DAFTAR PUSTAKA

Abdassah, M. (2017) 'Nanopartikel dengan Gelasi Ionik', *Farmaka*, 15(1), pp. 45–52.

Abdelmoaty, M. A., Ibrahim, M. A. and Ahmed, N. S. (2010) 'Confirmatory Studies on the Antioxidant and Antidiabetic Effect of Quercetin in Rats', *Indian Journal of Clinical Biochemistry*, 25(2), pp. 188–192.

Abdulkadir, A. A. A. and Thanoon, I. A.-J. (2012) 'Comparative Effects of Glibenclamide and Metformin on C-Reactive Protein and Oxidant/Antioxidant Status in Patients with Type II Diabetes Mellitus', *Sultan Qaboos University Medical Journal*, 12(February), pp. 55–61.

Adha, S. A., Febriyanti, R. M. and Milanda, T. (2019) 'Review : Potensi Sambiloto Sebagai Obat Antidiabetes Berbasis Herbal a Review : Potential of Sambiloto As Herbal Based Antidiabetic Medicine', *Medical Sains*, 4(1), pp. 7–12.

Aini, Q., Sabri, M. and Samingan (2016) 'Perbandingan Dosis Ekstrak Daun Kelor (Moringa Oleifera) Dalam Memperbaiki Nekrosa Sel Beta Pankreas Pada Tikus Hiperglikemik di Laboratorium', in *Prosiding Biotik*, pp. 189–195.

Akhoond Zardini, A., Mohebbi, M. and Farhoosh, R. (2018) 'Production and characterization of nanostructured lipid carriers and solid lipid nanoparticles containing lycopene for food fortification', *Journal of Food Science and Technology*, 55(1), pp. 287–298. doi: 10.1007/s13197-017-2937-5.

Andarina, R. and Djauhari, T. (2017) 'Antioksidan dalam dermatologi', *Jurnal Kedokteran Dan Kesehatan*, 4(1), pp. 39–48.

Andrunganyan, R. R. (2015) 'Aktivitas Ekstrak Etanol Daun Gaharu (Aquilaria microcarpa Baill.) terhadap Tes Toleransi Glukosa Oral, Glikogen Hati, dan Histopatologi Pankreas Tikus Putih yang Diinduksi Aloksan'. Banjarbaru: Universitas Lambung Mangkurat.

Arifin, R. (2014) *Efek Hepatoprotektor Ekstrak Etanol Lidah Buaya (Aloe vera) Terhadap Aktivitas Enzim Alanin Aminotransferase (ALT) dalam Plasma*

Rattus norvegicus Jantan Galur Wistar yang diinduksi Parasetamol. Universitas Tanjungpura.

Aulia (2021) *Efek pemberian ekstrak daun sambiloto (andrographis paniculata) terhadap penurunan glukosa darah pada tikus putih (rattus norvegicus) yang diinduksi streptozotocin*. Universitas Lampung.

Avadi, M. R., Mir, A. and Sadeghi, M. (2010) 'Preparation and characterization of insulin nanoparticles using chitosan and Arabic gum with ionic gelation method', *Nanomedicine: Nanotechnology, Biology, and Medicine*, 6(1), pp. 58–63. doi: 10.1016/j.nano.2009.04.007.

Banjarnahor, E. and Wangko, S. (2012) 'Sel Beta Pankreas Sintesis Dan Sekresi Insulin', *JURNAL BIOMEDIK*, 4, p. 3. doi: 10.35790/jbm.4.3.2012.795.

Baqarizky, F. (2015) *Gambaran Histopatologik Pankreas, Hepar dan Ginjal Tikus Diabetes Mellitus Yang Diinduksi Streptozotocin Dengan Pewarnaan Hematoksilin Eosin*. UIN Syarif Hidayatullah Jakarta.

Bharti, S. K., Krishnan, S. and Kumar, A. (2018) 'Antidiabetic phytoconstituents and their mode of action on metabolic pathways', *Journal Therapeutic Advances in Endocrinology and Metabolism*, 9(3), pp. 81–100. doi: 10.1177/https.

Bilia, A. R., Isacchi, B. and Righeschi, C. (2014) 'Flavonoids Loaded in Nanocarriers: An Opportunity to Increase Oral Bioavailability and Bioefficacy', *Food and Nutrition Sciences*, pp. 1212–1227.

Bolhassani, A., Javanzad, S. and Saleh, T. (2014) 'Polymeric Nanoparticles Potent Vectors For Vaccine Delivery Targeting Cancer And Infectious Diseases. Human Vaccnes & Immunoterapeutics.', *Human vaccines & immunotherapeutics*, 5515(10(2)), pp. 321–332. doi: 10.4161/hv.26796.

Chandra, E. K. (2019) *Pengaruh pemberian ekstrak teripang emas (stichopus hermanni) terhadap histopatologi jumlah pulau langerhans pankreas tikus putih galur wistar diabetes yang diinduksi dengan streptozotocin*. Universitas Hang Tuah.

Chaudhury, A., Duvoor, C. and Dendi, V. S. R. (2017) 'Clinical Review of Antidiabetic Drugs : Implications for Type 2 Diabetes Mellitus Management', *Frontiers in endocrinology*, 8(January). doi:

10.3389/fendo.2017.00006.

Chittasupho, C. and Athikomkulchai, S. (2018) 'Nanoparticles of Combretum quadrangulare leaf extract induce cytotoxicity, apoptosis, cell cycle arrest and anti-migration in lung cancer cells', *Journal of Drug Delivery Science and Technology*, 45(March), pp. 378–387. Available at: https://doi.org/10.1016/j.jddst.2018.04.003.

Coskun, O., Kanter, M. and Korkmaz, A. (2005) 'Quercetin, a flavonoid antioxidant, prevents and protects streptozotocin-induced oxidative stress and β-cell damage in rat pancreas', *Pharmacological research*, 51(2), pp. 117–123. doi: 10.1016/j.phrs.2004.06.002.

Couvreur, P. (2012) 'Nanoparticles in drug delivery : Past , present and future', *Advanced Drug Delivery Reviews*, pp. 4–6. doi: 10.1016/j.addr.2012.04.010.

Decroli, E. (2019) *Diabetes Melitus Tipe 2*. Edited by A. Kam, Y. P. Efendi, and G. Prima. Padang: Pusat Penerbitan Bagian Ilmu Penyakit Dalam Fakultas Kedokteran Universitas Andalas.

Dewi, N. P., Hasnawati and Tandi, J. (2021) 'Uji Efek Antidiabetes Ekstrak Etanol Daun Suruhan pada Tikus Putih Jantan yang Diinduksi Streptozotocin', *Farmakologika: Jurnal Farmasi*, (18(1)), pp. 56–65.

Dharma, I. G. B. S., Berata, I. K. and Samsuri (2015) 'Studi Histopatologi Pankreas Tikus Putih (Rattus Novergicus) yang Diberi Deksametason dan Suplementasi Vitamin E', *Indonesia Medicus Veterinus*, 4(3), pp. 257–266.

DiPiro, C. V., Wells, B. G. and Schwinghammer, T. L. (2015) *Pharmacotherapy Handbook Ninth Edition*. McGraw-Hill Education.

DiPiro, J. T., Schwinghammer, T. L. and Ellingrod, V. L. (2020) *Pharmacotherapy: A Pathophysiologic Approach, Eleventh Edition*. 11th edn. New York: McGraw Hill.

Dirjen, P. O. M. (2013) *Farmakope Indonesia Edisi V*. V. Jakarta: Kementerian Kesehatan RI.

Dolen, J., Rupnik, M. S. and Stozer, A. (2015) 'Structural similarities and differences between the human and the mouse pancreas', *Islets*, 7(1)(January), pp. 2–9. doi: 10.1080/19382014.2015.1024405.

Dwielma C. Nubatonis, Nemay Anggadewi Ndaong, Y. N. S. (2015) 'Pengaruh

Pemberian Ekstrak Etanol Daun Sambiloto(Andrographis paniculata Nees) Terhadap Histopatologi Pankreas Mencit (Mus musculus) Diabetes Melitus (DM) Tipe I', *Jurnal Kajian Veteriner*, 3(Dm), pp. 1–4. doi: 10.35508/jkv.v3i1.1028.

Eleazu, C. O., Chukwuma, S. and Essien, U. N. (2013) 'Review of the mechanism of cell death resulting from streptozotocin challenge in experimental animals , its practical use and potential risk to humans', *Journal of diabetes & metabolic disorders*, 12, pp. 1–7. doi: 10.1186/2251-6581-12-60.

Erwin, Etriwati and Muttaqien (2013) 'Ekspresi Insulin pada Pankreas Mencit (Mus musculus) yang Diinduksi Dengan Streptozotocin Berulang', *Jurnal Kedokteran Hewan-Indonesian Journal of Veterinary Sciences*, 7(2), pp. 97–100.

Fan, W., Yan, W. and Xu, Z. (2012) 'Formation Mechanism of Monodisperse, Low Molecular Weight Chitosan Nanoparticles By Ionic Gelation Technique', *Colloids and Surfaces B: Biointerfaces*, 90, pp. 21–27. doi: 10.1016/j.colsurfb.2011.09.042.

Firdaus, Rimbawan and Marliyati, S. A. (2016) 'Model tikus diabetes yang diinduksi streptozotocin-sukrosa untuk pendekatan penelitian diabetes melitus gestasional', *Media Kesehatan Masyarakat Indonesia*, 12(1), pp. 29–34.

Fitria, L. and Sarto, M. (2014) 'Profil Hematologi Tikus (Rattus norvegicus Berkenhout, 1769) Galur Wistar Jantan dan Betina Umur 4, 6, dan 8 Minggu', *Biogenesis: Jurnal Ilmiah Biologi*, 2(2), pp. 94–100. doi: 10.24252/bio.v2i2.473.

Fitriani, N. and Layal, K. (2017) 'Aktivitas Antidiabetes Kombinasi Ekstrak Etanol Daun Andrographis Paniculata dan Vernonia Amygdalina Pendahuluan Diabetes melitus merupakan penyakit', *Syifa' MEDIKA*, 7(2), pp. 104–110. doi: 10.32502/sm.v7i2.1371.

Furman, B. L. (2015) 'Streptozotocin-Induced Diabetic Models in Mice and Rats', *Current protocols in pharmacology*, 70(1), pp. 1–20. doi: 10.1002/0471141755.ph0547s70.

Geetha and Alexander, C. P. (2017) 'Antibacterial activity of Andrographis

paniculata extracts', *The Pharma Innovation Journal*, 6(5), pp. 1–4.

Goud, B. J., Dwarakanath.V and Swamy, B. K. C. (2015) 'Streptozotocin - A Diabetogenic Agent in Animal Models', *International Journal of Pharmacy and Pharmaceutical Research*, 3(1), pp. 253–269.

Gunawan, Gan, S. and Setiabudy (2012) *Insulin dan Antidiabetik Oral*. 5th edn. Jakarta: Badan Penerbit FKUI.

Hamidatun, Mandasari, O. K. and Rosdiana, I. (2014) 'Pengaruh Cuka Salak Terhadap Penurunan Glukosa Darah dan Histopatologi Pankreas Tikus Diabetes', *Pekan Ilmiah Mahasiswa Nasional Program Kreativitas Mahasiswa-Penelitian 2014*, Indonesian.

Hasanah, U. (2016) *Profil Sel Beta Pankreas pada Tikus Diabetes yang Diberi Umbi Kimpul (Xanthosoma sagittifolia (L.) Schott.).* Universitas Sebelas Maret.

Husain, F. and Wahidah, B. F. (2020) 'Medicine from Nature : Identification of Medicinal Plants Used by Belian (Sasakese Indigenous Healer) in Traditional Medicine in Lombok, West Nusa Tenggara, Indonesia', in *AIP Conference Proceedings*. doi: 10.1063/1.5061896 Published.

Husna, F., Suyatna, F. D. and Arozal, W. (2019a) 'Model Hewan Coba pada Penelitian Diabetes', *Pharmaceutical Sciences and Research*, 6(3), pp. 131–141.

Husna, F., Suyatna, F. D. and Arozal, W. (2019b) 'Model Hewan Coba pada Penelitian Diabetes', *Pharmaceutical Sciences & Research*, 6(3)(December), p. 1. doi: 10.7454/psr.v6i3.4531.

International Diabetes Federation (2021) *International Diabetes Federation (IDF) Diabetes Atlas*. 10th edn.

Irianto, H. E. and Muljanah, I. (2011) 'Proses dan Aplikasi Nanopartikel Kitosan Sebagai Penghantar Obat', *Squalen*, 6(1), pp. 1–8.

Jeevanandam, J., Barhoum, A. and Chan, Y. S. (2018) 'Review on nanoparticles and nanostructured materials: History, sources, toxicity and regulations', *Beilstein Journal of Nanotechnology*, 9(1), pp. 1050–1074. doi: 10.3762/bjnano.9.98.

Jing, X., Deng, L. and Gao, B. (2013) 'A novel polyethylene glycol mediated lipid

nanoemulsion as drug delivery carrier for paclitaxel', *Nanomedicine: Nanotechnology, Biology, and Medicine*, 10(2), pp. 371–380. doi: 10.1016/j.nano.2013.07.018.

Jusman, S. W. and Halim, A. (2009) 'Oxidative Stress in Liver Tissue of Rat Induced by Chronic Systemic Hypoxia', *Makara Journal of Health Research*, 13(1), pp. 34–38. doi: 10.7454/msk.v13i1.346.

Jusuf, A. A. (2009) *Histoteknik Dasar, Bagian Histologi Fakultas Kedokteran*. Jakarta: Universitas Indonesia.

Katzung, B. G. (2018) *Basic & Clinical Pharmacology 14th Edition*. 14th edn. New York, NY, USA: McGraw-Hill Education.

Katzung, B. G., Masters, S. B. and Trevor, A. J. (2012) *Basic & Clinical Pharmacology 12th Edition*. New York, NY, USA: McGraw-Hill Education.

Kementerian Kesehatan Republik Indonesia (2013) *Peraturan Menteri Kesehatan Republik Indonesia Nomor 88 Tahun 2013 Tentang Rencana Induk Pengembangan Bahan Baku Obat Tradisional*. Indonesia.

Kementerian Kesehatan Republik Indonesia (2018) *Hasil Utama RISKESDAS 2018*. Jakarta.

Kesarwani, K. and Gupta, R. (2013) 'Bioavailability enhancers of herbal origin : A n overview', *Asian Pacific Journal of Tropical Biomedicine*, 3(4), pp. 253–266. doi: 10.1016/S2221-1691(13)60060-X.

Kowal, P., Chatterji, S. and Naidoo, N. (2012) 'Data resource profile: The world health organization study on global ageing and adult health (SAGE)', *International Journal of Epidemiology*, 41(6), pp. 1639–1649. doi: 10.1093/ije/dys210.

Kunharjito, W. A. C., Avesina, M. and Anggriyawanti, D. P. (2018) 'Pemanfaatan Daun Kelor (Moringa oleifera) Terhadap Pemulihan Struktur Pankreas Mencit Diabetik', *BIOTROPIC The Journal of Tropical biology*, 2(2), pp. 85–92.

Kurniasari, D. and Atun, S. (2017) 'Pembuatan dan karakterisasi nanopartikel ekstrak etanol temu kunci (boesenbergia pandurata) pada berbagai variasi komposisi kitosan', *Jurnal Sains Dasar*, 6(1), pp. 31–35.

Mardiyanto, Herlina, N. A. F. and Rahmi, U. (2019) 'Formulasi dan Evaluasi Sediaan Submikro Partikel Gelasi-Ionik Pembawa Ekstrak Daun Pluchea indica sebagai Antibakteri pada Kulit Tikus Putih Jantan Galur Wistart', *Jurnal Sains Farmasi & Klinis*, pp. 171–179. doi: 10.25077/jsfk.6.2.171-179.2019L.

Martien, R., Adhyatmika and Irianto, I. D. K. (2012) 'Perkembangan Teknologi Nanopartikel dalam Sistem Penghantaran Obat', *Majalah Farmaseutik*, 8(1), pp. 133–144.

Masjedia, F., Golb, A. and Dabiric, S. (2013) 'Preventive effect of garlic (Allium sativum L.) on serum biochemical factors and histopathology of pancreas and liver in streptozotocin-induced diabetic rats', *Iranian journal of pharmaceutical research: IJPR*, 12(October 2012), pp. 325–338.

Meloh, M. L., Pandelaki, K. and Sugeng, C. (2015) 'Hubungan Kadar Gula Darah Tidak Terkontrol dan Lama Menderita Diabetes Melitus dengan Fungsi Kognitif pada Subyek Diabetes Melitus Tipe 2', *e-CliniC*, 3(April), p. 1. doi: 10.35790/ecl.v3i1.6837.

Mescher, A. L. (2016) *Histologi Dasar Junqueira Teks & Atlas edisi 12*. 12th edn. Jakarta: Buku Kedokteran: EGC.

Motiei, M., Kashanian, S. and Lucia, L. A. (2017) 'Intrinsic parameters for the synthesis and tuned properties of amphiphilic chitosan drug delivery nanocarriers', *Journal of Controlled Release*, 260(May), pp. 213–225. doi: 10.1016/j.jconrel.2017.06.010.

Mühlemann, M. (2018) *Intestinal stem cells and the Na + -D-Glucose Transporter SGLT1 : potential targets regarding future therapeutic strategies for diabetes*. Universität Würzburg.

Mutiyani, M., Soeatmadji, D. W. and Sunindya, B. R. (2014) 'Efek Diet Tinggi Karbohidrat dan Diet Tinggi Lemak Terhadap Kadar Glukosa Darah Dan Kepadatan Sel Beta Pankreas Pada Tikus Wistar (Effect Of High Carbohydrate Diet And High Fat Diet On Blood Glucose And Beta Cell Pancreas Density In Wistar Rats)', *Indonesian Journal of Human Nutrition*, 1(2), pp. 106–113.

Nagalakshmi, K., Sujatha, S. and Alwin, D. (2017) 'DDA loaded PCL

nanoparticles enhances the oral bioavailability of DDA in diabetes-induced experimental rats', *International Journal of Pharmacy and Pharmaceutical Sciences*, 9(4), pp. 4–8.

Nelson, D. L. and Cox, M. M. (2017) *Lehninger Principles of Biochemistry*. fourth edi. New York: Freeman and Company.

Oche, O., Sani, I. and Chilaka, N. G. (2014) 'Pancreatic islet regeneration and some liver biochemical parameters of leaf extracts of Vitex doniana in normal and streptozotocin–induced diabetic albino rats', *Asian Pacific Journal of Tropical Biomedicine*, 4(2), pp. 124–130. doi: 10.1016/S2221-1691(14)60220-3.

Ogbru, Williams and Marks, J. W. (2015) *Insulin: Drug Facts, Side Effects and Dosing*. Available at: http://www.medicinenet.com/insulin/article.html (Accessed: 1 January 2021).

Otto, G. M. and Franklin, C. L. (2015) *Chapter 4-biology and diseases of rats*. Laboratory animal medicine. doi: 10.1016/B978-0-12-409527-4.00004-3.

Panchal, S. K., Poudyal, H. and Iyer, A. (2011) 'High-carbohydrate , High-fat Diet – induced Metabolic Syndrome and Cardiovascular Remodeling in Rats', *Journal of cardiovascular pharmacology*, 57(5), pp. 611–624.

Panche, A. N., Diwan, A. D. and Chandra, S. R. (2016) 'Flavonoid: an overview', *Journal of nutritional science*, p. 5. doi: 10.1017/jns.2016.41.

PERKENI (2011) 'Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 di Indonesia'. Jakarta: PERKENI. doi: 10.1017/CBO9781107415324.004.

Pogaga, E., Yamlean, P. V. Y. and Lebang, J. S. (2020) 'Formulasi dan Uji Aktivitas Antioksidan Krim Ekstrak Etanol Daun Murbei (Morus alba L.) Menggunakan Metode DPPH (1,1-Diphenyl-2-Picrylhydrazyl)', *Pharmacon*, 9 (3), pp. 349–356.

Prameswari, O. M. and Widjanarko, S. B. (2014) 'Uji Efek Air Daun Pandan Wangi Terhadap Penurunan Kadar Glukosa Darah dan Histopatologi Tikus Diabetes Mellitus', *Jurnal Pangan dan Agroindustri*, 2(2), pp. 16–27.

Prasetia, T. (2016) 'Pola Komplikasi Sistemik Pada Pasien Diabetes Melitus Tipe 2 Di Rumah Sakit Pertamina Bintang Amin Lampung Periode 1 Januari - 31 Desember 2015', *Jurnal Medika Malahayati*, 3(1), pp. 55–60.

Prasetyo, A., Denashurya, T. G. and Putri, W. S. (2016) 'Perbandingan Efek Hipoglikemik Infusa Daun Kembang Bulan (Tithonia diversifolia (Hamsley) A. Gray) dan Metformin pada Tikus yang Diinduksi Aloksan', *Cermin Dunia Kedokteran*, 43(2), pp. 91–94.

Prayoga, E. R. K. (2020) 'Efek Sambiloto Terhadap Glukosa Darah dan Gambaran Histologi Pankreas Tikus (Rattus norvegicus) Diabetes', *Java Health Jounal*, 4(2). doi: 10.1210/jhj.v4i2.264.

Preet, R., Chakraborty, B. and Siddharth, S. (2014) 'Synthesis and biological evaluation of andrographolide analogues as anti-cancer agents', *European Journal of Medicinal Chemistry*, 85, pp. 95–106. doi: 10.1016/j.ejmech.2014.07.088.

Pridgen, E. M., Alexis, F. and Farokhzad, O. C. (2015) 'Polymeric nanoparticle drug delivery technologies for oral delivery applications', *Expert opinion on drug delivery*, 12(9), pp. 1459–1473. doi: 10.1517/17425247.2015.1018175.

Putra, F. D., Sidharta, B. B. R. and Aida, Y. (2014) 'Aktivitas Antidiabetes Ekstrak Daun Wani (Mangifera caesia) pada Mencit yang Diinduksi Streptozotocin', *Jurnal Teknobiologi*, (2004), pp. 1–16.

Putra, R. J. S., Achmad, A. and P, H. R. (2017) 'Kejadian Efek Samping Potensial Terapi Obat Anti Diabetes Pasien Diabetes Melitus Berdasarkan Algoritma Naranjo', *Pharmaceutical Journal of Indonesia*, 2(2), pp. 45–50.

Rahmawanty, D., Anwar, E. and Bahtiar, A. (2014) 'Formulasi Gel Menggunakan Ikan Haruan (Channa striatus) Sebagai Penyembuh Luka', *Media Farmasi*, 11(1), pp. 29–40.

Rahmawati, N. F. and Darah, K. G. (2021) 'Aktivitas Antihiperglikemik Ekstrak Etanol Daun Jati (Tectona grandis L.) pada Tikus yang Diinduksi Streptozotosin', *Jurnal Farmasi Sains dan Praktis*, pp. 220–227.

Rampino, A., Borgogna, M. and Blasi, P. (2013) 'Chitosan Nanoparticles : Preparation, Size Evolution and Stability', *International Journal of Pharmaceutics*, 455(1–2), pp. 219–228. doi: 10.1016/j.ijpharm.2013.07.034.

Ratnani, R. D., Hidrotropi, E. and Hartati, I. (2012) 'Potensi Andrographolide dari Sambiloto (Andrographis Paniculata Ness) Melalui Proses Ekstraksi Hidrotropi', *Jurnal Ilmiah MOMENTUM*, 8(1), pp. 6–10. doi:

10.36499/jim.v8i1.279.

Rizki, M., S.M, T. R. and Damanik, B. (2015) 'Uji Histopatologi Organ Ren, Insang, Ginjal, Intestinum dan Hepar Ikan Mas (Cyprinus caprio)', *Torani Journal of Fisheries and Marine Science*, pp. 1–14.

Saputra, N. T., Suartha, I. N. and Dharmayudha, A. A. G. O. (2018) 'Agen Diabetagonik Streptozotocin untuk Membuat Tikus Putih Jantan Diabetes Mellitus', *Buletin Veteriner Udayana*, 10(2), pp. 116–121. doi: 10.24843/bulvet.2018.v10.i02.p02.

Sari, R., Rahayyu, A. M. and Paramanandana, A. (2020) 'Pengaruh Jumlah Polimer terhadap Karakteristik Fisik dan Pelepasan Nanopartikel Fraksi Diterpen Lakton Sambiloto - Kitosan', *Jurnal Sains Farmasi & Klinis*, 7(2), pp. 99–106. doi: 10.25077/jsfk.7.2.99-106.2020.

Sharma, S., Sharma, Y. P. and Bhardwaj, C. (2018) 'HPLC quantification of andrographolide in different parts of Andrographis paniculata (Burm . f .) Wall . ex Nees', *Journal of Pharmacognosy and Phytochemistry*, 7(3), pp. 168–171.

Sheau-fang, Lin, R. C. Y. and Laybutt, D. R. (2010) 'Chronic high-fat diet in fathers programs β-cell dysfunction in female rat offspring', *Nature*, 467(7318), pp. 963–966. Available at: http://dx.doi.org/10.1038/nature09491.

Simanjuntak, E. and Zulham (2020) 'Superoksida Dismutase (SOD) dan Radikal Bebas', *Jurnal Keperawatan dan Fisioterapi (JKF)*, 2(2).

Sulistyorini, R., Johan, A. and Djamiatun, K. (2015) 'Pengaruh Ekstrak Etanol Daun Kelor (Moringa oleifera) pada Ekspresi Insulin dan Insulitis Tikus Diabetes Melitus', *Majalah Kedokteran Bandung*, 47(2), pp. 69–76. doi: 10.15395/mkb.v47n2.456.

Suvarna, S. K., Layton, C. and Bancroft, J. D. (2019) *Bancroft's theory and practice of histological techniques, 9th edn E-Book*. Elsevier Health Sciences.

Szkudelski, T. (2001) 'The Mechanism of Alloxan and Streptozotocin Action in B Cells of the Rat Pancreas', *Physiological research*, 50(6), pp. 536–546.

Tandi, J., As, S. and Natzir, R. (2016) 'Test of Ethanolextract Red Gedi Leaves

(Albelmoschus Manihot.(L.) Medik) in White Rat (Rattus Norvegicus) Type 2 Diabetes Mellitus', *International Journal Of Sciences*, 30 (4), pp. 84–94.

Tandi, J., Rizky, M. and Mariani, R. (2017) 'Uji Efek Ekstrak Etanol Daun Sukun (Artocarpus altilis (Parkinson Ex FA Zorn) Terhadap Penurunan Kadar Glukosa Darah, Kolesterol Total dan Gambaran Histopatologi Pankreas Tikus Putih Jantan (Rattus norvegicus) Hiperkolesterolemia-Diabetes', *Jurnal Sains dan kesehatan*, 1(8), pp. 384–396. doi: 10.25026/jsk.v1i8.73.

Tapa, F. La, Suryanto, E. and Momuat, L. I. (2016) 'Biosintesis Nanopartikel Perak Menggunakan Ekstrak Empelur Batang Sagu Baruk (Arenga microcarpha) dan Aktivitas Antioksidannya', *Chemistry Progress*, 9(1), pp. 8–13.

Triyono (2016) 'Aktivitas Ekstrak Etanolik Daun Kangkung Darat (Ipomoea reptans Poir.) Terstandar Sebagai Antihiperglikemia Terhadap Kadar HbA1c Dan Kadar Alt Pada Tikus Jantan Galur Wistar Yang Diinduksi Streptozotosin'. Yogyakarta: Universitas Islam Indonesia.

Vikash, Sakshi and Upadhyay, S. (2019) 'Anatomy And Histology Of The Pancreas: A Review Article', *World Journal of Pharmaceutical and Medical Research*, 5(10), pp. 52–54.

Wang, J. J., Zeng, Z. W. and Xiao, R. Z. (2011) 'Recent Advances of Chitosan Nanoparticles as Drug Carriers', *International Journal of Nanomedicine*, 6, pp. 765–774. doi: 10.2147/IJN.S17296.

Wang, J. and Wang, H. (2017) 'Oxidative Stress in Pancreatic Beta Cell Regeneration', *Oxidative medicine and cellular longevity*, 2017.

Widjajakusuma, E. C., Jonosewojo, A. and Hendriati, L. (2018) 'Phytochemical screening and preliminary clinicals trials of the aqueous extract mixture of Andrographis paniculata (Burm. f.) Wall. Ex Nees and Syzygium polyanthum (Wight.) Walp leaves in metformin treated patients with type 2 diabetes', *Phytomedicine*, 55, pp. 137–147. doi: 10.1016/j.phymed.2018.07.002.

Widyawati, T. (2015) 'Aspek Farmakologi Sambiloto (Andrographis paniculata Nees)', *Majalah Kedokteran Nusantara*, pp. 216–222.

Wijaya, A., Nurani, L. H. and Nurkhasah (2014) 'Aktivitas Antioksidan Sediaan

Nanopartikel Kitosan Ekstrak Etanol Kelopak Rosela (Hibiscus sabdariffa L) Pada Tikus Hiperkolesterol : Pengukuran Kadr Malondialdehid (MDA)', *Kartika: Jurnal Ilmiah Farmasi*, 2(1), pp. 1–6.

Wijaya, H. M., W, G. P. and Herowati, R. (2019) 'Efek Ekstrak Batang Brotowali (Tinospora Crispa L. Miers) pada Model Uji Tikus Hiperglikemia Komorbid Hiperlipidemia', *Jurnal Farmasi & Sains Indonesia*, 2(2), pp. 29–35.

World Health Organization (2021) *Traditional, Complementary and Integrative Medicine*. Available at: https://www.who.int/health-topics/traditional-complementary-and-integrative-medicine.

Youl, E., Bardy, G. and Magous, R. (2010) 'Quercetin potentiates insulin secretion and protects INS-1 pancreatic β-cells against oxidative damage via the ERK1/2 pathway', *British journal of pharmacology*, 161(4), pp. 799–814. doi: 10.1111/j.1476-5381.2010.00910.x.

Yulinah, E. and Fitri, M. A. (2001) 'Aktivitas Antidiabetika Ekstrak Etanol Herba Sambiloto (Andrographis paniculata Nees (Acanthaceae)', *Jurnal Matematika & Sains*, 6(1), pp. 13–20.

Zhai, S., Georgy, A. and Liang, Z. (2016) 'Pharmacokinetic and pharmacodynamics drug interaction study of piragliatin, a glucokinase activator, and glyburide, a sulfonylurea, in type 2 diabetic patients', *Clinical pharmacology in drug development*, 5, pp. 552–556. doi: 10.1002/cpdd.276.This.

Zhang, C., Gui, L. and Xu, Y. (2013) 'Preventive effects of andrographolide on the development of diabetes in autoimmune diabetic NOD mice by inducing immune tolerance', *International Immunopharmacology*, pp. 1–6. doi: 10.1016/j.intimp.2013.05.002.

Zhao, L., Shi, L. and Zhang, Z. (2011) 'Preparation and application of chitosan nanoparticles and nanofibers', *Brazilian Journal of Chemical Engineering*, 28(03), pp. 353–362.