

DAFTAR PUSTAKA

- Adu, S. A., Naughton, P. J., Marchant, R., & Banat, I. M. (2020). Microbial Biosurfactants in Cosmetic and Personal Skincare Pharmaceutical Formulations. *Pharmaceutics*, 12(11), 1099. <https://doi.org/10.3390/pharmaceutics12111099>
- Ady Water. (2023, May 6). *Standar Baku Mutu Air Limbah Industri Minyak Sawit*. https://www.pengolahanlimbah.com/2023/07/standar-baku-mutu-air-limbah-industri_6.html
- Ahmad, Z., Zhang, X., Imran, M., Zhong, H., Andleeb, S., Zulekha, R., Liu, G., Ahmad, I., & Coulon, F. (2021). Production, functional stability, and effect of rhamnolipid biosurfactant from *Klebsiella* sp. on phenanthrene degradation in various medium systems. *Ecotoxicology and Environmental Safety*, 207, 111514. <https://doi.org/10.1016/j.ecoenv.2020.111514>
- Aka, B. E. Z., Djeni, T. N., Amoikon, S. L. T., Kannengiesser, J., Ouazzani, N., & Dje, M. K. (2021). High-throughput 16S rRNA gene sequencing of the microbial community associated with palm oil mill effluents of two oil processing systems. *Scientific Reports*, 11(1). <https://doi.org/10.1038/s41598-021-92513-4>
- Akbari, E., Rasekh, B., Maal, K. B., Karbasiun, F., Yazdian, F., Emami-Karvani, Z., & Peighami, R. (2021). A novel biosurfactant producing *Kocuria rosea* ABR6 as potential strain in oil sludge recovery and lubrication. *AMB Express*, 11(1). <https://doi.org/10.1186/s13568-021-01283-9>
- Akhbari, A., Kutty, P. K., Chuen, O. C., & Ibrahim, S. (2020). A study of palm oil mill processing and environmental assessment of palm oil mill effluent treatment. *Environmental Engineering Research*, 25(2), 212–221. <https://doi.org/10.4491/eer.2018.452>
- Alemán-Vega, M., Sánchez-Lozano, I., Hernández-Guerrero, C. J., Hellio, C., & Quintana, E. T. (2020). Exploring Antifouling Activity of Biosurfactants Producing Marine Bacteria Isolated from Gulf of California. *International Journal of Molecular Sciences*, 21(17), 6068. <https://doi.org/10.3390/ijms21176068>
- Allegro, G., Ceresa, C., Rinaldi, M., & Fracchia, L. (2021). Diverse Effects of Natural and Synthetic Surfactants on the Inhibition of *Staphylococcus aureus* Biofilm. *Pharmaceutics*, 13(8), 1172. <https://doi.org/10.3390/pharmaceutics13081172>

- Anjum, F., Gautam, G., Edgard, G., & Negi, S. (2016). Biosurfactant production through *Bacillus* sp. MTCC 5877 and its multifarious applications in food industry. *Bioresource Technology*, 213, 262–269. <https://doi.org/10.1016/j.biortech.2016.02.091>
- Aqlinia, M., Astuti, R. I., Prastya, M. E., & Wahyudi, A. T. (2025). Antioxidant potential of melanin pigment from marine sponge-associated actinomycete *Micromonospora* sp. *Journal of Applied Pharmaceutical Science*. <https://doi.org/10.7324/JAPS.2025.201566>
- Baoune, H., Ould El Hadj-Khelil, A., Pucci, G., Sineli, P., Loucif, L., & Polti, M. A. (2018). Petroleum degradation by endophytic *Streptomyces* spp. isolated from plants grown in contaminated soil of southern Algeria. *Ecotoxicology and Environmental Safety*, 147, 602–609. <https://doi.org/10.1016/j.ecoenv.2017.09.013>
- Behrens, B., Engelen, J., Tiso, T., Blank, L. M., & Hayen, H. (2016). Characterization of rhamnolipids by liquid chromatography/mass spectrometry after solid-phase extraction. *Analytical and Bioanalytical Chemistry*, 408(10), 2505–2514. <https://doi.org/10.1007/s00216-016-9353-y>
- BPS. (2023). *Statistik Kelapa Sawit Indonesia 2022* (H. dan P. Direktorat Statistik Tanaman Pangan, Ed.; Vol. 16). Badan Pusat Statistik.
- Buonocore, C., Giugliano, R., Della Sala, G., Palma Esposito, F., Tedesco, P., Folliero, V., Galdiero, M., Franci, G., & de Pascale, D. (2023). Evaluation of Antimicrobial Properties and Potential Applications of *Pseudomonas gessardii* M15 Rhamnolipids towards Multiresistant *Staphylococcus aureus*. *Pharmaceutics*, 15(2), 700. <https://doi.org/10.3390/pharmaceutics15020700>
- Cajka, T., & Fiehn, O. (2016). Toward Merging Untargeted and Targeted Methods in Mass Spectrometry-Based Metabolomics and Lipidomics. *Analytical Chemistry*, 88(1), 524–545. <https://doi.org/10.1021/acs.analchem.5b04491>
- Cajka, T., Hricko, J., Rudl Kulhava, L., Paucova, M., Novakova, M., & Kuda, O. (2023). Optimization of Mobile Phase Modifiers for Fast LC-MS-Based Untargeted Metabolomics and Lipidomics. *International Journal of Molecular Sciences*, 24(3), 1987. <https://doi.org/10.3390/ijms24031987>
- Carrasco-Palafox, J., Rivera-Chavira, B. E., Adame-Gallegos, J. R., Rodríguez-Valdez, L. M., Orrantia-Borunda, E., & Nevárez-Moorillón, G. V. (2021). Rhamnolipids from *Pseudomonas aeruginosa* Rn19a Modifies the Biofilm Formation over a Borosilicate Surface by Clinical Isolates. *Coatings*, 11(2), 136. <https://doi.org/10.3390/coatings11020136>

- Ceresa, C., Fracchia, L., Fedeli, E., Porta, C., & Banat, I. M. (2021). Recent Advances in Biomedical, Therapeutic and Pharmaceutical Applications of Microbial Surfactants. *Pharmaceutics*, 13(4), 466. <https://doi.org/10.3390/pharmaceutics13040466>
- Ceresa, C., Fracchia, L., Sansotera, A. C., De Rienzo, M. A. D., & Banat, I. M. (2023). Harnessing the Potential of Biosurfactants for Biomedical and Pharmaceutical Applications. *Pharmaceutics*, 15(8), 2156. <https://doi.org/10.3390/pharmaceutics15082156>
- Chen, X., Lu, Y., Shan, M., Zhao, H., Lu, Z., & Lu, Y. (2022). A mini-review: mechanism of antimicrobial action and application of surfactin. In *World Journal of Microbiology and Biotechnology* (Vol. 38, Number 8). Springer Science and Business Media B.V. <https://doi.org/10.1007/s11274-022-03323-3>
- Choudhary, M., Muduli, M., & Ray, S. (2024). Biosurfactants and Their Application in Remediation of Environmental Contaminants. In *Biosurfactants: A Boon to Healthcare, Agriculture & Environmental Sustainability* (pp. 117–135). BENTHAM SCIENCE PUBLISHERS. <https://doi.org/10.2174/9789815196924124010009>
- da Silva, P. F. F., da Silva, R. R., Sarubbo, L. A., & Guerra, J. M. C. (2024). Production and Optimization of Biosurfactant Properties Using *Candida mogii* and Licuri Oil (*Syagrus coronata*). *Foods*, 13(24), 4029. <https://doi.org/10.3390/foods13244029>
- da Silva, R. R., da Silva, Y. A., Sarubbo, L. A., & de Luna, J. M. (2024). Biosurfactants: basic properties and characterizations. In *Industrial Applications of Biosurfactants and Microorganisms* (pp. 25–38). Elsevier. <https://doi.org/10.1016/B978-0-443-13288-9.00016-4>
- Damayana, H., Nurhasanah, Kiswandono, A. A., Juliasih, N. L. G. R., & Bahri, S. (2024). Utilization POME as growth substrate for local indigenous bacteria *Bacillus* sp. ALP D1 in producing biosurfactant. *IOP Conference Series: Earth and Environmental Science*, 1312(1), 012057. <https://doi.org/10.1088/1755-1315/1312/1/012057>
- Damayanti, B., Sumardi, S., Arifiyanto, A., Handayani, K., Kanedi, M., Handerlin Putri, M., & Lukyta Ratih Riyanto, C. (2022). Pengaruh Media Pertumbuhan dan pH Terhadap Aktivitas Biosurfaktan dari Bakteri *Serratia marcescens* strain MBC 1 pada Minyak Jelantah. *IJCA (Indonesian Journal of Chemical Analysis)*, 5(1), 01–08. <https://doi.org/10.20885/ijca.vol5.iss1.art1>
- Das, R. P., Sahoo, S., Paidesetty, S. K., Ahmad, I., & Pradhan, A. K. (2025). Isolation, structural characterization, and anticancer potential of a novel

glycolipid biosurfactant S1B with AI-driven medium optimization. *Scientific Reports*, 15(1). <https://doi.org/10.1038/s41598-025-20759-3>

Datta, M., & Chattopadhyay, I. (2024). Applications of microbial biosurfactants in human health and environmental sustainability: a narrative review. *Discover Medicine*, 1(1). <https://doi.org/10.1007/s44337-024-00181-w>

de Souza, A. C., Silva, M. S., Simões, L. A., Fernandes, N. A. T., Schwan, R. F., & Dias, D. R. (2024). Advantages of biosurfactants over petroleum-based surfactants. In *Industrial Applications of Biosurfactants and Microorganisms* (pp. 371–393). Elsevier. <https://doi.org/10.1016/B978-0-443-13288-9.00002-4>

Firdose, A., Chong, N. H. H., Ramli, R., & Aqma, W. S. (2023). Antimicrobial, antiadhesive, and antibiofilm actions of rhamnolipids on ESKAPE pathogens. *Letters in Applied Microbiology*, 76(2). <https://doi.org/10.1093/lambio/ovad013>

Fitria, A. N., Gunawan, V. S., & Mardiah, M. (2021). Study Of The Utilization Of Palm Oil Industry Liquid Waste. *Konversi*, 10(1). <https://doi.org/10.20527/k.v10i1.10146>

Gharsallah, H., Guerin, C., Eddehech, A., Boufi, S., Öztop, M. H., Balti, R., & Zarai, Z. (2025). Elucidating the biosurfactant potential of Bacillus strains: a study of structure and function in food applications. *International Journal of Food Science and Technology*, 60(1). <https://doi.org/10.1093/ijfood/vvaf116>

Guesmi, S., Pujic, P., Nouioui, I., Dubost, A., Najjari, A., Ghedira, K., Igual, J. M., Miotello, G., Cherif, A., Armengaud, J., Klenk, H., Normand, P., & Sghaier, H. (2021). Ionizing-radiation-resistant *Kocuria rhizophila* PT10 isolated from the Tunisian Sahara xerophyte *Panicum turgidum*: Polyphasic characterization and proteogenomic arsenal. *Genomics*, 113(1), 317–330. <https://doi.org/10.1016/j.ygeno.2020.11.029>

Hentati, D., Chebbi, A., Hadrich, F., Frikha, I., Rabanal, F., Sayadi, S., Manresa, A., & Chamkha, M. (2019). Production, characterization and biotechnological potential of lipopeptide biosurfactants from a novel marine *Bacillus stratosphericus* strain FLU5. *Ecotoxicology and Environmental Safety*, 167, 441–449. <https://doi.org/10.1016/j.ecoenv.2018.10.036>

Hossain, T. J. (2024). Methods for screening and evaluation of antimicrobial activity: A review of protocols, advantages, and limitations. *European Journal of Microbiology and Immunology*, 14(2), 97–115. <https://doi.org/10.1556/1886.2024.00035>

- Ingham, B., Hollywood, K., Wongsirichot, P., Veitch, A., & Winterburn, J. (2024). Uncovering the fragmentation and separation characteristics of sophorolipid biosurfactants with LC-MS-ESI. *Journal of Industrial Microbiology & Biotechnology*, 51. <https://doi.org/10.1093/jimb/kuae035>
- Inkson, B. J. (2016). Scanning electron microscopy (SEM) and transmission electron microscopy (TEM) for materials characterization. In *Materials Characterization Using Nondestructive Evaluation (NDE) Methods* (pp. 17–43). Elsevier. <https://doi.org/10.1016/B978-0-08-100040-3.00002-X>
- IPOSS. (2025). *POME: Limbah yang Menjadi Berkah*. <https://iposs.co.id/pome-limbah-yang-menjadi-berkah/>
- Jakubiec-Krzyszniak, K., Rajnisz-Mateusiak, A., Guspiel, A., Ziemska, J., & Solecka, J. (2018). Secondary metabolites of actinomycetes and their antibacterial, antifungal and antiviral properties. In *Polish Journal of Microbiology* (Vol. 67, Number 3, pp. 259–272). Polish Society of Microbiologists. <https://doi.org/10.21307/pjm-2018-048>
- Janda, J. M., & Abbott, S. L. (2007). 16S rRNA Gene Sequencing for Bacterial Identification in the Diagnostic Laboratory: Pluses, Perils, and Pitfalls. *Journal of Clinical Microbiology*, 45(9), 2761–2764. <https://doi.org/10.1128/JCM.01228-07>
- Johnson, J. S., Spakowicz, D. J., Hong, B.-Y., Petersen, L. M., Demkowicz, P., Chen, L., Leopold, S. R., Hanson, B. M., Agresta, H. O., Gerstein, M., Sodergren, E., & Weinstock, G. M. (2019). Evaluation of 16S rRNA gene sequencing for species and strain-level microbiome analysis. *Nature Communications*, 10(1), 5029. <https://doi.org/10.1038/s41467-019-13036-1>
- Kahn, A., Oliveira, P., Cuau, M., & Leão, P. N. (2023). Incorporation, fate, and turnover of free fatty acids in cyanobacteria. *FEMS Microbiology Reviews*, 47(2). <https://doi.org/10.1093/femsre/fuad015>
- Kareem, M. K. A. (2020). A Review of Biosurfactants (Glycolipids): The Characteristics, Composition and Application. *International Journal of Psychosocial Rehabilitation*, 24(5), 3795–3807. <https://doi.org/10.37200/ijpr/v24i5/pr202088>
- Khemkhao, M., Domrongpakkaphan, V., & Phalakornkule, C. (2021). Process Performance and Microbial Community Variation in High-Rate Anaerobic Continuous Stirred Tank Reactor Treating Palm Oil Mill Effluent at Temperatures Between 55 °C and 70 °C. <https://doi.org/10.21203/rs.3.rs-410835/v1>

- Kim, Y.-G., Lee, J.-H., Kim, S., Park, S., Kim, Y.-J., Ryu, C.-M., Seo, H. W., & Lee, J. (2024). Inhibition of Biofilm Formation in *Cutibacterium acnes*, *Staphylococcus aureus*, and *Candida albicans* by the Phytopigment Shikonin. *International Journal of Molecular Sciences*, *25*(4), 2426. <https://doi.org/10.3390/ijms25042426>
- Kowalska-Krochmal, B., & Dudek-Wicher, R. (2021). The Minimum Inhibitory Concentration of Antibiotics: Methods, Interpretation, Clinical Relevance. *Pathogens*, *10*(2), 165. <https://doi.org/10.3390/pathogens10020165>
- Kumari, K., Behera, H. T., Nayak, P. P., Sinha, A., Nandi, A., Ghosh, A., Saha, U., Suar, M., Panda, P. K., Verma, S. K., & Raina, V. (2023). Amelioration of lipopeptide biosurfactants for enhanced antibacterial and biocompatibility through molecular antioxidant property by methoxy and carboxyl moieties. *Biomedicine & Pharmacotherapy*, *161*, 114493. <https://doi.org/10.1016/j.biopha.2023.114493>
- Kumari, S., Kanta, S., & Kaur, P. (2022). Production And Exploration Of Antibacterial Potential Of Biosurfactant From Environmental Bacterial Isolate. *Journal of Advanced Scientific Research*, *13*(03), 126–132. <https://doi.org/10.55218/JASR.202213320>
- López-Prieto, A., Vecino, X., Rodríguez-López, L., Moldes, A. B., & Cruz, J. M. (2019). A Multifunctional Biosurfactant Extract Obtained from Corn Steep Water as Bactericide for Agrifood Industry. *Foods*, *8*(9), 410. <https://doi.org/10.3390/foods8090410>
- Lourenço, M., Duarte, N., & Ribeiro, I. A. C. (2024). Exploring Biosurfactants as Antimicrobial Approaches. *Pharmaceuticals*, *17*(9), 1239. <https://doi.org/10.3390/ph17091239>
- Lu, L., Zhao, Y., Li, M., Wang, X., Zhu, J., Liao, L., & Wang, J. (2024). Contemporary strategies and approaches for characterizing composition and enhancing biofilm penetration targeting bacterial extracellular polymeric substances. *Journal of Pharmaceutical Analysis*, *14*(4), 100906. <https://doi.org/10.1016/j.jpha.2023.11.013>
- Madaki, K. A., & Rabi'u, H. M. (2025). Biosurfactant: Bacterial Production, Properties, Classification and Applications. *Dutse Journal of Pure and Applied Sciences*, *11*(1b), 17–25. <https://doi.org/10.4314/dujopas.v11i1b.3>
- Markelova, N., & Chumak, A. (2025). Antimicrobial Activity of Bacillus Cyclic Lipopeptides and Their Role in the Host Adaptive Response to Changes in Environmental Conditions. *International Journal of Molecular Sciences*, *26*(1), 336. <https://doi.org/10.3390/ijms26010336>

- Marzban, A., Ebrahimipour, G., & Danesh, A. (2016). Bioactivity of a novel glycolipid produced by a halophilic *Buttiauxella* sp. and improving submerged fermentation using a response surface method. *Molecules*, *21*(10). <https://doi.org/10.3390/molecules21101256>
- Masthura, M., Daulay, A. H., & Daulay, L. (2022). Penurunan Kandungan Bod Dan Cod Limbah Cair Kelapa Sawit Menggunakan Metode Elektrokoagulasi. *JISTech (Journal of Islamic Science and Technology)*, *6*(2). <https://doi.org/10.30829/jistech.v6i2.10014>
- Maturana, P., Martinez, M., Noguera, M. E., Santos, N. C., Disalvo, E. A., Semorile, L., Maffia, P. C., & Hollmann, A. (2017). Lipid selectivity in novel antimicrobial peptides: Implication on antimicrobial and hemolytic activity. *Colloids and Surfaces B: Biointerfaces*, *153*, 152–159. <https://doi.org/10.1016/j.colsurfb.2017.02.003>
- Meena, K. R., Dhiman, R., Singh, K., Kumar, S., Sharma, A., Kanwar, S. S., Mondal, R., Das, S., Franco, O. L., & Mandal, A. K. (2021). Purification and identification of a surfactin biosurfactant and engine oil degradation by *Bacillus velezensis* KLP2016. *Microbial Cell Factories*, *20*(1), 26. <https://doi.org/10.1186/s12934-021-01519-0>
- Mishra, R., Panda, A. K., De Mandal, S., Shakeel, M., Bisht, S. S., & Khan, J. (2020). Natural Anti-biofilm Agents: Strategies to Control Biofilm-Forming Pathogens. In *Frontiers in Microbiology* (Vol. 11). Frontiers Media S.A. <https://doi.org/10.3389/fmicb.2020.566325>
- Mohd Asmadi, N. A. N., Zee, K. M., Baskaran, S. M., Ariffin, H., Wasoh, H., Maeda, T., Hassan, M. A., & Zakaria, M. R. (2024a). Rhamnolipids production by *Pseudomonas aeruginosa* RW9 using palm oil mill effluent sludge oil as a carbon source. *Biocatalysis and Agricultural Biotechnology*, *57*, 103069. <https://doi.org/10.1016/j.bcab.2024.103069>
- Mohd Asmadi, N. A. N., Zee, K. M., Baskaran, S. M., Ariffin, H., Wasoh, H., Maeda, T., Hassan, M. A., & Zakaria, M. R. (2024b). Rhamnolipids production by *Pseudomonas aeruginosa* RW9 using palm oil mill effluent sludge oil as a carbon source. *Biocatalysis and Agricultural Biotechnology*, *57*, 103069. <https://doi.org/10.1016/j.bcab.2024.103069>
- Mohd Yusof, M. A. Bin, Chan, Y. J., Chong, C. H., & Chew, C. L. (2023). Effects of operational processes and equipment in palm oil mills on characteristics of raw Palm Oil Mill Effluent (POME): A comparative study of four mills. *Cleaner Waste Systems*, *5*, 100101. <https://doi.org/10.1016/j.clwas.2023.100101>

- Nandiyanto, A. B. D., Oktiani, R., & Ragadhita, R. (2019). How to read and interpret ftir spectroscopy of organic material. *Indonesian Journal of Science and Technology*, 4(1), 97–118. <https://doi.org/10.17509/ijost.v4i1.15806>
- Nandiyanto, A. B. D., Ragadhita, R., & Fiandini, M. (2023). Interpretation of Fourier Transform Infrared Spectra (FTIR): A Practical Approach in the Polymer/Plastic Thermal Decomposition. *Indonesian Journal of Science and Technology*, 8(1), 113–126. <https://doi.org/10.17509/ijost.v8i1.53297>
- Nishant Tripathi, Muhammad Zubair, & Amit Sapra. (2025). *Gram Staining*. StatPearls Publishing, Treasure Island (FL). <https://www.ncbi.nlm.nih.gov/books/NBK562156/>
- Nur, M. M. A., Rao, A. R., & Ravishankar, G. A. (2024). Phycoremediation of Palm Oil Mill Effluent by Selected Algal Forms Leading to Biomass Production and High Value Products. In *Algae Mediated Bioremediation* (pp. 317–333). Wiley. <https://doi.org/10.1002/9783527843367.ch15>
- Pallikodathan, S., Man, H. C., Ghazi, T. I. M., Sulaiman, A., Nagarajoo, G., & Shukery, M. F. (2025). Minimizing Carbon Dioxide (CO₂) Emissions of POME Treatment System Using MILP Model. *Processes*, 13(2), 583. <https://doi.org/10.3390/pr13020583>
- Pascoal, P. V., Ribeiro, D. M., Cereijo, C. R., Santana, H., Nascimento, R. C., Steindorf, A. S., Calsing, L. C. G., Formighieri, E. F., & Brasil, B. S. A. F. (2021). Biochemical and phylogenetic characterization of the wastewater tolerant *Chlamydomonas biconvexa* Embrapa LBA40 strain cultivated in palm oil mill effluent. *PLoS ONE*, 16(4 April). <https://doi.org/10.1371/journal.pone.0249089>
- Patel, M., Siddiqui, A. J., Hamadou, W. S., Surti, M., Awadelkareem, A. M., Ashraf, S. A., Alreshidi, M., Snoussi, M., Rizvi, S. M. D., Bardakci, F., Jamal, A., Sachidanandan, M., & Adnan, M. (2021). Inhibition of Bacterial Adhesion and Antibiofilm Activities of a Glycolipid Biosurfactant from *Lactobacillus rhamnosus* with Its Physicochemical and Functional Properties. *Antibiotics*, 10(12), 1546. <https://doi.org/10.3390/antibiotics10121546>
- Patel, P., Patel, H., Sharma, J., Shrimali, S., Sharma, S., & Saraf, M. (2023). Microbial Biosurfactants: An Overview of their Uses, Classification, Types, Properties, and Biosynthesis. *Acta Scientific Microbiology*, 61–71. <https://doi.org/10.31080/asmi.2023.06.1260>
- Phulpoto, I. A., Yu, Z., Hu, B., Wang, Y., Ndayisenga, F., Li, J., Liang, H., & Qazi, M. A. (2020). Production and characterization of surfactin-like biosurfactant produced by novel strain *Bacillus nealsonii* S2MT and its potential for oil

contaminated soil remediation. *Microbial Cell Factories*, 19(1). <https://doi.org/10.1186/s12934-020-01402-4>

- Pokharel, K., Dawadi, B. R., & Shrestha, L. B. (2022). Role of Biofilm in Bacterial Infection and Antimicrobial Resistanc. In *Journal of the Nepal Medical Association* (Vol. 60, Number 253, pp. 836–840). Nepal Medical Association. <https://doi.org/10.31729/jnma.7580>
- Prastya, M. E., Simbolon, S., Priyanto, J. A., Hasidu, L. O. A. F., Permatasari, V., Primahana, G., Dewi, R. T., Kristiana, R., & Suryanti, E. (2024). Antibacterial and antibiofilm activities from soil *Streptomyces* spp. isolated from Muna Island, Indonesia against multidrug-resistant clinical isolates. <https://doi.org/10.21203/rs.3.rs-3811919/v1>
- Prastya, M. E., Supriyadi, A., Kusdiyantini, E., & Biologi, 1 Jurusan. (2021). Eksplorasi Rhizobakteri Indigenous Tanaman Cabai Rawit (*Capsicum frutescens* linn.) Dari Pertanian Semi Organik Desa Batur Kabupaten Semarang Sebagai Agen Hayati Pengendali Pertumbuhan Jamur *Fusarium oxysporum* f.sp *capsici*. In *Berkala Bioteknologi* (Vol. 4, Number 2).
- Priyanto, J. A., Prastya, M. E., Astuti, R. I., & Kristiana, R. (2023). The Antibacterial and Antibiofilm Activities of the Endophytic Bacteria Associated with *Archidendron pauciflorum* against Multidrug-Resistant Strains. *Applied Biochemistry and Biotechnology*, 195(11), 6653–6674. <https://doi.org/10.1007/s12010-023-04382-4>
- Priyanto, J. A., Prastya, M. E., Hening, E. N. W., Suryanti, E., & Kristiana, R. (2024). Two Strains of Endophytic *Bacillus velezensis* Carrying Antibiotic-Biosynthetic Genes Show Antibacterial and Antibiofilm Activities Against Methicillin-Resistant *Staphylococcus aureus* (MRSA). *Indian Journal of Microbiology*, 64(4), 1884–1893. <https://doi.org/10.1007/s12088-024-01262-1>
- Puyol McKenna, P., Naughton, P. J., Dooley, J. S. G., Ternan, N. G., Lemoine, P., & Banat, I. M. (2024). Microbial Biosurfactants: Antimicrobial Activity and Potential Biomedical and Therapeutic Exploits. *Pharmaceuticals*, 17(1), 138. <https://doi.org/10.3390/ph17010138>
- Rama Rao, T., Yashwanth, T., & Usha, B. (2024). Liquid Chromatography-Mass Spectrometry: A Review. *Journal of Drug Delivery and Therapeutics*, 14(6), 298–304. <https://doi.org/10.22270/jddt.v14i6.6669>
- Řezanka, T., Zahradník, J., Zavala-Meneses, S. G., Marešová, H., Řezanka, M., Pelantová, H., Grulich, M., Filištejn, V., & Palyzová, A. (2025). Elucidation of new sulfamethoxazole catabolic pathways in whole-cell catalyst of bacterium

Kocuria rhizophila SA117. *Bioresource Technology*, 435, 132912. <https://doi.org/10.1016/j.biortech.2025.132912>

- Ridha, R., Hefni, D., Tachrim, Z. P., Primahana, G., Priyanto, J. A., Linosefa, L., Adrial, A., Endrinaldi, E., & Prastya, M. E. (2024). Antibacterial Activity of Endophytic Bacterial Isolates from Kaempferia galanga Leaves. *Jurnal Kimia Sains Dan Aplikasi*, 27(11), 538–548. <https://doi.org/10.14710/jksa.27.11.538-548>
- Sæbø, I., Bjørås, M., Franzyk, H., Helgesen, E., & Booth, J. (2023). Optimization of the Hemolysis Assay for the Assessment of Cytotoxicity. *International Journal of Molecular Sciences*, 24(3), 2914. <https://doi.org/10.3390/ijms24032914>
- Santos, D., Rufino, R., Luna, J., Santos, V., & Sarubbo, L. (2016). Biosurfactants: Multifunctional Biomolecules of the 21st Century. *International Journal of Molecular Sciences*, 17(3), 401. <https://doi.org/10.3390/ijms17030401>
- Saputera, W. H., Amri, A. F., Daiyan, R., & Sasongko, D. (2021). Photocatalytic Technology for Palm Oil Mill Effluent (POME) Wastewater Treatment: Current Progress and Future Perspective. *Materials*, 14(11), 2846. <https://doi.org/10.3390/ma14112846>
- Sarafin, Y., Donio, M. B. S., Velmurugan, S., Michaelbabu, M., & Citarasu, T. (2014). Kocuria marina BS-15 a biosurfactant producing halophilic bacteria isolated from solar salt works in India. *Saudi Journal of Biological Sciences*, 21(6), 511–519. <https://doi.org/10.1016/j.sjbs.2014.01.001>
- Sari, C. N., Hertadi, R., Harahap, A. F. P., Ramadhan, M. Y. A., & Gozan, M. (2020). Process optimization of palm oil mill effluent-based biosurfactant of Halomonas meridiana BK-AB4 originated from bledug kuwu mud volcano in central java for microbial enhanced oil recovery. *Processes*, 8(6). <https://doi.org/10.3390/PR8060716>
- SARI, M. (2015, March 1). Potensi bakteri lumpur minyak sebagai penghasil biosurfaktan dan antimikroba. <https://doi.org/10.13057/psnmbi/m010113>
- Sarwar, A., Brader, G., Corretto, E., Aleti, G., Abaidullah, M., Sessitsch, A., & Hafeez, F. Y. (2018). Qualitative analysis of biosurfactants from Bacillus species exhibiting antifungal activity. *PLOS ONE*, 13(6), e0198107. <https://doi.org/10.1371/journal.pone.0198107>
- Setiani, N. A., Agustina, N., Mardiah, I., Hamdani, S., & Astriany, D. (2020). Potensi Bacillus cereus dalam produksi biosurfaktan. *Jurnal Biologi Udayana*, 24(2), 135. <https://doi.org/10.24843/JBIOUNUD.2020.v24.i02.p09>

- Shu, Q., Lou, H., Wei, T., Liu, X., & Chen, Q. (2021). Contributions of Glycolipid Biosurfactants and Glycolipid-Modified Materials to Antimicrobial Strategy: A Review. *Pharmaceutics*, 13(2), 227. <https://doi.org/10.3390/pharmaceutics13020227>
- Shukla, S. K., & Rao, T. S. (2017). An Improved Crystal Violet Assay for Biofilm Quantification in 96-Well Microtitre Plate. <https://doi.org/10.1101/100214>
- Sreepadmanabh, M., Ganesh, M., Sanjenbam, P., Kurzthaler, C., Agashe, D., & Bhattacharjee, T. (2024). Cell shape affects bacterial colony growth under physical confinement. *Nature Communications*, 15(1), 9561. <https://doi.org/10.1038/s41467-024-53989-6>
- Srividya Kailasam, P. (2024). *What Is LC-MS, LC-MS Analysis and LC-MS/MS. Analysis & Separations from Technology Networks*. . <http://www.technologynetworks.com/analysis/articles/lc-ms-what-is-lc-ms-lc-ms-analysis-and-lc-msms-348238>
- Thakur, P., Saini, N. K., Thakur, V. K., Gupta, V. K., Saini, R. V., & Saini, A. K. (2021). Rhamnolipid the Glycolipid Biosurfactant: Emerging trends and promising strategies in the field of biotechnology and biomedicine. *Microbial Cell Factories*, 20(1), 1. <https://doi.org/10.1186/s12934-020-01497-9>
- Wehrens, R., Hageman, J. A., van Eeuwijk, F., Kooke, R., Flood, P. J., Wijnker, E., Keurentjes, J. J. B., Lommen, A., van Eekelen, H. D. L. M., Hall, R. D., Mumm, R., & de Vos, R. C. H. (2016). Improved batch correction in untargeted MS-based metabolomics. *Metabolomics*, 12(5). <https://doi.org/10.1007/s11306-016-1015-8>
- Winand, R., Bogaerts, B., Hoffman, S., Lefevre, L., Delvoeye, M., Van Braeckel, J., Fu, Q., Roosens, N. H., De Keersmaecker, S. C., & Vanneste, K. (2019). Targeting the 16S rRNA Gene for Bacterial Identification in Complex Mixed Samples: Comparative Evaluation of Second (Illumina) and Third (Oxford Nanopore Technologies) Generation Sequencing Technologies. *International Journal of Molecular Sciences*, 21(1), 298. <https://doi.org/10.3390/ijms21010298>
- Witzke, M. C., Gullic, A., Yang, P., Bivens, N. J., Adkins, P. R. F., & Ericsson, A. C. (2020). Influence of PCR cycle number on 16S rRNA gene amplicon sequencing of low biomass samples. *Journal of Microbiological Methods*, 176, 106033. <https://doi.org/10.1016/j.mimet.2020.106033>
- World Health Organization. (2019). New report calls for urgent action to avert antimicrobial resistance crisis. <https://www.who.int/news/item/29-04-2019-new-report-calls-for-urgent-action-to-avert-antimicrobial-resistance-crisis>

Zargar, A. N., Mishra, S., Kumar, M., & Srivastava, P. (2022). Isolation and chemical characterization of the biosurfactant produced by *Gordonia* sp. IITR100. *PLOS ONE*, 17(4), e0264202. <https://doi.org/10.1371/journal.pone.0264202>

Zia, K. Z., & Linda, T. M. (2023). Potensi *Bacillus* spp. Sebagai Penghasil Biosurfaktan untuk Pengolahan Limbah Minyak Pelumas. *Biota : Jurnal Ilmiah Ilmu-Ilmu Hayati*, 69–78. <https://doi.org/10.24002/biota.v8i2.6360>

