

DAFTAR PUSTAKA

- Adelina, R., & Kurniatri, A. A. (2018). Mekanisme Katekin Sebagai Obat Antidislipidemia (Uji In Silico). *Buletin Penelitian Kesehatan*, 46(3), 147–154. <https://doi.org/10.22435/bpk.v46i3.899>
- Agrawal, U., Raju, R., & Udwadia, Z. F. (2020). Favipiravir: A new and emerging antiviral option in COVID-19. In *Medical Journal Armed Forces India* (Vol. 76, Issue 4, pp. 370–376). Elsevier B.V. <https://doi.org/10.1016/j.mjafi.2020.08.004>
- Arthur, D. E., & Uzairu, A. (2019). Molecular docking studies on the interaction of NCI anticancer analogues with human Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit | Enhanced Reader. */Journal of King Saud University – Science*, 31, 1151–1166. <https://doi.org/https://doi.org/10.1016/j.jksus.2019.01.011>
- Arwansyah, Ambarsari, L., & Sumaryada, T. I. (2014). Simulasi Docking Senyawa Kurkumin Dan Analognya Sebagai Inhibitor Enzim 12-Lipoksgenase. *Current Biochemistry*, 1(in silico), 36–39.
- Arwansyah, & Hasrianti. (2014). Simulasi Molecular Docking Senyawa Kurkumin dan Analognya Sebagai Selective Androgen Receptor Modulators (SARMs) Pada Kanker Prostat. *Jurnal Dinamika*, 5(2), 60–75.
- Athar, M., Lone, M. Y., & Jha, P. C. (2017). First protein drug target's appraisal of lead-likeness descriptors to unfold the intervening chemical space. *Journal of Molecular Graphics and Modelling*, 72, 272–282. <https://doi.org/10.1016/j.jmgm.2016.12.019>
- Azer, S. A. (2020). COVID-19: pathophysiology, diagnosis, complications and investigational therapeutics. In *New Microbes and New Infections* (Vol. 37, p. 100738). Elsevier Ltd. <https://doi.org/10.1016/j.nmni.2020.100738>
- Blaising, J., Polyak, S. J., & Pécheur, E. I. (2014). Arbidol as a broad-spectrum antiviral: An update. In *Antiviral Research* (Vol. 107, Issue 1, pp. 84–94). Elsevier B.V. <https://doi.org/10.1016/j.antiviral.2014.04.006>
- Burley, S. K., Berman, H. M., Bhikadiya, C., Bi, C., Chen, L., Costanzo, L. Di, Christie, C., Duarte, J. M., Dutta, S., Feng, Z., Ghosh, S., Goodsell, D. S., Green, R. K., Guranovic, V., Guzenko, D., Hudson, B. P., Liang, Y., Lowe, R., Peisach, E., ... Ioannidis, Y. E. (2019). Protein Data Bank: The single global archive for 3D macromolecular structure data. *Nucleic Acids Research*, 47(D1), D520–D528. <https://doi.org/10.1093/nar/gky949>
- CCSB. (2018). *AutoDockTools – AutoDock Suite*. <https://ccsb.scripps.edu/autodock/adt/>
- Chan, J. F.-W., Kok, K.-H., Zhu, Z., Chu, H., To, K. K.-W., Yuan, S., & Yuen, K.-Y. (2020). Genomic characterization of the 2019 novel human-pathogenic coronavirus isolated from a patient with atypical pneumonia after visiting Wuhan. *Emerging Microbes & Infections*, 9(1), 221–236. <https://doi.org/10.1080/22221751.2020.1719902>
- Chang, R. (2005). *Kimia Dasar Konsep - Konsep Inti. Edisi Ketiga (Jilid 2)*. Erlangga.
- Chaudhary, K., & Mishra, N. (2016). A Review on Molecular Docking: Novel Tool for Drug Discovery. *JSM Chemistry*, 4(3), 1029.

- https://www.researchgate.net/publication/308529147_A_Review_on_Molecular_Docking_Novel_Tool_for_Drug_Discovery
- Chen, Y., Liu, Q., & Guo, D. (2020). Emerging coronaviruses: Genome structure, replication, and pathogenesis. In *Journal of Medical Virology* (Vol. 92, Issue 4, pp. 418–423). John Wiley and Sons Inc. <https://doi.org/10.1002/jmv.25681>
- Cui, J., Li, F., & Shi, Z. L. (2019). Origin and evolution of pathogenic coronaviruses. *Nature Reviews Microbiology*, 17(3), 181–192. <https://doi.org/10.1038/s41579-018-0118-9>
- Damayanti, S., Khonsa, K., & Amelia, T. (2021). Antiviral Activity and Toxicity Prediction of Compounds Contained in Figs (Ficus carica L.) by In Silico Method. *Indonesian Journal of Pharmaceutical Science and Technology*, 8(1), 21. <https://doi.org/10.24198/ijpst.v8i1.29868>
- Daniaty, N., & Sianturi, M. (2017). Analisa Jembatan Garam untuk Meningkatkan Kestabilan Termal Enzim Xilanase Aspergillus niger. *Jurnal EduMatSains*, 1(2), 191–201.
- Dassault Systèmes. (2020a). *A suite of validated science technologies biovia discovery studio comprehensive modeling and simulations datasheet*. www.3ds.com.
- Dassault Systèmes. (2020b). *Biovia Discovery Studio*. <https://www.3ds.com/products-services/biovia/products/molecular-modeling-simulation/biovia-discovery-studio/>
- Deng, S.-Q., & Peng, H.-J. (2020). Characteristics of and Public Health Responses to the Coronavirus Disease 2019 Outbreak in China. *Journal of Clinical Medicine*, 9(2), 575. <https://doi.org/10.3390/jcm9020575>
- Fadhilah, Q., & Tjahjono, H. (2012). Hubungan Kuantitatif Struktur dan Aktivitas Senyawa Turunan 3-Haloasilaminobenzoilurea sebagai Inhibitor Pembentukan Mikrotubulus Validasi model statistik dilakukan untuk mendapatkan. *Acta Pharmaceutica Indonesia*, XXXVII(3), 76–82.
- Ferwadi, S., Gunawan, R., & Astuti, W. (2017). Studi Docking Molekular Senyawa Asam Sinamat Dan Derivatnya Sebagai Inhibitor Protein 1J4X Pada Sel Kanker Serviks. *Jurnal Kimia Mulawarman*, 14(2), 84–90. <http://jurnal.kimia.fmipa.unmul.ac.id/index.php/JKM/article/view/401/307>
- Furuta, Y., Komeno, T., & Nakamura, T. (2017). Favipiravir (T-705), a broad spectrum inhibitor of viral RNA polymerase. *Proc Jpn Acad Ser B Phys Biol Sci.*, 93(7), 449–463. <https://doi.org/https://doi.org/10.2183/pjab.93.027>
- Ganesan, M. S., Raja, K. K., Murugesan, S., Kumar, B. K., Rajagopal, G., & Thirunavukkarasu, S. (2020). Synthesis, biological evaluation, molecular docking, molecular dynamics and DFT studies of quinoline-fluoroproline amide hybrids. *Journal of Molecular Structure*, 1217, 128360. <https://doi.org/10.1016/j.molstruc.2020.128360>
- Gralinski, L. E., & Menachery, V. D. (2020). Return of the Coronavirus: 2019-nCoV. *Viruses*, 12(2), 135. <https://doi.org/10.3390/v12020135>
- Gromiha, M. M. (2010). Protein Interactions. In *Protein Bioinformatics* (pp. 247–302). Elsevier. <https://doi.org/10.1016/B978-8-1312-2297-3.50007-2>
- Hill, A. D., & Reilly, P. (2007). A Gibbs Free Energy Correlation for Automated Docking of Carbohydrates ANTHONY. *Journal of Computational Chemistry*, 29(October), 1131–1141. <https://doi.org/10.1002/jcc.20873>
- Hu, B., Guo, H., Zhou, P., & Shi, Z. L. (2020). Characteristics of SARS-CoV-2 and

- COVID-19. *Nature Reviews Microbiology*. <https://doi.org/10.1038/s41579-020-00459-7>
- Joshi, S., Parkar, J., Ansari, A., Vora, A., Talwar, D., Tiwaskar, M., Patil, S., & Barkate, H. (2020). Role of favipiravir in the treatment of COVID-19. *International Journal of Infectious Diseases*, 102, 501–508. <https://doi.org/10.1016/j.ijid.2020.10.069>
- Kaushik, M. (2014). A review of Innovative Chemical Drawing and Spectra Prediction Computer Software. *Mediterranean Journal of Chemistry*, 3(1), 759–766. <https://doi.org/10.13171/mjc.3.1.2014.04.04.16>
- Kousar, K., Majeed, A., Yasmin, F., Hussain, W., & Rasool, N. (2020). Phytochemicals from Selective Plants Have Promising Potential against SARS-CoV-2: Investigation and Corroboration through Molecular Docking, MD Simulations, and Quantum Computations. *BioMed Research International*. <https://doi.org/10.1155/2020/6237160>
- Krafcikova, P., Silhan, J., Nencka, R., & Boura, E. (2020). Structural analysis of the SARS-CoV-2 methyltransferase complex involved in RNA cap creation bound to sinefungin. *Nature Communications*, 11(1). <https://doi.org/10.1038/s41467-020-17495-9>
- Lestari, T. (2015). Studi Interaksi Senyawa Turunan 1 , 3-Dibenzoiltiourea sebagai Ribonukleotida Reduktase Inhibitor. *Jurnal Farmasi Indonesia*, 7(3), 163–169.
- Lins, L., & Brasseur, R. (1995). *The Hydrophobic effect in protein folding*. Faseb J.
- Lopinavir / DrugBank Online*. (2020). <https://go.drugbank.com/drugs/DB01601>
- Madelain, V., Oestereich, L., Graw, F., Nguyen, T. H. T., De Lamballerie, X., Mentré, F., Günther, S., & Guedj, J. (2015). Ebola virus dynamics in mice treated with favipiravir. *Antiviral Research*, 123, 70–77. <https://doi.org/10.1016/j.antiviral.2015.08.015>
- Marvin / ChemAxon*. (n.d.). <https://chemaxon.com/products/marvin>
- Moreira, F. T. C., Guerreiro, J. R. L., Brandão, L., & Sales, M. G. F. (2015). Synthesis of molecular biomimetics. *Biomimetic Technologies: Principles and Applications*, 3–31. <https://doi.org/10.1016/b978-0-08-100249-0.00001-x>
- Morris. (2013). *AutoDock — AutoDock*. <http://autodock.scripps.edu/>
- Mousavizadeh, L., & Ghasemi, S. (2020). Genotype and phenotype of COVID-19: Their roles in pathogenesis. In *Journal of Microbiology, Immunology and Infection*. Elsevier Ltd. <https://doi.org/10.1016/j.jmii.2020.03.022>
- Muchtaridi, Yanuar, A., Megantara, S., & Purnomo, H. (2018). *Kimia Medisinal: Dasar-dasar Dalam Perancangan Obat* (1st ed.). Prenadamedia Group.
- Nagata, T., Lefor, A. K., Hasegawa, M., & Ishii, M. (2015). Favipiravir: A New Medication for the Ebola Virus Disease Pandemic. *Disaster Medicine and Public Health Preparedness*, 9(1), 79–81. <https://doi.org/10.1017/dmp.2014.151>
- Narkhede, R. R., Cheke, R. S., & Shinde, S. D. (2020). The Molecular Docking Study of Potential Drug Candidates Showing Anti-COVID-19 Activity by Exploring of Therapeutic Targets of SARS-CoV-2. *Eurasian Journal of Medicine and Oncology*, 4(3), 185–195. <https://doi.org/10.14744/ejmo.2020.31503>
- Narko, T., Permana, B., Prasetyawati, R., Soni, D., & Khairiyah, F. (2017). Studi

- penambatan molekul senyawa dari umbi bawang dayak (*eleutherine palmifolia* (l) merr.) Sebagai obat antikanker serviks. *Jurnal Ilmiah Farmako Bahari*, 8(2), 1–14. <https://journal.uniga.ac.id/index.php/JFB/article/view/643>
- National Center for Biotechnology Information. (2020a). *Arbidol / C22H25BrN2O3S* - <https://pubchem.ncbi.nlm.nih.gov/compound/Umifenovir>
- National Center for Biotechnology Information. (2020b). *Chloroquine / C18H26ClN3* - <https://pubchem.ncbi.nlm.nih.gov/compound/Chloroquine>
- National Center for Biotechnology Information. (2020c). *Hydroxychloroquine / C18H26ClN3O* - <https://pubchem.ncbi.nlm.nih.gov/compound/Hydroxychloroquine>
- National Center for Biotechnology Information. (2020d). *Lopinavir / C37H48N4O5* - <https://pubchem.ncbi.nlm.nih.gov/compound/Lopinavir>
- National Center for Biotechnology Information. (2020e). *Oseltamivir / C16H28N2O4* - <https://pubchem.ncbi.nlm.nih.gov/compound/Oseltamivir>
- National Center for Biotechnology Information. (2020f). *PubChem Compound Summary for CID 492405, Favipiravir.* <https://pubchem.ncbi.nlm.nih.gov/compound/Favipiravir>.
- National Center for Biotechnology Information. (2020g). *Remdesivir / C27H35N6O8P* - <https://pubchem.ncbi.nlm.nih.gov/compound/Remdesivir>
- National Center for Biotechnology Information. (2020h). *Ribavirin / C8H12N4O5* - <https://pubchem.ncbi.nlm.nih.gov/compound/Ribavirin>
- National Center for Biotechnology Information. (2020i). *Ritonavir / C37H48N6O5S2* - <https://pubchem.ncbi.nlm.nih.gov/compound/Ritonavir>
- Oseltamivir / DrugBank Online.* (2020). <https://go.drugbank.com/drugs/DB00198>
- Pan American Health Organization. (2020). *PAHO Director's remarks on COVID-19 pandemic - 11 March 2020.* <https://www.paho.org/en/documents/paho-directors-remarks-covid-19-pandemic-11-march-2020>
- Pérez, S., & Tvaroška, I. (2014). Carbohydrate-protein interactions: Molecular modeling insights. In D. Horton (Ed.), *Advances in Carbohydrate Chemistry and Biochemistry* (Vol. 71). <https://doi.org/10.1016/B978-0-12-800128-8.00001-7>
- Rachmania, R. A. (2019). Validasi Protokol Skrining Virtual Dan Analisis Interaksi Inhibitor Antiproliferasi Sel Kanker Berbasis Bahan Alam Terhadap Reseptor Cyclin-Dependent Kinase 4 (Cdk 4). *Media Farmasi: Jurnal Ilmu Farmasi*, 16(1), 21–40. <https://doi.org/10.12928/mf.v16i1.12101>
- Rachmania, R. A., Supandi, & Cristina, F. A. D. (2016). *Phaleria macrocarpa*. 13(02), 239–251.
- Reddy, M. K. (2020). Amino Acid. In *Britannica Online*. Encyclopædia Britannica. <https://www.britannica.com/science/amino-acid>
- Ribavirin / DrugBank Online.* (2020). <https://go.drugbank.com/drugs/DB00811>
- Ritonavir / DrugBank Online.* (2020). <https://go.drugbank.com/drugs/DB00503>
- Rosenke, K., Feldmann, H., Westover, J. B., Hanley, P. W., Martellaro, C.,

- Feldmann, F., Saturday, G., Lovaglio, J., Scott, D. P., Furuta, Y., Komeno, T., Gowen, B. B., & Safronetz, D. (2018). Use of favipiravir to treat lassa virus infection in Macaques. *Emerging Infectious Diseases*, 24(9), 1696–1699. <https://doi.org/10.3201/eid2409.180233>
- Roy, K., Kar, S., & Das, R. N. (2015). Other Related Techniques. In K. Roy, S. Kar, & R. N. Das (Eds.), *Understanding the Basics of QSAR for Applications in Pharmaceutical Sciences and Risk Assessment*. Academic Press. <https://doi.org/10.1016/b978-0-12-801505-6.00010-7>
- Ruslin, Yana, N. R. A., & Leorita, M. (2020). Desain Turunan Senyawa Leonurine Sebagai Kandidat Obat Anti Inflamasi. *Jurnal Farmasi Galenika (Galenika Journal of Pharmacy) (e-Journal)*, 6(1), 181–191. <https://doi.org/10.22487/j24428744.2020.v6.i1.15025>
- Ruswanto, R. (2015). Molecular Docking Empat Turunan Isonicotinohydrazide Pada Mycobacterium Tuberculosis Enoyl-Acyl Carrier Protein Reductase (InhA). *Jurnal Kesehatan Bakti Tunas Husada: Jurnal Ilmu-Ilmu Keperawatan, Analis Kesehatan Dan Farmasi*, 13(1), 135–141. <https://doi.org/10.36465/jkbth.v13i1.25>
- Ruswanto, R., Nofianti, T., Mardianingrum, R., & Lestari, T. (2018a). Desain dan Studi In Silico Senyawa Turunan Kuwanon-H sebagai Kandidat Obat Anti-HIV. *Jurnal Kimia VALENSI*, 4(1), 57–66. <https://doi.org/10.15408/jkv.v4i1.6867>
- Ruswanto, R., Nofianti, T., Mardianingrum, R., & Lestari, T. (2018b). Desain dan Studi In Silico Senyawa Turunan Kuwanon-H sebagai Kandidat Obat Anti-HIV. *Jurnal Kimia VALENSI*, 4(1), 57–66. <https://doi.org/10.15408/jkv.v4i1.6867>
- Ruswanto, R., Rahayuningsih, N., Hadayati, N. L., Nuryani, G. S., & Mardianingrum, R. (2019). *Uji In Vitro dan Studi In Silico Senyawa Turunan N'-Benzoylisonicotinohydrazide sebagai Kandidat Antituberkulosis (In Vitro and In Silico Study of N'-Benzoylisonicotinohydrazide as Antituberculosis Candidate)*. 17(2), 218–226.
- Ruswanto, Ratnasari, A., & Tuslinah, L. (2015). Sintesis senyawa n'-(3,5-dinitrobenzoyl)-isonicotinohydrazide dan studi interaksinya pada mycobacterium tuberculosis enoyl acyl carrier protein reductase (INHA). *Jurnal Kesehatan Bakti Tunas Husada: Jurnal Ilmu-Ilmu Keperawatan, Analis Kesehatan Dan Farmasi*, 14(1), 63. <https://doi.org/10.36465/jkbth.v14i1.112>
- Satuan Tugas Penanganan COVID-19. (2020). *Data Sebaran*. <https://covid19.go.id/>
- Shippey, E. A., Wagler, V. D., & Collamer, A. N. (2018). Hydroxychloroquine: An old drug with new relevance. *Cleveland Clinic Journal of Medicine*, 85(6), 459–467. <https://doi.org/10.3949/ccjm.85a.17034>
- Siswandono. (2016). *Kimia Medisinal 1* (2nd ed.). Airlangga University Press.
- Snijder, E. J., Decroly, E., & Ziebuhr, J. (2016). The Nonstructural Proteins Directing Coronavirus RNA Synthesis and Processing. In *Advances in Virus Research* (Vol. 96, pp. 59–126). Academic Press Inc. <https://doi.org/10.1016/bs.aivir.2016.08.008>
- Tim Dosen Fakultas Kedokteran Unisba. (2020). *Kopid pedia - Bunga Rampai Artikel Penyakit Virus Korona (COVID-19)* (T. Respati & H. S. Rathomi

- (Eds.)). P2U Unisba.
http://repository.unisba.ac.id/bitstream/handle/123456789/26736/fulltext_bc_09_rahimah_kopidpedia_fk_p2u_unisba_2020.pdf?sequence=1&isAllowed=y
- Tong, J. C., & Ranganathan, S. (2013). Scientific publications and databases. In *Computer-Aided Vaccine Design* (pp. 21–46). Elsevier.
<https://doi.org/10.1533/9781908818416.21>
- Ullah, H., Ullah, A., Gull, A., Mousavi, T., & Khan, M. W. (2020). Novel Coronavirus 2019 (COVID-19) Pandemic Outbreak: A Comprehensive Review of the Current Literature. *Vacunas*.
<https://doi.org/10.1016/j.vacun.2020.09.009>
- Umifenovir / DrugBank Online*. (2020). <https://go.drugbank.com/drugs/DB13609>
- Van Goudoever, J. B., Vlaardingerbroek, H., Van Den Akker, C. H., De Groot, F., & Van Der Schoor, S. R. D. (2014). Amino acids and proteins. *World Review of Nutrition and Dietetics*, 110(April), 49–63.
<https://doi.org/10.1159/000358458>
- Vandekerckhove, S., & D'Hooghe, M. (2015). Quinoline-based antimalarial hybrid compounds. *Bioorganic and Medicinal Chemistry*, 23(16), 5098–5119.
<https://doi.org/10.1016/j.bmc.2014.12.018>
- Wang, M., Cao, R., Zhang, L., Yang, X., Liu, J., Xu, M., Shi, Z., Hu, Z., Zhong, W., & Xiao, G. (2020). Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro. In *Cell Research* (Vol. 30, Issue 3, pp. 269–271). Springer Nature.
<https://doi.org/10.1038/s41422-020-0282-0>
- Wang, Y., Sun, Y., Wu, A., Xu, S., Pan, R., Zeng, C., Jin, X., Ge, X., Shi, Z., Ahola, T., Chen, Y., & Guo, D. (2015). Coronavirus nsp10/nsp16 Methyltransferase Can Be Targeted by nsp10-Derived Peptide In Vitro and In Vivo To Reduce Replication and Pathogenesis. *Journal of Virology*, 89(16), 8416–8427.
<https://doi.org/10.1128/jvi.00948-15>
- Wu, J. T., Leung, K., & Leung, G. M. (2020). Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: a modelling study. *The Lancet*, 395(10225), 689–697. [https://doi.org/10.1016/S0140-6736\(20\)30260-9](https://doi.org/10.1016/S0140-6736(20)30260-9)