

DAFTAR PUSTAKA

- Afra, S., Makhdoumi, A., Matin, M.M., Feizy, J., 2017. A novel red pigment from marine *Arthrobacter* sp. G20 with specific anticancer activity. *J Appl Microbiol.* 123: 1228–1236. <https://doi.org/10.1111/jam.13576>
- Ahmed, E.F., Gad, G.F.M., Abdalla, A.M., Hasaneen, A.M., Abdelwahab, S.F., 2014. Prevalence of methicillin resistant *Staphylococcus aureus* among egyptian patients after surgical interventions. *Surg. Infect. (Larchmt).* 15: 404–411. <https://doi.org/10.1089/sur.2013.212>
- Ahmed, E.F., Rasmi, A.H., Darwish, A.M.A., Gad, G.F.M., 2023a. Prevalence and resistance profile of bacteria isolated from wound infections among a group of patients in upper Egypt: a descriptive cross-sectional study. *BMC Res. Notes* 16, 106. <https://doi.org/10.1186/s13104-023-06379-y>
- Ahmed, E.F., Rasmi, A.H., Darwish, A.M.A., Gad, G.F.M., 2023b. Prevalence and resistance profile of bacteria isolated from wound infections among a group of patients in upper Egypt: a descriptive cross-sectional study. *BMC Res. Notes* 16: 1–11. <https://doi.org/10.1186/s13104-023-06379-y>
- Akram, F., Imtiaz, M., Haq, I. ul, 2023. Emergent crisis of antibiotic resistance: A silent pandemic threat to 21st century. *Microb. Pathog.* 174: 105923. <https://doi.org/10.1016/j.micpath.2022.105923>
- Al-dhabi, N.A., Esmail, G.A., Ghilan, A.M., Arasu, M.V., Duraipandiyan, V., Ponmurugan, K., 2020. Chemical constituents of *Streptomyces* sp. strain Al-Dhabi-97 isolated from the marine region of Saudi Arabia with antibacterial and anticancer properties. *J. Infect. Public Health* 13: 235–243.
- Al-Zoubi, M.S., Al-Tayyar, I.A., Hussein, E., Al Jabali, A., Khudairat, S., 2015. Antimicrobial susceptibility pattern of *Staphylococcus aureus* isolated from clinical specimens in northern area of Jordan. *Iran. J. Microbiol.* 7: 265–272.
- Al Hamdan, A.S., Alamri, A.M., Sunki, A.A., 2022. Evaluating the Prevalence and the Risk Factors of Gram-Negative Multi-Drug Resistant Bacteria in Eastern Saudi Arabia. *Infect. Drug Resist.* 17:15:475-490. doi: 10.2147/IDR.S350048.
- Alharbi, N.S., Khaled, J.M., Kadaikunnan, S., Alobaidi, A.S., Sharafaddin, A.H., Alyahya, S.A., Almanaa, T.N., Alsughayier, M.A., Shehu, M.R., 2019. Prevalence of *Escherichia coli* strains resistance to antibiotics in wound infections and raw milk. *Saudi J. Biol. Sci.* 26: 1557–1562. <https://doi.org/10.1016/j.sjbs.2018.11.016>
- Alihosseini, F., Ju, K., Lango, J., Hammock, B.D., Sun, G., 2008. Antibacterial Colorants : Characterization of Prodiginines and Their Applications on Textile Materials. *Biotechnol* 24: 742–747.
- Alonso, H., Bliznyuk, A.A., Gready, J.E., 2006. Combining docking and molecular dynamic simulations in drug design. *Med. Res. Rev.* 26: 531–568. <https://doi.org/10.1002/med.20067>
- Altschul, S.F., Gish, W., Miller, W., Myers, E.W., Lipman, D.J., 1990. Basic local alignment search tool. *J. Mol. Biol.* 215: 403–410. [https://doi.org/10.1016/S0022-2836\(05\)80360-2](https://doi.org/10.1016/S0022-2836(05)80360-2)
- Ameen, F., AlNadhari, S., Al-Homaidan, A.A., 2021. Marine microorganisms as an untapped source of bioactive compounds. *Saudi J. Biol. Sci.* 28: 224–231.

<https://doi.org/10.1016/j.sjbs.2020.09.052>

- Asres, G.S., Legese, M.H., Woldearegay, G.M., 2017. Prevalence of Multidrug Resistant Bacteria in Postoperative Wound Infections at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia. *Arch. Med.* 09: 1–9. <https://doi.org/10.21767/1989-5216.1000233>
- Balcazar, J., Pintado, J., Planas, M., 2010. *Vibrio hippocampi* sp. nov., a new species isolated from wild seahorses (*Hippocampus guttulatus*). *FEMS Microbiol Lett* 307: 30–34. <https://doi.org/10.1111/j.1574-6968.2010.01955.x>
- Basak, S., Singh, P., Rajurkar, M., 2016. Multidrug Resistant and Extensively Drug Resistant Bacteria: A Study. *J. Pathog.* 2016: 1–5. <https://doi.org/10.1155/2016/4065603>
- Bayraktar, B., Pelit, S., Bulut, M., Aktas, E., 2019. Original Research Trend in Antibiotic Resistance of Extended-Spectrum Beta-Lactamase-Producing. *Med. Bull. Sisli Etfal* 53, 70–75. <https://doi.org/10.14744/SEMB.2018.60352>
- Bell, E.W., Zhang, Y., 2019. DockRMSD: An open-source tool for atom mapping and RMSD calculation of symmetric molecules through graph isomorphism. *J. Cheminform.* 11: 1–9. <https://doi.org/10.1186/s13321-019-0362-7>
- Bellini, D., Koekemoer, L., Newman, H., Dowson, C.G., 2019. Novel and Improved Crystal Structures of H. influenzae, E. coli and P. aeruginosa Penicillin-Binding Protein 3 (PBP3) and N. gonorrhoeae PBP2: Toward a Better Understanding of β -Lactam Target-Mediated Resistance. *J. Mol. Biol.* 431: 3501–3519. <https://doi.org/10.1016/j.jmb.2019.07.010>
- Ben-Haim, Y., Thompson, F.L., Thompson, C.C., Cnockaert, M.C., Hoste, B., Swings, J., Rosenberg, E., 2003. *Vibrio coralliilyticus* sp. nov., a temperature-dependent pathogen of the coral *Pocillopora damicornis* Printed in Great Britain. *Int. J. Syst. Evol. Microbiol.* 53: 309–315. <https://doi.org/10.1099/ijs.0.02402-0>
- Bernardes, N., Seruca, R., Chakrabarty, A.M., Fialho, A.M., 2010. Microbial-based therapy of cancer Current progress and future prospects. *Bioeng. Bugs.* 1: 178–190.
- Bessa, L.J., Fazii, P., Di Giulio, M., Cellini, L., 2015. Bacterial isolates from infected wounds and their antibiotic susceptibility pattern: Some remarks about wound infection. *Int. Wound J.* 12: 47–52. <https://doi.org/10.1111/iwj.12049>
- Blunt, J.W., Copp, B.R., Keyzers, R.A., Munro, M.H.G., Prinsep, M.R., 2017. Marine natural products. *Nat. Prod. Rep.* 34: 235–294. <https://doi.org/10.1039/c4np00144c>
- Borić, M., Danevčič, T., Stopar, D., 2012. Viscosity dictates metabolic activity of *Vibrio ruber*. *Front. Microbiol.* 3: 1–12. <https://doi.org/10.3389/fmicb.2012.00255>
- Cano-gomez, A., Goulden, E.F., Owens, L., Høj, L., 2010. *Vibrio owensii* sp. nov., isolated from cultured crustaceans in Australia. *FEMS Microbiol Lett.* 302: 175–181. <https://doi.org/10.1111/j.1574-6968.2009.01850.x>
- CDC, 2019. *Antibiotic Resistance Threats in The United States 2019*. <https://doi.org/http://dx.doi.org/10.15620/cdc:82532>
- Chatelain, E., Ioset, J.R., 2018. Phenotypic screening approaches for Chagas

- disease drug discovery. *Expert Opin. Drug Discov.* 13, 141–153. <https://doi.org/10.1080/17460441.2018.1417380>
- Chimetto, L.A., Cleenwerck, I., Moreira, A.P.B., Brocchi, M., Willems, A., Vos, P. De, Thompson, F.L., 2011. *Vibrio variabilis* sp. nov. and *Vibrio maritimus* sp. nov., isolated from *Palythoa caribaeorum*. *Int. J. Syst. Evol. Microbiol.* 61, 3009–3015. <https://doi.org/10.1099/ijso.0.026997-0>
- Church, D.L., Cerutti, L., Gürtler, A., Griener, T., Zelazny, A., Emler, S. 2020 Performance and Application of 16S rRNA Gene Cycle Sequencing for Routine Identification of Bacteria in the Clinical Microbiology Laboratory. *Clin Microbiol Rev.* 9;33(4):e00053-19. doi: 10.1128/CMR.00053-19.
- CLSI. 2020. Performance Standards for Antimicrobial Susceptibility Testing, 30th Edition. 30th edn, Clsi. 30th edn. Clinical and Laboratory Standards Institute.
- Cristianawati, O., Sibero, M.T., Ayuningrum, D., Nuryadi, H., Syafitri, E., Radjasa, O.K., Riniarsih, I., 2019. Screening of antibacterial activity of seagrass-associated bacteria from the North Java Sea, Indonesia against multidrug-resistant bacteria. *AACL Bioflux.* 12, 1054–1064.
- Dąbrowska, A.K., Spano, F., Derler, S., Adlhart, C., N.D, S., Rossi, R.M., 2018. The relationship between skin function, barrier properties, and body-dependent factors. *Ski. Res Technol.* 165–174. <https://doi.org/10.1111/srt.12424>
- Dallakyan, S., Olson, A.J., 2015. Small-molecule library screening by docking with PyRx. *Methods Mol. Biol.* 1263, 243–250. https://doi.org/10.1007/978-1-4939-2269-7_19
- Darshan, N., Manonmani, H.K., 2015. Prodigiosin and its potential applications. *J Food Sci Technol.* 52, 5393–5407. <https://doi.org/10.1007/s13197-015-1740-4>
- Davidson, S.K., Allen, S.W., Lim, G.E., Anderson, C.M., Al, D.E.T., Icrobiol, A.P.P.L.E.N.M., 2001. Evidence for the Biosynthesis of Bryostatins by the Bacterial Symbiont “*Candidatus Endobugula sertula*” of the Bryozoan *Bugula neritina*. *Appl. Environ. Microbiol.* 67, 4531–4537. <https://doi.org/10.1128/AEM.67.10.4531>
- de Andrade, A.F., Porto, A.L.F., Bezerra, R.P. 2022. Photosynthetic microorganisms and their bioactive molecules as new product to healing wounds. *Applied microbiology and biotechnology*, 106(2), 497–504. <https://doi.org/10.1007/s00253-021-11745-6>
- dos Santos, H.R.M. 2019. A 16S rDNA PCR-based theoretical to actual delta approach on culturable mock communities revealed severe losses of diversity information’, *BMC Microbiology*, 19(1), p. 74. Available at: <https://doi.org/10.1186/s12866-019-1446-2>.
- Devi, N.S., Mythili, R., Cherian, T., Dineshkumar, R., Sivaraman, G.K., Jayakumar, R., Prathaban, M., Duraimurugan, M., Chandrasekar, V., Peijnenburg, W.J.G.M., 2024. Overview of antimicrobial resistance and mechanisms: The relative status of the past and current. *The Microbe.* 3, 100083. <https://doi.org/10.1016/j.microb.2024.100083>
- Dian, M., Wibawa, T., Lisdiyanti, P., Rukmi, W., 2019. Evaluation of crystal violet decolorization assay and resazurin microplate assay for antimycobacterial

- screening. *Heliyon* 5, e02263. <https://doi.org/10.1016/j.heliyon.2019.e02263>
- Effah, C.Y., Sun, T., Liu, S., Wu, Y., 2020. *Klebsiella pneumoniae*: An increasing threat to public health. *Ann. Clin. Microbiol. Antimicrob.* 19, 1–9. <https://doi.org/10.1186/s12941-019-0343-8>
- Erandapurathukadumana Sreedharan, H., Harilal, C.C., Pradeep, S., 2020. Response surface optimization of prodigiosin production by phthalate degrading *Achromobacter denitrificans* SP1 and exploring its antibacterial activity. *Prep. Biochem. Biotechnol.* 50, 564–571. <https://doi.org/10.1080/10826068.2020.1712659>
- Everts, R., 2017. *How to Treat Prevention and treatment*. The Health Media Ltd, New Zealand.
- Fareza, M.S., Choironi, N.A., Harwoko, H., Sunarto, S., 2018. Antibacterial activity of two isolated endophytic extracts associated with Indonesian mangrove plant *Rhizophora mucronata*. *Pharmaciana* 8, 169.
- Gohil, N., Bhattacharjee, G., and Singh, V. 2020. Synergistic bactericidal profiling of prodigiosin extracted from *Serratia marcescens* in combination with antibiotics against pathogenic bacteria. *Microbial pathogenesis*, 149, 104508. <https://doi.org/10.1016/j.micpath.2020.104508>
- Gomez-gil, B., Fajer-avila, E., Pascual, J., Macia, M.C., Pujalte, J., Garay, E., Roque, A., 2008. *Vibrio sinaloensis* sp. nov., isolated from the spotted rose snapper, *Lutjanus guttatus*. *Int. J. Syst. Evol. Microbiol.* 58, 1621–1624. <https://doi.org/10.1099/ijs.0.65719-0>
- Gomez-gil, B., Roque, A., Chimetto, L., Moreira, A.P.B., Lang, E., Thompson, F.L., Gomez-gil, B., 2012. *Vibrio alfacensis* sp. nov., isolated from marine organisms. *Int. J. Syst. Evol. Microbiol.* 62, 2955–2961. <https://doi.org/10.1099/ijs.0.033191-0>
- Gomez-Gil, B., Thompson, F.L., Thompson, C.C., Roque, A., Swings, J., 2004. *Vibrio hispanicus* sp. nov., isolated from *Artemia* sp. and seawater in Spain. *Int. J. Syst. Evol. Microbiol.* 54, 261–265. <https://doi.org/10.1099/ijs.0.02775-0>
- Gomez-Gil, B., Thompson, F.L., Thompson, C.C., Swings, J., 2003a. *Vibrio rotiferianus* sp. nov., isolated from cultures of the rotifer *Brachionus plicatilis*. *Int. J. Syst. Evol. Microbiol.* 53, 239–243. <https://doi.org/10.1099/ijs.0.02430-0>
- Gomez-Gil, B., Thompson, F.L., Thompson, C.C., Swings, J., 2003b. *Vibrio pacinii* sp. nov., from cultured aquatic organisms. *Int. J. Syst. Evol. Microbiol.* 53, 1569–1573. <https://doi.org/10.1099/ijs.0.02670-0>
- Han, R., Xiang, R., Li, J., Wang, F., Wang, C., 2021. High-level production of microbial prodigiosin: A review. *J. Basic Microbiol.* 1–18. <https://doi.org/10.1002/jobm.202100101>
- Hassan, M.A., El-aziz, S.A., Elbadry, H.M., El-aassar, S.A., Tamer, T.M., 2022. Prevalence, antimicrobial resistance profile, and characterization of multidrug-resistant bacteria from various infected wounds in North Egypt. *Saudi J. Biol. Sci.* 29, 2978–2988. <https://doi.org/10.1016/j.sjbs.2022.01.015>
- Havenga, B., Ndlovu, T., Clements, T., Reyneke, B., Waso, M., Khan, W., 2019. Exploring the antimicrobial resistance profiles of WHO critical priority list

- bacterial strains. *BMC Microbiol.* 19, 1–16. <https://doi.org/10.1186/s12866-019-1687-0>
- Hayashi, K., Moriwaki, J., Sawabe, T., Thompson, F.L., Swings, J., Gudkovs, N., Christen, R., Ezura, Y., 2003. *Vibrio superstes* sp. nov., isolated from the gut of Australian abalones *Haliotis laevigata* and *Haliotis rubra*. *Int. J. Syst. Evol. Microbiol.* 53, 1813–1817. <https://doi.org/10.1099/ij.s.0.02625-0>
- Hillman, P.F., Lee, C., Nam, S.J., 2023. Microbial Natural Products with Wound-Healing Properties. *Processes* 11. <https://doi.org/10.3390/pr11010030>
- Hoffmann, M., Monday, S.R., Allard, M.W., Strain, E.A., Whittaker, P., Naum, M., McCarthy, P.J., Lopez, J.V., Fischer, M., Brown, E.W., 2012. *Vibrio caribbeanicus* sp. nov., isolated from the marine sponge *Scleritoderma cyanea*. *Int. J. Syst. Evol. Microbiol.* 62, 1736–1743. <https://doi.org/10.1099/ij.s.0.032375-0>
- Hove, R.J. ten, Tesfaye, M., ten Hove, W.F., Nigussie, M., 2017. Profiling of antibiotic resistance of bacterial species recovered from routine clinical isolates in Ethiopia. *Ann. Clin. Microbiol. Antimicrob.* 16, 1–8. <https://doi.org/10.1186/s12941-017-0221-1>
- Ibrahim, D., Nazari, T.F., Kassim, J., Lim, S., 2014. Prodigiosin - an antibacterial red pigment produced by *Serratia marcescens* IBRL USM 84 associated with a marine sponge *Xestospongia testudinaria*. *J. Appl. Pharm. Sci.* 4, 1–6. <https://doi.org/10.7324/JAPS.2014.401001>
- Immanuel, G., Thaddaeus, B.J., Usha, M., Ramasubburayan, R., Prakash, S., 2012. Antipyretic, wound healing, and antimicrobial activity of processed shell of the marine mollusc *Cypraea moneta*. *Asian Pac. J. Trop. Biomed.* 2, S1643–S1646. [https://doi.org/10.1016/S2221-1691\(12\)60469-9](https://doi.org/10.1016/S2221-1691(12)60469-9)
- Iswara, A., Tanaka, K., Ishijima, T., Nakajima, Y., Mukai, K., Tanaka, Y., Nakano, Y., Sugama, J., Oe, M., Okuwa, M., Nakatani, T., 2022. Wound healing in db / db mice with type 2 diabetes using non-contact exposure with an argon non-thermal atmospheric pressure plasma jet device. *PLoS One.* 21, 1–19. <https://doi.org/10.1371/journal.pone.0275602>
- Jafarzade, M., Yahya, N.A., Shayesteh, F., Usup, G., 2013. Influence of Culture Conditions and Medium Composition on the Production of Antibacterial Compounds by Marine *Serratia* sp. *J. Microbiol.* 51, 373–379. <https://doi.org/10.1007/s12275-013-2440-2>
- Jimtha, J.C., Jishma, P., Sreelekha, S., Chithra, S., Radhakrishnan, E., 2017. Antifungal properties of prodigiosin-producing rhizospheric *Serratia* sp. *Rhizosphere* 3, 105–108. <https://doi.org/10.1016/j.rhisph.2017.02.003>
- Jin, C., Luo, P., Zuo, H., Chen, J., Chen, M., Wang, W., 2013. *Vibrio zhuhaiensis* sp. nov., isolated from a Japanese prawn (*Marsupenaeus japonicus*). *Antonie Van Leeuwenhoek* 103, 989–996. <https://doi.org/10.1007/s10482-013-9878-4>
- Jin, C., Luo, P., Zuo, H., Chen, J., Chen, M., Wang, W., 2012. *Vibrio zhanjiangensis* sp. nov., isolated from seawater of shrimp farming pond. *Antonie Van Leeuwenhoek* 101, 743–751. <https://doi.org/10.1007/s10482-011-9688-5>
- Jose, A.C., Christy, P.H., 2013. Original Research Article Assessment of antimicrobial potential of endophytic bacteria isolated from *Rhizophora mucronata*. *Int. J. Curr. Microbiol. Appl. Sci.* 2, 188–194.

- Kang, J., Hossain, M.A., Park, H.C., Kim, Y.S., Park, S.W., Kim, T.W., 2020. Rapid determination of benzylpenicillin resistance in *Staphylococcus aureus* bacteraemia model. *Infect. Drug Resist.* 13, 1601–1606. <https://doi.org/10.2147/IDR.S243826>
- Kaur, M., Goel, M., Mishra, R.C., Lahane, V., Yadav, A.K., Barrow, C.J., 2023. Characterization of the Red Biochromes Produced by the Endophytic Fungus *Monascus purpureus* CPEF02 with Antimicrobial and Antioxidant Activities. *Fermentation* 9. <https://doi.org/10.3390/fermentation9040328>
- Khanam, B., Chandra, R., 2018. Comparative analysis of prodigiosin isolated from endophyte *Serratia marcescens*. *Lett. Appl. Microbiol.* 66, 42–49. <https://doi.org/10.1111/lam.12840>
- Kim, D., Baik, K.S., Hwang, Y.S., Choi, J., Kwon, J., Seong, C.N., 2013. lyase-producing bacterium, isolated from the gut microflora of sea urchin (*Hemicentrotus pulcherrimus*). *Int. J. Syst. Evol. Microbiol.* 63, 3697–3703. <https://doi.org/10.1099/ijs.0.047951-0>
- Kim, S., Chen, J., Cheng, T., Gindulyte, A., He, J., He, S., Li, Q., Shoemaker, B.A., Thiessen, P.A., Yu, B., Zaslavsky, L., Zhang, J., Bolton, E.E., 2023. PubChem 2023 update. *Nucleic Acids Res.* 51, D1373–D1380. <https://doi.org/10.1093/nar/gkac956>
- Kim, Y., Pai, H., Lee, H., Park, S., Choi, E., Kim, Jungmin, Kim, Je-hak, Kim, E., Al, K.I.M.E.T., 2002. Bloodstream Infections by Extended-Spectrum B-Lactamase-Producing *Escherichia coli* and *Klebsiella pneumoniae* in Children: Epidemiology and Clinical Outcome. *Antimicrob. Agent Chemotheray* 46, 1481–1491. <https://doi.org/10.1128/AAC.46.5.1481>
- Krishna, P.S., Sudha, S., Reddy, K.A., Al-dhabaan, F.A., Prakasham, R.S., Charya, M.A.S., 2019. Studies on wound healing potential of red pigment isolated from marine Bacterium *Vibrio* sp. *Saudi J. Biol. Sci.* 26, 723–729. <https://doi.org/10.1016/j.sjbs.2017.11.035>
- Kumari, S.K., Shivakrishna, P., Ganduri, V.S.R., 2020. Wound healing Activities of the bioactive compounds from *Micrococcus* sp. OUS9 isolated from marine water. *Saudi J. Biol. Sci.* 27, 2398–2402. <https://doi.org/10.1016/j.sjbs.2020.05.007>
- Kushmaro, A., Banin, E., Loya, Y., Stackebrandt, E., Rosenberg, E., 2001. *Vibrio shiloi* sp. nov., the causative agent of bleaching of the coral *Oculina patagonica*. *Int. J. Syst. Evol. Microbiol.* 51, 1383–1388.
- Lapenda, J.C., Silva, P.A., Vicalvi, M.C., Sena, K.X.F.R., Nascimento, S.C., 2015. Antimicrobial activity of prodigiosin isolated from *Serratia marcescens* UFPEA 398. *World J Microbiol Biotechnol* 31, 399–406. <https://doi.org/10.1007/s11274-014-1793-y>
- Lee, J.S., Kim, Y., Park, S., Kim, J., Kang, S., Lee, M., Ryu, S., Choi, J.M., Oh, T., Yoon, J., 2011. Exceptional Production of both Prodigiosin and Cycloprodigiosin as Major Metabolic Constituents by a Novel Marine Bacterium, *Zooshikella rubidus* S1-1. *Appl. Environ. Microbiol.* 77, 4967–4973. <https://doi.org/10.1128/AEM.01986-10>
- Lestari, S.D., Sadiq, A.L.O., Safitri, W.A., Dewi, S.S., Prastiyanto, M.E., 2019. The antibacterial activities of bacteriocin *Pediococcus acidilactici* of breast milk

- isolate to against methicillin-resistant *Staphylococcus aureus*. *J. Phys. Conf. Ser.* 1374, 012021. <https://doi.org/10.1088/1742-6596/1374/1/012021>
- Li, J., Ma, X., Guo, S., Hou, C., Shi, L., Zhang, H., Zheng, B., Liao, C., Yang, L., Ye, L., He, X., 2020. A Hydrophobic-Interaction-Based Mechanism Triggers Docking between the SARS-CoV-2 Spike and Angiotensin-Converting Enzyme 2. *Glob. Challenges* 4. <https://doi.org/10.1002/gch2.202000067>
- Lim, J., Kwon, A., Kim, S., Chong, Y., Lee, K., Choi, E., 2002. Prevalence of resistance to macrolide, lincosamide and streptogramin antibiotics in Gram-positive cocci isolated in a Korean hospital. *J. Antimicrob. Chemother.* 49, 489–495.
- Llor, C., Cots, J.M., 2009. The Sale of Antibiotics without Prescription in Pharmacies in Catalonia, Spain. *Clin. Infect. Dis.* 1345–1349. <https://doi.org/10.1086/598183>
- Loret, M., Morel, S., 2010. Isolation and structural characterization of two new metabolites from *Monascus*. *J. Agric. Food Chem.* 58, 1800–1803. <https://doi.org/10.1021/jf903231p>
- Lucena, T., Ruvira, M.A., Arahal, D.R., Macián, M.C., Pujalte, M.J., 2012. *Vibrio aestivus* sp. nov. and *Vibrio quintilis* sp. nov., related to *Marisflavi* and *Gazogenes* clades, respectively. *Syst. Appl. Microbiol.* 35, 427–431. <https://doi.org/10.1016/j.syapm.2012.08.002>
- Macia, M.C., Ludwig, W., Schleifer, K.H., Pujalte, M.J., 2001. *Vibrio agarivorans* sp. nov., a novel agarolytic marine bacterium. *Int. J. Syst. Evol. Microbiol.* 51, 2031–2036.
- Mahasanen, K. V., Molina, R., Bouley, R., Batuecas, M.T., Fisher, J.F., Hermoso, J.A., Chang, M., Mobashery, S., 2017. Conformational dynamics in penicillin-binding protein 2a of methicillin-resistant *Staphylococcus aureus*, allosteric communication network and enablement of catalysis. *J. Am. Chem. Soc.* 139, 2102–2110. <https://doi.org/10.1021/jacs.6b12565>
- Mama, M., Abdissa, A., Sewunet, T., 2014. Antimicrobial susceptibility pattern of bacterial isolates from wound infection and their sensitivity to alternative topical agents at Jimma University Specialized Hospital, South-West Ethiopia. *Ann. Clin. Microbiol. Antimicrob.* 13. <https://doi.org/10.1186/1476-0711-13-14>
- Melake, N., Eissa, N., Keshk, T., Sleem, A., 2015. Prevalence of multidrug-resistant bacteria isolated from patients with burn infection. *Menoufia Med. J.* 28, 677–684. <https://doi.org/10.4103/1110-2098.167888>
- Mirzaei, B., Bazgir, Z.N., Goli, H.R., Iranpour, F., Mohammadi, F., 2020. Prevalence of multidrug-resistant (MDR) and extensively drug-resistant (XDR) phenotypes of *Pseudomonas aeruginosa* and *Acinetobacter baumannii* isolated in clinical samples from Northeast of Iran. *BMC Res. Notes* 4–9. <https://doi.org/10.1186/s13104-020-05224-w>
- Miyake, T., Kono, I., Nozaki, N., Sammoto, H., 2008. Analysis of pigment compositions in various *Monascus* cultures. *Food Sci. Technol. Res.* 14, 194–197. <https://doi.org/10.3136/fstr.14.194>
- Moges, F., Eshetie, S., Abebe, W., Mekonnen, F., Dagnew, M., Endale, A., Amare, A., Feleke, T., Gizachew, M., Tiruneh, M., 2019. High prevalence of

- extended-spectrum beta-lactamase-producing Gram-negative pathogens from patients attending Felege Hiwot Comprehensive Specialized Hospital, Bahir Dar, Amhara region. *PLoS One* 14, 1–13. <https://doi.org/10.1371/journal.pone.0215177>
- Moini, A.S., Soltani, B., Ardakani, A.T., Moravveji, A., Erami, M., Rezaei, M.H., Namazi, M., 2015. Multidrug-resistant *Escherichia coli* and *Klebsiella pneumoniae* isolated from patients in Kashan, Iran. *Jundishapur J. Microbiol.* 8. <https://doi.org/10.5812/jjm.27517>
- Morshad, M., Islam, N., Delwer, M., Hawlader, H., 2021. Prevalence of multidrug resistance bacterial isolates from infected wound patients in Dhaka, Bangladesh: A cross-sectional study. *Int. J. Surg. Open* 28, 56–62. <https://doi.org/10.1016/j.ijso.2020.12.010>
- Mukai, K., Nakajima, Y., Urai, T., Komatsu, E., Sugama, J., 2014. 17 β -Estradiol administration promotes delayed cutaneous wound healing in 40-week ovariectomized female mice. *Int. wound J.* 13, 636–44. <https://doi.org/10.1111/iwj.12336>
- Mukai, K., Urai, T., Asano, K., Nakajima, Y., Nakatani, T., 2016. Evaluation of Effects of Topical Estradiol Benzoate Application on Cutaneous Wound Healing in Ovariectomized Female Mice. *PLoS One* 11, 1–15. <https://doi.org/10.1371/journal.pone.0163560>
- Mukherjee, G., Singh, S.K., 2011. Purification and characterization of a new red pigment from *Monascus purpureus* in submerged fermentation. *Process Biochem.* 46, 188–192. <https://doi.org/10.1016/j.procbio.2010.08.006>
- Nabil, M., Alam, R., Rahman, Q.A., Ul Islam, M.M., Noor, M.A.A., 2020. In Silico Molecular Docking Study of Some Already Approved Antiviral Drugs, Vitamins and Phytochemical Components Against Rna Dependent Rna Polymerase of Sars-Cov-2 Virus. *J. Appl. Bioinforma. Comput. Biol.* 9, 1–32. [https://doi.org/10.37532/jabcb.2020.9\(5\).182](https://doi.org/10.37532/jabcb.2020.9(5).182)
- Nassera, M., Ogalib, M., Kharat, A.S., 2018. Prevalence of MDR *Pseudomonas aeruginosa* of war-related wound and burn ward infections from some conflict areas of Western Yemen. *Wound Med.* 20, 58–61. <https://doi.org/10.1016/j.wndm.2018.02.001>
- Nawaz, A., Chaudhary, R., Shah, Z., Dufossé, L., Fouillaud, M., Mukhtar, H., Haq, I.U., 2021. An overview on industrial and medical applications of biopigments synthesized by marine bacteria. *Microorganisms* 9, 1–24.
- Numan, M., Bashir, S., Mumtaz, R., Tayyab, S., Ur, N., 2018. Therapeutic applications of bacterial pigments: a review of current status and future opportunities. *3 Biotech* 8, 207. <https://doi.org/10.1007/s13205-018-1227-x>
- Offret, C., Desriac, F., Chevalier, P. Le, Mounier, J., Jégou, C., 2016. Spotlight on Antimicrobial Metabolites from the Marine Bacteria *Pseudoalteromonas*: Chemodiversity and Ecological Significance. *Mar. Drugs* 14, 1–26. <https://doi.org/10.3390/md14070129>
- Ogasawara, N., Kasahara, K., Iwai, R., Takahashi, T., 2018. Unfolding of α -helical 20-residue polyglutamic acid analyzed by multiple runs of canonical molecular dynamics simulations. *PeerJ*, 1–17. <https://doi.org/10.7717/peerj.4769>

- Park, H.A., Park, S.A., Yang, Y.H., Choi, K.Y., 2021. Microbial synthesis of violacein pigment and its potential applications. *Crit. Rev. Biotechnol.* 41, 879–901. <https://doi.org/10.1080/07388551.2021.1892579>
- Patel, N., Dwivedi, M., Jadeja, S., Begum, R., 2020. Antibacterial activity of marine bacterial pigments obtained from Arabian sea water samples. *J. Pure Appl. Microbiol.* 14, 517–526. <https://doi.org/10.22207/JPAM.14.1.54>
- Paul, T., Bandyopadhyay, T.K., Mondal, A., Tiwari, O.N., Muthuraj, M., Bhunia, B., 2020. A comprehensive review on recent trends in production, purification, and applications of prodigiosin. *Biomass Conv. Bioref.* 12: 1409–1431. <https://doi.org/10.1007/s13399-020-00928-2>
- Percival, S.L., Hill, K.E., Williams, D.W., Hooper, S.J., Thomas, D.W., Costerton, J.W., 2012. A review of the scientific evidence for biofilms in wounds. *Wound Repair Regen.* Sep-Oct, 647–57. <https://doi.org/https://doi.org/10.1111/j.1524-475X.2012.00836.x>
- Perween, N., Prakash, S.K., Siddiqui, O., 2015. Multi-drug resistant *Klebsiella* isolates in burn patients: A comparative study. *J. Clin. Diagnostic Res.* 9, 14–16. <https://doi.org/10.7860/JCDR/2015/13837.6453>
- Poddar, K., Padhan, B., Sarkar, D., Sarkar, A., 2021. Purification and optimization of pink pigment produced by newly isolated bacterial strain *Enterobacter* sp. PWN1. *SN Appl. Sci.* 3, 1–11. <https://doi.org/10.1007/s42452-021-04146-x>
- Prastiyanto, M.E., Darmawati, S., Daryono, B.S., Retnaningrum, E., 2024. Black-Pigmented Marine *Pseudomonas aeruginosa* Exhibiting Anti-Bacterial Activity against Multidrug-Resistant (MDR) Wound Infection Bacteria. *Hayati J. Biosci.* 31, 880–890. <https://doi.org/10.4308/hjb.31.5.880-890>
- Prastiyanto, M.E., 2021. Seeds extract of three *Artocarpus* species : Their in-vitro antibacterial activities against multidrug-resistant (MDR) *Escherichia coli* isolates from urinary tract infections (UTIs). *Biodiversitas* 22, 4356–4362. <https://doi.org/10.13057/biodiv/d221028>
- Prastiyanto, M.E., Azizah, I.H., Haqi, H.D., Yulianto, B.D., Agmala, A.B., Radipasari, Z.D., Astuti, N.A.D., 2020a. In-vitro antibacterial activity of the seed extract of three member *Artocarpus* towards methicillin-resistant *Staphylococcus aureus* (MRSA). *J. Teknol. Lab.* 9, 1–6. <https://doi.org/10.29238/tek>
- Prastiyanto, M.E., Darmawati, S., Daryono, B.S., Retnaningrum, E., 2024a. Antibacterial Activity of Yellow Pigment from *Micrococcus flavus* AK 11 Isolates of the Coral *Porites* sp. from Gosong Beach, Central Java, Indonesia. *Egypt. J. Aquat. Biol. Fish.* 28, 723–737.
- Prastiyanto, M.E., Darmawati, S., Daryono, B.S., Retnaningrum, E., 2024. Examining the prevalence and antimicrobial resistance profiles of multidrug-resistant bacterial isolates in wound infections from Indonesian patients. *Narra J.* 4, e980. <https://doi.org/http://doi.org/10.52225/narra.v4i2.980>
- Prastiyanto, M.E., Darmawati, S., Mukaromah, A.H., 2022a. Antibacterial activity of seed kernel extracts of seven mangoes (*Mangifera indica*) cultivars native to Indonesia against MDR- *Pseudomonas aeruginosa* isolated from wounds. *Biodiversitas* 23, 5629–5637. <https://doi.org/10.13057/biodiv/d231112>
- Prastiyanto, M.E., Dewi, N.M.B.A., Pratiningtias, T.D., Pratiwi, N.M.R.,

- Windayani, A., Wahyunengsih, E., Astuti, Amir, E., Wardoyo, F.A., 2021. In vitro antibacterial activities of crude extracts of nine plants on multidrug resistance bacterial isolates of wound infections. *Biodiversitas*. 22, 2641–2647. <https://doi.org/10.13057/biodiv/d220712>
- Prastiyanto, M.E., Iswara, A., Khairunnisa, A., Sofyantoro, F., Siregar, A.R., Mafiroh, W.U., Setiawan, J., Nadifah, F., Wibowo, A.T., Putri, W.A., 2024b. Prevalence and antimicrobial resistance profiles of multidrug-resistant bacterial isolates from urinary tract infections in Indonesian patients: A cross-sectional study. *Clin. Infect. Pract.* 22, 100359. <https://doi.org/10.1016/j.clinpr.2024.100359>
- Prastiyanto, M.E., Kartika, A.I., Darmawati, S., Radjasa, O.K., 2022b. Bioprospecting of bacterial symbionts of sponge *Spongia officinalis* from Savu Sea, Indonesia for antibacterial potential against multidrug-resistant bacteria. *Biodiversitas*. 23, 1118–1124. <https://doi.org/10.13057/biodiv/d230256>
- Prastiyanto, M.E., Rukmana, R.M., Saraswati, D.K., Darmawati, S., Maharani, E.T.W., Tursinawati, Y., 2020b. Anticancer potential of methanolic extracts from *Pleurotus* species on raji cells and antibacterial activity against Methicillin-Resistant *Staphylococcus aureus*. *Biodiversitas* 21, 5644–5649. <https://doi.org/10.13057/biodiv/d211221>
- Prastiyanto, M.E., Setyaningtyas, A., Trisnawati, L., Syafira, A., 2016. Antimicrobial Activity and Identification The Compounds of Methanol Extract from The *Pleurotus Ostreatus* Fruiting Body. *el-Hayah* 6, 29–34.
- Prastiyanto, M.E., Tama, P.D., Ananda, N., Wilson, W., Mukaromah, A.H., 2020c. Antibacterial Potential of *Jatropha* sp. Latex against Multidrug-Resistant Bacteria. *Int. J. Microbiol.* 2020. <https://doi.org/https://doi.org/10.1155/2020/8509650>
- Prastiyanto, M.E., Wardoyo, F.A., Wilson, W., Darmawati, S., 2020d. Antibacterial Activity of Various Extracts of *Averrhoa bilimbi* against Multidrug-Resistant Bacteria. *Biosaintifika* 12, 163–168.
- Prastiyanto, M.E., Wardoyo F.A. 2025. Antibacterial efficacy of fruit extracts from three mangrove species: *Rhizophora mucronata*, *Sonneratia alba*, and *Sonneratia caseolaris* against multidrug-resistant (MDR) isolates derived from clinical specimens. *J Herbmmed Pharmacol.* 14(1):104-111. doi: 10.34172/jhp.2025.52806.
- Puca, V., Marulli, R.Z., Grande, R., Vitale, I., Niro, A., 2021. Microbial Species Isolated from Infected Wounds and Antimicrobial Resistance Analysis : Data Emerging from a Three-Years Retrospective Study. *Antibiot.* 10, 1162. <https://doi.org/10.3390/antibiotics10101162>
- Purnomo, H. 2024. *Molecular Docking Kombinasi. seri kimia medisinal*. Grafika Indah. Yogyakarta
- Rahim, K., Saleha, S., Zhu, X., Huo, L., Basit, A., 2016. Bacterial Contribution in Chronicity of Wounds. *Microb. Ecol.* <https://doi.org/10.1007/s00248-016-0867-9>
- Ramirez, D., Caballero, J., 2018. Is It Reliable to Take the Molecular Docking Top Scoring Position as the Best Solution without Considering Available

- Structural Data ? molecules 22, 1–17.
<https://doi.org/10.3390/molecules23051038>
- Saffanah, N.I., Agustina, D., Sutejo, I.R., 2020. Postoperative Orthopedic Surgical Site Infection Antibigram of dr. Soebandi Hospital, Jember in 2019. *JPSCR J. Pharm. Sci. Clin. Res.* 5, 110. <https://doi.org/10.20961/jpscr.v5i2.41947>
- Sakeena, M., Bennett, A., McLachlan, A., 2018. Non-prescription sales of antimicrobial agents at community pharmacies in developing countries: a systematic review. *Int. J. Antimicrob. Agents.* 52, 1–8.
<https://doi.org/https://doi.org/10.1016/j.ijantimicag.2018.09.022>
- Samsu, R.S., Furqon M.T., Kadhafi M., Supriatin F.E., Aprillianto R.Y. 2024. Mangroves in Alas Purwo National Park, Indonesia: Diversity and Its Potential Carbon Services. *HAYATI Journal of Biosciences*, 31(3), 589-595.
<https://doi.org/10.4308/hjb.31.3.589-595>
- Santoso, B., Sulistiowati, E., Tuti, S., Lamid, A., 2013. Riset Kesehatan Dasar Dalam Angka: Provinsi Jawa Tengah. Badan Penelitian dan Pengembangan Kesehatan, Jakarta.
- Sawabe, T., Hayashi, K., Moriwaki, J., Fukui, Y., Thompson, F.L., Swings, J., Christen, R., 2004. *Vibrio neonatus* sp. nov. and *Vibrio ezuræ* sp. nov. Isolated from the Gut of Japanese Abalones. *Syst. Appl. Microbiol.* 534, 527–534.
- Setiyono, E., Alfasisurya, M., Adhiwibawa, S., Indrawati, R., Nur, M., Prihastyanti, U., Shioi, Y., Hardo, T., Brotosudarmo, P., 2020. An Indonesian Marine Bacterium, *Pseudoalteromonas rubra*, Produces Antimicrobial Prodiginine Pigments. *ACS Omega* 5, 4626–4635.
<https://doi.org/10.1021/acsomega.9b04322>
- Shebl, R.I., Mosaad, Y.O., 2019. Frequency and Antimicrobial Resistance Pattern among Bacterial Clinical Isolates Recovered from Different Specimens in Egypt. *Cent. African J. Public Heal.* 5, 36.
<https://doi.org/10.11648/j.cajph.20190501.16>
- Sheu, S., Jiang, S., Chen, C.A., Wang, J., Chen, W., Chen, W., 2011. *Vibrio stylophoræ* sp. nov., isolated from the reef-building coral *Stylophora pistillata*. *Int. J. Syst. Evol. Microbiol.* 61, 2180–2185.
<https://doi.org/10.1099/ijs.0.026666-0>
- Shieh, W.Y., Chen, Y., Chaw, S., Chiu, H., 2003. *Vibrio ruber* sp. nov., a red, facultatively anaerobic, marine bacterium isolated from sea water. *Int. J. Syst. Evol. Microbiol.* 53, 479–484. <https://doi.org/10.1099/ijs.0.02307-0>
- Shiva-Krishna, P., Sudha, S., Reddy, K. A., Al-Dhabaan, F. A., Meher, Prakasham, R. S., & Singara Charya, M. A. 2019. Studies on wound healing potential of red pigment isolated from marine Bacterium *Vibrio* sp. *Saudi journal of biological sciences*, 26(4), 723–729.
<https://doi.org/10.1016/j.sjbs.2017.11.035>
- Shoichet, B.K., McGovern, S.L., Wei, B., Irwin, J.J., 2002. Lead discovery using molecular docking. *Curr. Opin. Chem. Biol.* 6, 439–446.
[https://doi.org/10.1016/S1367-5931\(02\)00339-3](https://doi.org/10.1016/S1367-5931(02)00339-3)
- Sibero, M.T., Bachtiarini, T.U., Trianto, A., Lupita, A.H., Sari, D.P., Igarashi, Y., Harunari, E., Sharma, A.R., Radjasa, O.K., Sabdono, A., 2019.

- Characterization of a yellow pigmented coral-associated bacterium exhibiting anti-Bacterial Activity Against multidrug-resistant (MDR) Organism. *Egypt. J. Aquat. Res.* 45, 81–87. <https://doi.org/10.1016/j.ejar.2018.11.007>
- Song, J., Hsueh, P., Chung, D.R., Ko, K.S., Kang, C., Peck, K.R., 2011. Spread of methicillin-resistant *Staphylococcus aureus* between the community and the hospitals in Asian countries : An ANSORP study Spread of methicillin-resistant *Staphylococcus aureus* between the community and the hospitals in Asian countries : an ANSORP. *J Antimicrob Chemother.* 66, 1062–1069. <https://doi.org/10.1093/jac/dkr024>
- Srinivasan, R., Kannappan, A., Shi, C., Lin, X., 2021. Marine bacterial secondary metabolites: A treasure house for structurally unique and effective antimicrobial compounds. *Mar. Drugs* 19, 1–36. <https://doi.org/10.3390/md19100530>
- Suryawanshi, R.K., Patil, C.D., Koli, S.H., John, E., Patil, S. V, Suryawanshi, R.K., Patil, C.D., Koli, S.H., John, E., 2016. Antimicrobial activity of prodigiosin is attributable to plasma-membrane damage. *Nat. Prod. Res.* 6419. <https://doi.org/10.1080/14786419.2016.1195380>
- Syaiful, R.A., Mazni, Y., Prasetyo, M.L., Lalisang, T.J.M., 2020. Surgical site infection after digestive surgery in a single tertiary hospital in Indonesia: Six years of data. *Med. J. Indones.* 29, 310–315. <https://doi.org/10.13181/mji.oa.192698>
- Taufik, A., Wiweko, A., Yudhanto, D., Wardoyo, E.H., Habib, P., Rizki, M., Rosyidi, R.M., 2022. Bacterial infection and antibiotic resistance pattern in open fracture cases in Indonesia. *Ann. Med. Surg.* 76, 103510. <https://doi.org/10.1016/j.amsu.2022.103510>
- Thompson, F.L., Thompson, C.C., Swings, J., 2003. *Vibrio tasmaniensis* sp. nov., isolated from Atlantic Salmon (*Salmo salar* L.). *Syst. Appl. Microbiol.* 26, 65–69.
- Triandala, M., Ulfa, T., Trianto, A., Hayu, A., 2019. Characterization of a yellow pigmented coral-associated bacterium exhibiting anti-Bacterial Activity Against Multidrug Resistant (MDR) Organism. *Egypt. J. Aquat. Res.* 45, 81–87. <https://doi.org/10.1016/j.ejar.2018.11.007>
- Trivedi, U., Parameswaran, S., Armstrong, A., Burgueno-vega, D., Griswold, J., Dissanaik, S., Rumbaugh, K.P., 2014a. Prevalence of Multiple Antibiotic Resistant Infections in Diabetic versus Nondiabetic Wounds. *J. Pathog.* 2014, 6.
- Trivedi, U., Parameswaran, S., Armstrong, A., Burgueno-Vega, D., Griswold, J., Dissanaik, S., Rumbaugh, K.P., 2014b. Prevalence of Multiple Antibiotic Resistant Infections in Diabetic versus Nondiabetic Wounds. *J. Pathog.* 2014, 1–6. <https://doi.org/10.1155/2014/173053>
- Trivedi, U., Parameswaran, S., Armstrong, A., Burgueno-Vega, D., Griswold, J., Dissanaik, S., Rumbaugh, K.P., 2014c. Prevalence of Multiple Antibiotic Resistant Infections in Diabetic versus Nondiabetic Wounds. *J. Pathog.* 2014, 173053. <https://doi.org/10.1155/2014/173053>
- Tzaneva, V., Irena, M., Galina, T., Dimitar, P., 2016. Antibiotic treatment and resistance in chronic wounds of vascular origin. *Clujul Med.* 89, 365–370.

<https://doi.org/10.15386/cjmed-647>

- Upreti, N., Rayamajhee, B., Sherchan, S.P., Choudhari, M.K., Banjara, M.R., 2018. Prevalence of methicillin resistant *Staphylococcus aureus*, multidrug resistant and extended spectrum β -lactamase producing gram negative bacilli causing wound infections at a tertiary care hospital of Nepal. *Antimicrob. Resist. Infect. Control* 7, 1–10.
- Velmurugan, P., Venil, C.K., Veera Ravi, A., Dufossé, L., 2020. Marine Bacteria Is the Cell Factory to Produce Bioactive Pigments: A Prospective Pigment Source in the Ocean. *Front. Sustain. Food Syst.* 4, 1–7.
- Wafa, N., Yunianto, P., Widyaningsih, T.D., 2024. The Activity of Extract from *Rhizophora mucronata* Endophytic Fungi Solid Fermentation Against *Staphylococcus aureus* and *Enterobacter aerogenes*. 2nd Int. Conf. Biol. Student 2023 2024, 92–97.
- Wang, S., Nguyen, V.B., Doan, C.T., Tran, T.N., 2020. Production and Potential Applications of Bioconversion of Chitin and Protein-Containing Fishery Byproducts into Prodigiosin: A Review. *molecules*. 25, 12–16.
- Wang, Y., Zhang, X., Yu, M., Wang, H., Austin, B., 2010. *Vibrio atypicus* sp. nov., isolated from the digestive tract of the Chinese prawn (*Penaeus chinensis* O'sbeck). *Int. J. Syst. Evol. Microbiol.* 60, 2517–2523. <https://doi.org/10.1099/ijss.0.016915-0>
- WHO, 2018. Resistance in bacteria Antibiotic. URL <http://www.who.int/mediacentre/factsheets/fs194/en/> (accessed 4.9.24).
- WHO, 2014. Antimicrobial Resistance Global Report on Surveillance. World Heal. Organ. 2014. URL https://apps.who.int/iris/bitstream/handle/10665/112642/9789241564748_eng.pdf;jsessionid=12E7A2386469BE4C3DCF92FB8C7A8769?sequence=1 (accessed 6.21.24).
- Williams, A., Repetto, E., Sunyoto, T., Cherestal, S., Mahama, G., 2021. Antimicrobial Resistance Prevalence of MDR bacteria in an acute trauma hospital in Port-au-Prince, Haiti : a retrospective analysis from 2012 to 2018. *JAC Antimicrob Resist* 1–8. <https://doi.org/10.1093/jacamr/dlab140>
- Windarsih, A., Suratno, Warmiko, H.D., Indrianingsih, A.W., Rohman, A., Ulumuddin, Y.I., 2022. Untargeted metabolomics and proteomics approach using liquid chromatography-Orbitrap high resolution mass spectrometry to detect pork adulteration in *Pangasius hypophthalmus* meat. *Food Chem.* 386, 132856. <https://doi.org/10.1016/j.foodchem.2022.132856>
- Wispriyono, B., Arsyina, L., Ardiansyah, I., Pratiwi, L.D., Arminsih, R., Hartono, B., Nurmallasari, N., Novirsa, R., 2021. The Role of Hygiene and Sanitation to the *Escherichia coli* Contamination in Drinking Water in Depok City, Indonesia. *Maced. J. Med. Sci.* 9, 641–644.
- Withycombe, C., Purdy, K.J., Maddocks, S.E., 2016. Micro-management: curbing chronic wound infection. *Mol. Oral Microbiol.* 32, 10–11. <https://doi.org/10.1111/omi.12174>
- Wong, F., Krishnan, A., Zheng, E.J., Stärk, H., Manson, A.L., Earl, A.M., Jaakkola, T., Collins, J.J., 2022. Benchmarking AlphaFold-enabled molecular docking predictions for antibiotic discovery. *Mol. Syst. Biol.* 18, 1–20.

<https://doi.org/10.15252/msb.202211081>

- Xu, R., Luo, G., Xia, H., He, W., Zhao, J., Liu, B., Tan, J., Zhou, J., Liu, D., Wang, Y., Yao, Z., Zhan, R., Yang, S., Wu, J., 2015. Biomaterials Novel bilayer wound dressing composed of silicone rubber with particular micropores enhanced wound re-epithelialization and contraction. *Biomaterials* 40, 1–11. <https://doi.org/10.1016/j.biomaterials.2014.10.077>
- Yarza P, Richter M, Peplies J, Euzeby J, Amann R, Schleifer KH, Ludwig W, Glöckner FO, Rosselló-Móra R. 2008. The All-Species Living Tree project: a 16S rRNA-based phylogenetic tree of all sequenced type strains. *Syst Appl Microbiol.* Sep;31(4):241-50. doi: 10.1016/j.syapm.2008.07.001. Epub 2008 Aug 9. PMID: 18692976.
- Yoshizawa, S., Tsuruya, Y., Fukui, Y., Sawabe, T., Yokota, A., Kogure, K., Higgins, M., Carson, J., Thompson, F.L., 2012. *Vibrio jasicida* sp. nov., a member of the Harveyi clade, isolated from marine animals (packhorse lobster, abalone and Atlantic salmon). *Int. J. Syst. Evol. Microbiol.* 62, 1864–1870. <https://doi.org/10.1099/ijs.0.025916-0>
- Yoshizawa, S., Wada, M., Kita-tsukamoto, K., Ikemoto, E., Yokota, A., Kogure, K., 2009. *Vibrio azureus* sp. nov., a luminous marine bacterium isolated from seawater. *Int. J. Syst. Evol. Microbiol.* 16, 1645–1649. <https://doi.org/10.1099/ijs.0.004283-0>
- Yoshizawa, S., Wada, M., Yokota, A., Kogure, K., 2010. luminous marine bacteria isolated from sea water. *J. Gen. Appl. Microbiol* 53, 499–507.
- Zang, C., Yeh, C., Chang, W., Lin, C., Kan, S., Shieh, C., Liu, Y., 2014. Identification and enhanced production of prodigiosin isoform pigment from *Serratia marcescens* N10612. *J. Taiwan Inst. Chem. Eng.* 10–16. <https://doi.org/10.1016/j.jtice.2013.12.016>
- Zhao, Y.C., Sun, Z.H., Li, J.K., Liu, H.Y., Cai, H.L., Cao, W., Yu, F., Zhang, B.K., Yan, M., 2024. Exploring the causes of the prevalence of vancomycin-resistant *Enterococcus faecalis*. *Environ. Sci. Eur.* 36. <https://doi.org/10.1186/s12302-024-00923-8>