

DAFTAR PUSTAKA

- Achinas, S., Charalampogiannis, N. and Euverink, G.J.W. (2019) "Brief Recap for Bacteria Adhesion and Biofilms," *Applied Sciences*, 9(2801), pp. 1–15.
- Adnan, M., Patel, M., Deshpande, S., Alreshidi, M., Siddiqui, A.J., Reddy, M.N., *et al.* (2020) "Effect of *Adiantum philippense* Extract on Biofilm Formation, Adhesion With Its Antibacterial Activities Against Foodborne Pathogens, and Characterization of Bioactive Metabolites: An in vitro-in silico Approach," *Frontiers in Microbiology*, 11(May), pp. 1–19. Available at: <https://doi.org/10.3389/fmicb.2020.00823>.
- Agustiani, S. (2020) *Buku Saku untuk Pengguna Kateter Urin "Memahami Kateter Urin dan Perawatannya Secara Mandiri."* Yogyakarta: Universitas Muhammadiyah Yogyakarta.
- Alhede, M., Kragh, K.N., Qvortrup, K., Allesen-holm, M., Gennip, M. Van, Christensen, L.D., *et al.* (2011) "Phenotypes of Non-Attached *Pseudomonas aeruginosa* Aggregates Resemble Surface Attached Biofilm," *PLoS ONE*, 6(11), p. e27943. Available at: <https://doi.org/10.1371/journal.pone.0027943>.
- Ali, A., Zhang, N. and Santos, R.M. (2023) "Mineral Characterization Using Scanning Electron Microscopy (SEM): A Review of the Fundamentals, Advancements, and Research Directions," *Applied Sciences (Switzerland)*, 13(12600), pp. 1–33. Available at: <https://doi.org/10.3390/app132312600>.
- Almalki, M.A. and Varghese, R. (2020) "Prevalence of catheter associated biofilm producing bacteria and their antibiotic sensitivity pattern," *Journal of King Saud University - Science*, 32(2), pp. 1427–1433. Available at: <https://doi.org/10.1016/j.jksus.2019.11.037>.
- Almeida, M., Salam, S., Rahmadani, A., Helmi, H., Narsa, A.C., Kusuma, S.A.F., *et al.* (2022) "The Potency of the Genus *Uncaria* from East Borneo for Herbal Medicine Purposes: A Mini-review," *Journal of Tropical Pharmacy and Chemistry*, 6(2), pp. 167–176. Available at: <https://doi.org/10.25026/jtpc.v6i2.457>.
- Almutairy, B. (2025) "Flavonoid-mediated biofilm inhibition and toxicological

- evaluation of *Atriplex laciniata* against multidrug-resistant MRSA,” *Frontiers in Pharmacology*, 16(June), pp. 1–14. Available at: <https://doi.org/10.3389/fphar.2025.1577052>.
- Alvita, L.R., Falah, S. and Nurhidayat, N. (2016) “Water Extract Activity of Papaya Leaf as Antibiofilm against *Escherichia coli*,” *Current Biochemistry*, 2(3), pp. 164–175. Available at: <https://doi.org/10.29244/cb.2.3.164-175>.
- Andersen, M.J. and Flores-Mireles, A.L. (2020) “Urinary catheter coating modifications: The race against catheter-associated infections,” *Coatings*, 10(23), pp. 1–25. Available at: <https://doi.org/10.3390/coatings10010023>.
- Anggi, A., Wijaya, D.W. and Ramayani, O.R. (2019) “Risk factors for catheter-associated urinary tract infection and uropathogen bacterial profile in the intensive care unit in hospitals in Medan, Indonesia,” *Open Access Macedonian Journal of Medical Sciences*, 7(20), pp. 3488–3492. Available at: <https://doi.org/10.3889/oamjms.2019.684>.
- Anita and Awasthi, K.K. (2025) “An Analysis of the Antimicrobial Activity of Methanol and Chloroform Extracts of *Cayratia trifolia*’s Leaf and Stem,” *Letters in Applied NanoBioScience*, 14(1), pp. 1–7. Available at: <https://doi.org/10.33263/LIANBS141.037>.
- Aparecida, P., Oliveira, A. De, Baboghlian, J., Orandina, C., Ramos, A., Stefani, A., *et al.* (2024) “Selection and validation of reference genes suitable for gene expression analysis by Reverse Transcription Quantitative real - time PCR in *Acinetobacter baumannii*,” *Scientific Reports*, 14(3830), pp. 1–11. Available at: <https://doi.org/10.1038/s41598-024-51499-5>.
- Arciola, C.R., Campoccia, D., Speziale, P., Montanaro, L. and Costerton, J.W. (2012) “Biofilm formation in *Staphylococcus* implant infections. A review of molecular mechanisms and implications for biofilm-resistant materials,” *Biomaterials*, 33(26), pp. 5967–5982. Available at: <https://doi.org/10.1016/j.biomaterials.2012.05.031>.
- Arsul, M.I., Syamsi, N., Putri, N., Nur, N.A.A., Mukhriani and Hamzah, N. (2022) “Total phenolic, flavonoid, and antioxidant capacity of bajakah (*Spatholobus littoralis* Hassk.)” *Current Research on Biosciences and*

- Biotechnology*, 4(1), pp. 242–245. Available at: <https://doi.org/10.5614/crbb.2022.4.1/vrj3x4lf>.
- Atta, S., Waseem, D., Fatima, H., Naz, I., Rasheed, F. and Kanwal, N. (2023) “Antibacterial potential and synergistic interaction between natural polyphenolic extracts and synthetic antibiotic on clinical isolates,” *Saudi Journal of Biological Sciences*, 30(3), p. 103576. Available at: <https://doi.org/10.1016/j.sjbs.2023.103576>.
- Atun, S., Aznam, N., Verdiana, P., Cahyani, D., Izah, L.Q. and Danarjati, W.D. (2025) “The Potential of the *Spatholobus littoralis* Hassk Plant as an Antioxidant and Prediction of the Mechanism of Activity Against ROS1 Kinase Receptor in Silico,” 44(June), pp. 42–51.
- Atun, S., Budimarwanti, C., Suwardi, S., Nurjanah, S., Az-Zahra, R., Garinda, A.C.B., *et al.* (2025) “Potential of The *Spatholobus littoralis* as an Antibacterial and Prediction of The Mechanism of Activity Against PBP3 Receptor Model of *Staphylococcus aureus*,” *Rasayan Journal of Chemistry*, 18(3), pp. 1229–1234. Available at: <https://doi.org/10.31788/RJC.2025.1839167>.
- Bahamondez-Canas, T.F., Heersema, L.A. and Smyth, H.D.C. (2019) “Current status of in vitro models and assays for susceptibility testing for wound biofilm infections,” *Biomedicines*, 7(2), pp. 1–31. Available at: <https://doi.org/10.3390/biomedicines7020034>.
- Barak, T.H., Eryilmaz, M., Karaca, B., Servi, H., Ertekin, S.K., Dinc, M., *et al.* (2025) “Antimicrobial, Anti-Biofilm, Anti-Quorum Sensing and Cytotoxic Activities of *Thymbra spicata* L. subsp. *spicata* Essential Oils,” *Antibiotics*, 14(181), pp. 1–13. Available at: <https://doi.org/10.3390/antibiotics14020181>.
- Barsoumian, A.E., Mende, K., Sanchez, C.J., Beckius, M.L., Wenke, J.C., Murray, C.K., *et al.* (2015) “Clinical infectious outcomes associated with biofilm-related bacterial infections: A retrospective chart review,” *BMC Infectious Diseases*, 15(1), pp. 1–7. Available at: <https://doi.org/10.1186/s12879-015-0972-2>.

- Batra, S., Batra, N. and Nagori, B.P. (2013) "Preliminary phytochemical studies and evaluation of antidiabetic activity of roots of *cayratia trifolia* (L.) domin in alloxan induced diabetic albino rats," *Journal of Applied Pharmaceutical Science*, 3(3), pp. 97–100. Available at: <https://doi.org/10.7324/JAPS.2013.30319>.
- Boote, C., Sigal, I.A., Grytz, R., Hua, Y., Nguyen, T.D. and Girard, M.J.A. (2020) "Progress in Retinal and Eye Research Scleral structure and biomechanics," *Progress in Retinal and Eye Research*, 74(100773), pp. 1–36. Available at: <https://doi.org/10.1016/j.preteyeres.2019.100773>.
- Bose, A., Chakraborty, B.C., Siva, B., Nanjappan, S.K., Arumugam, S., Taraphdar, A.K., *et al.* (2024) "Effect of hydro-ethanolic extract of *Abelmoschus moschatus* against multidrug resistant uropathogenic *Escherichia coli* biofilm—An insight into antibiofilm therapeutics," *South African Journal of Botany*, 174, pp. 66–74. Available at: <https://doi.org/10.1016/j.sajb.2024.08.022>.
- Bouheraoua, S., Cleeves, S., Preusse, M., Müsken, M., Braubach, P., Fuchs, M., *et al.* (2025) "Establishment and characterization of persistent *Pseudomonas aeruginosa* infections in air–liquid interface cultures of human airway epithelial cells," *American Society for Microbiology Infection and Immunity*, 93(3), pp. 1–21.
- Bridier, A., Dubois-Brissonnet, F., Boubetra, A., Thomas, V. and Briandet, R. (2010) "The biofilm architecture of sixty opportunistic pathogens deciphered using a high throughput CLSM method," *Journal of Microbiological Methods*, 82(1), pp. 64–70. Available at: <https://doi.org/10.1016/j.mimet.2010.04.006>.
- Bulacio, M.D.L.Á., Galván, L.R., Gaudioso, C., Cangemi, R. and Erimbaue, M.I. (2015) "Enterococcus faecalis Biofilm Formation And Development In Vitro Observed By Scanning Electron Microscopy," *Acta Odontol. Latinoam*, 28(3), pp. 210–214.
- Butement, J.T., Noel, D.J., Bryant, C.A., Wilks, S.A. and Eason, R.W. (2022) "A light-guiding urinary catheter for the inhibition of *Proteus mirabilis* biofilm

- formation,” *Frontiers in Microbiology*, 13(September), pp. 1–13. Available at: <https://doi.org/10.3389/fmicb.2022.995200>.
- Cacaci, M., Giraud, C., Leger, L., Torelli, R., Martini, C., Posteraro, B., *et al.* (2018) “Expression profiling in a mammalian host reveals the strong induction of genes encoding LysM domain-containing proteins in *Enterococcus faecium*,” *Scientific Reports*, 8(1), pp. 1–11. Available at: <https://doi.org/10.1038/s41598-018-30882-z>.
- Cai, Y. (2020) “Non-surface Attached Bacterial Aggregates : A Ubiquitous Third Lifestyle,” *Frontiers in Microbiology*, 11(557035), pp. 1–18. Available at: <https://doi.org/10.3389/fmicb.2020.557035>.
- Cao, B., Christophersen, L., Kolpen, M., Jensen, P.Ø., Sneppen, K., Høiby, N., *et al.* (2016) “Diffusion Retardation by Binding of Tobramycin in an Alginate Biofilm Model,” *PLoS ONE*, 11(4), p. e0153616. Available at: <https://doi.org/10.1371/journal.pone.0153616>.
- Cardoso, M.F.S. (2024) “User Protocol 14: Protocol for Bacterial Biofilm Visualization and Sample Preparation for Scanning Electron Microscopy,” 680, pp. 1–5.
- Chabib, L., Hamzah, H. and Luthfiyah, I. (2022) “Tracing Secondary Metabolites and Antibacterial Activity Ethanol Extract of Lakum Leaf (*Cayratia Trifolia* L. Domin), Against Acne-Causing Bacteria (*Propionibacterium Acne* Dan *Staphylococcus Epidermidis*),” *European Chemical Bulletin*, 11(11), pp. 162–166. Available at: <https://doi.org/10.31838/ecb/2022.11.11.019>.
- Chabib, L., Hamzah, H., Rahmah, W., Sammulia, S.F., Setyowati, E. and Nurfitriani, A. (2023) “Tracking of the Antibiofilm Activities of Lakum Leaf Extract (*Causonis trifolia* Linn.) Against *Staphylococcus aureus*,” *Pakistan Journal of Biological Sciences*, 26(2), pp. 91–100. Available at: <https://doi.org/10.3923/pjbs.2023.91.100>.
- Chali, B.U., Hasho, A. and Koricha, N.B. (2021) “Preference and Practice of Traditional Medicine and Associated Factors in Jimma Town, Southwest Ethiopia,” *Evidence-based Complementary and Alternative Medicine*, 2021. Available at: <https://doi.org/10.1155/2021/9962892>.

- Chopjitt, P., Boueroy, P., Jenjaroenpun, P., Wongsurawat, T., Hatrongjit, R., Kerdsin, A., *et al.* (2023) “Genomic characterization of vancomycin-resistant *Enterococcus faecium* clonal complex 17 isolated from urine in tertiary hospitals in Northeastern Thailand,” *Frontiers in Microbiology*, 14(January), pp. 1–8. Available at: <https://doi.org/10.3389/fmicb.2023.1278835>.
- Choudhary, K., Singh, M. and Pillai, U. (2009) “Ethnobotanical Survey of Rajasthan - An Update,” *American-Eurasian Journal of Botany*, 2(1), pp. 22–29.
- Choudhary, P., Singh, S. and Agarwal, V. (2020) “Microbial Biofilms Princy,” *Intech Open*, 9(6), pp. 1–14.
- Cruz, C.P., Alcantara, J.C. and Cruz, J.P. (2014) “Antibacterial Property of *Cayratia trifolia* L. as an Alternative Treatment for Boils,” *Research Journal of Science & IT Management*, 3(12), pp. 9–12. Available at: <http://www.accessmedicine.com/>.
- Dale, J.L., Nilson, J.L. and Barnes, A.M.T. (2017) “Restructuring of *Enterococcus faecalis* bio film architecture in response to antibiotic-induced stress,” *npj Biofilms and Microbiomes*, (May), pp. 1–9. Available at: <https://doi.org/10.1038/s41522-017-0023-4>.
- Van Decker, S.G., Bosch, N. and Murphy, J. (2021) “Catheter-associated urinary tract infection reduction in critical care units: A bundled care model,” *BMJ Open Quality*, 10(4), pp. 1–7. Available at: <https://doi.org/10.1136/bmj-2021-001534>.
- Diantoro, M.S. and Rizal, A.A.F. (2021) “Tradisional Literature Review : Kepatuhan Mencuci Tangan Perawat dengan Kejadian Infeksi Nosokomial,” *Borneo Student Research*, 2(3), pp. 1837–1844.
- Dimkić, I., Gobin, I., Begić, G., Antić, D.R., Ristivojević, P., Jurica, K., *et al.* (2021) “Antibacterial activity of herbal extracts towards uropathogenic *Enterococcus* isolates as a natural approach in control of urinary tract infections,” *Journal of Herbal Medicine*, 28(March). Available at: <https://doi.org/10.1016/j.hermed.2021.100445>.

- Domouchtsidou, A., Ioannou, P., Lianou, A., Tsante, K.A., Tsakri, D., Bonova, E., *et al.* (2025) “evolving therapeutic landscape,” *American Society for Microbiology Journal of Clinical Microbiology*, 0(0), pp. 1–21.
- Donlan, R.M. (2002) “Biofilms: Microbial Life on Surfaces,” *Emerging Infectious Diseases*, 8(9), pp. 881–890.
- Donlan, R.M. and Costerton, J.W. (2002) “Biofilms: Survival mechanisms of clinically relevant microorganisms,” *Clinical Microbiology Reviews*, 15(2), pp. 167–193. Available at: <https://doi.org/10.1128/CMR.15.2.167-193.2002>.
- Drago, L., Fidanza, A., Giannetti, A., Ciuffoletti, A., Logroscino, G. and Romanò, C.L. (2024) “Bacteria Living in Biofilms in Fluids: Could Chemical Antibiofilm Pretreatment of Culture Represent a Paradigm Shift in Diagnostics?,” *Microorganisms*, 12(259), pp. 1–13.
- Du, X., Hua, X., Qu, T., Jiang, Y., Zhou, Z. and Yu, Y. (2014) “Molecular characterization of Rifr mutations in *Enterococcus faecalis* and *Enterococcus faecium*,” *Journal of Chemotherapy*, 26(4), pp. 217–221. Available at: <https://doi.org/10.1179/1973947813Y.0000000137>.
- Dunny, G.M., Hancock, L.E. and Shankar, N. (2014) “Enterococcal Biofilm Structure and Role in Colonization and Disease Biofilm Formation by Enterococci: Concepts and Caveats Epidemiology of Biofilm-Related Enterococcal Infections,” in M. Gilmore, D. Clewell, Y. Ike, and E. Al (eds.) *Enterococci: From Commensals to Leading Causes of Drug Resistant Infection [Internet]*. Boston: Massachusetts Eye and Ear Infirmary. U.S. National Library of Medicine, pp. 1–26. Available at: <https://www.ncbi.nlm.nih.gov/books/>.
- Dwisari, F., Dermawan, A.M., Rahma, N.A., Tjoadri, T.N. and Abidin, K.R. (2025) “Antibacterial Activity of Bajakah Tampala (*Spatholobus littoralis* Hassk.) Methanol Extract in Roll-On Deodorant against *Staphylococcus epidermidis*,” *Jurnal Mandala Pharmacoon Indonesia (JMPI)*, 11(2), pp. 458–464. Available at: <https://doi.org/10.35311/jmpi.v11i2.865>.
- Eissa, M.A., Hashim, Y.Z.H.Y., Abdul Azziz, S.S.S., Salleh, H.M., Isa, M.L.M.,

- Abd Warif, N.M., *et al.* (2022) “Phytochemical Constituents of *Aquilaria malaccensis* Leaf Extract and Their Anti-Inflammatory Activity against LPS/IFN- γ -Stimulated RAW 264.7 Cell Line,” *ACS Omega*, 7(18), pp. 15637–15646. Available at: <https://doi.org/10.1021/acsomega.2c00439>.
- Elawady, R., Aboulela, A.G., Gaballah, A., Ghazal, A.A. and Amer, A.N. (2024) “Antimicrobial Sub-MIC induces *Staphylococcus aureus* biofilm formation without affecting the bacterial count,” *BMC Infectious Diseases*, 24(1065), pp. 1–15.
- Elysa, Chandra, M.A. and Nastiti, K. (2025) “Uji Aktivitas Antibakteri Jamur Endofit Batang Bajakah Tampala (*Spatholobus littoralis* Hassk) Pada Bakteri,” *Journal of Pharmaceutical Care and Sciences*, 5(2), pp. 254–267. Available at: <https://doi.org/10.33859/jpcs.v5i2>.
- Eshtiaghi, S., Nazari, R. and Fasihi-Ramandi, M. (2023) “Molecular Docking, Anti-Biofilm & Antibacterial Activities and Therapeutic Index of mCM11 Peptide on *Acinetobacter baumannii* Strains,” *Current Microbiology*, 80(6), pp. 1–13. Available at: <https://doi.org/10.1007/s00284-023-03217-z>.
- Fischer, E.R., Hansen, B.T., Nair, V., Hoyt, F.H., Schwartz, C.L. and Dorward, D.W. (2024) “Scanning Electron Microscopy,” *Current Protocols*, 4(5), pp. 1–49. Available at: <https://doi.org/10.1002/cpz1.1034>.
- Fitriani, Sampepana, E. and Saputra, S.H. (2020) “Karakterisasi Tumbuhan Akar Bajakah (*Spatholobus littoralis* Hassk) Dari LOA KULU Kabupaten Kutai Kartanegara,” *Jurnal Riset Teknologi Industri*, 14(2), p. 365. Available at: <https://doi.org/10.26578/jrti.v14i2.6590>.
- Gao, W., Howden, B.P. and Stinear, T.P. (2018) “Evolution of virulence in *Enterococcus faecium*, a hospital-adapted opportunistic pathogen,” *Current Opinion in Microbiology*, 41, pp. 76–82. Available at: <https://doi.org/10.1016/j.mib.2017.11.030>.
- Gaur, R.D., Sharma, J. and Painuli, R.M. (2010) “Plants used in traditional healthcare of livestock by Gujjar community of Sub-Himalayan tracts, Uttarakhand, India,” *Indian Journal of Natural Products and Resources*, 1(2), pp. 243–248.

- Gould, D., Gaze, S., Drey, N. and Cooper, T. (2017) “Implementing clinical guidelines to prevent catheter-associated urinary tract infections and improve catheter care in nursing homes: Systematic review,” *American Journal of Infection Control*, 45(5), pp. 471–476. Available at: <https://doi.org/10.1016/j.ajic.2016.09.015>.
- Green, M.R. and Sambrook, J. (2018) “Analysis and normalization of real-time polymerase chain reaction (PCR) experimental data,” *Cold Spring Harbor Protocols*, 2018(10), pp. 769–777. Available at: <https://doi.org/10.1101/pdb.top095000>.
- Guzmán-Soto, I., McTiernan, C., Gonzalez-Gomez, M., Ross, A., Gupta, K., Suuronen, E.J., *et al.* (2021) “Mimicking biofilm formation and development: Recent progress in in vitro and in vivo biofilm models,” *iScience*, 24(5), pp. 1–51. Available at: <https://doi.org/10.1016/j.isci.2021.102443>.
- Hamzah, H., Fitrah, M.A., Mochtar, C.F., Bakhtiar, M.I., Lestari, D., Dewi, S.R., *et al.* (2025) “Exploring the Bioactivity of Bajakah Tampala Plant (*Spatholobus littoralis* Hassk) as Polymicrobial Antibiofilm on Catheters,” *Letters in Applied NanoBioScience*, 14(3), pp. 1–12. Available at: <https://doi.org/10.33263/LIANBS143.186>.
- Hamzah, H., Hertiani, T., Pratiwi, S.U.T. and Nuryastuti, T. (2020) “Inhibitory activity and degradation of curcumin as anti-biofilm polymicrobial on catheters,” *International Journal of Research in Pharmaceutical Sciences*, 11(1), pp. 830–835. Available at: <https://doi.org/10.26452/ijrps.v11i1.1902>.
- Hamzah, H., Hertiani, T., Pratiwi, S.U.T., Nuryastuti, T. and Bayu Murti, Y. (2020) “The biofilm inhibition and eradication activity of curcumin againts polymicrobial biofilm,” *BIO Web of Conferences*, 28(5), pp. 1–7. Available at: <https://doi.org/10.1051/bioconf/20202804001>.
- Hamzah, H., Hertiani, T., Pratiwi, S.U.T., Nuryastuti, T. and Murti, Y.B. (2020) “The biofilm inhibition and eradication activity of curcumin againts polymicrobial biofilm,” *BIO Web of Conferences*, 28(04001), pp. 1–5. Available at: <https://doi.org/10.1051/bioconf/20202804001>.

- Hamzah, H., Hertiani, T., Utami Tunjung Pratiwi, S. and Nuryastuti, T. (2019) “The Inhibition Activity of Tannin on the Formation of Mono-Species and Polymicrobial Biofilm *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Candida albicans*,” *Majalah Obat Tradisional*, 24(2), p. 110. Available at: <https://doi.org/10.22146/mot.44532>.
- Hamzah, H., Pratiwi, S.U.T., Jabbar, A., Hafifah, A.S., Al-Fajri, B.A. and Nurhalisah, N. (2023) “Bioactivity Tracing of the Ethanol Extract of Bajakah Tampala (*Spatholobus littoralis* Hassk.) Typical Plant of Kalimantan Island as Antibiofilm of *Staphylococcus aureus*,” *Open Access Macedonian Journal of Medical Sciences*, 11(A), pp. 8–14. Available at: <https://doi.org/10.3889/oamjms.2023.10676>.
- Hamzah, H., Pratiwi, S.U.T., Jabbar, A. and Nandini, E. (2022) “Efficacy of Bajakah Tampala Ethanol Extract, a Typical Plant of Kalimantan Island (Borneo), Against *Candida Albicans* Biofilm,” *European Chemical Bulletin*, 11(5), pp. 59–63. Available at: <https://doi.org/10.31838/ecb/2022.11.05.009>.
- Hamzah, H., Tunjung Pratiwi, S.U., Jabbar, A., Mochtar, C.F., Rahmah, W. and Hafifah, A.S. (2022) “Tracing Antibiofilm Activity and Biofilm Eradication of Bajakah Tampala (*Spatholobus Littoralis* Hassk) Ethanol Extract Against *Pseudomonas Aeruginosa* Biofilm,” *European Chemical Bulletin*, 11(8), pp. 69–73. Available at: <https://doi.org/10.31838/ecb/2022.11.08.011>.
- Hancock, L.E., Murray, B.E. and Sillanpää, J. (2014) “Enterococcal Cell Wall Components and Structures,” in M. Gilmore, D. Clewell, Y. Ike, and E. Al (eds.) *Enterococci: From Commensals to Leading Causes of Drug Resistant Infection [Internet]*. Boston: Massachusetts Eye and Ear Infirmary. U.S. National Library of Medicine, pp. 1–34. Available at: <https://www.ncbi.nlm.nih.gov/books/>.
- Haney, E.F., Trimble, M.J. and Hancock, R.E.W. (2021) “Microtiter plate assays to assess antibiofilm activity against bacteria,” *Nature Protocols*, 16(5), pp. 2615–2632. Available at: <https://doi.org/10.1038/s41596-021-00515-3>.

Hendrickx, A.P.A., Van Luit-Asbroek, M., Schapendonk, C.M.E., Van Wamel, W.J.B., Braat, J.C., Wijnands, L.M., *et al.* (2009) “SgrA, a nidogen-binding LPXTG surface adhesin implicated in biofilm formation, and EcbA, a collagen binding MSCRAMM, are two novel adhesins of hospital-acquired *Enterococcus faecium*,” *Infection and Immunity*, 77(11), pp. 5097–5106. Available at: <https://doi.org/10.1128/IAI.00275-09>.

Hidayati, A.N. and Liuwan, H.C. (2019) “Peran Biofilm terhadap Infeksi Saluran Genital yang disebabkan oleh Vaginosis Bakterial,” *Berkala Ilmu Kesehatan Kulit dan Kelamin*, 31(2), pp. 150–158.

Høiby, N., Bjarnsholt, T., Givskov, M., Molin, S. and Ciofu, O. (2010) “Antibiotic resistance of bacterial biofilms,” *Elsevier International Journal of Antimicrobial Agents*, 35, pp. 322–332. Available at: <https://doi.org/10.1016/j.ijantimicag.2009.12.011>.

Homenta, H.. (2016) “Infeksi Biofilm Bakterial,” *Jurnal e-Biomedik*, 4(1), pp. 1–11. Available at: <https://doi.org/10.35790/ebm.4.1.2016.11736>.

Homeyer, K.H., Goudie, M.J., Singha, P. and Handa, H. (2019) “Liquid-Infused Nitric-Oxide-Releasing Silicone Foley Urinary Catheters for Prevention of Catheter-Associated Urinary Tract Infections,” *ACS Biomaterials Science and Engineering*, 5(4), pp. 2021–2029. Available at: <https://doi.org/10.1021/acsbomaterials.8b01320>.

Hossain, N., Mobarak, M.H., Islam, M.A., Hossain, A., Al Mahmud, M.Z., Rayhan, M.T., *et al.* (2023) “Recent development of dental implant materials, synthesis process, and failure – A review,” *Results in Chemistry*, 6(101136), pp. 1–14. Available at: <https://doi.org/10.1016/j.rechem.2023.101136>.

Irie, Y., Borlee, B.R., Connor, J.R.O., Hill, P.J., Harwood, C.S., Wozniak, D.J., *et al.* (2012) “Self-produced exopolysaccharide is a signal that stimulates biofilm formation in *Pseudomonas aeruginosa*,” *PNAS*, 109(50), pp. 20632–20636. Available at: <https://doi.org/10.1073/pnas.1217993109>.

Istiqomah and Safitri, D. (2021) “Pharmacological Activities of *Spatholobus Littoralis*,” *Jurnal Info Kesehatan*, 11(2), pp. 463–469.

Jagani, S., Chelikani, R. and Kim, D.S. (2009) “Effects of phenol and natural

- phenolic compounds on biofilm formation by *Pseudomonas aeruginosa*,” *Biofouling*, 25(4), pp. 321–324. Available at: <https://doi.org/10.1080/08927010802660854>.
- Jara, J., Alarcón, F., Monnappa, A.K., Santos, J.I., Bianco, V., Nie, P., *et al.* (2021) “Self-Adaptation of *Pseudomonas fluorescens* Biofilms to Hydrodynamic Stress,” *Frontiers in Microbiology*, 11, p. 588884. Available at: <https://doi.org/10.3389/fmicb.2020.588884>.
- Kadriadi, Rahmadiawan, D., Abral, H., Ilhamdi, Ivan, M., Akmal, Handayani, D., Septria Ningrum, L.R., *et al.* (2025) “A novel active packaging film based on polyvinyl alcohol/bajakah tampala (*Spatholobus littoralis* hassk) extract: Enhancing mechanical, UV protection, thermal stability, antimicrobial, and barrier properties,” *Food Bioscience*, 68(March), p. 106500. Available at: <https://doi.org/10.1016/j.fbio.2025.106500>.
- Kadriadi, Rahmadiawan, D., Abral, H., Ilhamdi, Ivan, M., Akmal, Handayani, D., Ningrum, L.R.S., *et al.* (2025) “Food Bioscience A novel active packaging film based on polyvinyl alcohol / bajakah tampala (*Spatholobus littoralis* hassk) extract : Enhancing mechanical , UV protection , thermal stability , antimicrobial , and barrier properties,” *Food Bioscience*, 68(2025), p. 106500. Available at: <https://doi.org/10.1016/j.fbio.2025.106500>.
- Kamil, H., Al, J. and Hmood, B.A. (2025) “Antimicrobial activity of cranberry juice (*Vaccinium macrocarpon* L.) ethanol extract against uropathogenic bacteria,” 15, pp. 813–819. Available at: <https://doi.org/10.5455/OVJ.2025.v15.i2.30>.
- Kaplan, J.B. (2011) “Antibiotic-induced biofilm formation,” *SAGE Journal The International Journal of Artificial Organs*, 34(9), pp. 737–751. Available at: <https://doi.org/10.5301/ijao.5000027>.
- Kim, G.S., Park, C.R., Kim, J.E., Kim, H.K. and Kim, B.S. (2022) “Anti-Biofilm Effects of *Torilis japonica* Ethanol Extracts against *Staphylococcus aureus*,” *Journal of Microbiology and Biotechnology*, 32(2), pp. 220–227. Available at: <https://doi.org/10.4014/jmb.2107.07053>.
- Kincses, A., Sultan, T., Ghazal, A., Veres, K. and Spengler, G. (2025) “Phenolic

- compounds from *Origanum majorana* with biofilm-inhibitory activity against methicillin-resistant *Staphylococcus aureus* and *Escherichia coli* strains,” *Pharmaceutical Biology*, 63(1), pp. 402–410. Available at: <https://doi.org/10.1080/13880209.2025.2511805>.
- Kining, E., Falah, S. and Nurhidayat, N. (2016) “The In Vitro Antibiofilm Activity of Water Leaf Extract of Papaya (*Carica papaya* L.) against *Pseudomonas aeruginosa*,” *Current Biochemistry*, 2(3), pp. 150–163. Available at: <https://doi.org/10.29244/cb.2.3.150-163>.
- Korshoj, L.E. and Kielian, T. (2024) “Bacterial single-cell RNA sequencing captures biofilm transcriptional heterogeneity and differential responses to immune pressure,” *Nature Communications* , 15(1). Available at: <https://doi.org/10.1038/s41467-024-54581-8>.
- Kragh, K.N., Hutchison, J.B., Melaugh, G., Rodesney, C., Roberts, A.E.L., Irie, Y., *et al.* (2016) “Role of multicellular aggregates in biofilm formation,” *mBio*, 7(2), pp. 1–11. Available at: <https://doi.org/10.1128/mBio.00237-16>.
- Kragh, K.N., Tolker-Nielsen, T. and Lichtenberg, M. (2023) “The non-attached biofilm aggregate,” *Communications Biology*, 6(1), pp. 1–13. Available at: <https://doi.org/10.1038/s42003-023-05281-4>.
- Kulišová, M., Mařátková, O., Brányik, T., Zelenka, J., Drábová, L. and Kolouchová, I.J. (2023) “Detection of microscopic filamentous fungal biofilms – Choosing the suitable methodology,” *Journal of Microbiological Methods*, 205(January). Available at: <https://doi.org/10.1016/j.mimet.2023.106676>.
- Kumar, D., Kumar, S., Gupta, J., Arya, R. and Gupta, A. (2011) “A review on chemical and biological properties of *Cayratia trifolia* Linn. (Vitaceae),” *Pharmacognosy Reviews*, 5(10), pp. 184–188. Available at: <https://doi.org/10.4103/0973-7847.91117>.
- Lach, S., Jurczak, P., Karska, N., Kubiś, A., Szymańska, A. and Rodziewicz-Motowidło, S. (2020) “Spectroscopic methods used in implant material studies,” *Molecules*, 25(579), pp. 1–33. Available at: <https://doi.org/10.3390/molecules25030579>.

- Lattanzio, V. (2013) “Phenolic Compounds: Introduction,” in K.G. Ramawat and J.M. Me´rillon (eds.) *Natural Products*. Berlin Heidelberg: Springer-Verlag Berlin Heidelberg, pp. 1543–1580. Available at: <https://doi.org/10.1007/978-3-642-22144-6>.
- Lee, J.H., Park, J.H., Cho, H.S., Joo, S.W., Cho, M.H. and Lee, J. (2013) “Anti-biofilm activities of quercetin and tannic acid against *Staphylococcus aureus*,” *Biofouling: The Journal of Bioadhesion and Biofilm Research*, 29(5), pp. 491–499. Available at: <https://doi.org/10.1080/08927014.2013.788692>.
- Lestari, D.R.S., Soegianto, L. and Hermanu, L.S. (2017) “Potensi Antibakteri dan Antibiofilm Ekstrak Etanol Bunga Bintaro (*Cerbera odollam*) terhadap *Staphylococcus aureus* ATCC 6538,” *Journal of Pharmacy Science*, 4(1), pp. 30–35.
- Li, J., Chen, D. and Lin, H. (2021) “Antibiofilm peptides as a promising strategy: comparative research,” *Applied Microbiology and Biotechnology*, 105(4), pp. 1647–1656. Available at: <https://doi.org/10.1007/s00253-021-11103-6>.
- Lim, S.Y., Teh, C.S.J. and Thong, K.L. (2017) “Biofilm-Related Diseases and Omics: Global Transcriptional Profiling of *Enterococcus faecium* Reveals Different Gene Expression Patterns in the Biofilm and Planktonic Cells,” *OMICS A Journal of Integrative Biology*, 21(10), pp. 592–602. Available at: <https://doi.org/10.1089/omi.2017.0119>.
- Liu, F., Wang, Xing, Huang, L., Wang, Xinling, Kong, L., Duan, J., *et al.* (2022) “The in Vitro Antimicrobial and Antibiofilm Activities of Lysozyme against Gram-Positive Bacteria,” *Computational and Mathematical Methods in Medicine*, 4559982, pp. 1–11. Available at: <https://doi.org/10.1155/2022/4559982>.
- Lobiuc, A., Pavăl, N.-E., Mangalagiu, I.I., Amăriucăi-Mantu, D. and Stoleru, V. (2023) “Future Antimicrobials: Natural and Functionalized Phenolics,” *Molecules*, 28(1114), pp. 1–16.
- Loresta, S., Murwani, S. and Trisunuwati, P. (2014) “Efek Ekstrak Etanol Daun Kelor (*Moringa oleifera*) Terhadap Pembentukan Biofilm *Staphylococcus*

aureus Secara In Vitro,” *Fakultas Kedokteran Hewan Universitas Brawijaya*, 9(11), pp. 1–8.

Lories, B., Roberfroid, S., Dieltjens, L., Coster, D. De, Foster, K.R., Steenackers, H.P., *et al.* (2020) “Biofilm Bacteria Use Stress Responses to Detect and Respond to Competitors Article Biofilm Bacteria Use Stress Responses to Detect and Respond to Competitors,” *Current Biology*, 30(7), pp. 1231-1244.e4. Available at: <https://doi.org/10.1016/j.cub.2020.01.065>.

Mah, T.F.C. and O’Toole, G.A. (2001) “Mechanisms of biofilm resistance to antimicrobial agents,” *Trends in Microbiology*, 9(1), pp. 34–39. Available at: [https://doi.org/10.1016/S0966-842X\(00\)01913-2](https://doi.org/10.1016/S0966-842X(00)01913-2).

Mahfudh, N., Utami, D., Nashihah, S., Ahda, M., Andika, A. and Sabilla, G.A. (2024) “Variability and pharmacological potential of bajakah (*Spatholobus* sp.) as an indigenous medicinal plant: a review,” *International Journal of Public Health Science (IJPHS)*, 13(3), p. 1470. Available at: <https://doi.org/10.11591/ijphs.v13i3.23791>.

Mangal, S., Pho, A., Arcia, A. and Carter, E. (2021) “Patient and Family Engagement in Catheter-Associated Urinary Tract Infection (CAUTI) Prevention: A Systematic Review,” *Joint Commission Journal on Quality and Patient Safety*, 47(9), pp. 591–603. Available at: <https://doi.org/10.1016/j.jcjq.2021.05.009>.

McDermaid, A., Monier, B., Zhao, J., Liu, B. and Ma, Q. (2019) “Interpretation of differential gene expression results of RNA-seq data: Review and integration,” *Briefings in Bioinformatics*, 20(6), pp. 2044–2054. Available at: <https://doi.org/10.1093/bib/bby067>.

McGlennen, M., Dieser, M., Foreman, C.M. and Warnat, S. (2023) “Monitoring biofilm growth and dispersal in real-time with impedance biosensors,” *Journal of Industrial Microbiology and Biotechnology*, 50(1). Available at: <https://doi.org/10.1093/jimb/kuad022>.

Meganathan, B. (2023) “Wound Healing Potential of Bioactive Compound from *Cayratia trifolia* (L.): An In silico and In Vitro analysis,” *Biological Forum – An International Journal*, 15(May), pp. 104–113.

- Meganathan, B., Palanisamy, C.P. and Panagal, M. (2021) “Antioxidant, antimicrobial and cytotoxicity potential of n-hexane extract of *Cayratia trifolia* L,” *Bioinformation*, 17(3), pp. 452–459. Available at: <https://doi.org/10.6026/97320630017452>.
- Mendogralo, E.Y., Nesterova, L.Y., Nasibullina, E.R., Shcherbakov, R.O., Myasnikov, D.A., Tkachenko, A.G., *et al.* (2023) “Synthesis, Antimicrobial and Antibiofilm Activities, and Molecular Docking Investigations of 2-(1H-Indol-3-yl)-1H-benzo[d]imidazole Derivatives,” *Molecules*, 28(20). Available at: <https://doi.org/10.3390/molecules28207095>.
- Mochtar, C.F., Saleh, L.O., Hamzah, H. and Ilyas, N.M. (2022) “Potensi Bajakah Tampala (*Spatholobus littoralis* Hassk) Sebagai Antibakteri dan Antijamur Terhadap *Staphylococcus aureus* dan *Candida albicans*,” *Jurnal Mandala Pharmacon Indonesia*, 8(2), pp. 177–184. Available at: <https://doi.org/10.35311/jmpi.v8i2.212>.
- Mong, I., Ramoo, V., Ponnampalavanar, S., Chong, M.C. and Wan Nawawi, W.N.F. (2022) “Knowledge, attitude and practice in relation to catheter-associated urinary tract infection (CAUTI) prevention: A cross-sectional study,” *Journal of Clinical Nursing*, 31(1–2), pp. 209–219. Available at: <https://doi.org/10.1111/jocn.15899>.
- Morot, A., Delavat, F., Bazire, A., Paillard, C., Dufour, A. and Rodrigues, S. (2024) “Genetic Insights into Biofilm Formation by a Pathogenic Strain of *Vibrio harveyi*,” *Microorganisms*, 12(1), pp. 1–17. Available at: <https://doi.org/10.3390/microorganisms12010186>.
- Mtanis, T., Biadsee, A. and Ormianer, Z. (2023) “Assessing the Cleanliness of Dental Implants Using Scanning Electron Microscopy and Energy-Dispersive X-ray Spectroscopy Analysis—A SEM and EDS In Vitro Study,” *Journal of Functional Biomaterials*, 14(172), pp. 1–17. Available at: <https://doi.org/10.3390/jfb14030172>.
- Muhammad, M.H., Idris, A.L., Fan, X., Guo, Y., Yu, Y., Jin, X., *et al.* (2020) “Beyond Risk: Bacterial Biofilms and Their Regulating Approaches,” *Frontiers in Microbiology*, 11(928), pp. 1–20. Available at:

<https://doi.org/10.3389/fmicb.2020.00928>.

- Nallapareddy, S.R., Weinstock, G.M. and Murray, B.E. (2003) “Clinical isolates of *Enterococcus faecium* exhibit strain-specific collagen binding mediated by Acm, a new member of the MSCRAMM family,” *Molecular Microbiology*, 47(6), pp. 1733–1747. Available at: <https://doi.org/10.1046/j.1365-2958.2003.03417.x>.
- Nastiti, K. and Nugraha, D.F. (2022) “Aktivitas Antiinflamasi Ekstrak Kayu Bajakah (*Spatholobus littoralis* Hask),” *Jurnal Surya Medika*, 7(2), pp. 45–50. Available at: <https://doi.org/10.33084/jsm.v7i2.3202>.
- Nasution, L.H. (2012) “Infeksi Nosokomial,” *MDVI*, 39(1), pp. 36–41.
- Nicolle, L.E. (2014) “Catheter associated urinary tract infections,” *Antimicrobial Resistance and Infection Control*, 3(23), pp. 1–8. Available at: <https://doi.org/10.1186/2047-2994-3-23>.
- Novais, C., Tedim, A.P., Lanza, V.F., Freitas, A.R., Silveira, E., Escada, R., *et al.* (2016) “Co-diversification of *Enterococcus faecium* core genomes and PBP5: Evidences of PBP5 horizontal transfer,” *Frontiers in Microbiology*, 7(OCT), pp. 1–17. Available at: <https://doi.org/10.3389/fmicb.2016.01581>.
- Nur, A.D.F., Zakiah, M. and Assegaf, S.N.Y.R.S. (2024) “Potensi Antioksidan Dari Akar Tanaman Bajakah (*Spatholobus Littoralis* Hassk) Asal Kubu Raya Kalimantan Barat,” *Ibnu Sina: Jurnal Kedokteran dan Kesehatan - Fakultas Kedokteran Universitas Islam Sumatera Utara*, 23(2), pp. 129–137. Available at: <https://doi.org/10.30743/ibnusina.v23i2.622>.
- Nurdin, E., Nurdin, G.M. and Noviyanti, R. (2020) “Hubungan Durasi Pemakaian Kateter terhadap Infeksi *Staphylococcus aureus* pada Pasien Infeksi Saluran Kemih Rawat Inap,” *Jurnal Celebes Biodiversitas*, 3(2), pp. 25–29. Available at: <http://repositorio.unan.edu.ni/2986/1/5624.pdf>.
- O’Connell, D.J., Kolde, R., Sooknah, M., Graham, D.B., Sundberg, T.B., Latorre, I., *et al.* (2017) “Simultaneous Pathway Activity Inference and Gene Expression Analysis Using RNA Sequencing,” *Cell Syst.*, 2(5), pp. 323–334. Available at: <https://doi.org/10.1016/j.cels.2016.04.011>.
- Omidi, M., Firoozeh, F., Saffari, M., Sedaghat, H., Zibaei, M. and Khaledi, A.

- (2020) “Ability of biofilm production and molecular analysis of spa and ica genes among clinical isolates of methicillin-resistant *Staphylococcus aureus*,” *BMC Research Notes*, 13(1), pp. 1–7. Available at: <https://doi.org/10.1186/s13104-020-4885-9>.
- Opeña, J.M. and Sotto, R.C. (2022) “Environmental Conditions, Phytochemical Constituents, and Antibacterial Activities of Two Philippine Medicinal Vitaceae Species,” *Journal of Tropical Life Science*, 12(1), pp. 11–19. Available at: <https://doi.org/10.11594/jtls.12.01.02>.
- Ounjaijean, S., Somsak, V., Saki, M., Mitsuwan, W. and Romyasamit, C. (2024) “Antibacterial, Antibiofilm, and Antioxidant Activities of Aqueous Crude *Gymnema inodorum* Leaf Extract against Vancomycin-Resistant *Enterococcus faecium*,” *Microorganisms*, 12(7). Available at: <https://doi.org/10.3390/microorganisms12071399>.
- Özyiğitoğlu, G., Açıkgöz, B., Tahiroğlu, G. and Sesal, N.C. (2017) “Comparison of antibacterial and antibiofilm activity properties of *Hypogymnia tubulosa* (Schaer.) Hav. lichen extracts from different locations in Turkey,” *Mycosphere*, 8(8), pp. 994–1002. Available at: <https://doi.org/10.5943/mycosphere/8/8/2>.
- Paganelli, F.L., Willems, R.J.L., Jansen, P., Hendrickx, A., Zhang, X., Bonten, M.J.M., *et al.* (2013) “Release *Enterococcus faecium* Biofilm Formation : Identification of Major,” *mBio*, 4(2), pp. 1–10. Available at: <https://doi.org/10.1128/mBio.00154-13.Editor>.
- Pan, Y., Zhao, Y., Zeng, H., Wu, J., Song, Y., Rao, Y., *et al.* (2024) “Reference Genes for Expression Analyses by qRT-PCR in *Enterobacter cancerogenus*,” *Microorganisms*, 12(1024), pp. 1–16. Available at: <https://doi.org/10.3390/microorganisms12051024>.
- Patole, S., Rout, M. and Mohapatra, H. (2021) “Identification and validation of reference genes for reliable analysis of differential gene expression during antibiotic induced persister formation in *Klebsiella pneumoniae* using qPCR,” *Journal of Microbiological Methods*, 182(106165), pp. 1–7. Available at: <https://doi.org/10.1016/j.mimet.2021.106165>.

- Peeters, E., Nelis, H.J. and Coenye, T. (2008) "Comparison of multiple methods for quantification of microbial biofilms grown in microtiter plates," *Journal of Microbiological Methods*, 72(2), pp. 157–165. Available at: <https://doi.org/10.1016/j.mimet.2007.11.010>.
- Pelling, H., Nzakizwanayo, J., Milo, S., Denham, E.L., MacFarlane, W.M., Bock, L.J., *et al.* (2019) "Bacterial Biofilm Forming On Indwelling Urethral Catheters," *Letters in Applied Microbiology*, 68, pp. 277–293. Available at: <https://doi.org/10.1016/B978-0-323-60984-5.00062-7>.
- Permatasari, R., Ariestania, G. and Deviyanti, S. (2024) "Testing the Inhibitory Activity of Bajakah Tampala (*Spatholobus littoralis* Hassk) Wood Extract from South Kalimantan on the Growth of *Pseudomonas aeruginosa* Bacteria," *International Journal of Pharmaceutical and Bio-Medical Science*, 04(09), pp. 765–771. Available at: <https://doi.org/10.47191/ijpbms/v4-i9-10>.
- Perumal, P.C., Sowmya, S., Pratibha, P., Vidya, B., Anusooriya, P., Starlin, T., *et al.* (2015) "Isolation, structural characterization and in silico drug-like properties prediction of a natural compound from the ethanolic extract of *cayratia trifolia* (L.)," *Pharmacognosy Research*, 7(1), pp. 121–125. Available at: <https://doi.org/10.4103/0974-8490.147226>.
- Pierce, C.G., Uppuluri, P., Tummala, S. and Lopez-Ribot, J.L. (2010) "A 96 well microtiter plate-based method for monitoring formation and antifungal susceptibility testing of *Candida albicans* biofilms," *Journal of Visualized Experiments*, (44), pp. 1–4. Available at: <https://doi.org/10.3791/2287>.
- Di Pippo, F., Crognale, S., Levantesi, C., Vitanza, L., Sighicelli, M., Pietrelli, L., *et al.* (2022) "Plastisphere in lake waters: Microbial diversity, biofilm structure, and potential implications for freshwater ecosystems," *Environmental Pollution*, 310(August), p. 119876. Available at: <https://doi.org/10.1016/j.envpol.2022.119876>.
- Post, S.J., Shapiro, J.A. and Wuest, W.M. (2019) "Connecting iron acquisition and biofilm formation in the ESKAPE pathogens as a strategy for combatting antibiotic resistance," *MedChemComm*, 10(4), pp. 505–512. Available at:

<https://doi.org/10.1039/c9md00032a>.

Prasetyo, B., Linda, R. and Mukarlina (2016) “Pemanfaatan Tumbuhan Lakum (*Cayratia tridolia* (L.) Domin.) oleh Etnis Melayu di Kecamatan Sungai Kunyit Kabupaten Mempawah,” *Protobiont*, 5(2), pp. 25–33.

Pratiwi, S.U.T., Lagendijk, E.L., Hertiani, T., De Weert, S., Cornellius, A.M. and Van Den Hondel, J.J. (2015) “Antimicrobial effects of Indonesian medicinal plants extracts on planktonic and biofilm growth of *Pseudomonas aeruginosa* and *Staphylococcus aureus*,” *International Journal of Pharmacy and Pharmaceutical Sciences*, 7(4), pp. 183–191. Available at: <https://doi.org/10.4172/2376-0354.1000119>.

Rai, V., GAN, C.S., Rosenthal, V.D., Hasan, M.S., LUM, L.C.S., Mansor, M., *et al.* (2016) “Device-associated infection and mortality rates, bacterial resistance, and length of stay in hospitals of Malaysia: International Nosocomial Infection Control Consortium (INICC)’s findings,” *Canadian Journal of Infection Control*, 31(2), pp. 107–112.

Reddy, A.K., Joy, J.M. and Kumar, A. (2011) “*Lansea coromandelica*: The Researcher’s Tree,” *Microscopy Research*, 04, pp. 577–579. Available at: <https://doi.org/10.4236/mr.2013.12002>.

Rehman, S.U., Choe, K. and Yoo, H.H. (2016) “Review on a traditional herbal medicine, *Eurycoma longifolia* Jack (Tongkat Ali): Its traditional uses, chemistry, evidence-based pharmacology and toxicology,” *Molecules*, 21(3). Available at: <https://doi.org/10.3390/molecules21030331>.

Rikhaturohmah, Rospadila Dwi Adrila, Widiya Dwi Handayani, Rasyani, Ananda Alifvia Suprpto, Nofran Putra Pratama, *et al.* (2024) “The Antibacterial Activity of Bajakah Tampala Extracts (*Spatholobus littoralis* Hassk.) Mouthwash Formulation Inhibited Dental Plaque against *Streptococcus mutans*,” *Journal of Food and Pharmaceutical Sciences*, 12(2), pp. 158–168. Available at: <https://doi.org/10.22146/jfpps.15147>.

Rousdy, D.W. and Wardoyo, E.R.P. (2023) “In Vitro Antiinflammatory Activity of Bajakah (*Spatholobus littoralis*) Stem Extract,” *Biosaintifika*, 15(2), pp. 150–157. Available at: <https://doi.org/10.15294/biosaintifika.v15i2.36227>.

- Rubi, H., Mudey, G. and Kunjalwar, R. (2022) “Catheter-Associated Urinary Tract Infection (CAUTI).,” *Cureus*, 14(10), p. e30385. Available at: <https://doi.org/10.7759/cureus.30385>.
- Sadeghi-Kiakhani, M., Tehrani-Bagha, A.R., Miri, F.S., Hashemi, E. and Safi, M. (2022) “Application of *Achillea millefolium* extract as a reducing agent for synthesis of silver nanoparticles (AgNPs) on the cotton: antibacterial, antioxidant and dyeing studies,” *BioMetals*, 35(2), pp. 313–327. Available at: <https://doi.org/10.1007/s10534-022-00366-9>.
- Sari, R.E., Soegianto, L. and Hermanu, L.S. (2018) “Uji Aktivitas Antimikroba Ekstrak Etanol Daun *Cayratia trifolia* terhadap *Staphylococcus aureus* dan *Candida albicans*,” *Journal of Pharmacy Science and Practice*, 5(1), pp. 23–29.
- Sauer, K., Stoodley, P., Goeres, D.M., Hall-stoodley, L., Burmølle, M., Stewart, P.S., *et al.* (2023) “The biofilm life cycle– expanding the conceptual model of biofilm formation,” *Nature Reviews Microbiology*, 20(10), pp. 608–620. Available at: <https://doi.org/10.1038/s41579-022-00767-0>.
- Şchiopu, P., Toc, D.A., Colosi, I.A., Costache, C., Ruospo, G., Berar, G., *et al.* (2023) “An Overview of the Factors Involved in Biofilm Production by the *Enterococcus* Genus,” *International Journal of Molecular Sciences*, 24(14). Available at: <https://doi.org/10.3390/ijms241411577>.
- Setiawan, R., Saraswati, T.R., Biologi, P.S., Diponegoro, U., Biologi, D. and Diponegoro, U. (2020) “Pengaruh Pemberian Ekstrak Etanol Daun Lakum (*Cayratia trifolia* L.) dan Buah Kersen (*Muntingia calabura* L.) terhadap Bobot Tubuh dan Bobot Lemak Abdominal *Rattus norvegicus* L. Strain Wistar Jantan Hiperlipidemia,” *Buletin Anatomi dan Fisiologi*, 5(1), pp. 43–51.
- Setyowati, E., Irzani, E.F., Mochtar Luthfi, C.F. and Hamzah, H. (2024) “Tracing the Antibacterial, Antifungal and Anti-Biofilm Activities of Root Extract Bajakah Tampala (*Spatholobus Littoralis* Hassk.)” *Jurnal Farmasi Sains dan Praktis*, 10(1), pp. 32–41. Available at: <https://doi.org/10.31603/pharmacy.v10i1.8804>.

- Shah, M.D., Maran, B.A.V., Shaleh, S.R.M., Zuldin, W.H., Gnanaraj, C. and Yong, Y.S. (2022) "Therapeutic Potential and Nutraceutical Profiling of North Bornean Seaweeds: A Review," *Marine Drugs*, 20(2), pp. 1–23. Available at: <https://doi.org/10.3390/md20020101>.
- Sianipar, R.N.R., Suryanegara, L., Fatriasari, W., Arung, E.T., Kusuma, I.W., Achmadi, S.S., *et al.* (2023) "The role of selected flavonoids from bajakah tampala (*Spatholobus littoralis* Hassk.) stem on cosmetic properties: A review," *Saudi Pharmaceutical Journal*, 31(3), pp. 382–400. Available at: <https://doi.org/10.1016/j.jsps.2023.01.006>.
- Sianturi, S., Leswana, N.F. and Simanjuntak, S. (2025) "Aktivitas Antibakteri Akar Bajakah Tampala (*Spatholobus littoralis* Hassk.) Terhadap Bakteri Patogen *Staphylococcus haemolyticus*," *Wahana-Bio: Jurnal Biologi dan Pembelajarannya*, 17(2), pp. 128–138.
- Sillanpää, J., Nallapareddy, S.R., Prakash, V.P., Qin, X., Hook, M., Weinstock, G.M., *et al.* (2009) "Identification and phenotypic characterization of a second collagen adhesin, Scm, and genome-based identification and analysis of 13 other predicted MSCRAMMs, including four distinct pilus loci, in *Enterococcus faecium*," *Microbiology*, 154(10), pp. 3199–3211. Available at: <https://doi.org/10.1099/mic.0.2008/017319-0>.Identification.
- Singdam, P., Kamnate, A., Somsap, O. and Tohkayomatee, R. (2025) "Phytochemical Screening , Antioxidant Potential , and α -Glucosidase Inhibition of *Causonis trifolia* Leaf Extracts : A Solvent-Based Comparative Study," *Pharmacognosy Journal*, 17(2), pp. 164–170.
- Siregar, K.A.A.K., Aisyiyah, N.M. and Kustiawan, P.M. (2021) "Tinjauan Artikel: Potensi Tanaman Lakum (*Cayratia trifolia*) sebagai Imunomodulator," *Jurnal Farmagazine*, 8(2), pp. 13–19. Available at: <https://doi.org/10.47653/farm.v8i2.549>.
- Solihin, J., Waturangi, D.E. and Purwadaria, T. (2021) "Induction of amylase and protease as antibiofilm agents by starch , casein , and yeast extract in *Arthrobacter* sp . CW01," *BMC Microbiology*, 21(232), pp. 1–12. Available at: <https://doi.org/10.1186/s12866-021-02294-z>.

- Soltani, S., Arshadi, M., Getso, M.I., Aminharati, F., Mahmoudi, M. and Pourmand, M.R. (2018) "Prevalence of virulence genes and their association with biofilm formation in vre faecium isolates from ahvaz, iran," *Journal of Infection in Developing Countries*, 12(11), pp. 970–977. Available at: <https://doi.org/10.3855/jidc.10078>.
- Somarajan, S.R., Roh, J.H., Singh, K. V., Weinstock, G.M. and Murray, B.E. (2014) "CcpA is important for growth and virulence of *Enterococcus faecium*," *Infection and Immunity*, 82(9), pp. 3580–3587. Available at: <https://doi.org/10.1128/IAI.01911-14>.
- Sosilowati and Sari, I.N. (2020) "Perbandingan Kadar Flavonoid Total Seduhan Daun Benalu Cengkeh (*Dendrophthoe Petandra* L.) pada Bahan Segar dan Kering Comparison of Total Flavonoid Contents of *Dendrophthoe Petandra* Leaves Infusion in Fresh and Dry Materials," *Jurnal Farmasi (Journal of Pharmacy)*, 9(2), pp. 33–40.
- Stickler, D.J. (2014) "Clinical complications of urinary catheters caused by crystalline biofilms: Something needs to be done," *Journal of Internal Medicine*, 276(2), pp. 120–129. Available at: <https://doi.org/10.1111/joim.12220>.
- Sugimoto, S., Okuda, K.I., Miyakawa, R., Sato, M., Arita-Morioka, K.I., Chiba, A., *et al.* (2016) "Imaging of bacterial multicellular behaviour in biofilms in liquid by atmospheric scanning electron microscopy," *Scientific Reports*, 6(25889), pp. 1–13. Available at: <https://doi.org/10.1038/srep25889>.
- Tarawneh, O., Alwahsh, W., Abul-futouh, H., Al-samad, L.A., Hamadneh, L., Abu Mahfouz, H., *et al.* (2021) "Determination of antimicrobial and antibiofilm activity of combined LVX and AMP impregnated in p(HEMA) hydrogel," *Applied Sciences (Switzerland)*, 11(18). Available at: <https://doi.org/10.3390/app11188345>.
- Tiwari, V.K. and Mishra, B.B. (2011) *Opportunity, Challenge and Scope of Natural Products in Medicinal Chemistry*. Trivandrum, India: Research Signpost.
- Tobi, C.H.B., Saptarini, O. and Rahmawati, I. (2022) "Aktivitas Antibiofilm Ekstrak dan Fraksi-Fraksi Biji Pinang (*Areca catechu* L.) Terhadap

- Staphylococcus aureus* ATCC 25923,” *JPSCR: Journal of Pharmaceutical Science and Clinical Research*, 7(1), pp. 56–70. Available at: <https://doi.org/10.20961/jpscr.v7i1.43698>.
- Venkataraman, R., Yadav, U., Shivalingegowda, R.K. and Shrestha, Y. (2023) “Vaccination strategies to combat nosocomial infections,” *Vacunas (English Edition)*, 24(1), pp. 60–67. Available at: <https://doi.org/10.1016/j.vacune.2023.02.005>.
- Venkateswaran, P., Vasudevan, S., David, H., Shaktivel, A., Shanmugam, K., Neelakantan, P., *et al.* (2023) “Revisiting ESKAPE Pathogens: virulence, resistance, and combating strategies focusing on quorum sensing,” *Frontiers in Cellular and Infection Microbiology*, 13(June), pp. 1–30. Available at: <https://doi.org/10.3389/fcimb.2023.1159798>.
- Vuotto, C. and Donelli, G. (2014) “Microbial Biofilms, Methods and Protocols Edited,” *Springer*, 1147, pp. 73–84. Available at: <https://doi.org/10.1007/978-1-4939-0467-9>.
- Wahyuni, R., Guswandi and Rivai, H. (2014) “Pengaruh Cara Pengeringan Dengan Oven, Kering Angin dan Cahaya Matahari Langsung Terhadap Mutu Simplisia Herba Sambiloto,” *Jurnal Farmasi Higea*, 6(2), pp. 126–133.
- Wang, S., Kang, O.H. and Kwon, D.Y. (2021) “Bisdemethoxycurcumin reduces methicillin-resistant staphylococcus aureus expression of virulence-related exoproteins and inhibits the biofilm formation,” *Toxins*, 13(11). Available at: <https://doi.org/10.3390/toxins13110804>.
- Wei, M., Wang, P., Li, T., Wang, Q., Su, M., Gu, L., *et al.* (2023) “Antimicrobial and antibiofilm effects of essential fatty acids against clinically isolated vancomycin-resistant *Enterococcus faecium*,” *Frontiers in Cellular and Infection Microbiology*, 13(September), pp. 1–12. Available at: <https://doi.org/10.3389/fcimb.2023.1266674>.
- Wei, Y., Palacios Araya, D. and Palmer, K.L. (2024) “*Enterococcus faecium*: evolution, adaptation, pathogenesis and emerging therapeutics,” *Nature Reviews Microbiology*, 22(November 2024), pp. 705–721. Available at: <https://doi.org/10.1038/s41579-024-01058-6>.

- Wuart, C. (2006) *Medicinal Plants of Asia and the Pacific, Pharmaceutisch Weekblad*. France: CRC Press.
- Wirjatmadi, B. and Isaura, E.R. (2024) “Effect on the Blood Glucose of Streptozotocin-Induced Wistar,” *The Indonesian Journal of Public Health*, 19(1), pp. 81–93. Available at: <https://doi.org/10.20473/ijph.v19i1.2024.81-93>.
- Wojnicz, D., Tichaczek-Goska, D., Korzekwa, K., Kicia, M. and Hendrich, A.B. (2016) “Study of the impact of cranberry extract on the virulence factors and biofilm formation by *Enterococcus faecalis* strains isolated from urinary tract infections,” *International Journal of Food Sciences and Nutrition*, 67(8), pp. 1005–1016. Available at: <https://doi.org/10.1080/09637486.2016.1211996>.
- Y, M.I., Susanti, S., Karmilah, K. and Hapsari, I.P. (2018) “Aktivitas Antibakteri Ekstrak Etanol Daun *Cayratia trifolia* L. Domin. Terhadap Bakteri *Escherichia coli*,” *Medula*, 6(1), pp. 523–529. Available at: <https://doi.org/10.46496/medula.v6i1.5375>.
- Yamanaka-Okada, A., Sato, E., Kouchi, T., Kimizuka, R., Kato, T. and Okuda, K. (2008) “Inhibitory effect of cranberry polyphenol on cariogenic bacteria,” *The Bulletin of Tokyo Dental College*, 49(3), pp. 107–112. Available at: <https://doi.org/10.2209/tdcpublish.49.107>.
- Yazdanpanah, S., Shafiekhani, M., Emami, M., Khodadadi, H., Pakshir, K. and Zomorodian, K. (2025) “Exploring the anti - biofilm and gene regulatory effects of anti - inflammatory drugs on *Candida albicans*,” *Naunyn-Schmiedeberg's Archives of Pharmacology*, 398, pp. 7263–7272. Available at: <https://doi.org/10.1007/s00210-024-03727-y>.
- Yuan, H., Ma, Q., Ye, L. and Piao, G. (2016) “The traditional medicine and modern medicine from natural products,” *Molecules*, 21(5). Available at: <https://doi.org/10.3390/molecules21050559>.
- Yulian, M. and Safrijal (2018) “Uji Aktivitas Antioksidan Daun Benalu Kopi (*Loranthus ferrugineus* Roxb.) dengan Metode DPPH (1,1 - Difenil -2- Pikrilhidrazil),” *Lantanida Journal*, 6(2), pp. 103–202.

- Zhang, Y., Cai, P. and Cheng, G. (2022) “A Brief Review of Phenolic Compounds Identified from Plants: Their Extraction, Analysis, and Biological Activity,” *Natural Product Communications blossfeldiana*, 17(1), pp. 1–14. Available at: <https://doi.org/10.1177/1934578X211069721>.
- Zhong, X., Lu, R., Liu, F., Ye, J., Zhao, J., Wang, F., *et al.* (2021) “Identification of LuxR Family Regulators That Integrate Into Quorum Sensing Circuit in *Vibrio parahaemolyticus*,” *Frontiers in Microbiology*, 12(June), pp. 1–11. Available at: <https://doi.org/10.3389/fmicb.2021.691842>.
- Zhu, L., Ma, J., Yuan, H., Deng, L., Shi, Z. and He, Q. (2023) “Bioresource Technology Effects of successional sulfadiazine exposure on biofilm in moving bed biofilm reactor: Secretion of extracellular polymeric substances, community activity and functional gene expression,” *Bioresource Technology*, 380(April), p. 129092. Available at: <https://doi.org/10.1016/j.biortech.2023.129092>.
- Zhu, Z., Wang, Z., Li, S. and Yuan, X. (2019) “Antimicrobial strategies for urinary catheters,” *Journal of Biomedical Materials Research - Part A*, 107(2), pp. 445–467. Available at: <https://doi.org/10.1002/jbm.a.36561>.