

DAFTAR PUSTAKA

- Abdelshafey, H. E., Abdalla, M. A., Eltayeb, E. E., Mohmmmed, R. O., Younis, A. A., Musa, Y. A. M. A., ... & El-Maradny, Y. A. (2024). Combatting Antimicrobial Resistance: Mechanisms, Emerging Therapies, And Future Directions. *Microbial Biosystems*, 9(2), 96-114.
- Abubakar, A. R., & Haque, M. (2020). Preparation of medicinal plants: Basic extraction and fractionation procedures for experimental purposes. *Journal of Pharmacy and Bioallied Sciences*, 12(1), 1-10.
- Abubakar, I. B., Malami, I., Yahaya, Y., & Sule, S. M. (2018). A review on the ethnomedicinal uses, phytochemistry and pharmacology of *Alpinia officinarum* Hance. *Journal of Ethnopharmacology*, 224, 45–62.
- Adhi, A., Wahyudi, W., Suryanto, W., Sismanto, S., Suprianto, A., & Ellianawati, E. (2019). Estimasi Temperatur Bawah Permukaan Reservoir Gunung Lumpur Bledug Kuwu (GLBK) Jawa Tengah Menggunakan Metode Geotermometri. *Jurnal Pendidikan Fisika Dan Keilmuan (JPFK)*, 5(1), 1.
- Adithama, R. M., Munifah, I., Yanto, D. H. Y., & Meryandini, A. (2023). Biodegradation of low-density polyethylene microplastic by new halotolerant bacteria isolated from saline mud in Bledug Kuwu, Indonesia. *Bioresource Technology Reports*, 22, 101466.
- Agrawal, S., Chavan, P., & Dufossé, L. (2024). Hidden treasure: Halophilic fungi as a repository of bioactive lead compounds. *Journal of Fungi*, 10(4), 290.
- Akhsan, N. I. M., Sila, S., Syaifudin, E. A., & Kurniati, I. R. A. (2022). Identifikasi Jamur Rhizosfer di Lahan Tanaman Bawang Merah (*Allium ascalonicum* L.) Bergulma di Desa Bendang Raya Kecamatan Tenggarong. *Jurnal Agroekoteknologi Tropika Lembap*, 4(2), 99–106.
- Amina, M., & Lotfi, G. (2024). An overview of extremophile: microbial diversity, adaptive strategies, and potential applications. *Microbiology and Biotechnology Letters*, 52(3), 233-254.
- Anggreni, N. G., Fadhil, N., & Prasasty, V. D. (2019). Potential in vitro and in vivo antioxidant activities from *Piper crocatum* and *Persea americana* leaf extracts. *Biomedical and Pharmacology Journal*, 12(2), 661-667.
- Asy'ari, M., Parwata, I. P., Aditiawati, P., Akhmaloka, A., & Hertadi, R. (2014). Isolation and identification of halostable lipase producing bacteria from the

- Bledug Kuwu mud crater located at Purwodadi-Grobogan, Central Java, Indonesia. *J. Pure Appl. Microbiol.*, 8(5), 3387-3396.
- Azyenela, L., Sari, H. P., Wardi, E. S., & Sartika, D. (2023). Isolasi dan identifikasi dengan gen 16s rRNA Bakteri Endofit dari Tanaman Pepaya (*Carica Papaya L.*) Serta Uji Aktivitas Antibakterinya. *Journal of Pharmaceutical and Sciences*, 1068-1078.
- Badan Standardisasi Nasional. (2018). SNI 8623:2018: Cara uji antioksidan senyawa bahan alam perairan dengan metode DPPH (2,2-difenil-1-pikrilhidrazil) spektrofotometri. Jakarta: Badan Standardisasi Nasional.
- Barnett, HL and Hunter, BB 1998. Illustrated genera of Imperfect fungi (4" ed.). *Mycotaxon*, 46, 141-154.
- Bennett, R. J., & Turgeon, B. G. (2016). Fungal sex: the Ascomycota. *Microbiology spectrum*, 4(5), 10-1128.
- Bhat, S., & Rajanna, L. (2017). Preliminary phytochemical analysis and *in vitro* antioxidant potential of fruit stalks of *Capsicum annum* var. *glabriusculum* (Dunal) Heiser & Pickersgill. *Journal of Pharmaceutical Sciences and Research*, 9(8), 1283–1287.
- Budaraga, I. K., & Putra, D. P. (2021, May). Analysis antioxidant IC50 liquid smoke of cocoa skin with several purification methods. In *IOP Conference Series: Earth and Environmental Science*, 757(1), 12053.
- Butler MS, Blaskovich MA, Cooper MA. (2017). Antibiotics in the Clinical Pipeline at The End of 2015. *Journal Antibiot.* 70(1), 3–24.
- Cabuhat, K. S. P., & Moron-Espiritu, L. S. (2022). Quorum Sensing Orchestrates Antibiotic Drug Resistance, Biofilm Formation, and Motility in *Escherichia coli* and Quorum Quenching Activities of Plant-derived Natural Products: A Review. *Journal of Pure & Applied Microbiology*, 16(3), 1538-1549.
- Chakraverty, R., Samanta, K., Mandal, P., Karmakar, S., & Karmakar, S. (2023). Mechanisms of Action of Antibacterial Agents (AMA). In *How Synthetic Drugs Work* (pp. 421-429).
- Charlton, N. C., Mastuygin, M., Török, B., & Török, M. (2023). Structural features of small molecule antioxidants and strategic modifications to improve potential bioactivity. *Molecules*, 28(3), 1057.
- Chavez, J. A., Brat, D. J., Hunter, S. B., Velazquez Vega, J., & Guarner, J. (2018). Practical diagnostic approach to the presence of hyphae in neuropathology

- specimens with three illustrative cases. *American journal of clinical pathology*, 149(2), 98-104.
- Cole, R. J., Kirksey, J. W., & Morgan-Jones, G. (1975). *Verruculotoxin*, a new mycotoxin from *Penicillium verruculosum*. *Toxicology and applied pharmacology*, 31(3), 465-468.
- Dishliyska, V., Miteva-Staleva, J., Gocheva, Y., Stoyancheva, G., Yovchevska, L., Abrashev, R., ... & Krumova, E. (2025). Biological Potential of Extremophilic Filamentous Fungi for the Production of New Compounds with Antimicrobial Effect. *Fermentation*, 11(6), 347.
- Dutta, B., & Bandopadhyay, R. (2022). Biotechnological potentials of halophilic microorganisms and their impact on mankind. *Beni-Suef University Journal of Basic and Applied Sciences*, 11(1), 75.
- Emelda, Putri, A. L., Lubis, A. R., Dewi, A. F., & Octaviani, A. (2025). Perbedaan jenis pelarut terhadap aktivitas antioksidan ekstrak daun lamtoro (*Leucaena leucocephala* (Lam.) de Wit). *Lambung Farmasi*, 6(1), 34-40.
- Emelia, R., Safitri, D. D., & Andriyani, H. (2020). Daun Kelor (*Moringa oleifera*) Sebagai Antibakteri Terhadap Infeksi Bakteri *Escherichia coli*. *Jurnal Infokes-Politeknik Piksi Ganesha*, 4(2), 44–50.
- Gandjar, I., & Rifai, M. A. (1999). Pengenalan kapang tropik umum. Yayasan Obor Indonesia, 60-110.
- Guimarães, A., & Venâncio, A. (2022). The potential of fatty acids and their derivatives as antifungal agents: a review. *Toxins*, 14(3), 188.
- Fadhillah, F., Elfita, E., Muharni, M., Yohandini, H., & Widjajanti, H. (2021). Antioxidant compound of endophytic fungi *Penicillium oxalicum* isolated from *Swietenia mahagoni* L. Jacq. *Tropical Journal of Natural Product Research*, 5(3), 543–548.
- Fernando, L. D., Pérez-Llano, Y., Dickwella Widanage, M. C., Jacob, A., Martínez-Ávila, L., Lipton, A. S., ... & Wang, T. (2023). Structural Adaptation of Fungal Cell Wall in Hypersaline Environment. *Nature communications*, 14(1), 7082.
- Hanidah, U., Nabilla, F. A., Azkadhafina, F., Hidayat, T. A., Putri, N. F., Zahra, P. A., ... & Buulolo, F. (2023). Antibiotics sensitivity test diffusion and dilution methods. *Journal of Research in Pharmacy and Pharmaceutical Sciences*, 2(1), 38-47.

- Hammerl, R., Frank, O., Schmittngel, T., Ehrmann, M. A., & Hofmann, T. (2019). Functional metabolome analysis of *Penicillium roqueforti* by means of differential Off-Line LC–NMR. *Journal of agricultural and food chemistry*, 67(18), 5135-5146.
- Hapsoro, C. A. (2023). Rare Earth Element Characterization of Bledug Kuwu Mud Volcano, Central Java, Indonesia, Based on Geochemical Analyzes (Susceptibility, XRF, XRD, SEM-EDS). *Sains Malaysiana*, 52(9), 2529-2543.
- Hillis, D. M., & Bull, J. J. (1993). An Empirical Test of Bootstrapping as a Method for Assessing Confidence in Phylogenetic Analysis. *Systematic Biology*, 42(2), 182–192.
- Hmad, I. B., & Gargouri, A. (2024). Halophilic Filamentous Fungi and Their Enzymes: Potential Biotechnological Applications. *Journal of Biotechnology*, 381, 11-18.
- Huang, Y., Zhang, T., Zhou, H., Feng, Y., Fan, C., Chen, W., ... & Jiang, Z. (2016). Fast separation of triterpenoid saponins using supercritical fluid chromatography coupled with single quadrupole mass spectrometry. *Journal of Pharmaceutical and Biomedical Analysis*, 121, 22-29.
- Iqbal, S., Hasni, M. S., Malik, Y., Baloch, S., & Aamir, R. (2023). Halophilic fungi: versatile microorganisms for biotechnological advancements. *Pak-Euro Journal of Medical and Life Sciences*, 6(3), 191-198.
- Javaid, A., Anjum, F., Anwar, A., Asif, M., Ahmad, S., & Ferdosi, M. F. (2024). *Antifungal* compounds of *Tribulus terrestris* root for the control of *Pyricularia oryzae*, the cause of rice blast disease. *Pakistan Journal of Weed Science Research*, 30(3), 131-137.
- Jawetz, E., Melnick, J. L., & Adelberg, E. A. (2005). *Medical Microbiology* (Ed. 23). Jakarta: Salemba Medika, 233.
- Kementerian Kesehatan Republik Indonesia. (2020). *Farmakope Indonesia* (Edisi VI). Jakarta: Direktorat Jenderal Kefarmasian dan Alat Kesehatan. 131, 1866.
- Kim, D. O., Lee, K. W., Lee, H. J., & Lee, C. Y. (2002). Vitamin C equivalent antioxidant capacity (VCEAC) of phenolic phytochemicals. *Journal of Agricultural and food chemistry*, 50(13), 3713-3717.

- Konuk, H. B., & Ergüden, B. (2020). Phenolic–OH group is crucial for the *antifungal* activity of terpenoids via disruption of cell membrane integrity. *Folia Microbiologica*, 65(4), 775-783.
- Koul, M., Meena, S., Kumar, A., Sharma, P. R., Singamaneni, V., Riyaz-Ul-Hassan, S., ... & Singh, S. (2016). Secondary metabolites from endophytic fungus *Penicillium pinophilum* induce ROS-mediated apoptosis through mitochondrial pathway in pancreatic cancer cells. *Planta medica*, 82(04), 344-355.
- Kumari, P., Singh, A., Singh, D. K., Sharma, V. K., Kumar, J., Gupta, V. K., ... & Kharwar, R. N. (2021). Isolation and purification of bioactive metabolites from an endophytic fungus *Penicillium citrinum* of *Azadirachta indica*. *South African Journal of Botany*, 139, 449-457.
- Levene, P. A., & West, C. J. (1916). Cerebronic Acid: V. Relation of Cerebronic and Lignoceric Acids. *Journal of Biological Chemistry*, 26(1), 115-120.
- Ling, K. H., Liou, H. H., Yang, C. M., & Yang, C. K. (1984). Isolation, chemical structure, acute toxicity, and some physicochemical properties of territrems C from *Aspergillus terreus*. *Applied and environmental microbiology*, 47(1), 98-100.
- Malik, S., Kishore, S., & Dutta, A. K. (2023). Antagonistic activity of endophytic nanoparticles against plant and human pathogens. In *Endophytic Association: What, Why and How* (pp. 333-352). Academic Press.
- Marks, B. B., Nogueira, M. A., & Hungria, M. (2025). Microbial secondary metabolites and their use in achieving sustainable agriculture: Present achievements and future challenges. *Agronomy*, 15(6), 1350.
- Morooka, N., Uratsuji, N., Yoshizawa, T., & Yamamoto, H. (1972). Studies on the toxic substances in barley infected with *Fusarium* spp. *Food Hygiene and Safety Science (Shokuhin Eiseigaku Zasshi)*, 13(5), 368-375.
- Munusamy, M., Tan, K., Nge, C. E., Gakuubi, M. M., Crasta, S., Kanagasundaram, Y., & Ng, S. B. (2023). Diversity and Biosynthetic Potential of Fungi Isolated from St. John's Island, Singapore. *International Journal of Molecular Sciences*, 24(2), 1033.
- Mushtaq, S., Shah, A. M., Shah, A., Lone, S. A., Hussain, A., Hassan, Q. P., & Ali, M. N. (2018). Bovine Mastitis: An Appraisal Of Its Alternative Herbal Cure. *Microbial Pathogenesis*, 114, 357-361.

- Nadhira, D. H., Liviawaty, E., & Kurniawati, N. (2019). Identifikasi Kapang Pada Dendeng Daging Lumat Nila Dengan Penggunaan Anti Kapang Lidah Buaya. *Jurnal Perikanan Kelautan*, 10(1), 29-38.
- Nambisan, P. (2017). *An Introduction to Ethical, Safety and Intellectual Property Rights Issues in Biotechnology*. Academic Press. 150-170.
- Nursid, M., Dewi, A. S., & Maya, D. (2020). Cytotoxicity of Marine-Derived Fungi Collected from Kepulauan Seribu Marine National Park. In *IOP Conference Series: Earth and Environmental Science*, 404(1), 12006.
- Ohmomo, S., Sato, T., Utagawa, T., & Abe, M. (1975). Isolation of festuclavine and three new indole alkaloids, roquefortine A, B and C from the cultures of *Penicillium roqueforti*. *Agricultural and Biological Chemistry*, 39(6), 1333-1334.
- Op De Beeck, M., Lievens, B., Busschaert, P., Declerck, S., Vangronsveld, J., & Colpaert, J. V. (2014). Comparison and validation of some ITS primer pairs useful for fungal metabarcoding studies. *PloS one*, 9(6), e97629.
- Oren, A. (2024). Novel Insights Into The Diversity Of Halophilic Microorganisms and Their Functioning in Hypersaline Ecosystems. *npj Biodiversity*, 3(1), 18.
- Park, M. S., Oh, S. Y., Fong, J. J., Houbraken, J., & Lim, Y. W. (2019). The diversity and ecological roles of *Penicillium* in intertidal zones. *Scientific reports*, 9(1), 13540.
- Pérez-Victoria, I., Crespo, J. L., Cantizani, J., & Reyes, F. (2016). Combined LC/UV/MS and NMR Strategies for the Dereplication of Marine Natural Products. *Planta Medica*, 82(09/10), 825–833.
- Pratiwi, S. T. (2008). *Mikrobiologi Farmasi*. Jakarta: Penerbit Erlangga, 150-171.
- Raja, H. A., Miller, A. N., Pearce, C. J., & Oberlies, N. H. (2017). Fungal identification using molecular tools: A primer for the natural products research community. *Journal of Natural Products*, 80(3), 756–770.
- Ridwanto, R., Aprilia, H., Rani, Z., Fauzi, Z. P. A., Kaban, V. E., & Nasri, N. (2024). Antibacterial Activity Test of Malacca Leaf Extract (*Phyllanthus emblica*) Against *Staphylococcus aureus* and *Staphylococcus epidermidis* Bacteria. *Indonesian Journal of Pharmaceutical and Clinical Research*, 7(1), 22-27.
- Rodriguez-Andrade, E., Stchigel, A. M., & Cano-Lira, J. F. (2021). New xerophilic species of *Penicillium* from soil. *Journal of fungi*, 7(2), 126.

- Rohman, M. S., Prijambada, I. D., Indriani, Y. A., & Hendrosatriyo, H. (2012). Identification of Protease Producing Halophilic Bacteria from Bledug Kuwu-Mud Volcano. *Indones J Biotechnol*, 17(1), 35-41.
- Saif, F. A., Yaseen, S. A., Alameen, A. S., Mane, S. B., & Pathan, M. A. (2020). Identification of *Penicillium* Species of Fruits Using Morphology and Spectroscopic Methods. *Journal of Physics: Conference Series*, 1644(1), 012019.
- Salam, M. A., Al-Amin, M. Y., Salam, M. T., Pawar, J. S., Akhter, N., Rabaan, A. A., & Alqumber, M. A. (2023, July). Antimicrobial Resistance: A Growing Serious Threat For Global Public Health. *In Healthcare*, 11(13), 1946.
- Saleem, H., Htar, T. T., Naidu, R., Anwar, S., Zengin, G., Locatelli, M., & Ahemad, N. (2020). HPLC–PDA polyphenolic quantification, UHPLC–MS secondary metabolite composition, and in vitro enzyme inhibition potential of *Bougainvillea glabra*. *Plants*, 9(3), 388.
- Sharifi-Rad J, Kamiloglu S, Yeskaliyeva B, Beyatli A, Alfred MA, Salehi B, Martorell M. (2020). Pharmacological activities of Psoralidin: a comprehensive review of the molecular mechanisms of action. *Front Pharmacol*, 11, 571459.
- Silva-Beltran, N. P., Boon, S. A., Ijaz, M. K., McKinney, J., & Gerba, C. P. (2023). *Antifungal* activity and mechanism of action of natural product derivatives as potential environmental disinfectants. *Journal of Industrial Microbiology and Biotechnology*, 50(1), 36.
- Singh, S., & Ray, P. (2021). The accessory gene regulator (*agr*) locus: An important regulatory system for antimicrobial resistance and virulence in *Staphylococcus aureus*. *Antibiotics*, 10(4), 430.
- Siregar, R. R. (2019). Isolasi dan Identifikasi Kapang Pada Pindang Bandeng (*Chanos chanos*) Presto. *Jurnal Kelautan dan Perikanan Terapan (JKPT)*, 2(1), 15-23.
- Siregar, S., & Siregar, N. I. (2016). Analisis dan Pemanfaatan Unsur Belerang dan Salinitas Lumpur Bledug Kuwu di Desa Kuwu, Kecamatan Kradenan, Kabupaten Grobongan, Jawa Tengah. *Positron*, 6(1), 40-42.
- Stekel, D. (2018). First Report of Antimicrobial Resistance Pre-Dates Penicillin. *Nature*. 562(7726).
- Suarjana, N., Nyandra, M., Astuti, N. P. W., Kurniati, N. M., Sumadewi, N. L. U., Putra, I. M. W. A., & Andrianto, N. (2025). Effect of different solvents on

- antioxidant activity of *Euphorbia hirta* L. extract. *Acta Chimica Asiana*, 8(2), 708-715.
- Sulieman, A. M. E., Ibrahim, S. M., Alshammari, M., Abdulaziz, F., Idriss, H., Alanazi, N. A. H., ... & Badraoui, R. (2024). Zingiber officinale uncovered: Integrating experimental and computational approaches to antibacterial and phytochemical profiling. *Pharmaceuticals*, 17(11), 1551.
- Taritla, S., Kumari, M., Kamat, S., Bhat, S. G., & Jayabaskaran, C. (2021). Optimization of physicochemical parameters for production of cytotoxic secondary metabolites and apoptosis induction activities in the culture extract of a marine algal-derived endophytic fungus *Aspergillus* sp. *Frontiers in Pharmacology*, 12, 542891.
- Teoh, W. Y., Yong, Y. S., Razali, F. N., Stephenie, S., Shah, M. D., Tan, J. K., Gnanaraj, C., & Mohd Esa, N. (2023). LC-MS/MS and GC-MS Analysis for the Identification of Bioactive Metabolites Responsible for the Antioxidant and Antibacterial Activities of *Lygodium microphyllum* (Cav.) R. Br. *Separations*, 10(3), 215.
- Thompson, T. P., & Gilmore, B. F. (2024). Exploring Halophilic Environments as A Source of New Antibiotics. *Critical reviews in Microbiology*, 50(3), 341-370.
- Tjampakasari, C. R., Agustini, R., Baihaki, I., Noor, S., & Bustami, A. (2024). Kultur slide sebagai metode mikroskopik tidak langsung untuk identifikasi jamur kapang. *Jurnal Sehat Indonesia (JUSINDO)*, 6(01), 201-210.
- Usman, Y., & Muin, R. (2023). Uji Kualitatif Dan Perhitungan Nilai Rf Senyawa Flavonoid Dari Ekstrak Daun Gulma Siam: Uji Kualitatif Dan Perhitungan Nilai Rf Senyawa Flavonoid Dari Ekstrak Daun Gulma Siam. *Journal of Pharmaceutical Science and Herbal Technology*, 1(1), 10–15.
- Vanreppelen, G., Wuyts, J., Van Dijck, P., & Vandecruys, P. (2023). Sources of antifungal drugs. *Journal of Fungi*, 9(2), 171.
- Yovchevska, L., Gocheva, Y., Stoyancheva, G., Miteva-Staleva, J., Dishliyska, V., Abrashev, R., ... & Krumova, E. (2025). Halophilic fungi—Features and potential applications. *Microorganisms*, 13(1), 175.
- Watanabe, T. (2002). *Pictorial atlas of soil and seed fungi: morphologies of cultured fungi and key to species*. CRC press, 290.

- Zhang, S., Wang, H., Sai, C., Wang, Y., Cheng, Z., & Zhang, Z. (2025). The Cytotoxic Activity of Secondary Metabolites from Marine-Derived *Penicillium* spp.: A Review (2018–2024). *Marine Drugs*, 23(5), 197.
- Zhang, Y., Ouyang, B., Zhang, W., Guang, C., Xu, W., & Mu, W. (2024). *Deoxynivalenol* : occurrence, toxicity, and degradation. *Food Control*, 155, 110027.