2SP): 232–237.

- Praditasari, J.A. & Sumarmik, S. 2018. Asupan Lemak, Aktivitas Fisik dan Kegemukan Pada Remaja Putri di SMP Bina Insani Surabaya. *Media Gizi Indonesia*, 13(2): 117.
- Pramono, A., Ulfa Kesuma, S., Hikma Tazkiana, N. & Alma Yunita, R. 2011. *Pengaruh Rebusan Daun Sukun (Artocarpus altilis) terhadap Kadar Trigliserida, Kolesterol Total dan Low Density Lipoprotein (LDL) Serum Darah Tikus Putih (Rattus norvegicus) Effect of Leaf Stew Breadfruit (Artocarpus altilis) on Triglyceride, Total Cholesterol and LDL (Low Density Lipoprotein) Blood Serum White Rat (Rattus norvegicus)*.
- Prendergast, H., Tyo, C., Colbert, C., Kelley, M. & Pobe, R. 2022. Medical complications of obesity: heightened importance in a COVID era. *International Journal of Emergency Medicine*, 15(1): 1–7. <https://doi.org/10.1186/s12245-022-00431-7>.
- Putri, J.Y., Nastiti, K. & Hidayah, N. 2023. PENGARUH PELARUT ETANOL 70% DAN METANOL TERHADAP KADAR FLAVONOID TOTAL EKSTRAK DAUN SIRSAK (*Annona muricata* Linn). *Journal of Pharmaceutical Care and Sciences*, 3(2): 20–29. <https://ejurnal.unism.ac.id/index.php/jpcs>.
- Rajebi, O., Putri Sabrina, A., Nur Aeni, F., Ahda, A. & Sri Gunarti, N. 2023. Isolasi Jenis Asam Lemak Dari Bahan Alam : Artikel Review. *Jurnal Ilmiah Farmasi*, 3(2): 11–17.
- Rajeev, D. & MacIver, N.J. 2024. Metformin as a Therapeutic Agent for Obesity-Associated Immune Dysfunction. *Journal of Nutrition*, 154(8): 2534–2542.
- Riskedas. 2013. Badan Peneliti dan Pengembangan Kesehatan. https://repository.badankebijakan.kemkes.go.id/eprint/4467/1/Laporan_riskedas_2013_final.pdf.
- Riskedas. 2018. Badan Penelitian dan Pengembangan Kesehatan Kementerian RI tahun 2018. https://dinkes.babelprov.go.id/sites/default/files/dokumen/bank_data/20181228%20-%20Laporan%20Riskedas%202018%20Nasional-1.pdf.
- Rodríguez-Correa, E., González-Pérez, I., Clavel-Pérez, P.I., Contreras-Vargas, Y. & Carvajal, K. 2020. Biochemical and Nutritional Overview of Diet-induced Metabolic Syndrome Models in Rats: What is the Best Choice? *Nutrition and Diabetes*, 10(1).
- Rohm, T. V., Meier, D.T., Olefsky, J.M. & Donath, M.Y. 2022. Inflammation in obesity, diabetes, and related disorders. *Immunity*, 55(1): 31–55.
- Royani, S., Sugianto & Majid, S.F. 2024. *Uji Kualitatif Senyawa Metabolit Sekunder Ekstrak Etanol 70% Daun Sukun (Artocarpus altilis) Qualitative Test of Secondary Metabolite Compounds in Ethanol 70% Extract of Breadfruit (Artocarpus altilis) Leaves*.
- Sandoval, V., Sanz-Lamora, H., Arias, G., Marrero, P.F., Haro, D. & Relat, J. 2020. Metabolic impact of flavonoids consumption in obesity: From central to peripheral. *Nutrients*, 12(8): 1–55.
- Santosa, B. 2020. *TEKNIK ELISA Metode Elisa Untuk Pengukuran Protein Metallothionein Pada Daun Padi Ir Bagendit*. 1st ed. B. Santosa, ed. Semarang: Unimus Press.
- Sari, H.P., Sulistyning, A.R., Wicaksari, S.A., Putri, W.P. & Widyaningtyas, E. 2024. Hubungan Pola Konsumsi Makanan Cepat Saji, Minuman Berpemanis, dan Asupan Serat dengan Kolesterol Darah pada Dewasa Muda. *Amerta Nutrition*, 8.

- Sarwono, A.E. & Handayani, A. 2021. *Metode Kuantitatif Penulis*. 1st ed. Surakarta: UNISRI Press.
- Shehadeh, M.B., Suaifan, G.A.R.Y. & Abu-Odeh, A.M. 2021. Plants Secondary Metabolites as Blood Glucose-Lowering Molecules. *Molecules*, 26(14): 1–46.
- Simanjuntak, H.A. & Gurning, K. 2020. The Effect of Infusion Breadfruit Leaves (*Artocarpus Altilis* (Parkinson) Fosberg) On Blood Glucose Levels in Male Mice (*Mus Musculus*) Diabetes Mellitus Type 2. *Asian Journal of Pharmaceutical Research and Development*, 8(6): 1–04. <http://ajprd.comhttp://dx.doi.org/10.22270/ajprd.v8i6.852>.
- Sindi, C., Fitriyasti, B., Mahatma, G. & Salmi, S. 2022. Penurunan Kadar Glukosa Darah Mencit (*Mus Musculus*) yang Diinduksi Hiperglikemia oleh Ekstrak Etanol Daun Sirsak (*Annona muricata* L.). *EKOTONIA: Jurnal Penelitian Biologi, Botani, Zoologi dan Mikrobiologi*, 7(1): 23–30.
- Siregar, F.A. & Makmur, T. 2020. Metabolisme Lipid Dalam Tubuh. *Jurnal Inovasi Kesehatan Masyarakat*, 1(2): 60–66. <http://ejournal.delihusada.ac.id/index.php/JIKM>.
- Sombra, L.R. & Anastasopoulou, C. 2024. Terapi Farmakologis untuk Obesitas. *StatPearls*.
- Srivastava, P., Wal, P., Chaturvedi, V., Wal, A. & Srivastava, A. 2022. Beyond Blood Sugar Control: A Comprehensive Review Of DPP-4 Inhibitors and Their Expanding Landscape. *Journal of Population Therapeutics and Clinical Pharmacology*, 29(4): 1273–1303.
- Subhaktiyasa, P.G. 2024. Menentukan Populasi dan Sampel: Pendekatan Metodologi Penelitian Kuantitatif dan Kualitatif. *Jurnal Ilmiah Profesi Pendidikan*, 9(4): 2721–2731. <https://jipp.unram.ac.id/index.php/jipp/article/view/2657>.
- Sumadji, A.R., Ganjari, L.E., Nugroho, C.A. & Endang Purwaningsih. 2022. Variasi Morfologi Sukun *Artocarpus altilis* (Park.) Forsberg Di Kota Bekasi. *Jurnal Biologi dan Pembelajarannya (JB&P)*, 9(2): 76–85.
- Sunani, S. & Hendriani, R. 2023. *Indonesian Journal of Biological Pharmacy Review Article: Classification and Pharmacological Activities of Bioactive Tannins*. <https://jurnal.unpad.ac.id/ijbp>.
- Syahrizal, H. & Jailani, M.S. 2023. Jenis-Jenis Penelitian Dalam Penelitian Kuantitatif dan Kualitatif. *Jurnal Pendidikan, Sosial & Humaniora*, 1(1): 13–23.
- Terreros, G., Munoz, F., Magdalena, M., Soto-Donoso, M., Torres, N. & D'Espessailles, A. 2025. Adipose Tissue Dysfunction Induced by High-Fat Diet Consumption Is Associated with Higher Otoacoustic Emissions Threshold in Mice C57BL/6. *Nutrients*, 17(11): 1–14.
- Wahyudin, Massi, M.N., Natzir, R., Alam, G. & Bukhari, A.S. 2017. Effect of sukun leaf extract [*Artocarpus altilis* (Park.) fosberg] on insulin resistance in obese rats (*Rattus norvegicus*): A study of free fatty acid (FFA) levels. *Pakistan Journal of Nutrition*, 16(7): 521–524.
- Wahyudin, Natzir, R., Alam, G. & Stevani, H. 2017. Effects Analysis Leaf Extract Breadfruit (*Artocarpus altilis* (Park.) Fosberg) Against Insulin Resistance in Rat (*Rattus norvegicus*) Obese Study on Cell Morphology of Langerhans Island. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, 31(1): 313–318. <http://gssrr.org/index.php?journal=JournalOfBasicAndApplied>.

- Wahyudin, Nuru, H., Stevani, H. & Arafah, S. 2022. Effect Of Extract Breadfruit Leaf (*Artocarpus altilis* (Park.) Fosberg) Toward Tumor Necrosis Factor (TNF- α) In Obese Rat (*Rattus norvegicus*) With Insulin Resistance. *Media Farmasi*, 18(1): 104.
- Whalen, K. 2019. *Lippincott Illustrated Reviews: Pharmacology South Asian Edition*. South Asian. S. Sharma & T. Velpandian, eds. New Delhi: Wolters Kluwer.
- Yang, J., Campitelli, J., Hu, G., Lin, Y. & Xue, C. 2007. Increase in DPP-IV in the intestine, liver and kidney of the rat treated with high fat diet and streptozotocin. *Life Sciences*, 81(4): 272–279.
- Yao, P. & Liu, Y. 2023. Terpenoids: Natural Compounds for Non-Alcoholic Fatty Liver Disease (NAFLD) Therapy. *Molecules*, 28(1): 1–37.
- Yerevanian, A. & Soukas, A.A. 2019. Metformin: Mechanisms in Human Obesity and Weight Loss. *Current Obesity Reports*, 8(2): 156–164.
- Zhang, M., Wang, H., Li, X., Shu, S., Piao, J., Yue, X., Zhao, S., Li, M., Jin, X., Nan, Y. & Cheng, X.W. 2025. Increased Dipeptidyl Peptidase-4 Promotes Adipose Inflammation and Dysfunction in Mice Under Chronic Stress. *The FASEB Journal*, 39(15): 1–16.
- Ziqubu, K., Mazibuko-Mbeje, S.E., Mthembu, S.X.H., Mabhida, S.E., Jack, B.U., Nyambuya, T.M., Nkambule, B.B., Basson, A.K., Tiano, L. & Dlodla, P. V. 2023. Anti-Obesity Effects of Metformin: A Scoping Review Evaluating the Feasibility of Brown Adipose Tissue as a Therapeutic Target. *International Journal of Molecular Sciences*, 24(3).

