

DAFTAR PUSTAKA

- Ács, K., Balázs, V. L., Kocsis, B., Bencsik, T., Böszörményi, A., & Horváth, G. (2018). Antibacterial activity evaluation of selected essential oils in liquid and vapor phase on respiratory tract pathogens. *BMC Complementary and Alternative Medicine*, 18(1), 1–9. <https://doi.org/10.1186/S12906-018-2291-9/TABLES/6>
- Adiguna, P., & Santoso, O. (2017). Pengaruh Ekstrak Daun Serai (*Cymbopogon citratus*) pada Berbagai Konsentrasi terhadap Viabilitas Bakteri *Streptococcus Mutans*. *Jurnal Kedokteran Diponegoro*, 6(4), 1543–1550.
- Adiputra, I. M. S., Trisnadewi, N. W., Oktaviani, N. P. W., Munthe, S. A., Hulu, V. T., Budiastutik, I., Faridi, A., Ramdany, R., Fitriani, R. J., Tania, P. O. A., & Rahmiati, B. F. (2021). *Metodologi Penelitian Kesehatan*. Yayasan Kita Menulis.
- Adiyasa, M. R., & Meiyanti. (2021). Pemanfaatan obat tradisional di Indonesia: distribusi dan faktor demografis yang berpengaruh. *Jurnal Biomedika Dan Kesehatan*, 4(3), 130–138. <https://doi.org/10.18051/JBiomedKes.2021>
- Aelenei, P., Rimbu, C. M., Guguianu, E., Dimitriu, G., Aprotosoiaie, A. C., Brebu, M., Horhogeia, C. E., & Miron, A. (2019). Coriander essential oil and linalool – interactions with antibiotics against Gram-positive and Gram-negative bacteria. *Letters in Applied Microbiology*, 68(2), 156–164. <https://doi.org/10.1111/lam.13100>
- Ahmadi, H., Ebrahimi, A., & Ahmadi, F. (2021). Antibiotic Therapy in Dentistry. In *International Journal of Dentistry* (Vol. 2021). Hindawi Limited. <https://doi.org/10.1155/2021/6667624>
- A'iana, L., Sari, R., & Apridamayanti, P. (2017). Penentuan Nilai FICI Kombinasi Ekstrak Etanol Kulit Daun Lidah Buaya (*Aloe vera* (L) Burm.f) dan Gentamisin Sulfat Terhadap Bakteri *Escherichia coli*. *Pharm Sci Res*, 4(3).
- Altun, M., & Yapici, B. M. (2022). Determination of chemical compositions and antibacterial effects of selected essential oils against human pathogenic strains. *Anais Da Academia Brasileira de Ciencias*, 94(1). <https://doi.org/10.1590/0001-3765202220210074>
- Alves-Barroco, C., Paquete-Ferreira, J., Santos-Silva, T., & Fernandes, A. R. (2020). Singularities of Pyogenic Streptococcal Biofilms – From Formation to Health Implication. *Frontiers in Microbiology*, 11, 3179. <https://doi.org/10.3389/FMICB.2020.584947/BIBTEX>

- Amelia, S., Lubis, N. D. A., Balatif, R., Rozi, M. F., & Sidhi, S. P. (2020). Antibacterial effect of Andaliman (*Zanthoxylum acanthopodium*) against contaminant in raw common carp (*Cyprinus carpio* Linnaeus). *IOP Conference Series: Earth and Environmental Science*, 425(1). <https://doi.org/10.1088/1755-1315/425/1/012036>
- Andries, J. R., Gunawan, P. N., & Supit, A. (2014). UJI EFEK ANTI BAKTERI EKSTRAK BUNGA CENGKEH TERHADAP BAKTERI *Streptococcus mutans* SECARA *IN VITRO*. *Jurnal E-GiGi (EG)*, 2(2).
- Antonelli, G., Cappelli, L., Cinelli, P., Cuffaro, R., Manca, B., Nicchi, S., Tondi, S., Vezzani, G., Viviani, V., Delany, I., Scarselli, M., & Schiavetti, F. (2021). Strategies to Tackle Antimicrobial Resistance: The Example of *Escherichia coli* and *Pseudomonas aeruginosa*. *International Journal of Molecular Sciences* 2021, Vol. 22, Page 4943, 22(9), 4943. <https://doi.org/10.3390/IJMS22094943>
- Asbur, & Khairunnisyah, Y. (2018). Pemanfatan Andaliman (*Zanthoxylum acanthopodium* DC) sebagai Tanaman Penghasil Minyak Atsiri. *Jurnal Kultivasi*, 17(1), 537–543.
- Astannudinsyah, Ruwanda, R. A., & Basid, A. (2019). Faktor-Faktor Yang Berhubungan Dengan Status Karies Gigi Pada Anak Sekolah Min 1 Kota Banjarmasin. *Jurnal Kesehatan Indonesia*, 9(3), 149–156.
- Azmir, J., Zaidul, I. S. M., Rahman, M. M., Sharif, K. M., Mohamed, A., Sahena, F., Jahurul, M. H. A., Ghafoor, K., Norulaini, N. A. N., & Omar, A. K. M. (2013). Techniques for extraction of bioactive compounds from plant materials: A review. *Journal of Food Engineering*, 117(4), 426–436. <https://doi.org/10.1016/j.jfoodeng.2013.01.014>
- Balouiri, M., Sadiki, M., & Ibsouda, S. K. (2016). Methods for in vitro evaluating antimicrobial activity: A review. *Journal of Pharmaceutical Analysis*, 6(2), 71. <https://doi.org/10.1016/J.JPHA.2015.11.005>
- Bellio, P., Fagnani, L., Nazzicone, L., & Celenza, G. (2021). New and simplified method for drug combination studies by checkerboard assay. *MethodsX*, 8. <https://doi.org/10.1016/j.mex.2021.101543>
- Blanco, A., & Blanco, G. (2022). *Medical Biochemistry* (Second Edition). Academic Press.
- Brennan-Krohn, T., & Kirby, J. E. (2019). Antimicrobial synergy testing by inkjet printer-assisted automated checkerboard array and manual time-kill methods. *JoVE (Journal of Visualized Experiments)*, 146.
- Centers for Disease Control and Prevention. (2019). *Antibiotic resistance threats in the United States, 2019*. <https://doi.org/10.15620/cdc:82532>

- Cornelissen, C. N., Fisher, B. D., & Harvey, R. A. (2013). *Lippincott's Illustrated Reviews: Microbiology* (Third Edition). Lippincott Williams & Wilkins.
- Cotton, G. C., Lagesse, N. R., Parke, L. S., & Meledandri, C. J. (2019). Antibacterial nanoparticles. In *Comprehensive Nanoscience and Nanotechnology* (Vols. 1–5, pp. 65–82). Elsevier. <https://doi.org/10.1016/B978-0-12-803581-8.10409-6>
- Crevelin, E. J., Caixeta, S. C., Dias, H. J., Groppo, M., Cunha, W. R., Martins, C. H. G., & Crotti, A. E. M. (2015). Antimicrobial Activity of the Essential Oil of *Plectranthus neochilus* against Cariogenic Bacteria. *Evidence-Based Complementary and Alternative Medicine*, 2015. <https://doi.org/10.1155/2015/102317>
- Dewi, K. Y., & Riyandari, B. A. (2020). Potensi Tanaman Lokal sebagai Tanaman Obat dalam Menghambat Penyebaran COVID-19. *Jurnal Pharmascience*, 07(02), 112–128. <https://ppjp.ulm.ac.id/journal/index.php/pharmascience>
- Dianawati, N., Setyarini, W., Widjiastuti, I., Ridwan, R. D., & Kuntaman, K. (2020). The distribution of *Streptococcus mutans* and *Streptococcus sobrinus* in children with dental caries severity level. *Dental Journal*, 53(1), 36–39. <https://doi.org/10.20473/j.djmk.v53.i1.p36-39>
- Efstratiou, A., & Lamagni, T. (2016). Epidemiology of *Streptococcus pyogenes*. In J. J. Ferretti, D. L. Stevens, & V. A. Fischetti (Eds.), *Streptococcus pyogenes Basic Biology to Clinical Manifestations*. The University of Oklahoma Health Sciences Center.
- El Atki, Y., Aouam, I., El Kamari, F., Taroq, A., Nayme, K., Timinouni, M., Lyoussi, B., & Abdellaoui, A. (2019). Antibacterial activity of cinnamon essential oils and their synergistic potential with antibiotics. *Journal of Advanced Pharmaceutical Technology and Research*, 10(2), 63–67. https://doi.org/10.4103/japtr.JAPTR_366_18
- Esentürk-Güzela, I., Durgunb, M. E., Özsoyb, Y., & Güngörb, S. (2022). Drug Release, Susceptibility and Time-Kill Assays to Develop Novel Anti-Infective Drugs. In N. Rezaei (Ed.), *ENCYCLOPEDIA OF INFECTION AND IMMUNITY*. Elsevier.
- Etebu, E., & Arikekpar, I. (2016). *Antibiotics: Classification and mechanisms of action with emphasis on molecular perspectives* Antibiotics View project antimicrobial effects of irvingia View project. <https://www.researchgate.net/publication/319881509>
- Farooqui, A., Khan, A., Borghetto, I., Kazmi, S. U., Rubino, S., & Paglietti, B. (2015). Synergistic antimicrobial activity of *Camellia sinensis* and *juglans regia* against multidrug-resistant bacteria. *PLoS ONE*, 10(2). <https://doi.org/10.1371/journal.pone.0118431>

- Haeriah, Djide, N., Alam, G., & Sartini. (2018). Sinergitas Aktivitas Antibakteri dari Kelopak Bunga Rosella dan Kitosan Terhadap *Staphylococcus aureus*. *Jurnal Farmasi Galenika: Galenika Journal of Pharmacy*, 4(2), 93–97. <https://doi.org/10.22487/j24428744.10590>
- Hamid, K. J., Kurji, B. M., & Abed, K. M. (2021). Extraction and mass transfer study of *Cupressus sempervirens* L. oil by hydro-distillation method. *Materials Today: Proceedings*, 42, 2227–2232. <https://doi.org/10.1016/j.matpr.2020.12.308>
- Han, Y., Chen, W., & Sun, Z. (2021). Antimicrobial activity and mechanism of limonene against *Staphylococcus aureus*. *Journal of Food Safety*, 41(5). <https://doi.org/10.1111/jfs.12918>
- Haq, S. U., Wang, L., Guo, W., Aqib, A. I., Muneer, A., Saqib, M., Ahmad, S., Ghafoor, M., Iftikhar, A., Chen, K., & Liang, J. (2022). Enhancing activity of β -lactam and fluoroquinolones antibiotics by artemisinin and its derivatives against MDR *Escherichia coli*. *Frontiers in Veterinary Science*, 9. <https://doi.org/10.3389/FVETS.2022.1048531/FULL>
- Harris, L. G. (2022). Microbial Cell Structure and Organization: Bacteria. In N. Rezaei (Ed.), *Encyclopedia of Infection and Immunity*. Elsevier.
- He, Z., Huang, Z., Jiang, W., & Zhou, W. (2019). Antimicrobial Activity of Cinnamaldehyde on *Streptococcus mutans* Biofilms. *Frontiers in Microbiology*, 10, 2241. <https://doi.org/10.3389/FMICB.2019.02241/BIBTEX>
- Hilal, N., Syahrir, A., Mochamad Afendi, F., Susetyo, B., Mochamad, F., & Program, A. (2016). *Efek Sinergis Bahan Aktif Tanaman Obat Berbasiskan Jejaring Dengan Protein Target* (Vol. 1, Issue 1).
- Integrated Taxonomic Information System. (2022a). *ITIS - Report: Streptococcus mutans*. https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=966483#null
- Integrated Taxonomic Information System. (2022b). *ITIS - Report: Streptococcus pyogenes*. https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=966482#null
- Jorgensen, J. H., & Turnidge, J. D. (2015). *Manual of Clinical Microbiology* (J. H. Jorgensen, K. C. Carroll, G. Funke, & M. A. Pfaller, Eds.; 11th ed.). ASM Press.
- Kamal, H. Z. A., Ismail, T. N. N. T., Arief, E. M., & Ponnuraj, K. T. (2020). Antimicrobial activities of citronella (*Cymbopogon nardus*) essential oil

- against several oral pathogens and its volatile compounds. *Padjadjaran Journal of Dentistry*, 32(1), 1. <https://doi.org/10.24198/pjd.vol32no1.24966>
- Kanwal, S., & Vaitla, P. (2022). *Streptococcus Pyogenes*. *StatPearls*. <https://www.ncbi.nlm.nih.gov/books/NBK554528/>
- Kapoor, G., Saigal, S., & Elongavan, A. (2017). Action and resistance mechanisms of antibiotics: A guide for clinicians. *Journal of Anaesthesiology, Clinical Pharmacology*, 33(3), 300. https://doi.org/10.4103/JOACP.JOACP_349_15
- Katzung, B. G. (2021). Basic and Clinical Pharmacology. In *Basic & Clinical Pharmacology* (15th Edition). McGraw-Hill.
- Kebede, D., Admas, A., & Mekonnen, D. (2021). Prevalence and antibiotics susceptibility profiles of *Streptococcus pyogenes* among pediatric patients with acute pharyngitis at Felege Hiwot Comprehensive Specialized Hospital, Northwest Ethiopia. *BMC Microbiology*, 21(1). <https://doi.org/10.1186/s12866-021-02196-0>
- Khasanah, H. R., Muslim, Z., & Welkriana, P. W. (2019). Uji Sensitifitas Bakteri Gram Positif pada Plak Gigi terhadap Antibiotika. *AVICENNA*, 14(2), 36–41.
- Kim, S.-Y., Bae, I. K., Lee, J.-H., Shin, J. H., & Kim, J.-B. (2020). Molecular epidemiology and characterization of *Streptococcus mutans* strains in Korea. *Journal of Korean Academy of Oral Health*, 44(1), 34. <https://doi.org/10.11149/jkaoh.2020.44.1.34>
- Kintamani, E., Batubara, I., Kusmana, C., Tiryana, T., Mirmanto, E., & Asoka, S. F. (2023). Essential Oil Compounds of Andaliman (*Zanthoxylum acanthopodium* DC.) Fruit Varieties and Their Utilization as Skin Anti-Aging Using Molecular Docking. *Life*, 13(3), 754. <https://doi.org/10.3390/life13030754>
- Kon, K., & Rai, M. (2016). *Antibiotic Resistance: Mechanisms and New Antimicrobial Approaches*. Academic Press.
- Ledingham, K., Hinchliffe, S., Jackson, M., Thomas, F., & Tomson, G. (2019). *Antibiotic Resistance: Using a Cultural Contexts of Health Approach to Address a Global Health Challenge*. World Health Organization (WHO). www.euro.who.int
- Lemos, J. A., Palmer, S. R., Zeng, L., Wen, Z. T., Kajfasz, J. K., Freires, I. A., Abranches, J., & Brady, L. J. (2019). The Biology of *Streptococcus mutans*. *Microbiology Spectrum*, 7(1). <https://doi.org/10.1128/microbiolspec.gpp3-0051-2018>
- Li, Z. H., Cai, M., Liu, Y. S., Sun, P. L., & Luo, S. L. (2019). Antibacterial Activity and Mechanisms of Essential Oil from *Citrus medica* L. Var. *Sarcodactylis*. *Molecules*, 24(8). <https://doi.org/10.3390/molecules24081577>

- Lira, M. H. P. de, Andrade Júnior, F. P. de, Moraes, G. F. Q., Macena, G. da S., Pereira, F. de O., & Lima, I. O. (2020). Antimicrobial activity of geraniol: an integrative review. In *Journal of Essential Oil Research* (Vol. 32, Issue 3, pp. 187–197). Taylor and Francis Inc. <https://doi.org/10.1080/10412905.2020.1745697>
- Mabeku, L. B. K., Emmanuel, T., Kouam, J., Zra, T., & Louis, O. E. J. (2013). Synergetic Effects of Plant Extracts and Antibiotics on *Vibrio cholerae* O1 Strains Isolated From Clinical Specimens. *International Journal of Biology*, 5(3), 64–72. <https://doi.org/10.5539/ijb.v5n3p64>
- Maftuhah, A., Harnina, S. B., & Mustikaningtyas, D. (2015). PENGARUH INFUSA DAUN BELUNTAS (*Pluchea indica*) TERHADAP PERTUMBUHAN BAKTERI *Staphylococcus epidermidis*. *Unnes Journal of Life Science*, 4(1), 60–65. <http://journal.unnes.ac.id/sju/index.php/UnnesJLifeSci>
- Magi, G., Marini, E., & Facinelli, B. (2015). Antimicrobial activity of essential oils and carvacrol, and synergy of carvacrol and erythromycin, against clinical, erythromycin-resistant Group A Streptococci. *Frontiers in Microbiology*, 6(MAR). <https://doi.org/10.3389/FMICB.2015.00165/ABSTRACT>
- Manjulika, Y., Devesh Kumar, K., Sanjukta, C., & Geeta, W. (2016). Comparative Antibacterial Efficacy of *Swertia chirata* and *Colocasia esculenta*. *International Journal of Pharmacognosy and Phytochemical Research*, 8(12), 2016–2019. www.ijppr.com
- Manning, M. Lou, Septimus, E. J., Ashley, E. S. D., Cosgrove, S. E., Fakhri, M. G., Schweon, S. J., Myers, F. E., & Moody, J. A. (2018). Antimicrobial stewardship and infection prevention—leveraging the synergy: A position paper update. In *American Journal of Infection Control* (Vol. 46, Issue 4, pp. 364–368). Mosby Inc. <https://doi.org/10.1016/j.ajic.2018.01.001>
- Masyita, A., Mustika Sari, R., Dwi Astuti, A., Yasir, B., Rahma Rumata, N., Emran, T. Bin, Nainu, F., & Simal-Gandara, J. (2022). Terpenes and terpenoids as main bioactive compounds of essential oils, their roles in human health and potential application as natural food preservatives. *Food Chemistry: X*, 13. <https://doi.org/10.1016/j.fochx.2022.100217>
- Maulana, I. A., Triatmoko, B., & Nugraha, A. S. (2020). Skrining Fitokimia dan Uji Aktivitas Antibakteri Ekstrak dan Fraksi Tanaman Senggugu (*Rothea serrata* (L.) Steane & Mabb.) terhadap *Pseudomonas aeruginosa*. *JPSCR: Journal of Pharmaceutical Science and Clinical Research*, 5(1), 01–11. <https://doi.org/10.20961/jpscr.v5i1.32200>
- Meinen, A., Reuss, A., Willrich, N., Feig, M., Noll, I., Eckmanns, T., Al-Nawas, B., & Markwart, R. (2021). Antimicrobial Resistance and the Spectrum of Pathogens in Dental and Oral-Maxillofacial Infections in Hospitals and Dental

- Practices in Germany. *Frontiers in Microbiology*, 12. <https://doi.org/10.3389/fmicb.2021.676108>
- Metwalli, K. H., Khan, S. A., Krom, B. P., & Jabra-Rizk, M. A. (2013). Streptococcus mutans, Candida albicans, and the Human Mouth: A Sticky Situation. *PLoS Pathogens*, 9(10). <https://doi.org/10.1371/JOURNAL.PPAT.1003616>
- Mirza, A. U., Khan, M. S., Nami, S. A. A., Kareem, A., Rehman, S., Bhat, S. A., & Nishat, N. (2019). Copper Oxide Nanomaterials Derived from *Zanthoxylum armatum* DC. and *Berberis lycium* Royle Plant Species: Characterization, Assessment of Free Radical Scavenging and Antibacterial Activity. *Chemistry and Biodiversity*, 16(8). <https://doi.org/10.1002/cbdv.201900145>
- Moektiwardoyo, M., Muchtaridi, M., & Halimah, E. (2014). Chemical composition and locomotor activity of Andaliman fruits (*Zanthoxylum acanthopodium* DC.) essential oil on mice. *International Journal of Pharmacy and Pharmaceutical Sciences*, 6(2), 547–550. https://www.researchgate.net/publication/286601487_Chemical_composition_and_locomotor_activity_of_Andaliman_fruits_Zanthoxylum_acanthopodium_DC_essential_oil_on_mice
- Mohr, K. I. (2016). History of Antibiotics Research. In M. Stadler & P. Dersch (Eds.), *How to Overcome the Antibiotic Crisis* (Vol. 398). Springer International Publishing AG. <http://www.springer.com/series/82>
- Murray, C. J., Ikuta, K. S., Sharara, F., Swetschinski, L., Robles Aguilar, G., Gray, A., Han, C., Bisignano, C., Rao, P., Wool, E., Johnson, S. C., Browne, A. J., Chipeta, M. G., Fell, F., Hackett, S., Haines-Woodhouse, G., Kashef Hamadani, B. H., Kumaran, E. A. P., McManigal, B., ... Naghavi, M. (2022). Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. *The Lancet*, 399(10325), 629–655. [https://doi.org/10.1016/S0140-6736\(21\)02724-0](https://doi.org/10.1016/S0140-6736(21)02724-0)
- Murugaiyan, J., Anand Kumar, P., Rao, G. S., Iskandar, K., Hawser, S., Hays, J. P., Mohsen, Y., Adukkadukkam, S., Awuah, W. A., Jose, R. A. M., Sylvia, N., Nansubuga, E. P., Tilocca, B., Roncada, P., Roson-Calero, N., Moreno-Morales, J., Amin, R., Krishna Kumar, B., Kumar, A., ... van Dongen, M. B. M. (2022). Progress in Alternative Strategies to Combat Antimicrobial Resistance: Focus on Antibiotics. In *Antibiotics* (Vol. 11, Issue 2). MDPI. <https://doi.org/10.3390/antibiotics11020200>
- Muzafri, A. (2019). Uji Aktivitas Antimikroba ekstrak Andaliman (*Zanthoxylum acanthopodium* DC.) pada *Staphylococcus aureus*. *Jurnal Sungkai*, 7(1), 122–126.
- Nurlaeni, Y., Iskandar, J., & Junaedi, D. I. (2021). Ethnoecology of *Zanthoxylum acanthopodium* by local communities around lake Toba, North Sumatra,

Indonesia. *Biodiversitas*, 22(4), 1806–1818.
<https://doi.org/10.13057/biodiv/d220426>

- Oreopoulou, A., Tsimogiannis, D., & Oreopoulou, V. (2019). Extraction of Polyphenols From Aromatic and Medicinal Plants: An Overview of the Methods and the Effect of Extraction Parameters. In R. R. Watson (Ed.), *Polyphenols in Plants* (Second Edition). Academic Press.
- Pa, E. T., Sinaga, H., & Ridwansyah. (2019). The effect of addition of andaliman (*Zanthoxylum acanthopodium* DC) on the quality of andaliman condiment. *IOP Conf. Series: Earth and Environmental Science*, 260. <https://doi.org/10.1088/1755-1315/260/1/012099>
- Panichayupakaranant, P., Septama, A. W., & Sinviratpong, A. (2019). Synergistic activity of lawsone methyl ether in combination with some antibiotics and artocarpin against *methicillin-resistant Staphylococcus aureus*, *Candida albicans*, and *Trychophyton rubrum*. *Chinese Herbal Medicines*, 11(3), 321–325. <https://doi.org/10.1016/j.chmed.2019.06.001>
- Parker, J. (2013). Antibiotic-Resistance Mutants. In S. Maloy & K. Hughes (Eds.), *Brenner's Encyclopedia of Genetics* (Second Edition). Academic Press.
- Percival, S. L., Williams, D. W., Randle, J., & Cooper, T. (Eds.). (2014). *Biofilms in Infection Prevention and Control* (1st ed.). Academic Press.
- Preedy, V. R. (Ed.). (2016). *Essential Oils in Food Preservation, Flavor and Safety*. Academic Press.
- Puvača, N. (2022). Antimicrobial Resistance and Treatment in Companion, Food and Exotic Animals. In *Antibiotics* (Vol. 11, Issue 10). MDPI. <https://doi.org/10.3390/antibiotics11101360>
- Qiu, W., Zhou, Y., Li, Z., Huang, T., Xiao, Y., Cheng, L., Peng, X., Zhang, L., & Ren, B. (2020). Application of Antibiotics/Antimicrobial Agents on Dental Caries. In *BioMed Research International* (Vol. 2020). Hindawi Limited. <https://doi.org/10.1155/2020/5658212>
- Rai, M. K., & Kon, V. K. (2013). *Fighting Multidrug Resistance with Herbal Extracts, Essential Oils and Their Components* (M. K. Rai & K. V. Kon, Eds.). Academic Press. www.elsevierdirect.com/rights
- Ramadan, M. F. (Ed.). (2022). *Cold Pressed Oils: Green Technology, Bioactive Compounds, Functionality, and Applications*. Academic Press.
- Reygaert, W. C. (2018). An overview of the antimicrobial resistance mechanisms of bacteria. *AIMS Microbiology*, 4(3), 482–501. <https://doi.org/10.3934/microbiol.2018.3.482>
- Ribeiro, A. I., Dias, A. M., & Zille, A. (2022). Synergistic Effects between Metal Nanoparticles and Commercial Antimicrobial Agents: A Review. In ACS

- Applied Nano Materials* (Vol. 5, Issue 3, pp. 3030–3064). American Chemical Society. <https://doi.org/10.1021/acsnm.1c03891>
- Riedel, S., Hobden, J. A., Miller, S., Morse, S. A., Mietzner, T. A., Detrick, B., Mitchell, T. G., Sakanari, J. A., Hotez, P., & Mejia, R. (2019). *Jawetz, Melnick, & Adelberg's Medical Microbiology* (28th edition). McGraw-Hill. www.mhprofessional.com.
- Rodriguez-Urretavizcaya, B., Pascual, N., Pastells, C., Martin-Gomez, M. T., Vilaplana, L., & Marco, M. P. (2021). Diagnosis and Stratification of *Pseudomonas aeruginosa* Infected Patients by Immunochemical Quantitative Determination of Pyocyanin From Clinical Bacterial Isolates. *Frontiers in Cellular and Infection Microbiology*, 11. <https://doi.org/10.3389/fcimb.2021.786929>
- Rosidah, Hasibuan, P. A. Z., Satria, D., Haro, G., & Masri, P. (2018). Antioxidant activity of alkaloid fractions of *Zanthoxylum acanthopodium* DC. Fruits with 1,1-diphenyl-2-picrylhydrazyl assay. *Article in Asian Journal of Pharmaceutical and Clinical Research*, 11(1).
- Sanhueza, L., Melo, R., Montero, R., Maisey, K., Mendoza, L., & Wilkens, M. (2017). Synergistic interactions between phenolic compounds identified in grape pomace extract with antibiotics of different classes against *Staphylococcus aureus* and *Escherichia coli*. *PLoS ONE*, 12(2). <https://doi.org/10.1371/journal.pone.0172273>
- Saragih, D. E., & Arsita, E. V. (2019). Kandungan fitokimia *Zanthoxylum acanthopodium* dan potensinya sebagai tanaman obat di wilayah Toba Samosir dan Tapanuli Utara, Sumatera Utara. *Prosiding Seminar Nasional Masyarakat Biodiversitas Indonesia*, 5(1), 71–76. <https://doi.org/10.13057/psnmbi/m050114>
- Schmidt, T. M. (Ed.). (2019). *Encyclopedia of Microbiology* (Fourth Edition). Elsevier.
- Setditjen Farmalkes. (2016). *Mari Bersama Atasi Resistensi Antimikroba (AMR) / Direktorat Jenderal Kefarmasian dan Alat Kesehatan*. <https://farmalkes.kemkes.go.id/2016/06/mari-bersama-atasi-resistensi-antimikroba-amr/>
- Shivekar, S., & Menon, T. (2015). Molecular basis for erythromycin resistance in group a streptococcus isolated from skin and soft tissue infections. *Journal of Clinical and Diagnostic Research*, 9(11), DC21–DC23. <https://doi.org/10.7860/JCDR/2015/14744.6843>
- Sibero, M. T., Siswanto, A. P., Murwani, R., Frederick, E. H., Wijaya, A. P., Syafitri, E., Farabi, K., Saito, S., & Igarashi, Y. (2020). Antibacterial, cytotoxicity and metabolite profiling of crude methanolic extract from

- andaliman (*Zanthoxylum acanthopodium*) fruit. *Biodiversitas*, 21(9), 4147–4154. <https://doi.org/10.13057/biodiv/d210928>
- Silva, V. A., Sousa, J. P., Guerra, F. Q. S., Pessôa, H. L. F., Freitas, A. F. R., Coutinho, H. D. M., Alves, L. B. N., & Lima, E. O. (2015). Antibacterial Activity of the Monoterpene Linalool: Alone and in Association with Antibiotics Against Bacteria of Clinical Importance. *International Journal of Pharmacognosy and Phytochemical Research*, 7(5), 1022–1026. www.ijppr.com
- Silvério, M. S., Del-Vechio-Vieira, G., Pinto, M. A. O., Alves, M. S., & Sousa, O. V. (2013). Chemical composition and biological activities of essential oils of *Eremanthus erythropappus* (DC) McLeisch (Asteraceae). *Molecules*, 18(8), 9785–9796. <https://doi.org/10.3390/molecules18089785>
- Simbolon, W. I., Kardhinata, E. H., Bangun, M. K., & Simatupang, S. (2018). Identifikasi Karakter Morfologis Andaliman (*Zanthoxylum acanthopodium* DC.) di Beberapa Kabupaten di Sumatera Utara. *Jurnal Agroekoteknologi FP USU*, 6(4), 745–756.
- Sinto, R. (2020). Peran Penting Pengendalian Resistensi Antibiotik pada Pandemi COVID-19. In *Jurnal Penyakit Dalam Indonesia* | (Vol. 7, Issue 4). <https://covid19.who.int>.
- Sitanggang, F. M. C., Duniaji, A. S., & Pratiwi, I. D. P. K. (2019). DAYA HAMBAT EKSTRAK BUAH ANDALIMAN (*Zanthoxylum acanthopodium* DC) DALAM ETIL ASETAT TERHADAP PERTUMBUHAN *Escherichia coli*. *Jurnal Ilmu Dan Teknologi Pangan*, 8(3), 257–266.
- Soetjipto, H. (2018). Antibacterial Properties of Essential Oil in Some Indonesian Herbs. In *Potential of Essential Oils*. InTech. <https://doi.org/10.5772/intechopen.78033>
- Soudeiha, M. A. H., Dahdouh, E. A., Azar, E., Sarkis, D. K., & Daoud, Z. (2017). In vitro evaluation of the colistin-carbapenem combination in clinical isolates of a. baumannii using the checkerboard, Etest, and time-kill curve Techniques. *Frontiers in Cellular and Infection Microbiology*, 7(MAY). <https://doi.org/10.3389/fcimb.2017.00209>
- Sreepian, A., Popruk, S., Nutalai, D., Phutthanu, C., & Sreepian, P. M. (2022). Antibacterial Activities and Synergistic Interaction of Citrus Essential Oils and Limonene with Gentamicin against Clinically Isolated Methicillin-Resistant *Staphylococcus aureus*. *Scientific World Journal*, 2022. <https://doi.org/10.1155/2022/8418287>
- Sun, Y., Chen, S., Zhang, C., Liu, Y., Ma, L., & Zhang, X. (2018). Effects of sub-minimum inhibitory concentrations of lemon essential oil on the acid tolerance and biofilm formation of *Streptococcus mutans*. *Archives of Oral Biology*, 87, 235–241. <https://doi.org/10.1016/j.archoralbio.2017.12.028>

- Suryana, S., Nuraeni, Y. Y. A., & Rostinawati, T. (2017). *Aktivitas Antibakteri Ekstrak Etanol Dari Lima Tanaman Terhadap Bakteri Staphylococcus Epidermidis Dengan Metode Mikrodilusi M7-A6CLSI* (Vol. 4, Issue 1).
- Suryani, Y., & Taupiqurrahman, O. (2021). *MIKROBIOLOGI DASAR*. LP2M UIN SGD Bandung.
- Susanti, N., Situmorang, E., & Fitri, W. (2020). Effectiveness of the Antibacterial Activity of n-Hexane Andaliman (*Zanthoxylum Acanthopodium* DC) Extract Against *Bacillus subtilis*, *Salmonella typhi*, and *Staphylococcus aureus*. *Journal of Physics: Conference Series*, 1462(1). <https://doi.org/10.1088/1742-6596/1462/1/012072>
- Sykes, J. E. (Ed.). (2014). *Canine and Feline Infectious Diseases*. Elsevier Inc.
- Tortora, G. J., Funke, B. R., & Case, C. L. (2019). *Microbiology: An Introduction* (13th Edition). Pearson.
- Tuyen, T. T., Quan, P. M., Thu Le, V. T., Toan, T. Q., Nghi, D. H., Bach, C. P., Inh, T. C., Hanh, N. P., Thi Hong Van, N., Quoc Viet, H., Giay, C., Noi, H., Thi Tuyen, T., Minh Quan, P., Thi Thu Le, V., Quoc Toan, T., Huu Nghi, D., Cao Bach, P., Thi Inh, C., ... Van, N. T. H. (2021). Chemical Composition, Antimicrobial, and Cytotoxic Activities of Leaf, Fruit, and Branch Essential Oils Obtained From *Zanthoxylum nitidum* Grown in Vietnam. *Natural Product Communications*, 16(1), 1–7.
- Wahyono, W., Widowati, L., Mujahid, R., Subositi, D., Widiyastuti, Y., Haryanti, S., Junediono, Jokopriyambodo, W., Budiarti, M., Maruzy, A., Mustofa, F. I., & Sari, A. N. (2017). *LAPORAN NASIONAL Eksplorasi Pengetahuan Lokal Etnomedisin dan Tumbuhan Obat Berbasis Komunitas di Indonesia*.
- Walsh, C., & Wencewicz, T. (2016). *Antibiotics: Challenges, Mechanisms, Opportunities*. ASM Press.
- Wassel, M. O., & Khattab, M. A. (2017). Antibacterial activity against *Streptococcus mutans* and inhibition of bacterial induced enamel demineralization of propolis, miswak, and chitosan nanoparticles based dental varnishes. *Journal of Advanced Research*, 8(4), 387. <https://doi.org/10.1016/J.JARE.2017.05.006>
- Wijesundara, N. M., Lee, S. F., Cheng, Z., Davidson, R., & Rupasinghe, H. P. V. (2021). Carvacrol exhibits rapid bactericidal activity against *Streptococcus pyogenes* through cell membrane damage. *Scientific Reports*, 11(1). <https://doi.org/10.1038/s41598-020-79713-0>
- World Health Organization (WHO). (2021). *Antimicrobial stewardship interventions: a practical guide*.
- Worotikan, R. V, Tuju, E. A., & Kawuwung, F. (2017). Analisis efektivitas antidiabetes ekstrak etanol buah andaliman (*Zanthoxylum acanthopodium* DC)

pada histopatologi ginjal tikus putih (*Rattus novergicus*) yang diinduksi alloksan. *Jurnal Sains, Matematika, & Edukasi (JSME)*, 5(1), 29–37.

- Xie, Y., Yang, W., Tang, F., Chen, X., & Ren, L. (2014). Antibacterial Activities of Flavonoids: Structure-Activity Relationship and Mechanism. *Current Medicinal Chemistry*, 22(1), 132–149. <https://doi.org/10.2174/0929867321666140916113443>
- Yang, J., Song, X., Hu, H., Zhong, W., Cao, R., Xu, Y., & Li, R. (2022). Chemical Composition and Antifungal, Anti-Inflammatory, Antiviral, and Larvicidal Activities of the Essential Oils of *Zanthoxylum acanthopodium* DC. from China and Myanmar. *Molecules*, 27(16). <https://doi.org/10.3390/molecules27165243>
- Yanti, & Limas, R. W. (2019). Chemical profiling of *zanthoxylum acanthopodium* essential oil and its antidiabetic activity. *Food Research*, 3(5), 422–427. [https://doi.org/10.26656/fr.2017.3\(5\).065](https://doi.org/10.26656/fr.2017.3(5).065)
- Zhou, X., & Li, Y. (2015). *Atlas of oral microbiology : from healthy microflora to disease*. Elsevier Inc.