



DAFTAR PUSTAKA

- Adamczak, A., Ożarowski, M., dan Karpiński, T.M., 2020, Curcumin, a Natural Antimicrobial Agent with Strain-Specific Activity, *Pharmaceuticals*, 13(7), 1–12.
- Adeniyi, A.A., Adeniyi, J.N., Nlooto, M., dan Singh, P., 2022, Probing New Antileukemia Agents That Target FLT3 and BCL-2 from Traditional Concoctions through a Combination of Mass Spectrometry Analysis and Consensus Docking Methods, *App. Sci.*, 12, 1–14.
- Agarwal, S. dan Mehrotra, R., 2016, An Overview of Molecular Docking, *JSM Chem*, 4(2), 1024–1028.
- Agu, P.C., Afiukwa, C.A., Orji, O.U., Ezeh, E.M., Ofoke, I.H., Ogbu, C.O., Ugwuja, E.I., dan Aja, P.M., 2023, Molecular Docking as A Tool for the Discovery of Molecular Targets of Nutraceuticals in Diseases Management, *Sci. Rep.*, 13, 1–18.
- Ahire, V., Das, D., Mishra, K.P., Kulkarni, G., dan Ackland, L., 2016, Inhibition of the p53 Y220C Mutant by 1-Hydroxy-2-Methylanthraquinone Derivatives: A Novel Strategy for Cancer Therapy, *J. Environ. Pathol.*, 35(4), 355–364.
- Almalki, F.A., Shawky, A.M., Abdalla, A.N., dan Gouda, A.M., 2021, Icotinib, Almonertinib, and Olmutinib: A 2D Similarity/Docking-Based Study to Predict the Potential Binding Modes and Interactions into EGFR, *Molecules*, 26, 1–16.
- de Almeida, W.S. dan da Silva, D.A., 2021, Does Polysaccharide Quaternization Improve Biological Activity?, *Int. J. Biol. Macromol.*, 182, 1419–1436.
- Aminuddin, M., Shafiee, M., Ashraf, M., Asri, M., Sakinah, S., dan Alwi, S., 2021, Review on the In Vitro Cytotoxicity Assessment in Accordance to the International Organization for Standardization (ISO), *Mal. J. Med. Health. Sci.*, 17(2), 2636–9346.
- Aslantürk, Ö.S., 2018, In Vitro Cytotoxicity and Cell Viability Assays: Principles, Advantages, and Disadvantages, Dalam Larramendy, M.L., dan Soloneski, S., *Genotoxicity - A Predictable Risk to Our Actual World*. InTech.
- Astuti, E., Raharjo, T.J., Boangmanalu, P.M., Putra, I.S.R., Waskitha, S.S.W., dan Solin, J., 2021, Synthesis, Molecular Docking, and Evaluation of Some New Curcumin Analogs as Antimalarial Agents, *Indones. J. Chem.*, 21(2), 452–461.
- Ayati, A., Moghimi, S., Salarinejad, S., Safavi, M., Pouramiri, B., dan Foroumadi, A., 2020, A review on Progression of Epidermal Growth Factor Receptor (EGFR) Inhibitors as an Efficient Approach in Cancer Targeted Therapy, *Bioorg. Chem.*, 99, 1–16.



- Babamohamadi, M., Babaei, E., Ahmed Salih, B., Babamohammadi, M., Jalal Azeez, H., dan Othman, G., 2022, Recent Findings on the Role of Wild-Type and Mutant p53 in Cancer Development and Therapy, *Front. Mol. Biosci.*, 9, 1–11.
- Bahreyni, A., Mohamud, Y., dan Luo, H., 2024, Oncolytic Virus-Based Combination Therapy in Breast Cancer, *Cancer Lett.*, 585, 1–9.
- Bray, F., Laversanne, M., Sung, H., Ferlay, J., Siegel, R.L., Soerjomataram, I., dan Jemal, A., 2024, Global Cancer Statistics 2022: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries, *CA: Cancer J. Clin.*, 74, 229–263.
- Cas, M.D. dan Ghidoni, R., 2019, Dietary Curcumin: Correlation between Bioavailability and Health Potential, *Nutrients*, 11, 1–14.
- Diez de los Rios de la Serna, C., Boers-Doets, C.B., Wiseman, T., Radia, B., dan Hammond, R., 2024, Early Recognition and Management of Side Effects Related to Systemic Anticancer Therapy for Advanced Breast Cancer, *Semin. Oncol. Nurs.*, 40, 1–8.
- Debela, D.T., Muzazu, S.G.Y., Heraro, K.D., Ndalamo, M.T., Mesele, B.W., Haile, D.C., Kitui, S.K., dan Manyazewal, T., 2021, New Approaches and Procedures for Cancer Treatment: Current Perspectives, *SAGE Open. Med.*, 9, 1–10.
- Elanthendral, G., Shobana, N., Meena, R., P, P., dan Samrot, A. V., 2021, Utilizing Pharmacological Properties of Polyphenolic Curcumin in Nanotechnology, *Biocatal. Agric. Biotechnol.*, 38, 1–7.
- Eryanti, Y., Hendra, R., Herlina, T., Zamri, A., dan Supratman, U., 2015, Synthesis of Curcumin Analogue, N-H and N-Benzil-4-Piperidone and their Cytotoxic Activity, *Procedia Chem.*, 17, 224–229.
- Eryanti, Y., Hendra, R., Herlina, T., Zamri, A., dan Supratman, U., 2018, Synthesis of N-Methyl-4-Piperidone Curcumin Analogues and their Cytotoxicity Activity Against T47D Cell Lines, *Indones. J. Chem.*, 18(2), 362–366.
- Eryanti, Y., Hidayah, N., Herlina, dan Zamri, 2013, Synthesis and Cytotoxic Activity of Curcumin Analogues, *Bionatura-Jurnal Ilmu-ilmu Hayati dan Fisik*, 15(3), 170–174.
- Fathima, A.A., Kumaravel, V., Jonathan, D.R., Sadasivam, S.K., Yuvashri, R., dan Usha, G., 2024, Synthesis, Structural Examination, Molecular Interaction Analysis, In Vitro and In Silico Anticancer Activity Investigation of a New Curcumin Derivative: 1- (4 – chlorobenzoyl) - 3, 5 - bis ((E) - 4 - methoxybenzylidene) piperidin - 4 – one, *Chem. Phys. Impact.*, 8, 1–12.



- Fikroh, R.A., 2018, Sintesis dan Uji Aktivitas Senyawa 2-bromo-4,5-dimetoksikalkon terhadap Sel Kanker T47D Secara In Vitro, *J. Pharm. Sci. and Med. Res.*, 1(1), 2614–6118.
- Gagandeep, Kumar, P., Kandi, S.K., Mukhopadhyay, K., dan Rawat, D.S., 2020, Synthesis of Novel Monocarbonyl Curcuminoids, Evaluation of Their Efficacy Against MRSA, Including Ex Vivo Infection Model and Their Mechanistic Studies, *Eur. J. Med. Chem.*, 195, 1–16.
- Gera, M., Sharma, N., Ghosh, M., Huynh, D.L., Lee, S.J., Min, T., Kwon, T., dan Jeong, D.K., 2017, Nanoformulations of Curcumin: An Emerging Paradigm for Improved Remedial Application, *Oncotarget*, 8(39), 66680–66698.
- Gómez-Jeria, J.S., Robles-Navarro, A., Kpotin, G.A., Garrido-Sáez, N., dan Gatica-Díaz, N., 2020, Some remarks about the relationships between the common skeleton concept within the Klopman-Peradejordi-Gómez QSAR method and the weak molecule-site interactions, *J. Chem. Res.*, 5(2), 32–52.
- Gregory, G.L. dan Copple, I.M., 2023, Modulating The Expression of Tumor Suppressor Genes Using Activating Oligonucleotide Technologies as A Therapeutic Approach in Cancer, *Mol. Ther. Nucleic Acids*, 31, 211–223.
- Gupta, A.P., Khan, S., Manzoor, M.M., Yadav, A.K., Sharma, G., Anand, R., dan Gupta, S., 2017, Anticancer Curcumin: Natural Analogues and Structure-Activity Relationship, Dalam Rahman, A., *Studies in Natural Products Chemistry*. Elsevier.
- Hashmi, A.A., Hussain, Z.F., Irfan, M., Naeem, M., Hashmi, S.K., Asif, H., Baloch, S., dan Faridi, N., 2019, Epidermal Growth Factor Receptor (EGFR) Overexpression in Endometrial Carcinoma: Association with Histopathologic Parameters, *Surg. Exp. Pathol.*, 2(8), 1–5.
- Hassan, M., Tutar, L., Sari-Ak, D., Rasul, A., Basheer, E., dan Tutar, Y., 2024, Non-Genetic Heterogeneity and Immune Subtyping in Breast Cancer: Implications for Immunotherapy and Targeted Therapeutics, *Transl. Oncol.*, 47, 1–8.
- Hassanpour, S.H. dan Dehghani, M., 2017, Review of Cancer from Perspective of Molecular, *J. Cancer Res. Pract*, 4, 127–129.
- Hata, A.N., Engelman, J.A., dan Faber, A.C., 2015, The BCL2 family: Key Mediators of The Apoptotic Response to Targeted Anticancer Therapeutics, *Cancer Discov.*, 5(5), 475–487.
- Hu, J., Cao, J., Topatana, W., Juengpanich, S., Li, S., Zhang, B., Shen, J., Cai, L., Cai, X., dan Chen, M., 2021, Targeting Mutant p53 for Cancer Therapy: Direct and Indirect Strategies, *J. Hematol. Oncol.*, 14, 1-19.



- Inayah, S.K., Pranowo, H.D., Wahyuningsih, T.D., dan Anwar, C., 2019, Ultrasound-Assisted Synthesis of Some Curcumin Analogs and their Synergistic Effect with Ferulic Acid on α -Amylase Inhibition, *Mater. Sci. Forum.*, 948, 120–126.
- Jamil, S.N.H., Ali, A.H., Feroz, S.R., Lam, S.D., Agustar, H.K., Mohd Abd Razak, M.R., dan Latip, J., 2023, Curcumin and Its Derivatives as Potential Antimalarial and Anti-Inflammatory Agents: A Review on Structure–Activity Relationship and Mechanism of Action, *Pharmaceuticals*, 16, 1–25.
- Kaur, K., Al-Khzaleh, A.K., Bhuyan, D.J., Li, F., dan Li, C.G., 2024, A Review of Recent Curcumin Analogues and Their Antioxidant, Anti-Inflammatory, and Anticancer Activities, *Antioxidants*, 13, 1–34.
- Kim, A., Jang, M.H., Lee, S.J., dan Bae, Y.K., 2017, Mutations of the Epidermal Growth Factor Receptor Gene in Triple-Negative Breast Cancer, *J. Breast Cancer*, 20, 150–159.
- Kontomanolis, E.N., Koutras, A., Syllaios, A., Schizas, D., Mastoraki, A., Garmpis, N., Diakosavvas, M., Angelou, K., Tsatsaris, G., Pagkalos, A., Ntounis, T., dan Fasoulakis, Z., 2020, Role of Oncogenes and Tumor-suppressor Genes in Carcinogenesis: A Review, *Anticancer Research*, 40, 6009–6015.
- Lana D. T., T., Chairil, A., dan Endang, A., 2019, Synthesis of Curcumin Analogs Under Ultrasound Irradiation for Inhibiting α -Amylase, *Mat. Sci. Forum.*, 948, 115–119.
- Liang, Y., Lu, Q., Li, Wei, Zhang, D., Zhang, F., Zou, Q., Chen, L., Tong, Y., Liu, M., Wang, S., Li, Wenxuan, Ren, X., Xu, P., Yang, Z., Dong, S., Zhang, B., Huang, Y., Li, D., dan Wang, H., 2021, Reactivation of Tumour Suppressor In Breast Cancer by Enhancer Switching through Namirna Network, *Nucleic Acids Research*, 49, 8556–8572.
- Lin, K., Baritaki, S., Vivarelli, S., Falzone, L., Scalisi, A., Libra, M., dan Bonavida, B., 2022, The Breast Cancer Protooncogenes HER2, BRCA1 and BRCA2 and their Regulation by the iNOS/NOS2 Axis, *Antioxidants*, 11, 1–35.
- Liu, A.B.E.R.H., 2022, Penambatan Molekul, Sintesis, dan Uji In Vitro Senyawa Analog Kurkumin Monoketon Berbahan Dasar 3-Klorobenzaldehida Sebagai Antikanker, *Tesis*, Program Pasca Sarjana Kimia Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Gadjah Mada, Yogyakarta.
- Liu, X., Fan, Z., Zhang, L., Jin, Z., Yan, D., Zhang, Y., Li, X., Tu, L., Xue, B., Chang, Y., Zhang, H., dan Kong, X., 2017, Bcl-2 Inhibitor Uploaded Upconversion Nanophotosensitizers to Overcome the Photodynamic Therapy Resistance of Cancer Through Adjuvant Intervention Strategy, *Biomater.*, 144, 73–83.



- Lu, K.H., Lu, P.W.A., Lu, E.W.H., Lin, C.W., dan Yang, S.F., 2023, Curcumin and its Analogs and Carriers: Potential Therapeutic Strategies for Human Osteosarcoma, *Int. J. Biol. Sci.*, 19(4), 1241–1265.
- Łukasiewicz, S., Czeczelewski, M., Forma, A., Baj, J., Sitarz, R., dan Stanisławek, A., 2021, Breast Cancer—Epidemiology, Risk Factors, Classification, Prognostic Markers, and Current Treatment Strategies—An Updated Review, *Cancers*, 13, 1–30.
- Malki, A., Elbayaa, R.Y., Thabet, O.A., Sultan, A., dan Youssef, A.M., 2017, Novel Quinuclidinone Derivatives Induced Apoptosis in Human Breast Cancer Via Targeting p53, *Bioorg. Chem.*, 72, 57–63.
- Marei, H.E., Althani, A., Afifi, N., Hasan, A., Caceci, T., Pozzoli, G., Morrione, A., Giordano, A., dan Cenciarelli, C., 2021, p53 Signaling in Cancer Progression and Therapy, *Cancer Cell Int.*, 21(703), 1–5.
- Mbese, Z., Khwaza, V., dan Aderibigbe, B.A., 2019, Curcumin and Its Derivatives as Potential Therapeutic Agents in Prostate, Colon and Breast Cancers, *Molecules*, 24, 1–23.
- Mohammadi Ziarani, G., kheilkordi, Z., dan Gholamzadeh, P., 2020, Ultrasound-Assisted Synthesis of Heterocyclic Compounds, *Mol. Divers.*, 24, 771–820.
- Mohanty, M. dan Mohanty, P.S., 2023, Molecular Docking in Organic, Inorganic, and Hybrid Systems: A Tutorial Review, *Monatsh. Chem.*, 154, 683–707.
- Muttaqin, F.Z., Ferdian Pratama, M., dan Kurniawan, F., 2019, Molecular Docking and Molecular Dynamic Studies of Stilbene Derivative Compounds as Sirtuin-3 (Sirt3) Histone Deacetylase Inhibitor on Melanoma Skin Cancer and Their Toxicities Prediction, *Journal of Pharmacopodium*, 2(2), 112–121.
- Pagadala, N.S., Syed, K., dan Tuszynski, J., 2017, Software for molecular docking: a review, *Biophy. Rev.*, 9, 91–102.
- Pavia, D.L., Lampman, G.M., Kriz, G.S., dan Vyvyan, J.R., 2013, *Introduction to Spectroscopy*, Edisi Kelima, Cengage Learning, Stamford.
- Perumalsamy, V., Harish Kumar, D.R., dan Suresh, S., 2023, Conjugation of Curcumin and Metformin for Improved Pharmacological Profile in Cancer Therapy: An In Silico Approach, *Biointerface Res. Appl. Chem.*, 13(2), 1–15.
- Pourmadadi, M., Abbasi, P., Eshaghi, M.M., Bakhshi, A., Ezra Manicum, A.L., Rahdar, A., Pandey, S., Jadoun, S., dan Díez-Pascual, A.M., 2022, Curcumin Delivery and Co-Delivery Based on Nanomaterials as an Effective Approach for Cancer Therapy, *J. Drug Deliv. Sci. Technol.*, 78, 1–17.



- Priyadarsini, K.I., 2014, The Chemistry of Curcumin: From Extraction to Therapeutic Agent, *Molecules*, 19, 20091–20112.
- Qian, S., Wei, Z., Yang, W., Huang, J., Yang, Y., dan Wang, J., 2022, The Role of BCL-2 Family Proteins in Regulating Apoptosis and Cancer Therapy, *Front. Oncol.*, 12, 1–6.
- Rahmania, T.A., Ritmaleni, R., dan Setyowati, E.P., 2020, In silico and In Vitro Assay of Hexagamavunon-6 analogs, Dibenzilyden-N-Methyl-4-piperidone as Antibacterial Agents, *J. Appl. Pharm. Sci.*, 10(3), 39–43.
- Rahmawari, F., 2024, Penambatan Molekul, ADMET, Sintesis Analog Kurkumin Monoketon Berbahan Dasar N-Metil-4-Piperidon dan Aktivitas Sitotoksik Terhadap T47D Cell Line, *Tesis*, Program Pasca Sarjana Kimia Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Gadjah Mada, Yogyakarta.
- Ramírez, D. dan Caballero, J., 2018, Is It Reliable to Take the Molecular Docking Top Scoring Position as the Best Solution without Considering Available Structural Data?, *Molecules*, 23, 1–17.
- Razali, N.S.C., Lam, K.W., Rajab, N.F., A Jamal, A.R., Kamaluddin, N.F., dan Chan, K.M., 2022, Curcumin Piperidone Derivatives Induce Anti-Proliferative and Anti-Migratory Effects in LN-18 Human Glioblastoma Cells, *Sci. Rep.*, 12, 13131–13148.
- Sancha, S.A.R., Szemerédi, N., Spengler, G., dan Ferreira, M.J.U., 2023, Lycorine Carbamate Derivatives for Reversing P-glycoprotein-Mediated Multidrug Resistance in Human Colon Adenocarcinoma Cells, *Int. J. Mol. Sci.*, 24, 1–22.
- Shen, L., Shi, Q., and Wang, W., 2018, Double Agents: Genes with Both Oncogenic and Tumor-Suppressor Functions, *Oncogenesis*, 7, 1–14.
- Shomali, N., Kamrani, A., Heris, J.A., Shahabi, P., Nasiri, H., Sadeghvand, S., Ghahremanzadeh, K., dan Akbari, M., 2023, Dysregulation of p53 in Breast Cancer: Causative Factors and Treatment Strategies, *Pathol. Res. Pract.*, 247, 1–5.
- Sohn, S.I., Priya, A., Balasubramaniam, B., Muthuramalingam, P., Sivasankar, C., Selvaraj, A., Valliammai, A., Jothi, R., dan Pandian, S., 2021, Biomedical Applications and Bioavailability of Curcumin—An Updated Overview, *Pharmaceutics*, 13, 1–33.
- Tapera, M., Kekeçmuhammed, H., Tunc, C.U., Kutlu, A.U., Çelik, İ., Zorlu, Y., Aydin, O., dan Sarıpinar, E., 2023, Design, synthesis, molecular docking and biological evaluation of 1,2,4-triazole derivatives possessing a hydrazone moiety as anti-breast cancer agents, *New J. Chem.*, 47, 11602–11614.



Tomeh, M.A., Hadianamrei, R., dan Zhao, X., 2019, A Review of Curcumin and Its Derivatives as Anticancer Agents, *Int. J. Mol. Sci.*, 20, 1–26.

Torres, P.H.M., Sodero, A.C.R., Jofily, P., dan Silva-Jr, F.P., 2019, Key Topics in Molecular Docking for Drug Design, *Int. J. Mol. Sci.*, 20, 1–29.

Urošević, M., Nikolić, L., Gajić, I., Nikolić, V., Dinić, A., dan Miljković, V., 2022, Curcumin: Biological Activities and Modern Pharmaceutical Forms, *Antibiotics*, 11(2), 1–27.

Vieira, T.F. dan Sousa, S.F., 2019, Comparing AutoDock and Vina in Ligand/Decoy Discrimination for Virtual Screening, *Appl. Sci.*, 9, 1–18.

Wang, J. dan Wu, S.G., 2023, Breast Cancer: An Overview of Current Therapeutic Strategies, Challenge, and Perspectives, *Breast Cancer: Targets and Therapy*, 15, 721–730.

Wang, X., Simpson, E.R., dan Brown, K.A., 2015, p53: Protection Against Tumor Growth Beyond Effects on Cell Cycle and Apoptosis, *Cancer Research*, 75, 5001–5007.

Welsh, J., 2017, *Chapter 35 - Modeling Breast Cancer in Animals—Considerations for Prevention and Treatment Studies*. Dalam Conn, P.M., *Animal Models for the Study of Human Disease*, Edisi 2, Academic Press, Lubbock.

Yadav, I.S., Nandekar, P.P., Shrivastava, S., Sangamwar, A., Chaudhury, A., dan Agarwal, S.M., 2014, Ensemble Docking and Molecular Dynamics Identify Knoevenagel Curcumin Derivatives with Potent Anti-EGFR Activity, *Gene*, 539, 82–90.

Yang, Z.J., Huang, S.Y., Zhou, D.D., Xiong, R.G., Zhao, C.N., Fang, A.P., Zhang, Y.J., Li, H. Bin, dan Zhu, H.L., 2022, Effects and Mechanisms of Curcumin for the Prevention and Management of Cancers: An Updated Review, *Antioxidants*, 11(8), 1–24.

Zakaria, Z., Zulkifle, M.F., Hasan, W.A.N.W., Azhari, A.K., Raub, S.H.A., Eswaran, J., Soundararajan, M., dan Syed Husain, S.N.A., 2019, Epidermal Growth Factor Receptor (EGFR) Gene Alteration and Protein Overexpression in Malaysian Triple-Negative Breast Cancer (TNBC) Cohort, *Onco. Targets. Ther.*, 12, 7749–7756.

Zelelew, D., Endale, M., Melaku, Y., Geremew, T., Eswaramoorthy, R., Tufa, L.T., Choi, Y., dan Lee, J., 2023, Ultrasonic-Assisted Synthesis of Heterocyclic Curcumin Analogs as Antidiabetic, Antibacterial, and Antioxidant Agents Combined with In Vitro and In Silico Studies, *Adv. Appl. Bioinforma Chem.*, 16, 61–91.