DAFTAR PUSTAKA

Agustina, C. S. T., & Lisdiana, L. (2023). Isolasi dan Karakterisasi Bakteri Pendegradasi Logam Timbal (Pb) di Perairan Teluk Lamong Surabaya. *LenteraBio : Berkala Ilmiah Biologi*, *12*(1), 101–106. https://doi.org/10.26740/lenterabio.

Alvarado-Campo, K. L., Quintero, M., Cuadrado-Cano, B., Montoya-Giraldo, M., Otero-Tejada, E. L., Blandón, L., Sánchez, O., Zuleta-Correa, A., & Gómez-León, J. (2023). Heavy Metal Tolerance of Microorganisms Isolated from Coastal Marine Sediments and Their Lead Removal Potential. *Microorganisms*, *11*(11), 2708. https://doi.org/10.3390/microorganisms

Anggraeni, A., & Triajie, H. (2021). Uji Kemampuan Bakteri (Pseudomonas aeruginosa) dalam Proses Biodegradasi Pencemaran Logam Berat Timbal (Pb), Di Peraiaran Timur Kamal Kabupaten Bangkalan. *Juvenil:Jurnal Ilmiah Kelautan dan Perikanan*, *2*(3), 176–185. https://doi.org/10.21107/juvenil.

Anggraini, W., & Puryanti, D. (2019). Identifikasi Pencemaran Logam Berat Tembaga (Cu), Timbal (Pb) dan Kadmium (Cd) Air Laut di Sekitar Pelabuhan Teluk Bayur Kota Padang Jurnal Ilmu Fisika | *Universitas Andalas* , *11*(2), 95–101. https://doi.org/10.25077/jif.

Aris, M., Ibrahim, T. A., & Nasir, L. (2020). Kontaminasi logam nikel (Ni) pada struktur jaringan ikan. *e-Journal BUDIDAYA PERAIRAN*, *9*(1). https://doi.org/10.35800/bdp.

Aslam, A., Kanwal, F., Javied, S., Nisar, N., & Torriero, A. A. J. (2025). Microbial biosorption: A sustainable approach for metal removal and environmental remediation. *International Journal of Environmental Science and Technology*, *22*(13), 13245–13276. https://doi.org/10.1007/s137

Astuti Feb, F., & Aziza, R. (2021). Exopolysaccharides-Producing Biofilm Bacteria from Submerged Seawater Substrate for Bioremediation of Heavy Metal Contamination. *Pakistan Journal of Biological Sciences*, *25*(1), 9–14. https://doi.org/10.3923/pjbs

Ayilara, M. S., & Babalola, O. O. (2023). Bioremediation of environmental wastes: The role of microorganisms. *Frontiers in Agronomy*, *5*. https://doi.org/10.3389/fagro.

Cui, D., Tan, C., Deng, H., Gu, X., Pi, S., Chen, T., Zhou, L., & Li, A. (2020a). Biosorption Mechanism of Aqueous Pb^{2+} , Cd^{2+} , and Ni^{2+} Ions on Extracellular Polymeric Substances (EPS). *Archaea*, *2020*, 1–9. https://doi.org/10.1155/2020/8891543

Cui, D., Tan, C., Deng, H., Gu, X., Pi, S., Chen, T., Zhou, L., & Li, A. (2020b). Biosorption Mechanism of Aqueous Pb^{2+} , Cd^{2+} , and Ni^{2+} Ions on Extracellular Polymeric Substances (EPS). *Archaea*, *2020*, 1–9. https://doi.org/10.1155/2020/8891543

Deo, L., Osborne, J. W., & Benjamin, L. K. (2025). Biotranslocation of lead and cadmium in Spinacia oleracea amended with Klebsiella sp. VITLLJ4: An effective microbe technology-based phyto-rhizoremediation study. *Frontiers in Environmental Science*, *13*, 1633959. https://doi.org/10.3389/fenvs.2025.1633959

Fatmawati, F., Muhlis, M., Larekeng, S. H., Ibrahim, R., & Rahim, I. (2025). Analysis of heavy metal content and isolation of indigenous bacteria with potential as bioremediation agents in leachate at Tamangapa landfill, Makassar City. *BIO Web of Conferences*, *180*, 02005. https://doi.org/10.1051/bioconf/202518002005

Febria, F. A., Zulkhairia, F., Walpajri, F., Putra, A., & Syukriani, L. (2023). Biofilm-Forming Heavy Metal Resistance Bacteria From Bungus Ocean Fisheries Port (PPS) West Sumatra as a Waters Bioremediation Agent. *Pakistan Journal of Biological Sciences*, *26*(4), 168–176. https://doi.org/10.3923/pjbs.2023.168.176

Firmani, U., & Safitri, N. M. (2023). Bakteri Penyerap Logam Timbal (Pb) dari Sedimen dan Kerang Hijau, Di Laut Banyu Urip Ujung Pangkah, GRESIK. *Journal of Aquatropica Asia*, *8*(1), 1–5. https://doi.org/10.33019/joaa.v8i1.3769

Ghifari, M. F., Nurrachmi, I., & Effendi, I. (2024). *Analysis of the Relationship Between Phytoplankton Abundance and Total Oil Content in Bayur Bay Waters, Padang City, West Sumatera Province*. Journal of Coastal and Ocean Sciences, 5(3), 166–174. https://doi.org/10.31258/jocos.5.3.166-174

Gul, I., Adil, M., Lv, F., Li, T., Chen, Y., Lu, H., Ahamad, M. I., Lu, S., & Feng, W. (2024). Microbial strategies for lead remediation in agricultural soils and wastewater: Mechanisms, applications, and future directions. *Frontiers in Microbiology*, *15*, 1434921. https://doi.org/10.3389/fmicb.2024.1434921

Haque, Md. M., Mosharaf, M. K., Haque, Md. A., Tanvir, Md. Z. H., & Alam, Md. K. (2021). Biofilm Formation, Production of Matrix Compounds and Biosorption of Copper, Nickel and Lead by Different Bacterial Strains. *Frontiers in Microbiology*, *12*, 615113. https://doi.org/10.3389/fmicb.2021.615113

Kolo, M. M., Batu, M. S., Bani, M. R., Nana, G. Y., & Kedang, Y. I. (2024). Kapasitas Adsorpsi Lempung Alam Teraktivasi HCl dalam Mengadsorpsi Logam Berat (Pb) Penyebab Pencemaran Lingkungan. *Jurnal Ilmu Lingkungan*, *22*(4), 981–986. https://doi.org/10.14710/jil.22.4.981-986

Khalifa, K., Elbaghdady, K., El Khafrawy., El-Zeiny, A. (2025). Bioremediation vs. Traditional Methods: A Comparative Review of Heavy Metal Removal Techniques from Aquatic Environment. *Egyptian Journal of Aquatic Biology and Fisheries*, *29*(2), 1307–1335. https://doi.org/10.21608/ejabf.2025.

Li, Q., Zhang, W., Liao, S., Xing, D., Xiao, Y., Zhou, D., & Yang, Q. (2023). Mechanism of lead adsorption by a Bacillus cereus strain with indole-3-acetic acid secretion and inorganic phosphorus dissolution functions. *BMC Microbiology*, *23*(1), 57. https://doi.org/10.1186/s12866-023-02795-z

Mahrus, M. H., Kartika, R., Fahmi, M., Aswat, R., & Rizkirullah, M. A. (2023). *Penyerapan Logam Berat Secara Biokimia Oleh Bakteri Gram Positif dan Gram Negatif: 11*(2), 147. https://doi.org/10.3390/toxics11020147 .

May, B. M., Bambo, M. F., Hosseini, S. S., Sidwaba, U., Nxumalo, E. N., & Mishra, A. K. (2022). A review on I–III–VI ternary quantum dots for fluorescence detection of

heavy metals ions in water: Optical properties, synthesis and application. *RSC Advances*, *12*(18), 11216–11232. https://doi.org/10.1039/D1RA08660J

Muratov, E., Keilholz, J., Kovács, Á. T., & Moeller, R. (2025). The biofilm matrix protects Bacillu subtilis against hydrogen peroxide. *Biofilm*, *9*, 100274. https://doi.org/10.1016/j.bioflm

Mondal, S., Melzi, A., Zecchin, S., & Cavalca, L. (2025). Quorum sensing in biofilm-mediated heavy metal resistance and transformation: environmental perspectives and bioremediation. *Frontiers in Microbiology*, 16, 1607370. https://doi.org/10.3389/fmicb.2025.1607370

Nurcahyani, et al. (2024). Bioremediasi Timbal (Pb) Menggunakan Bakteri Indigenous dari Sungai Tercemar Limbah Cair Pertambangan Emas Martabe Batang Toru. *BEST Journal (Biology Education, Sains and Technology)*, 7(1), 217–222. https://jurnal.uisu.ac.id/index.php/best/article/view/8679

Nursabrina, A., Joko, T., & Septiani, O. (2021). Kondisi Pengelolaan Limbah B3 Industri Di Indonesia dan Potensi Dampaknya. *Jurnal Riset Kesehatan Poltekkes Depkes Bandung*, *13*(1). doi.org/10.34011/juriskesbdg

Oladimeji, T. E., Oyedemi, M., Emetere, M. E., Agboola, O., Adeoye, J. B., & Odunlami, O. A. (2024). Review on the impact of heavy metals from industrial wastewater effluent and removal technologies. *Heliyon*, *10*(23), e40370. https:doi.org/10.1016

Rahadi, B., Susanawati, L. D., Universitas Brawijaya, Agustianingrum, R., & Universitas Brawijaya. (2019). Bioremediasi Logam Timbal (Pb) Menggunakan Bakteri Indigenous Pada Tanah Tercemar Air Lindi (Leachate). *Jurnal Sumberdaya Alam dan Lingkungan*, *6*(3), 11–18. https://doi.org/10.21776/ub.jsal

Razi, N. M., Fildzah, F., Dhani, D. N., Nasir, M., Rizki, A., & Firdus, F. (2023). Literatur Review: Pencemaran Logam Berat di Pelabuhan Indonesia. *Jurnal Laot Ilmu Kelautan*, *5*(1), 48. https://doi.org/10.35308/jlik.v5i1.7175

Romantschuk, M., Lahti-Leikas, K., Kontro, M., Galitskaya, P., Talvenmäki, H., Simpanen, S., Allen, J. A., & Sinkkonen, A. (2023). Bioremediation of contaminated soil and groundwater by in situ biostimulation. *Frontiers in Microbiology*, *14*, 1258148. https://doi.org/10.3389/fmicb.2023.1258148

Sauer, K., Stoodley, P., Goeres, D. M., Hall-Stoodley, L., Burmølle, M., Stewart, P. S., & Bjarnsholt, T. (2022). The biofilm life cycle: Expanding the conceptual model of biofilm formation. *Nature Reviews Microbiology*, *20*(10), 608–620. https://doi.org/10.1038

Shah, S. M., Khan, S., Bibi, N., Rehman, B., Ali, R., Shireen, F., Yilmaz, S., Ali, Q., Ullah, A., & Ali, D. (2025). Indigenous bacteria as potential agents for trace metal remediation in industrial wastewater. *Scientific Reports*, *15*(1), 13141. https://doi.org/10.1038

Singh, V., Singh, N., Rai, S. N., Kumar, A., Singh, A. K., Singh, M. P., Sahoo, A., Shekhar, S., Vamanu, E., & Mishra, V. (2023). Heavy Metal Contamination in the Aquatic Ecosystem: Toxicity and Its Remediation Using Eco-Friendly Approaches. *Toxics*, *11*(2), 147. https://doi.org/10.3390/toxics11020147

Tarigan, T. H., Nedi, S., & Effendi, I. (2026). *The Relationship between Total Suspended Solids and Total Organic Matter and Phytoplankton Abundance in the Waters of Bayur Bay, Padang City, West Sumatra*. Journal of Coastal and Ocean Sciences, 7(1), 10–15. https://doi.org/10.31258/jocos.7.1.10-15

Turu, D., & Canli, K. (2025). Detection of Biofilm Formation : Evaluation of Congored Agar and Crystal Violet Staining methode. Gazi University Journal of Scince, 38(4), 1663-1684. https://doi.org/10.35378/gujs.1670270

Uqab, B., Nazir, R., Ahmad Ganai, B., Rahi, P., Rehman, S., Farooq, S., Dar, R., Parray, J. A., Fahad Al-Arjani Al-Arjani, A.-B., Tabassum, B., & Fathi Abd_Allah, E. (2020). MALDI-TOF-MS and 16S rRNA characterization of lead tolerant metallophile bacteria isolated from saffron soils of Kashmir for their sequestration potential. *Saudi Journal of Biological Sciences*, *27*(8), 2047–2053. https://doi.org/10.1016/j.sjb

Vélez, J. M. B., Martínez, J. G., Ospina, J. T., & Agudelo, S. O. (2021). Bioremediation potential of Pseudomonas genus isolates from residual water, capable of tolerating lead through mechanisms of exopolysaccharide production and biosorption. *Biotechnology Reports*, *32*, e00685. https://doi.org/10.1016/j.btre.2021.e00685

Wei, W., Wang, Q., Li, A., Yang, J., Ma, F., Pi, S., & Wu, D. (2016). Biosorption of Pb (II) from aqueous solution by extracellular polymeric substances extracted from Klebsiella sp. J1: Adsorption behavior and mechanism assessment. *Scientific Reports*, *6*(1), 31575. https://doi.org/10.1038/srep31575

Yanti, D. H., Nursyirwani, N., & Yoswaty, D. (2021). Isolation and Identification of Bacteria from Dumai Marine Waters that Have Potencial as Lead Bioremediation Agents. *Journal of Coastal and Ocean Sciences*, *2*(3), 21. https://doi.org/10.31258/jocos

Zafer, M. M., Mohamed, G. A., Ibrahim, S. R. M., Ghosh, S., Bornman, C., & Elfaky, M. A. (2024). *Biofilm-mediated infections by multidrug-resistant microbes: A comprehensive exploration and forward perspectives*. Archives of Microbiology, 206(3), 101. https://doi.org/10.1007/s00203-023-03826-z

Zakaria, N. N., Gomez-Fuentes, C., Abdul Khalil, K., Convey, P., Roslee, A. F. A., Zulkharnain, A., Sabri, S., Shaharuddin, N. A., Cárdenas, L., & Ahmad, S. A. (2021). Statistical Optimisation of Diesel Biodegradation at Low Temperatures by an Antarctic Marine Bacterial Consortium Isolated from Non-Contaminated Seawater. *Microorganisms*, *9*(6), 1213. https://doi.org/10.3390

Zhang, K., Xue, Y., Zhang, J., & Hu, X. (2020). *Removal of lead from acidic wastewater by bio-mineralized bacteria with pH self-regulation*. Chemosphere, 241, 125041. https://doi.org/10.1016/j.chemospher


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