

DAFTAR PUSTAKA

- Agarwal, S., & Mehrotra, R. 2016. An overview of molecular docking. *JSM Chemistry*, 4(2), 1024.
- Aksono, E. B., Latifah, A. C., Suwanti, L. T., Haq, K. U., & Pertiwi, H. 2022. *Veterinary Medicine International*, 2022, 5113742. <https://doi.org/10.1155/2022/5113742>
- Albaar, M. T., Masrika, N. U. E., & Wahyudi, R. B. 2024. Penyuluhan kesehatan: upaya pencegahan dampak jangka panjang infeksi saluran kemih di SMA Negeri 8 Ternate. *Jurnal Kreativitas Pengabdian kepada Masyarakat*, 7(1), 178-189. <https://doi.org/10.33024/jkpm.v7i1.12553>
- Amajida, H., Purwoko, T., & Susilowati A. 2019. Antibacterial activity of ethanolic and n-hexane extracts of *Ruellia tuberosa* leaves against *Escherichia coli* and *Bacillus subtilis* bacteria. *Biofarmasi J. Nat. Prod. Biochem*, 17 (2), 69-80. 10.13057/biofar/f170203.
- Amelia, B., Saepudin, E., Cahyana, A. H., Rahayu, D. U., Sulistyoningrum, A. S., & Haib, J. 2017. GC-MS analysis of clove (*Syzygium aromaticum*) bud essential oil from Java and Manado. *AIP Conference Proceedings*, 1862(1), 030082. <https://doi.org/10.1063/1.4991186>
- Anwar, I., Nuralifah, Parawansah, Trinovitasari, N., Hikmah, N., & Malina, R. 2023. Aktivitas antibakteri gram positif serta penetapan kadar flavonoid dan fenolik total dari ekstrak dan fraksi daun jati (*Tectona grandis* Linn.F.). *BioWallacea: Jurnal Penelitian Biologi*, 10(2), 74-87.
- Aswad, M., Christine, L., Nursamsir, & Hardianti, B. 2019. Studi penambatan molekul senyawa-senyawa bioaktif dari kulit akar murbei (*Morus sp.*)

terhadap reseptor TNF- α . *Majalah Farmasi dan Farmakologi*, 23(3), 85-100. <https://doi.org/10.20956/mff.v23i3.9399>

Ayub, M. A., Goksen, G., Fatima, A., Zubair, M., Abid, M. A., & Starowicz, M. 2023. Comparison of conventional extraction techniques with superheated steam distillation on chemical characterization and biological activities of *Syzygium aromaticum* L. essential oil. *Separations*, 10(1), 27. <https://doi.org/10.3390/separations10010027>

Aziz, Z. H. A., Rizkiyah, D. N., Qomariyah, L., Irianto, I., Yunus, M. A. C., & Putra, N. R. 2023. Unlocking the full potential of clove (*Syzygium aromaticum*) spice: An overview of extraction techniques, bioactivity, and future opportunities in the food and beverages industry. *Processes*, 11(8), 2453. <https://doi.org/10.3390/pr11082453>

Bai, J., Li, J., Chen, Z., Bai, X., Yang, Z., Wang, Z., & Yang, Y. 2023. Antibacterial activity and mechanism of clove essential oil against foodborne pathogens. *Lebensmittel-Wissenschaft & Technologie*, 173, 114249. <https://doi.org/10.1016/j.lwt.2022.114249>

Basak, S., Singh, P. & Rajurkar, M. 2016. Multidrug resistant and extensively drug resistant bacteria: a study. *Journal of Pathogens*, 2016(1), 4065603. <https://doi.org/10.1155/2016/4065603>

Basavaraju, M., & Gunashree, B.S. 2023. *Escherichia coli*: An Overview of Main Characteristics. In M. Starcičič Erjavec (Ed.), *Escherichia coli – Old and New Insights*. IntechOpen. <https://doi.org/10.5772/intechopen.105508>

Batiha, G.E., Alkazmi, L.M., Lamiaa, G.W., Beshbishy, A.M., Nadwa, E.H., & Rashwan, E.K. (2020). *Syzygium aromaticum* L. (Myrtaceae): traditional uses, bioactive chemical constituents, pharmacological and toxicological activities. *Biomolecules*, 10(2), 202. <https://doi.org/10.3390/biom10020202>

- Bhardwaj, K., Silva, A. S., Atanassova, M., Sharma, R., Nepovimova, E., Musilek, K., Sharma, R., Alghuthaymi, M. A., Dhanjal, D. S., Nicoletti, M., Sharma, B., Upadhyay, N. K., Martins, N. C., Bhardwaj, P., & Kuca, K. 2021. Conifers phytochemicals: a valuable forest with therapeutic potential. *Molecules*, 26, 3005. <https://doi.org/10.3390/molecules26103005>
- Bikheet, M.M., Hassan, H. M., Omar, M. O. A., Abdel-Aleem, W. M. Galal, S. M., Korma, S. A., Ibrahim, S. A., & Nassar, K. S. 2025. Effects of clove (*Syzygium aromaticum*) extract on antibacterial activity, phytochemical properties, and storage quality of flavored milk beverages. *Journal of Dairy Science*, 108(4), 3300-3313. <https://doi.org/10.3168/jds.2024-26023>
- Chaachouay, N. 2025. Synergy, additive effects, and antagonism of drugs with plant bioactive compounds. *Drugs and Drug Candidates*, 4(1), 4. <https://doi.org/10.3390/ddc4010004>
- Chellat, M. F., Raguz, L. & Riedl, R. 2016. Targeting antibiotic resistance. *Angewandte Chemie International Edition*, 55(23), 6600-6626. <https://doi.org/10.1002/anie.201506818>
- Cho, H., Uehara, T., & Bernhardt, T.G. 2014. Beta-Lactam antibiotics induce a lethal malfunctioning of the bacterial cell wall synthesis machinery. *Cell*, 159(6), 1300-1311. <http://dx.doi.org/10.1016/j.cell.2014.11.017>
- Clinical and Laboratory Standards Institute. 2020. *Performance standards for antimicrobial susceptibility testing* (30th ed.). CLSI supplement M100. Clinical and Laboratory Standards Institute.
- Contreras-Alvarado, L. M., Zavala-Vega, S., Cruz-Cordova, A., Reyes-Grajeda, J. P., Escalona-Venegas, G., Flores, V., Alcazar-Lopez, V., Arellano-Galindo, J., Hernandez-Castro, R., Castro-Escarpulli, G., Xicohtencatl-Cortes, J. & Ochoa, S. A. 2021. Molecular epidemiology of multidrug-resistant uropathogenic *Escherichia coli* O25b strain

associated with complicated urinary tract infection in children. *Microorganisms*, 9(11), 2299.
<https://doi.org/10.3390/microorganisms9112299>

Costa, E. M. D., Rengga, M. P. E., & Oktavia, N. 2021. Rasionalitas penggunaan antibiotik pada pasien infeksi saluran kemih (ISK) di rumah sakit Bhayangkara Tk.III Drs.Titus Uly Kupang. *CHM-K Pharmaceutical Scientific Journal*, 4(2), 276-281.

Daina, A., Michielin, O., & Zoete, V. 2017. SwissADME: a free web tool to evaluate pharmacokinetics, drug-likeness and medicinal chemistry friendliness of small molecules. *Scientific Reports*, 7, 42717.
<https://doi.org/10.1038/srep42717>

Dallakyan, S., & Olson, A. J. 2015. Small-molecule library screening by docking with PyRx. In J. E. Hempel, C. Williams, & C. Hong. (Eds.), *Chemical Biology*. (pp. 243-250). *Methods in Molecular Biology*.
https://doi.org/10.1007/978-1-4939-2269-7_19

Druzhilovskiy, D.S., Rudik, A. V., Filimonov, D. A., Glorizova, T. A., Lagunin, A. A., Dmitriev, A. V., Pogodin, V. I., Murtazaliev, K. A., Semin, M. I., Maiorov, I. S., Gaur, A. S., Sastry, G. N., & Poroikov, V. V. 2017. Computational platform Way2Drug: from the prediction of biological activity to drug repurposing. *Russian Chemical Bulletin, International Edition*, 66(10), 1832-1841.
<http://dx.doi.org/10.1007/s11172-017-1954-x>

Elfita, L., Apriadi, A., Supandi, & Dianmurdedi, S. 2022. Studi penambatan molekuler dan simulasi dinamika molekuler senyawa turunan Furanokumarin terhadap reseptor esterogen alfa (ER- α) sebagai anti kanker payudara. *Jurnal Sains Farmasi & Klinis*, 9(3), 255-264.
<https://doi.org/10.25077/jsfk.9.3.255-264.2022>

Filimonov, D. A., Lagunin, A. A., Glorizova, T. A., Rudik A. V., Druzhilovskii, D. S., Pogodin, P. V., & Poroikov, V. V. 2014.

Prediction of the biological activity spectra of organic compounds using the PASS online webresource. *Chemistry of Heterocyclic Compounds*, 50(3), 444-457.

Flores-Mireles, A.L., Walker, J.N., Caparon, M. & Hultgren, S.J. 2015. Urinary tract infections: epidemiology, mechanisms of infection and treatment options. *Nature Reviews Microbiology*, 13(5), 269-284.

<https://doi.org/10.1038/nrmicro3432>

Gonelimali, F. D., Lin, J., Miao, W., Xuan, J., Charles, F., Chen, M., & Hatab, S. R. 2018. Antimicrobial properties and mechanism of action of some plant extracts against food pathogens and spoilage microorganisms. *Frontiers in Microbiology*, 9, 1639.

<https://doi.org/10.3389/fmicb.2018.01639>

Hariati, H., Suza, D. E. and Tarigan, R. 2019. Risk factors analysis for catheter-associated urinary tract infection in Medan, Indonesia. *Open Access Maced Journal of Medical Sciences*, 7(19), 3189-3194.

<https://doi.org/10.3889/oamjms.2019.798>

Hidayah, S. N., Suma, A. A. T., & Lukitaningsih, E. 2024. Volatilomics profiling of counterfeit perfume by gas chromatography hyphenated to mass spectrometry and fourier-transformed infrared spectroscopy. *Indonesia Journal of Chemistry*, 24(6), 1772-1783.

<https://doi.org/10.22146/ijc.96313>

Horvath, G., Bencsik, T., Acs, K., & Kocsis, B. 2016. Sensitivity of ESBL-producing gram-negative bacteria to essential oils, plant extracts, and their isolated compounds. In K. Kon & M. Rai (Ed.), *Antibiotic Resistance: Mechanisms and New Antimicrobial Approaches* (pp. 239-269). Elsevier.

Hotmian, E., Suoth, E., Fatimawali, & Tallei, T. 2021. GC-MS (gas chromatography – mass spectrometry) analysis of nut grass tuber

(*Cyperus rotundus* L.) methanolic extract. *Pharmachon*, 10(2), 849-856. <https://doi.org/10.35799/pha.10.2021.34034>

Ibrahim, Z. Y., Uzairu, A., Shallangwa, G., & Abechi, S. 2020. Molecular docking studie, druglikeness and in-silico ADMET prediction of some noverl β -Amino alcohol grafted 1,4,5-trisubtituted 1,2,3-triazoles derivatives as elevators of p53 protein levels. *Scientific African*, 10, e00570. <https://doi.org/10.1016/j.sciaf.2020.e00570>

Intan, K., Diani, A., & Nurul, A. S. R. 2021. Aktivitas antibakteri kayu manis (*Cinnamomum burmanii*) terhadap pertumbuhan *Staphylococcus aureus*. *Jurnal Kesehatan Perintis*, 8(2), 121-127. <http://dx.doi.org/10.33653/jkp.v8i2.679>

Jariremombe, R. C. 2023. *Mechanisms of Antimicrobial Resistance of E. coli*. In M. Starcičić Erjavec (Ed.), *Escherichia coli – Old and New Insights*. IntechOpen. <https://doi.org/10.5772/intechopen.101671>

Kalalo, M.J., Gratia, B., Bidulang, C.B., Djafar, F., & Edy, H.J. 2020. Potensi antimikrobia cengkeh: review literatur. *Pharmacy Medical Journal*, 3(2), 53-63. <https://doi.org/10.35799/pmj.3.2.2020.32882>

Kementrian Kesehatan Republik Indonesia. 2022. *Farmakope Herbal Indonesia Edisi II: Suplemen I*. Jakarta: Kementrian Kesehatan RI. 2022.

Khan, Z. A., Siddiqui, M. F., & Park, S. 2019. Current and emerging methods of antibiotic susceptibility testing. *Diagnostics*, 9(2), 49. <https://doi.org/10.3390/diagnostics9020049>

Khare, T., Anand, U., Dey, A., Assaraf, Y.G., Chen, Z.S., Liu, Z. & Kumar, V. 2021. Exploring phytochemicals for combating antibiotic resistance in microbial pathogens. *Frontiers in Pharmacology*, 12, 720726. <https://doi.org/10.3389/fphar.2021.720726>

- Kim, H. W., Wang, M., Leber, C. A., Nothias, L. F., Reher, R., Kang, K. B., van der Hoof, J. J. J., Dorrestein, P. C., Gerwick, W. H., Cottrell, G. W. 2021. NPClassifier: a deep neural network-based structural classification tool for natural products. *Journal of Natural Products*, 84(11), 2795-2807. <https://doi.org/10.1021/acs.jnatprod.1c00399>
- Kim, S., Chen, J., Cheng, T., Gindulyte, A., He, J., He, S., Li, Q., Shoemaker, B. A., Thiessen, P. A., Yu, B., Zaslavsky, L., Zhang, J., & Bolton, E. E. 2025. PubChem 2025 update. *Nucleic Acids Res*, 53(D1), D1516-D1525. <https://doi.org/10.1093/nar/gkae1059>
- Klein, R.G. & Hultgren, S.J. 2020. Urinary tract infections: microbial pathogenesis, host-pathogen interactions and new treatment strategies. *Nature Reviews Microbiology*, 18(4), 211-226. <https://doi.org/10.1038/s41579-020-0324-0>
- Kurniawati, R. D., Martini, M., Wahyuningsih, N. E., & Sutiningsih, D. 2022. Comparison analysis of leaf and flower extraction of clove which have the potential as larvacida. *International Research Journal of Public and Environmental Health*, 9(4), 110-119. <https://doi.org/10.15739/irjpeh.22.014>
- Kusuma, I.Y., Pitaloka, D.A.E., Arbi, N.D., Sunarti, S., Pratiwi, H., Omer, A.A A. & Bahar, M.A. 2023. Five years of antibiotic consumption for urinary tract infection patients in Indonesia's Provincial Public Hospital. *Pharmacia*, 70(3), 493-498. <https://doi.org/10.3897/pharmacia.70.e107519>
- Lawati, H.A., Blair, B.M. & Larnard, J. 2023. Urinary tract infections: core curriculum 2024. *American Journal of Kidney Disease*, 83(1), 90-100. <https://doi.org/10.1053/j.ajkd.2023.08.009>
- Levy, N., Bruneau, J. M., Rouzic, E. L., Bonnard, D., Strat, F. L., Caravano, A., Chevreuril, F., Barbion, J., Chasset, S., Ledoussal, B., Moreau, F., & Ruff, M. 2019. Structural basis for *E. coli* penicillin binding protein

(PBP) 2 inhibition, a platform for drug design. *Journal of Medicinal Chemistry*, 62(9), 4742-4754.

<http://dx.doi.org/10.1021/acs.jmedchem.9b00338>

Lina, L.F. & Lestari, D.P. 2019. Analisis kejadian infeksi saluran kemih berdasarkan penyebab pada pasien di poliklinik urologi RSUD Dr.M. Yunus Bengkulu. *Jurnal Keperawatan Muhammadiyah Bengkulu*. 7(1), 55-61. <http://dx.doi.org/10.36085/jkmu.v7i1.346>

Lipinski, C. A., Lombardo, F., Dominy, B. W., & Feeney, P. J. 2001. Experimental and computational approaches to estimate solubility and permeability in drug discovery and development settings. *Advanced Drug Delivery Reviews*, 46(1-3), 3-26. [https://doi.org/10.1016/s0169-409x\(00\)00129-0](https://doi.org/10.1016/s0169-409x(00)00129-0)

Mahmoud, A., Afifi, M. M., Shenawy, F. E., Salem, W., & Elesawy, B. H. 2021. *Syzygium aromaticum* extracts as potential antibacterial inhibitors against clinical isolates of *Acinobacter baumannii*: an in-silico-supported in-vitro study. *Antibiotics*, 10 (9), 1062. <https://doi.org/10.3390/antibiotics10091062>

Margareta, M. A. H., & Wonorahardjo, S. 2023. Optimasi metode penetapan senyawa eugenol dalam minyak cengkeh menggunakan *gas chromatography-mass spectrum* dengan variasi suhu injeksi. *Jurnal Sains dan Edukasi Sains*, 6(2), 95-103. <https://doi.org/10.24246/juses.v6i2p95-103>

Marouf, R., Ermolaev, A.A., Podoprigora, I.V., Senyagin, A.N., & Mbarga, M.J.A. 2023. Antibacterial activity of clove *Syzygium aromaticum* L. and synergism with antibiotics against multidrug-resistant uropathogenic *E. coli*. *RUDN Journal of Medicine*, 27(3), 379-390. <https://doi.org/10.22363/2313-0245-2023-27-3-379-390>

Masadeh, M. M., Alzoubi, K. H., Al-azzam, S. I., Khabour, O. F., & Al-buhairan, A. M. 2016. Ciprofloxacin-induced antibacterial activity is

attenuated by pretreatment with antioxidant agen. *Pathogens*, 5(1), 28.
<https://doi.org/10.3390/pathogens5010028>

Mathews, A., Arbal, A. V., Kaarunya, A., Jha, P.K., Le-Bail, A., & Rawson, A. 2024. Conventional vs modern extraction techniques in the food industry. In S. M. Jafari & S. Akhavan-Mahdavi (Eds), *Extraction Process in the Food Industry* (pp. 97-146). Elsevier.
<https://doi.org/10.1016/B978-0-12-819516-1.00013-2>

Maulani, D. & Siagian, E. 2022. Hubungan pengetahuan dan kebersihan urogenital dengan infeksi saluran kemih. *Jurnal Penelitian Perawat profesional*, 4(4), 1269-1280. <https://doi.org/10.37287/jppp.v4i4.1238>

Musdalipah. 2018. Identifikasi *drug related problem* (DRP) pada pasien infeksi saluran kemih di rumah sakit Bhayangkara Kendari. *Jurnal Kesehatan*, 11(1), 39-50.
<https://doi.org/10.24252/kesehatan.v11i1.4908>

Mustapa, M.A. 2020. *Penelusuran Senyawa Tumbuhan Cengkeh* (pp. 23, 67-69). Media Madani.

Novema, A. P., & Ramadhani, M. A. 2022. Aktivitas antibakteri ekstrak kasar dan terpurifikasi daun cengkeh (*Syzygium aromaticum*) terhadap *Escherichia coli* dan *Staphylococcus aureus*. *Borobudur Pharmacy Review*, 2(1), 8-14. <https://doi.org/10.31603/bphr.v2i1.6934>

Nursanti, O., Aziz, A., & Hadisoebroto, G. 2022. Docking dan uji toksisitas secara insilico untuk mendapatkan kandidat obat analgesik. *Indonesian Pharmacy and Natural Medicine Journal*, 6(1), 35-46.
<http://dx.doi.org/10.21927/inpharmmed.v6i1.1922>

Pawar, R. P., & Rohane, S. H. 2021. Role of autodock vina in PyRx molecular docking. *Asian Journal of Research in Chemistry*, 14(2), 132-134.
<https://doi.org/10.5958/0974-4150.2021.00024.9>

- Prastiyanti, M. E., Iswara, A., Khairunnisa, A., Sofyantoro, F., Siregar, A. R., Mafiroh, W. U., Setiawan, J., Nadifah, F., Wibowo, A. T., & Putri, W. A. 2024. Prevalence and antimicrobial resistance profiles of multidrug-resistant bacterial isolates from urinary tract infections in Indonesian patients: A cross-sectional study. *Clinical Infection in Practice*, 22, 100359. <https://doi.org/10.1016/j.clinpr.2024.100359>
- Rahmah, A. F., Arma, U., Lestari, C., Edrizal, & Zia, H. K. 2024. Uji zona hambat ekstrak metanol teripang putih (*Holothuria scabra*) Mentawai terhadap *Streptococcus sanguinis* pada *stomatitis aftosa rekuren* secara *in vitro*: studi eksperimental. *Padjadjaran Journal of Dental Researchers and Students*, 8(1), 71-79. <https://doi.org/10.24198/pjdrs.v8i1.52551>
- Reshi, Z. A., Ahmad, W., Lukatkin, A. S., & Javed, S. B. 2023. From nature to lab: a review of secondary metabolite biosynthetic pathway, environmental influences and *in vitro* approaches. *Metabolites*, 13(8), 895. <https://doi.org/10.3390/metabo13080895>
- Rinawati, W., & Aulia, D. 2022. Update pemeriksaan laboratorium infeksi saluran kemih. *Jurnal Penyakit Dalam Indonesia*. 9(2), 124-131. <https://doi.org/10.7454/jpdi.v9i2.319>
- Rosana, Y., Herliyana, L., Krisandi, G. & Suwarsono, E.A. 2023. Profile of multi-drug-resistant bacteria causing urinary tract infections in inpatients and outpatients in Jakarta and Tangerang. *Universa Medica*, 42(3), 303-313. <http://dx.doi.org/10.18051/UnivMed.2023.v42.303-313>
- Salam, Md. A., Al-Amin, Md. Y., Salam, M. T., Pawar, J. S., Akhter, N., Rabaan, A. A., & Alqumber, M. A. A. 2023. Antimicrobial resistance: A growing serious threat for global public health. *Healthcare*. 11(13), 1946. <https://doi.org/10.3390/healthcare11131946>

- Sari, I. W., Junaidin, & Pratiwi, D. 2020. Studi molecular docking senyawa flavonoid herba kumis kucing (*Orthosiphon stamineus* B.) pada reseptor α -glukosidase sebagai antidiabetes tipe 2. *Jurnal Farmagazine*, 2(2), 54-60. <http://dx.doi.org/10.47653/farm.v7i2.194>
- Seko, M. H., Sabuna, A. Ch., & Ngginak, J. 2021. Ekstrak etanol daun ajeran sebagai antibakteri terhadap *Staphylococcus aureus*. *Jurnal Biosains*, 7(1). <https://doi.org/10.24114/jbio.v7i1.22671>
- Senduk, T. W., Montolalu, L. A. D. Y., & Dotulong, V. 2020. The rendement of boiled water extract of mature leaves of mangrove *Sonneratia alba*. *Jurnal Perikanan dan Kelautan Tropis*, 11(1), 9-15. <https://doi.org/10.35800/jpkt.11.1.2020.28659>
- Simon, F.J., Porong, J.V., & Ogie, T.B. 2022. Study of clove plant cultivation techniques (*Syzygium aromaticum* L.) in Sangihe islands regency. *Applied Agroecotechnology Journal*, 3(1), 153-166. <https://doi.org/10.35791/jat.v3i2.38269>
- Sini, A., Bindu, T. K., Raphael, V. P., Shaju, K. S., & Sebastian, S. 2024. Growth inhibition of *P. aeruginosa* by methanol extract of *Bridelia stipularis* and identification of active components using in silico studies. *Future Journal of Pharmaceutical Sciences*, 10(96), 1-12. <https://doi.org/10.1186/s43094-024-00668-4>
- Smith, B.L., Fernando, S. & King, M. D. 2024. *Escherichia coli* resistance mechanism AcrAB-TolC efflux pump interactions with commonly used antibiotics: a molecular dynamic study. *Sci Rep* 14, 29940. <https://doi.org/10.1038/s41598-024-80622-9>
- Subandrate, Sinulingga, S., Adma, C. A., Monanda, M. D. A., Fatmawati, Safyudin, & Oswari, L. D. 2024. Effect of solvent polarity on secondary metabolite content and α -glucosidase enzyme IC₅₀ of *Dendrophthoe pentandra* (L). Miq leaves extract. *Jurnal Ilmu*

Kefarmasian Indonesia, 22(1), 1-7.

<https://doi.org/10.35814/jifi.v22i1.1363>

Tannabe, R. H. S., Dias, R. C. B., Orsi, H., Lira, D. R. P. D., Vieira, M.A. Santos, L. F. D., Ferreira, A. M., Rall, V. L. M., Mondelli, A. L., Gomes, T. A. T., Camargo, C. H. & Hernandez, R. T. 2022. Characterization of uropathogenic *Escherichia coli* reveals hybrid isolates of uropathogenic and diarrheagenic (UPEC/DEC) *E. coli*. *Microorganisms*, 10(3), 645.

<https://doi.org/10.3390/microorganisms10030645>

Torres, P. H. M., Sodero, A. C. R., Jofily, P., & Silva-Jr, F. P. 2019. Key topics in molecular docking for drug design. *International Journal of Molecular Sciences*. 20(18), 4574.

<https://doi.org/10.3390/ijms20184574>

Trisnaputri, D. R., Dewi, C., Anisa, S. N., Isrul, M., & Fitriah, A. O. I. 2023. Formulasi dan uji aktivitas antioksidan sediaan masker gel *peel-off* ekstrak etanol daun kelengkeng (*Dimocarpus longan* L.). *Jurnal Mandala Pharmacon Indonesia*, 9(2), 432-449.

<https://doi.org/10.35311/jmpi>.

Whelan, S., Lucey, B. & Finn, K., 2023. Uropathogenic *Escherichia coli* (UPEC)-associated urinary tract infections: the molecular basis for challenges to effective treatment. *Microorganisms*, 11, 2169.

<https://doi.org/10.3390/microorganisms11092169>

Xue, Q., Xiang, Z., Wang, S., Cong, Z., Gao, P., & Liu, X. 2022. Recent advances in nutritional composition, phytochemistry, bioactive, and potential applications of *Syzygium aromaticum* L. (Myrtaceae). *Frontiers in Nutrition*, 9, 1002147.

<https://doi.org/10.3389/fnut.2022.1002147>

Yasmin, R., Mafiroh, W. U., Kinasih, A., Ramadhani, A. N., Putri, R., & Semiarti, E. 2022. Potensi antikanker dan antimikroba pada anggrek

berdasarkan prediction of activity spectra for substances (PASS) online.

Journal of Agromedicine and Medical Sciences, 8(1), 25-33.

<http://dx.doi.org/10.19184/ams.v8i1.26848>

Zhou, Y., Zhou, Z., Zheng, L., Gong, Z., Li, Y., Jin, Y., Huang, Y., & Chi, M.

2023. Urinary tract infections caused by uropathogenic *Escherichia coli*: mechanisms of infection and treatment options. *International Journal of Molecular Sciences*,

24(13), 10537.

<https://doi.org/10.3390/ijms241310537>