DAFTAR PUSTAKA

[1] S. Rini, O. Ayu Dhea Manto, and A. Irawan, "Hubungan Pola Hidup dengan Kadar Gula Darah Pasien dengan Diabetes Melitus Tipe 2," *Journal of Nursing Invention*, vol. 3, no. 2, 2022.

[2] Perkeni (Perkumpulan Endokrinologi Indonesia), *Pedoman Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 Dewasa di Indonesia*, 1st ed. PB PERKENI, 2019.

[3] W. P. Sakul and H. Andriani, "Prevalensi Global Diabetes Mellitus: Tinjauan Sistematis Negara-Negara dengan BebanTinggi dan Strategi Penanganannya," *Jurnal NERS*, vol. 9, no. 3, pp. 5150–5158, 2025, [Online]. Available: http://journal.universitaspahlawan.ac.id/index.php/ners

[4] N. Nur Rosyidah and E. Agus Cahyono, "Diabetes Melitus Tipe 2: Artikel Review," *Enfermeria Ciencia*, vol. 3, no. 1, 2025.

[5] E. Erdaliza, M. Mitra, N. Rany, Y. Harnani, and A. Rienarti Abidin, "Faktor Risiko yang Berhubungan dengan Komplikasi Diabetes Mellitus Tipe 2," *Jurnal kesehatan komunitas (Journal of community health)*, vol. 10, no. 3, pp. 534–545, Dec. 2024, doi: 10.25311/keskom.vol10.iss3.2039.

[6] E. Bonora *et al.*, "Insulin Resistance and Beta-Cell Dysfunction in Newly Diagnosed Type 2 Diabetes: Expression, Aggregation and Predominance. Verona Newly Diagnosed Type 2 Diabetes Study 10," *Diabetes. Metab. Res. Rev.*, vol. 38, no. 7, May 2022, doi: 10.1002/dmrr.3558.

[7] C. Wysham and J. Shubrook, "Beta-Cell Failure in Type 2 Diabetes: Mechanisms, Markers, and Clinical Implications," *Postgrad. Med.*, vol. 132, no. 8, pp. 676–686, Jun. 2020, doi: 10.1080/00325481.2020.1771047.

[8] A. K. Singh, D. Yadav, N. Sharma, and J. O. Jin, "Dipeptidyl Peptidase (DPP)-IV Inhibitors with Antioxidant Potential Isolated from Natural Sources: A Novel Approach for the Management of Diabetes," *Pharmaceuticals*, vol. 14, no. 6, Jun. 2021, doi: 10.3390/ph14060586.

[9] G. Turdu, H. Gao, Y. Jiang, and M. Kabas, "Plant Dipeptidyl Peptidase-IV Inhibitors as Antidiabetic Agents: A Brief Review," *Future Med. Chem.*, vol. 10, no. 10, pp. 1229–1239, Jun. 2018, doi: 10.4155/fmc-2017-0235.

[10] C. Almeida, C. Monteiro, and S. Silvestre, "Inhibitors of 11β-Hydroxysteroid Dehydrogenase Type 1 as Potential Drugs for Type 2 Diabetes Mellitus—A Systematic Review of Clinical and In Vivo Preclinical Studies," *Sci. Pharm.*, vol. 89, no. 1, pp. 1–14, Mar. 2021, doi: 10.3390/scipharm89010005.

[11] R. F. Firdaus, R. H. Pratiwi, and D. N. Ahmad, "Aktivitas Antibakteri Air Rebusan Kulit Buah Manggis (*Garcinia mangostana* L.) Terhadap Pertumbuhan Staphylococcus aureus," *Jurnal Pendidikan Biologi Biogenerasi*, vol. 10, no. 1, pp. 212–220, 2024.

[12] M. A. F. Sutrisno, "Potential Combination of Xanthone Compounds from Mangosteen Fruit (*Garcinia mangostana*) with Eugenol Compounds in Basic Leaf (*Ocimum sanctum*) as Alternative Therapy in Preeclampsia," *Eureka Herba Indonesia*, vol. 2, no. 2, pp. 113–119, Aug. 2021, doi: 10.37275/ehi.v2i2.32.

[13] A. F. Maulana, S. Sriwidodo, Y. Rukayadi, and I. P. Maksum, "*In Silico* Study of Mangostin Compounds and Its Derivatives as Inhibitors of α-Glucosidase Enzymes for Anti-Diabetic Studies," *Biology (Basel).*, vol. 11, no. 12, Dec. 2022, doi: 10.3390/biology11121837.

[14] S. P. Chen *et al.*, "Mangosteen Xanthone γ-mangostin Exerts Lowering Blood Glucose Effect with Potentiating Insulin Sensitivity through the Mediation of AMPK/PPARγ," *Biomedicine and Pharmacotherapy*, vol. 144, Dec. 2021, doi: 10.1016/j.biopha.2021.112333.

[15] R. Safaei *et al.*, "Mechanistic Insights into the Xanthones Present in Mangosteen Fruit (*Garcinia mangostana*) and Their Applications in Diabetes and Related Complications," *J. Food Biochem.*, Jul. 2023, doi: 10.1155/2023/5334312.

[16] Q. Kasturi, S. Mursidah, L. Syahrial, H. Medina, and L. Lubis, "Efektivitas Studi *Molecular Docking* Terhadap Penemuan Obat Terbarukan," Univeritas Muhammadiyah Sumatera, Medan, 2022.

[17] Heryadi Eki, "Penerapan Senam Kaki Diabetik Terhadap Penurunan Kadar Gula Darah pada Pasien Diabetes Mellitus di Ruang Melati 2 RSUP dr. Soeradji Tirtonegoro Klaten," Poltekkes Kemenkes Yogyakarta, 2023. Accessed: Mar. 18, 2026. [Online]. Available: http://eprints.poltekkesjogja.ac.id/id/eprint/12970

[18] A. Sapra and P. Bhandari, "Diabetes Mellitus," 2023, Accessed: Mar. 18, 2026. [Online]. Available: https://pubmed.ncbi.nlm.nih.gov/31855345/

[19] Kementerian Kesehatan RI, *Laporan Nasional RISKESDAS 2018*. Jakarta: Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan (LPB), 2018.

[20] Kementerian Kesehatan RI, "Pedoman Nasional Pelayanan Klinis Tata Laksana Diabetes Melitus pada Anak," 2023.

[21] C. S. Herrera, C. Triplit, R. Charles, C. Eugenio, and A. D. F. Ralph, *Classification of Diabetes Mellitus*. National Library of Medicine, 2018. Accessed: Mar. 18, 2026. [Online]. Available: https://www.ncbi.nlm.nih.gov/books/NBK279119/

[22] F. Nasution, A. Azwar Siregar, and S. Tinggi Kesehatan Indah Medan, "Faktor Risiko Kejadian Diabetes Mellitus (Risk Factors for The Event of Diabetes Mellitus)," *Jurnal Ilmu Kesehatan*, vol. 9, no. 2, 2021.

[23] B. Hartono and S. Ediyono, "Hubungan Tingkat Pendidikan, Lama Menderita Sakit dengan Tingkat Pengetahuan 5 Pilar Penatalaksanaan Diabetes Melitus di Wilayah Kerja Puskesmas Sungai Durian Kabupaten KBU Raya Kalimantan Barat," *Journal of TSCS1Kep*, vol. 9, no. 1, pp. 2775–0345, 2024, [Online]. Available: http://ejournal.annurpurwodadi.ac.id/index.php/TSCS1Kep

[24] R. Widiyanto and Qarana Gilang Al, "Penyuluhan Kepada Masyarakat di Wilayah RW 04 Kelurahan Klender Jakarta Timur Terkait Pencegahan Komplikasi Diabetes Melitus," *Jurnal Pengabdian IKIFA*, vol. 4, no. 2, Jun. 2025.

[25] Y. D. Prawinda *et al.*, "Penatalaksanaan Lima Pilar Diabetes Melitus Oleh Diabetisi: Studi Fenomenologi," *Journal Nursing Research Publication Media (NURSEPEDIA)*, vol. 3, no. 1, pp. 12–25, Feb. 2024, doi: 10.55887/nrpm.v3i1.52.

[26] Kasina SVSK, Baradhi KM. Dipeptidyl Peptidase IV (DPP IV) Inhibitors. [Updated 2023 May 22]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing https://www.ncbi.nlm.nih.gov/books/NBK542331/2

[27] K. Makrilakis, "The role of dpp-4 inhibitors in the treatment algorithm of type 2 diabetes mellitus: When to select, what to expect," Aug. 01, 2019, *MDPI AG*. doi: 10.3390/ijerph16152720.

[28] K. Saini, S. Sharma, and Y. Khan, "DPP-4 inhibitors for treating T2DM - hype or hope? an analysis based on the current literature," 2023, *Frontiers Media S.A.* doi: 10.3389/fmolb.2023.1130625.

[29] S. Dhankhar *et al.*, "Novel targets for potential therapeutic use in Diabetes mellitus," Dec. 01, 2023, *BioMed Central Ltd*. doi: 10.1186/s13098-023-00983-5.

[30] D. Kupczyk *et al.*, "11β-HSD as a New Target in Pharmacotherapy of Metabolic Diseases," Aug. 01, 2022, *MDPI*. doi: 10.3390/ijms23168984.

[31] Zhang X, Kupczyk E, Kopplin P. S, and Mueller C, "Current and Future Approaches for In Vitro Hit Discovery in Diabetes Mellitus," *Drug Discov. Today*, vol. 27, no. 10, Oct. 2022, Accessed: Mar. 18, 2026. [Online]. Available: https://doi.org/10.1016/j.drudis.2022.07.016

[32] K. Peng *et al.*, "11β-Hydroxysteroid Dehydrogenase Type 1(11β-HSD1) mediates insulin resistance through JNK activation in adipocytes," *Sci. Rep.*, vol. 6, Nov. 2016, doi: 10.1038/srep37160.

[33] N. Maftucha, R. Manalu, R. Amelia, P. Cordia, and R. Bupu, "Potensi Senyawa Turunan Xanton dari Kulit Buah Manggis (*Garcinia mangostana*

L.) Sebagai Inhibitor Protein Mycobacterium tuberculosis: Studi In Silico." Pharmaceutical Journal Of Indonesia [Online]. Available: http://.pji.ub.ac.id

[34] T. Z. A. D. Putri, R. P. Findrayani, M. Isrul, and N. Lolok, "Studi *Molecular Docking* Senyawa Kimia Dari Herba Putri Malu (*Mimosa pudica*) Terhadap Inhibisi Enzim A-Glukosidase Sebagai Antidiabetes Melitus," *Jurnal Pharmacia Mandala Waluya*, vol. 3, no. 4, pp. 225–233, Aug. 2024, doi: 10.54883/jpmw.v3i4.104.

[35] Rohmadi Slamet, "Kebun Buah Manggis 'Gaya Urakan' Berupa Alas Manggis." Accessed: Mar. 18, 2026. [Online]. Available: https://www.beritamagelang.id/server.php/kebun-buah-manggis-gaya-urakan-berupa-alas-manggis#!

[36] Ellen Veronica, "Keunikan Buah Manggis Dari Kulit Hingga Daging Yang Menyimpan Banyak Manfaat." Accessed: Mar. 18, 2026. [Online]. Available: https://www.baliinyourhands.com/panduan-bulanan/1551489597/keunikan-buah-manggis-dari-kulit-hingga-daging-yang-menyimpan-banyak-manfaat

[37] Husen Saikhu A, "Gamma-Mangostin dari Kulit Buah Manggis sebagai Agen Potensi Pelindung Organ Ginjal pada Hewan Coba Diabetes Mellitus," Universitas Airlangga. Accessed: Mar. 18, 2026. [Online]. Available: https://unair.ac.id/gamma-mangostin-dari-kulit-buah-manggis-sebagai-agen-potensi-pelindung-organ-ginjal-pada-hewan-coba-diabetes-mellitus/

[38] Alqadri, Y. Tambing, and B. Latarang, "Karakteristik Morfologi dan Anatomi Tanaman Manggis (*Garcinia mangostana* L.) di Desa Batusuya dan Labean Kabupaten Donggala," *J. Agrotekbis*, vol. 4, no. 5, pp. 571–578, Oct. 2016.

[39] A. Putri and S. Rahman, "Efektivitas Kulit Buah Manggis (*Garcinia mangostana* L.) terhadap Kepadatan Kolagen sebagai Penyembuhan Luka Bakar pada Tikus Putih Wistar," *Jurnal Implementa Husada*, vol. 5, no. 3, Aug. 2024.

[40] Pakpahan Berlina, "Uji Efektivitas Pemberian Ekstrak Etanol Kulit Buah Manggis (*Garcinia mangostana* L.) Terhadap Kadar Gula Darah pada Tikus (*Rattus norvegicus*) Diinduksi Glukosa," Kemenkes Poltekkes Medan, 2023. Accessed: Mar. 18, 2026. [Online]. Available: https://repository.poltekkes-medan.ac.id/id/eprint/2708

[41] V. Mierza, "Article Review: Potensi Senyawa Xanthone Dalam Ekstrak Kulit Manggis (*Garcinia mangostana* L.) Sebagai Senyawa Aktif Obat," *Jurnal Sehat Mandiri*, vol. 20, 2025.

[42] S. R., N. N., & R. R. Rena, "Analisis *Molecular Docking* Senyawa *Garcinia mangostana* L Sebagai Kandidat Anti SARS-CoV-2," *Jurnal Fisika Unand*, vol. 11, no. 1, pp. 82–88, 2022, Accessed: Mar. 18, 2026. [Online]. Available: https://doi.org/10.25077/jfu.11.1.82-88.2022

[43] K. Batubara, E. Sinaga, and M. I. Br. Sianturi, "Edukasi Pemberian Jus Kulit Manggis Terhadap Kestabilan Kadar Glukosa Darah Pasien Diabetes Mellitus Tipe II," *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, vol. 6, no. 7, pp. 2805–2815, Jun. 2023, doi: 10.33024/jkpm.v6i7.10051.

[44] J. M. Maligan, F. Chairunnisa, and S. N. Wulan, "Peran Xanthon Kulit Buah Manggis (*Garcinia mangostana* L.) Sebagai Agen Antihiperglikemik," *Jurnal Ilmu Pangan dan Hasil Pertanian*, vol. 2, no. 2, pp. 99–106, Jan. 2019, doi: 10.26877/jiphp.v2i2.2813.

[45] S. Amin, G. Fauziah, N. A. Putri, and F. Azizah, "Analisis *In Silico* Senyawa Bioaktif Kulit Buah Manggis (*Garcinia mangostana* L.) sebagai Kandidat Inhibitor Enzim Diabetes Tipe 2," *Journal of Innovative and Creativity*, vol. 1, no. 1, p. 240, Apr. 2025.

[46] Nurlan, K. Moch Erwin Rachman, M. Karim, I. Safei, and R. Faisal Syamsu, "Perbandingan Pemberian Ekstrak Kulit Manggis dengan Glibenklamid terhadap Penurunan Kadar Glukosa Darah pada Mencit," *Fakumi Medical Junral: Jurnal Mahasiswa Kedokteran*, no. 2, Feb. 2023.

[47] F. Naufa, R. Mutiah, and A. Y. Indrawijaya, "Studi *in Silico* Potensi Senyawa Katekin Teh Hijau (*Camellia sinensis*) sebagai Antivirus SARS CoV-2 terhadap Spike Glycoprotein (6LZG) dan Main Protease (5R7Y)," *J.Food Pharm.Sci*, vol. 2022, no. 1, pp. 584–596, Jun. 2023, [Online]. Available: www.journal.ugm.ac.id/v3/JFPA

[48] A. Hakiki, M. Banjarmasin, and K. Selatan, "Studi *Molecular Docking* dan Prediksi ADMET Senyawa Turunan Kurkumin Sebagai Inhibitor Kasein Kinase 2-α," *Jurnal Ilmu Kefarmasian*, vol. 5, no. 2, 2024, [Online]. Available: https://www.rcsb.org/.

[49] K. Raval and T. Ganatra, "Basics, types and applications of *molecular docking*: A review," *IP International Journal of Comprehensive and Advanced Pharmacology*, vol. 7, no. 1, pp. 12–16, Mar. 2022, doi: 10.18231/j.ijcaap.2022.003.

[50] X. Du *et al.*, "Insights into protein–ligand interactions: Mechanisms, models, and methods," Jan. 26, 2016, *MDPI AG*. doi: 10.3390/ijms17020144.

[51] Anwar Muhammad Tajul, "Studi *Molecular Docking* Senyawa-Senyawa Aktif Buah Pare (*Momordica charantia* L.) Golongan Flavonoid Pada Enzim Maltase-Glukoamilase (MGAM) Terminal C dan N Sebagai Kandidat Obat Antidiabetes," Universitas Islam Negeri Maulana Malik Ibrahim Malang, Malang, 2024.

[52] R. Prasiska Wulandari *et al.*, "*In Silico* Study of Secondary Metabolite Compounds in Parsley (*Petroselinum crispum*) as a Drug Terapy for Blood Cancer (Myeloproliferative Neoplasm (MPN)) targeting JAK-2,"

Indonesian Journal of Chemical Science, vol. 12, no. 2, 2023, [Online]. Available: http://journal.unnes.ac.id/sju/index.php/ijcs

[53] Z. Jiang, L. You, W. Dou, T. Sun, and P. Xu, "Effects of an electric field on the conformational transition of the protein: A molecular dynamics simulation study," *Polymers (Basel).*, vol. 11, no. 2, Feb. 2019, doi: 10.3390/polym11020282.

[54] A. B. Pratama, R. Herowati, and H. M. Ansory, "Studi *Docking Molekuler* Senyawa Dalam Minyak Atsiri Pala (*Myristica fragrans* H.) Dan Senyawa Turunan Miristisin Terhadap Target Terapi Kanker Kulit," *Majalah Farmaseutik*, vol. 17, no. 2, p. 233, Apr. 2021, doi: 10.22146/farmaseutik.v17i2.59297.

[55] A. Ravelliani *et al.*, "Study Of *Molecular Docking* On Compounds With Potential As Anti-Inflammatory," *Jurnal eduhealth*, vol. 13, no. 02, p. 2022, 2022, Accessed: Mar. 18, 2026. [Online]. Available: https://ejournal.seaninstitute.or.id/index.php/healt/article/download/1032/865/3059

[56] Sudirman Virgina K. R. J *et al.*, "*In Silico* Study of Antidiabetic Potential Compound in *Black Garlic* as DPP-4 Enzyme Inhibitor," *Indonesian Journal of Pharmaceutical Science and Technology*, vol. 11, no. 2, pp. 217–225, Jun. 2024, doi: https://doi.org/10.24198/ijpst.v11i2.47506.

[57] R. Rasida, Y. Dwi, M. Pinanga, A. H. Saputro, and S. Damayanti, "Komparasi Profil ADMET Senyawa Sintetik dan Herbal Antimalaria: Pendekatan In Silico," *Acta Pharmaceutica Indonesia* |, vol. 49, no. 2, pp. 85–98, 2024, [Online]. Available: https://biosig.lab.uq.edu.au/pkc

[58] F. Kanti Rahayu, U. Rohanah, and M. Khoreun Nisa, "*Molekuler Docking* dan Analisis ADMET Senyawa *Anredera cordifolia* Terhadap DPP-4: Obat Diabetes," 2025. [Online]. Available: https://pubchem.ncbi.nlm.nih.gov/.

[59] N. L. Anna Sakinah *et al.*, "Indonesian Journal of Chemical Science *In Silico* Study on the Antidiabetic Activity of Shallot Plants (*Allium cepa*) Targeting the Dipeptidyl Peptidase-4 (DPP4) Receptor," 2025. [Online]. Available: http://journal.unnes.ac.id/sju/index.php/ijcs

[60] A. M. Hassan, A. H. Sadiya, K. E. Jafaru, and H. G. Sunday, "In-silico Investigation of Potential Inhibitors of 11-β-Hydroxysteroid Dehydrogenase," *Asian Journal of Biochemistry, Genetics and Molecular Biology*, vol. 15, no. 2, pp. 10–23, Sep. 2023, doi: 10.9734/ajbgmb/2023/v15i2329.

[61] L. Galandarli, C. Mollayeva, A. Javadzade, A. Mammadova, and N. Amrahov, "*Molecular Docking* of Glycyrrhizin With 11β-HSD1 Protein," *Agricultural & Veterinary Sciences*, vol. 6, no. 3, pp. 141–146, 2022, [Online]. Available: https://discover.3ds.com/discovery-studio-visualizer-

[62] P. RSCB, "Crystal Structure of Human Dipeptidyl Peptidase Iv In Complex With A Beta Amino Acid Inhibitor Online. Accessed: Mar. 23, 2026. [Online]. Available: https://www.rcsb.org/structure/1X70

[63] P. RSCB, "Structure of Human 11-beta-Hydroxysteroid Dehydrogenase (HSD1) with NADP and Adamantane Sulfone Inhibitor," Online. Accessed: Mar. 23, 2026. [Online]. Available: https://www.rcsb.org/structure/2ILT

[64] R. Li, B. S. Inbaraj, and B. H. Chen, "Quantification of Xanthone and Anthocyanin in Mangosteen Peel by UPLC-MS/MS and Preparation of Nanoemulsions for Studying Their Inhibition Effects on Liver Cancer Cells," *Int. J. Mol. Sci.*, vol. 24, no. 4, Feb. 2023, doi: 10.3390/ijms24043934.

[65] Pramesti Ni Luh Putu Cintya and Laksmiani Ni Putu Linda, "Skrining Senyawa Aloesin Pada Lidah Buaya (*Aloe vera* (L.) Burm.f.) sebagai Antikanker Prostat Secara In Silico," *Prosiding Workshop dan Seminar Nasional Farmasi*, vol. 1, no. 1, pp. 495–504, Oct. 2022.

[66] L. Elfita, A. Apriadi, Supandi, and D. Shanifa, "Studi Penambatan Molekuler dan Simulasi Dinamika Molekuler Senyawa Turunan Furanokumarin terhadap Reseptor Estrogen Alfa (ER-α) Sebagai Anti Kanker Payudara," *Jurnal Sains Farmasi & Klinis*, vol. 9, no. 3, p. 255, Jan. 2023, doi: 10.25077/jsfk.9.3.255-264.2022.

[67] R. Novianty, "Analisis Interaksi Senyawa Guvakolin dan Homoarekolin Terhadap MAO-A secara In Silico," *Photon: Jurnal Sains dan Kesehatan*, vol. 13, no. 1, Jun. 2023, doi: 10.37859/jp.v13i1.5042.

[68] I. W. Sari, J. Junaidin, and D. Pratiwi, "Studi *Molecular Docking* Senyawa Flavonoid Herba Kumis Kucing (*Orthosiphon stamineus* B.) Pada Reseptor α-glukosidase Sebagai Antidiabetes Tipe 2," *Jurnal Farmagazine*, vol. 7, no. 2, p. 54, Aug. 2020, doi: 10.47653/farm.v7i2.194.

[69] T. Lewis-Atwell, P. A. Townsend, and M. N. Grayson, "Comparing the Performances of Force Fields in Conformational Searching of Hydrogen-Bond-Donating Catalysts," *Journal of Organic Chemistry*, vol. 87, no. 9, pp. 5703–5712, May 2022, doi: 10.1021/acs.joc.2c00066.

[70] E. Ferdian, T. A. Listyani, and T. S. Wardani, "*In Silico* Testing of *Andrographis Paniculata* Compounds Against EGFR G719S Mutantions Causing Resistanse to Non-Small Cell Lung Cancer Therapy," *Jurnal Analis Farmasi*, vol. 11, no. 1, pp. 46–60, Apr. 2026.

[71] L. Cahyaningrum, R. Rubianti, T. Mahira, K. Gabriel, A. Rusdin, and D. Novitasari, "Studi *In Silico* Metabolit Sekunder dalam Tanaman Tahongai (*Kleinhovia hospita* L.) Sebagai Kandidat Agen Terapi Karsinoma Hepatoseluler Tertarget Reseptor c-MET," *Indonesian Journal of Pure and Applied Chemistry*, vol. 7, no. 2, pp. 83–93, Aug. 2024, doi: 10.26418/indonesian.v7i2.82567.

[72] I. F. Mujtahid, R. Razak, and A. Najib, "Studi *In Silico* Prediksi Sifat Fisikokimia dan Toksisitas Senyawa Tectoquinone Sebagai α-Glukosidase inhibitor," *Makassar Natural Product Journal*, vol. 2, no. 3, pp. 215–221, 2024, [Online]. Available: https://journal.farmasi.umi.ac.id/index.php/mnpj

[73] I. Hairunisa, A. I. Prasetyo, D. K. Awalia, F. Kurniawan, D. Lestari, and M. F. A. Bakar, "Analisis Komponen Bioaktif dan Kajian *In Silico* Ekstrak Etanol Dari *Eleutherine bulbosa* (Mill.) Urb. (Bawang Dayak) dengan Metode UHPLC-MS," *iset Sains dan Teknologi*, vol. 10, no. 1, Mar. 2026, doi: 10.30595/jrst.v10i1.27746.

[74] Lealita, A. Risvina Easter Ajie Pramesti, Rollando, and M. Resta Surya Yanuar, "Potensi Senyawa pada Tanaman Secang (*Caesalpinia sappan*) dalam Menghambat Enzim COX-2 sebagai Antiinflamasi," *Jurnal Farmasi Ma Chung: Sains Teknologi dan Klinis Komunitas*, vol. 3, no. 2, 2025, doi: 10.33479/jfmc.v3i2.79.

[75] N. Frimayanti, A. Lukman, and L. Nathania, "Studi *Molecular Docking* Senyawa 1,5-benzothiazepine sebagai Inhibitor Dengue DEN-2 NS2B/NS3 Serine Protease," *Cempublish Journal*, vol. 6, no. 1, pp. 54–62, Dec. 2021, doi: 10.22437/chp.v6i1.12980.

[76] Shintia Maudy, "Kajian Senyawa Derivat Florotanin Ecklonia cava Sebagai Kandidat Anti SARS-CoV-2 Berdasarkan Pendekatan *Molecular Docking*," Universitas Pendidikan Indonesia, 2020.

[77] N. I. Ischak, W. J. Musa, L. O. Aman, L. Alio, A. La Kilo, and S. D. Saleh, "Studi *Molecular Docking* dan Prediksi ADME Senyawa Metabolit Sekunder Tumbuhan Obat Tradisional Gorontalo terhadap Reseptor HER-2 sebagai Antikanker Payudara," *Jamb.J.Chem*, vol. 5, no. 1, pp. 90–103, 2023, [Online]. Available: https://www.rcsb.org/.

[78] D. S. Diningrat, A. N. Sari, N. S. Harahap, and Kusdianti, "Potential of Hanjeli (Coix lacryma-jobi) Essential Oil in Preventing SARS-CoV-2 Infection Via Blocking the Angiotensin Converting Enzyme 2 (ACE2) Receptor," *J. Plant Biotechnol.*, vol. 48, no. 4, pp. 289–303, 2021, doi: 10.5010/JPB.2021.48.4.289.

[79] Edlyna Evelyn, "Potensi Kelompok Senyawa Antosianin Beras Hitam (*Oryzae sativa* L.) Sebagai Agen Anti-Hiperkolesterolemia Melalui Penghambatan Enzim Pancreatic Lipase Secara In Silico," Universitas Diponegoro, 2026.

[80] A. Prasetiyo, S. Kumala, E. Mumpuni, R. R. Tjandrawinata, and L. Sulastri, "Uji Aktivitas Penghambatan Dipeptidyl peptidase-4 (DPP-4) Senyawa dari Lima Tanaman Indonesia secara In-Silico," *Jurnal Fitofarmaka Indonesia*, vol. 10, no. 1, pp. 2023–2024, 2023, doi: 10.33096/jffi.v10i1.884.

[81] A. B. Pratama, R. Herowati, and H. M. Ansory, "Studi *Docking Molekuler* Senyawa dalam Minyak Atsiri Pala (*Myristica fragrans* H.) dan Senyawa

Turunan Miristisin Terhadap Target Terapi Kanker Kulit," *Majalah Farmaseutik*, vol. 17, no. 2, p. 233, Apr. 2021, doi: 10.22146/farmaseutik.v17i2.59297.

[82] B. Sorensen *et al.*, "Adamantane sulfone and sulfonamide 11-β-HSD1 Inhibitors," *Bioorg. Med. Chem. Lett.*, vol. 17, no. 2, pp. 527–532, 2007, Accessed: May 18, 2026. [Online]. Available: https://www.sciencedirect.com/science/article/abs/pii/S0960894X06011784?via%3Dihub

[83] L. Sekolah, T. Ilmu, K. Kendal, A. W. Nugroho, and A. Fauzi, "Studi *Docking Molekuler* Senyawa Turunan Acetoxychavicol Acetat (ACA) pada Protein Target ER-A, ER-B, dan HER-2 sebagai Agen Sitotoksik," *Jurnal Farmasetis*, vol. 13, no. 3, Aug. 2024, [Online]. Available: www.swissadme.ch

[84] I. K. Klara, R. M. Purwono, and P. Achmadi, "Analisis *In Silico* Senyawa Flavonoid Kayu Secang (*Caesalpinia sappan* L.) pada Reseptor α-Amilase Sebagai Antihiperglikemik," *Acta Veterirania Indonesiana*, vol. 11, no. 3, Nov. 2023, Accessed: May 18, 2026. [Online]. Available: https://share.google/fIPbM69mfxrYjl7W6

[85] A. F. Maulana, S. Sriwidodo, Y. Rukayadi, and I. P. Maksum, "*In Silico* Study of Mangostin Compounds and Its Derivatives as Inhibitors of α-Glucosidase Enzymes for Anti-Diabetic Studies," *Biology (Basel).*, vol. 11, no. 12, Dec. 2022, doi: 10.3390/biology11121837.

[86] V. Kumar *et al.*, "α-Mangostin Mediated Pharmacological Modulation of Hepatic Carbohydrate Metabolism in Diabetes Induced Wistar Rat," *Journal of Basic and Applied Sciences*, vol. 5, no. 3, 2016, Accessed: May 21, 2026. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S2314853516300622

[87] M. Y. Alsedfy, A. A. Ebnalwaled, M. Moustafa, and A. H. Said, "Investigating the Binding Affinity, Molecular Dynamics, and ADMET Properties of Curcumin-IONPs as a Mucoadhesive Bioavailable Oral Treatment for Iron Deficiency Anemia," *Sci. Rep.*, vol. 14, no. 1, Dec. 2024, doi: 10.1038/s41598-024-72577-8.

[88] I. R. K. Wardani, "Pengembangan Senyawa Analgesik Turunan Asam-5-Bromo-o-Benzoil Salisilat (3) Secara In Silico," Universitas Muhhamdiyah Malang, 2024.

[89] G. Hadisoebroto, S. Effendi, Y. Al Azzahra, and L. F. Sari, "Analisis *Molecular Docking* Senyawa Aktif Tanaman Kumis Kucing (*Orthosiphon stamineus* B.) terhadap Reseptor Carbonic Anhydrase II sebagai Kandidat Obat Antihipertensi," *Journal of Noncomm*, vol. 5, no. 1, pp. 29–52, 2025.

[90] R. Y. Anggraeni, "Studi *In Silico* Senyawa Phyllanthin, Hypophyllanthin, Nirtetralin, dan Niranthin dari Tanaman Meniran (*Phyllanthus niruri* L.)

Terhadap Reseptor RDRP (7BV2) yang Berpotensi Sebagai Antivirus SARS-CoV-2," Universitas Islam Negeri Maulana Malik Ibrahim, 2021.

[91] B. A. Wijanarko, L. Puspitasari, and S. Bahri, "Studi *Molecular Docking* Senyawa Flavonoid Quarcentin Daun Mimba (*Azadiracta indica* A. Juss) Sebagai Antidiabetes dan Antioksidan," *Journal of Research in Pharmacy*, vol. 6, no. 1, Jan. 2026.

[92] J. P. Berger *et al.*, "A Comparative Study of the Binding Properties, Dipeptidyl Peptidase-4 (DPP -4) Inhibitory Activity and Glucose-Lowering Efficacy of the DPP -4 Inhibitors Alogliptin, Linagliptin, Saxagliptin, sitagliptin and Vildagliptin in Mice," *Endocrinol. Diabetes Metab.*, vol. 1, no. 1, Aug. 2017, doi: 10.1002/edm2.2.

[93] K. Kurniawan, N. Marfu'ah, and G. Fazriah D., "*In Silico* Study of Gamma-Mangostin Compound from *Garcinia Mangostana* L. Fruit Skin and Activity Test as an Alpha Amylase Inhibitor," *Journal La Medihealtico*, vol. 6, no. 2, pp. 395–410, Mar. 2025, doi: 10.37899/journallamedihealtico.v6i2.1889.

[94] J. C. Winata, "Identifikasi Metabolit Sekunder, Uji In Silico, dan Uji In Vitro Ekstrak Etanol Paku Kawat (*Lycopodiella cernua*)," Universitas Ma Chung, 2025. Accessed: May 27, 2026. [Online]. Available: http://repository.machung.ac.id/id/eprint/1083/1/TA_Johanes%20Christo%20Winata_612110027.pdf

[95] A. S. Izzaturahmi *et al.*, "*In Silico* Study of Licorice (*Glycyrrhiza glabra* L.) on VEGFR-2 Receptors in Breast Cancer," *Indonesian Journal of Biological Pharmacy*, vol. 3, no. 3, pp. 137–153, 2023, [Online]. Available: https://jurnal.unpad.ac.id/ijbp

[96] D. S. Megawati, J. Ekowati, and S. Siswodihardjo, "Physicochemical, ADMET Properties, and *d*Studies of N-benzoyl-N'-naphtylthiourea Derivatives for Anti-breast Cancer Activity," *Lett. Drug Des. Discov.*, vol. 21, no. 17, pp. 3913–3922, Aug. 2023, doi: 10.2174/1570180820666230817101819.

[97] V. Mathur *et al.*, "Insight into Structure Activity Relationship of DPP-4 Inhibitors for Development of Antidiabetic Agents," *Molecules*, vol. 28, no. 15, Aug. 2023, doi: 10.3390/molecules28155860.

[98] R. N. Aulia and Sriwidodo, "Sistem Penghantaran Ekstrak Herbal dalam Formulasi dan Aplikasi Biomedis," *Majalah Farmasetika*, vol. 7, no. 5, pp. 424–458, 2022.

[99] A. dr Simatupang, *Monografi. Farmakologi klinik obat-obat Diabetes Mellitus Tipe 2*. 2019. Accessed: May 27, 2026. [Online]. Available: http://repository.uki.ac.id/1801/1/Monograf%20DMT2-Abraham%20Simatupang_compressed.pdf

[100] A. Fadlan, T. Warsito, and D. Sarmoko, "Mengungkap Aktivitas Antikanker Senyawa Dihidrokaempferida secara In Silico," *Jamb.J.Chem*, vol. 4, no. 1, pp. 39–48, 2022.

[101] A. S. R. Agus *et al.*, *Kimia Medisinal*. Padang: PT. Global Eksekutif Teknologi, 2023. [Online]. Available: www.globaleksekutifteknologi.co.id

[102] E. Wangsasaputra, S. Prihandini, C. Novalinda Ginting, and L. Chiuman, "Prediksi Toksisitas *In Silico* Senyawa Bioaktif Daun Kemangi (*Ocimum sanctum* L.)," *Damianus Journal of Medicine*, vol. 22, no. 2, pp. 108–118, 2023, [Online]. Available: https://pubchem.