

DAFTAR PUSTAKA

- Abiola, J. L. dan Aiyelaagbe, O. O. 2023. Phytochemical, Antimicrobial and Cytotoxic Activities of *Strophanthus sarmentosus* DC. *Biology, Medicine, & Natural Product Chemistry*. **12**(1): 119–126.
- Al-Hassan, J. M., Afzal, M., Oommen, S., Liu, Y. F., dan Pace-Asciak, C. 2022. Oxysterols in catfish skin secretions (*Arius bilineatus*, Val.) exhibit anti-cancer properties. *Frontiers in Pharmacology*. **13**(October): 1–10.
- Anggraini, M., Swantara, I. M. D., dan Sukadana, I. M. 2021. Toksisitas ekstrak dan isolat rumput laut *Eucheuma spinosum*. *Indonesian E-journal of Applied Chemistry*. **9**(1): 35–41.
- Arumugam, K., Arthanari, A., dan Sivaperumal. 2023. Antibacterial activity against oral pathogens and hemolytic properties from *Kappaphycus* sp. seaweed extract. *Chelonian Conservation And Biology*. **18**(2): 2100–2018.
- Azanza, R. 2023. *Kappaphycus*. CABI. (January). Advance Access published 2023.
- Barthwal, R. dan Mahar, R. 2024. Exploring the Significance, Extraction, and Characterization of Plant-Derived Secondary Metabolites in Complex Mixtures. *Metabolites*. **14**(119).
- Baweja, P., Kumar, S., Sahoo, D., dan Levine, I. 2016. *Biology of Seaweeds*. Elsevier Inc..
- Bhuyar, P., Rahim, M. H., Sundararaju, S., Maniam, G. P., dan Govindan, N. 2020. Antioxidant and antibacterial activity of red seaweed; *Kappaphycus alvarezii* against pathogenic bacteria. *Global Journal of Environmental Science and Management*. **6**(1): 47–58.
- Bierne, H. dan Pourpre, R. 2020. Bacterial factors targeting the nucleus: The growing family of nucleomodulins. *Toxins*. **12**(4): 1–19.
- Blaustein, M. P. 2017. The pump, the exchanger, and the holy spirit: Origins and 40-year evolution of ideas about the ouabain- Na^+ pump endocrine system. *American Journal of Physiology - Cell Physiology*. **314**(1): C3–C26.
- Bux, K. dan Moin, S. T. 2019. Solvation of cholesterol in different solvents: A molecular dynamics simulation study. *Physical Chemistry Chemical Physics*. **22**(3): 1154–1167.
- Cavalcante-Silva, L. H. A., Lima, É. de A., Carvalho, D. C. M., de Sales-Neto, J. M., Alves, A. K. d. A., Galvão, J. G. F. M., da Silva, J. S. d. F., dan Rodrigues-Mascarenhas, S. 2017. Much more than a cardiotoxic steroid: Modulation of inflammation by ouabain. *Frontiers in Physiology*. **8**(895): 1–8.
- Chaves, J. O., Souza, M. C. De, Capelasso, L., Forster-carneiro, T., Vázquez-espinoza, M., González-de-peredo, A. V., dan Barbero, G. F. 2020. Extraction of Flavonoids From Natural Sources Using Modern Techniques. *Frontiers in Chemistry*. **8**(507887).

- Coady, D. J., Ong, Z. Y., Lee, P. S., Venkataraman, S., Chin, W., Engler, A. C., Yang, Y. Y., dan Hedrick, J. L. 2014. Enhancement of Cationic Antimicrobial Materials via Cholesterol Incorporation. *Advanced Healthcare Materials*. **3**(6): 882-889.
- Cuong, D. X., Boi, V. N., Van, T. T. T., dan Hau, L. N. 2015. Effect of storage time on phlorotannin content and antioxidant activity of six *Sargassum* species from Nhatrang Bay , Vietnam. *Journal of Applied Phycology*. **28**(1): 567-572.
- Das, D., Arulkumar, A., Paramasivam, S., Lopez-Santamarina, A., del Carmen Mondragon, A., dan Miranda Lopez, J. M. 2023. Phytochemical Constituents, Antimicrobial Properties and Bioactivity of Marine Red Seaweed (*Kappaphycus alvarezii*) and Seagrass (*Cymodocea serrulata*). *Foods*. **12**(2811): 1-15.
- Delaney, O., Letten, A. D., dan Engelstädter, J. 2023. Drug mode of action and resource constraints modulate antimicrobial resistance evolution. *bioRxiv*. 2023.08.29.555413.
- Dijk, L. J. A. van, Miraldo, A., Raharinjanahary, D., Rajoelison, E. T., Fisher, B. L., Goodsell, R. M., Iwaszkiewicz-Eggebrecht, E., Åhlén, D., Högvall, J., Lundberg, E., Rova, E., Łukasik, P., Ronquist, F., Roslin, T., et al. 2024. Biotic and abiotic drivers of ecosystem functioning differ between a temperate and a tropical region. *bioRxiv*. **1**: 1-62.
- Duncan, K. O. dan Smith, T. L. 2011. Primary Cutaneous Infection with *Bacillus Megaterium* Mimicking Cutaneous Anthrax. *Journal of the American Academy of Dermatology*. **65**(2): e60-e61.
- Emelda, Eka Asriani Safitri, dan Fatmawati, A. 2021. Aktivitas Inhibisi Ekstrak Etanolik *Ulva lactuca* terhadap Bakteri *Staphylococcus aureus*. *Pharmaceutical Journal of Indonesia*. **7**(1): 43-48.
- Fadilah, S. dan Pratiwi, D. A. 2020. Peningkatan Pertumbuhan Rumput Laut *Halymenia* sp. melalui Penentuan Jarak Tanam Rumpun. *Jurnal Perikanan Universitas Gadjah Mada*. **22**(1): 37-42.
- Febrina, L., Rusli, R., dan Mufliah, F. 2015. Optimalisasi Ekstraksi dan Uji Metabolit Sekunder Tumbuhan Libo (*Ficus Variegata* Blume). *Journal Of Tropical Pharmacy And Chemistry*. **3**(2): 74-81.
- Galan, M. M., Gomez, D. K., dan Limbago, J. S. 2022. Antibacterial potential of different red seaweed (Rhodophyta) extracts against ornamental fish pathogen *Salmonella arizonae*. *Aquatic Research*. **5**(4): 275-284.
- GBD 2019 Antimicrobial Resistance Collaborators. 2022. Global mortality associated with 33 bacterial pathogens in 2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet (London, England)*. **400**: 2221-2248.
- Gil-Martín, E., Forbes-Hernández, T., Romero, A., Cianciosi, D., Giampieri, F., dan Battino, M. 2022. Influence of the extraction method on the recovery of

- bioactive phenolic compounds from food industry by-products. *Food Chemistry*. **378**: 131918.
- de Goffau, M. C., Charnock-Jones, D. S., Smith, G. C. S., dan Parkhill, J. 2021. Batch Effects Account For The Main Findings of an In Utero Human Intestinal Bacterial Colonization Study. *Microbiome*. **9**(6): 1-7.
- Goswami, G., Panda, D., Samanta, R., Boro, R. C., Modi, M. K., Bujarbaruah, K. M., dan Barooah, M. 2018. *Bacillus megaterium* Adapts to Acid Stress Condition through a Network of Genes: Insight from a genome-wide transcriptome analysis. *Scientific Reports*. **8**(16105): 1-13.
- Hafting, J. T., Craigie, J. S., Stengel, D. B., Loureiro, R. R., Buschmann, A. H., Yarish, C., Edwards, M. D., dan Critchley, A. T. 2015. Prospects and challenges for industrial production of seaweed bioactives. *Journal of Phycology*. **51**(5): 821-837.
- Hardono, T. dan Supriyadi, K. 2020. Modifikasi Autoclave Berbasis Atmega328 (Suhu). *Medika Teknika : Jurnal Teknik Elektromedik Indonesia*. **1**(2): 1-7.
- Harmita, K., Harahap, Y., dan Supandi. 2019. Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS). PT. ISFI Penerbitan, Jakarta Barat.
- van Hees, D. H., Olsen, Y. S., Wernberg, T., Van Alstyne, K. L., dan Kendrick, G. A. 2017. Phenolic concentrations of brown seaweeds and relationships to nearshore environmental gradients in Western Australia. *Marine Biology*. **164**(74): 1-13.
- Hernández-Cruz, K., Jiménez-Martínez, C., Perucini-Avenidaño, M., Mateo Cid, L. E., Perea-Flores, M. de J., Gutiérrez-López, G. F., dan Dávila-Ortiz, G. 2022. Chemical and microstructural characterization of three seaweed species from two locations of Veracruz, Mexico. *Food Science and Technology (Brazil)*. **42**: 1-9.
- Hillis, Amanda M Hulse, R. dan Sheridan, P. P. 2018. Methods to Isolate Possible Bacteriophage for *Micrococcus luteus* and *Acinetobacter baumannii*. *Journal of Advanced Laboratory Research in Biology*. **9**(4): 86-94.
- Hoang, N. T. N., Le, A. T. H., Nguyen, K. T., Nguyen, C. T. M., Le, N. T. M., dan Nguyen, T. P. C. 2019. Purification and bioactivity of fucoidan from *kappaphycus alvarezii* alga. *Vietnam Journal of Science and Technology*. **57**(3B): 59.
- Hong, M., Ma, Z., Wang, X., Shen, Y., Mo, Z., Wu, M., Chen, B., dan Zhang, T. 2020. Effects of light intensity and ammonium stress on photosynthesis in *Sargassum fusiforme* seedlings. *Chemosphere*. **273**(128605).
- Hudzicki, J. 2009. Kirby-Bauer Disk Diffusion Susceptibility Test Protocol.
- Hung, L. D., Hirayama, M., Ly, B. M., dan Hori, K. 2015. Biological activity, cDNA cloning and primary structure of lectin KSA-2 from the cultivated red alga *Kappaphycus striatum* (Schmitz) Doty ex Silva. *Phytochemistry Letters*.

14: 99–105.

- Hurtado, A. Q., Critchley, A. T., dan Neish, I. C. 2017. Tropical Seaweed Farming Trends, Problems and Opportunities. Springer International Publishing, Cham, Switzerland.
- Hurtado, A. Q., Lim, P.-E., Tan, J., Phang, S.-M., Neish, I. C., dan Critchley, A. T. 2016. Biodiversity and Biogeography of Commercial Tropical Carrageenophytes in The Southeast Asian Region, hal. 51–74, in Pereira, L. (ed.). *Carrageenans*. Nova Science Publishers, Inc..
- Hussein, H. A., Syamsumir, D. F., Radzi, S. A. M., Siong, J. Y. F., Zin, N. A. M., dan Abdullah, M. A. 2020. Phytochemical screening, metabolite profiling and enhanced antimicrobial activities of microalgal crude extracts in co-application with silver nanoparticle. *Bioresources and Bioprocessing*. 7(1).
- Jalal, R. S., Jalani, K. J., Wahab, I. A., Eshak, Z., Ibrahim, A. H., dan Mohsin, H. F. 2023. *Kappaphycus alvarezzi*: Phytochemicals and Ethnopharmacological Significance. *Journal of Sustainability Science and Management*. 18(10): 187–208.
- Jan, R., Asaf, S., Numan, M., Lubna, dan Kim, K. M. 2021. Plant secondary metabolite biosynthesis and transcriptional regulation in response to biotic and abiotic stress conditions. *Agronomy*. 11(968): 1–31.
- Jimenez-Lopez, C., Pereira, A. G., Lourenço-Lopes, C., Garcia-Oliveira, P., Cassani, L., Fraga-Corral, M., Prieto, M. A., dan Simal-Gandara, J. 2021. Main bioactive phenolic compounds in marine algae and their mechanisms of action supporting potential health benefits. *Food Chemistry*. 341: 128262.
- Kasmianti, K., Nurunnisa, A. T., Amran, A., Resya, M. I., dan Rahmi, M. H. 2022. Antibacterial activity and toxicity of *Halymenia durvillei* red seaweed from Kayangan island, South Sulawesi, Indonesia. *Fisheries and Aquatic Sciences*. 25(8): 417–428.
- Khalil, H. P. S. A., Lai, T. K., Tye, Y. Y., Rizal, S., Chong, E. W. N., Yap, S. W., Hamzah, A. A., Nurul Fazita, M. R., dan Paridah, M. T. 2018. A review of extractions of seaweed hydrocolloids: Properties and applications. *Express Polymer Letters*. 12(4): 296–317.
- Kumari, N., Singh, S., Kumari, V., Kumar, S., Kumar, V., dan Kumar, A. 2019. Ouabain potentiates the antimicrobial activity of aminoglycosides against *Staphylococcus aureus*. *BMC Complementary and Alternative Medicine*. 19(1): 1–12.
- Kumowal, S., Fatimawali, F., dan Jayanto, I. 2019. Uji kativitas antibakteri nanopartikel ekstrak lengkuas putih (*Alpinia galanga* (L.) Willd) terhadap bakteri *Klebsiella pneumoniae*. *Pharmacon*. 8(4): 781–790.
- Langford, Z. 2024. Globalisation and Livelihood Transformations in the Indonesian Seaweed Industry. New York.
- Lawani, V. C., Simbala, H. E. ., dan Rotinsulu, H. 2019. Uji Aktivitas Antimikroba

- Ekstrak dan Fraksi Spons *Liosina paradoxa* Dari Perairan Desa Tumbak Minahasa Tenggara Terhadap Pertumbuhan Mikroba *Staphylococcus aureus*, *Escherichia coli*, dan *Candida albicans*. *Pharmacon*. **8**(3): 791–800.
- Leandro, A., Pereira, L., dan Gonçalves, A. M. M. 2020. Diverse applications of marine macroalgae. *Marine Drugs*. **18**(1): 1–15.
- Li, P., Wang, S., Liu, M., Dai, X., Shi, H., Zhou, W., Sheng, S., dan Wu, F. 2024. Antibacterial Activity and Mechanism of Three Root Exudates from Mulberry Seedlings against *Ralstonia pseudosolanacearum*. *Plants*. **13**(4): 1–17.
- Li, D., Zhou, B., dan Lv, B. 2020. Antibacterial Therapeutic Agents Composed of Functional Biological Molecules. *Hindawi Journal of Chemistry*. 1–13.
- Liao, L. M. 1996. Validation of Names Transferred to *Kappaphycus* Doty from *Eucheuma* J. Agardh (Rhodophyta: Solieriaceae). *The Philippine Journal of Science*. **125**(2): 157–160.
- Loong, S. K., Teoh, B. T., Johari, J., Khor, C. S., Abd-Jamil, J., Nor'e, S. S., Samsudin, N. I., Azizan, N. S., Yaacob, C. N., CheMatSeri, A. A., Mahfodz, N. H., dan AbuBakar, S. 2017. Penicillin-Susceptible, Oxidase-Negative, Nonhemolytic, Nonmotile *Bacillus megaterium* in Disguise of *Bacillus anthracis*; diakses pada Hindawi: Case Reports in Infectious Diseases.
- Magvirah, T., Marwati, dan Ardhani, F. 2019. Uji Daya Hambat Bakteri *Staphylococcus aureus* Menggunakan Ekstrak Daun Tahongai (*Kleinhovia hospita* L.). *Jurnal Peternakan Lingkungan Tropis*. **2**(2): 41–50.
- Mali, P. S. dan Kumar, P. 2023. Optimization of microwave assisted extraction of bioactive compounds from black bean waste and evaluation of its antioxidant and antidiabetic potential in vitro. *Food Chemistry Advances*. **3**(100543).
- Mannino, A. M. dan Micheli, C. 2020. Ecological function of phenolic compounds from mediterranean furoid algae and seagrasses: An overview on the genus *Cystoseira sensu lato* and *Posidonia oceanica* (L.) Delile. *Journal of Marine Science and Engineering*. **8**(1): 12–17.
- Matos, G. S., Pereira, S. G., Genisheva, Z. A., Gomes, A. M., Teixeira, J. A., dan Rocha, C. M. R. 2021. Advances in extraction methods to recover added-value compounds from seaweeds: Sustainability and functionality. *Foods*. **10**(516): 1–20.
- Mirzaei, R., Esmaili Gouvarchin Ghaleh, H., dan Ranjbar, R. 2023. Antibiofilm effect of melittin alone and in combination with conventional antibiotics toward strong biofilm of MDR-MRSA and *-Pseudomonas aeruginosa*. *Frontiers in Microbiology*. **14**(1030401).
- Moon, S.-M., Lee, S. A., Hong, J. H., Kim, J.-S., Kim, D. K., dan Kim, C. S. 2018. Oleamide suppresses inflammatory responses in LPS-induced RAW264.7 murine macrophages and alleviates paw edema in a carrageenan-induced inflammatory rat model. *International Immunopharmacology*. **56**: 179–185.

- Morzycki, J. W. dan Sobkowiak, A. 2015. Electrochemical oxidation of cholesterol. *Beilstein Journal of Organic Chemistry*. **11**: 392–402.
- Mueller, G. P. dan Driscoll, W. J. 2009. Chapter 3: Biosynthesis of Oleamide, hal. 55–78, in *Vitamins and Hormones*. Elsevier Inc..
- Muttaqin, M. R., Rotinsulu, D. J., dan Sulistiawati. 2023. Uji Aktivitas Antibakteri Ekstrak Etil Asetat Terong Ungu (*Solanum melongena* L.) terhadap Bakteri *Staphylococcus aureus*. *Jurnal Sains dan Kesehatan*. **5**(2): 205–211.
- Narayana, R., Mohana, C., dan Kumar, A. 2022. Analytical characterization of erucamide degradants by mass spectrometry. *Polymer Degradation and Stability*. **200**(109956).
- Nauer, F., Yokoya, N. S., dan Fujii, M. T. 2021. Short-term effects of temperature on morphology and physiology of turf-forming *Hypnea* species (Rhodophyta) from southeastern Brazil. *Applied Phycology*. **3**(1): 247–259.
- O'Connor, K. 2017. *Seaweed A Global History*. London.
- Oedjoe, M. D. R., Turupadang, W. L., Kangkan, A. L., dan Sine, K. G. 2022. Effect of The Temperature and salinity variations on Growth and Carraggenan content *Kappaphycus alvarezii* in Akle Waters, Kupang Regency, East Nusa Tenggara, Indonesia. *Research Square*. 1–17.
- Park, E., Yu, H., Lim, J.-H., Hee Choi, J., Park, K.-J., dan Lee, J. 2023. Seaweed metabolomics: A review on its nutrients, bioactive compounds and changes in climate change. *Food Research International*. **163**: 112221.
- Pramesti, R., Susanto, A., S, W. A., Ridlo, A., Subagiyo, S., dan Oktaviaris, Y. 2016. Struktur Komunitas dan Anatomi Rumpun Laut di Perairan Teluk Awur, Jepara dan Pantai Krakal, Yogyakarta. *Jurnal Kelautan Tropis*. **19**(2): 81–94.
- Prasad, Shekhar, S., dan Babhulkar. 2013. Antibacterial activity of seaweed (*Kappaphycus*) extracts against infectious pathogens. *African Journal of Biotechnology*. **12**(20): 2968–2971.
- Purba, N. E., Suhendra, L., dan Wartini, N. M. 2019. Pengaruh Suhu dan Lama Ekstraksi dengan cara Maserasi terhadap Karakteristik Pewarna dari Ekstrak Alga Merah (*Gracilaria* sp.). *Jurnal Rekayasa Dan Manajemen Agroindustri*. **7**(4): 488–498.
- Purniasih, N. K. P., Ginting, E. L., Wullur, S., Mangindaan, R. E., Rumampuk, N. D., dan Pratasik, S. B. 2022. Aktivitas Antibakteri dari Bakteri Endofit Simbion Lamun *Enhalus acoroides* asal Perairan Tiwoho, Minahasa Utara. *Jurnal Ilmiah Platax*. **10**(2): 402–414.
- Rahayu, W. P., Nurjanah, S., dan Komalasari, E. 2018. *Escherichia coli*: Patogenitas, Analisis, dan Kajian Risiko. Bogor.
- Rai, A. dan Han, S. S. 2022. Critical Review on Key Approaches to Enhance Synthesis and Production of Steviol Glycosides: A Blueprint for Zero-Calorie

- Sweetener. *Applied Sciences (Switzerland)*. **12**(8640): 1–22.
- Ramachandran, R. P., Nadimi, M., Cenkowski, S., dan Paliwal, J. 2024. Advancement and Innovations in Drying of Biopharmaceuticals , Nutraceuticals , and Functional Foods. *Food Engineering Reviews*. (0123456789). Advance Access published 2024: doi:10.1007/s12393-024-09381-7.
- Reddy, C. R. K., Yokoya, N. S., Yong, W. T. L., Luhan, M. R. J., dan Hurtado, A. Q. 2017. Micro-propagation of *Kappaphycus* and *Eucheuma*: Trends and Prospects BT - Tropical Seaweed Farming Trends, Problems and Opportunities: Focus on *Kappaphycus* and *Eucheuma* of Commerce, hal. 91–110, in Hurtado, A. Q., Critchley, A. T., dan Neish, I. C. (ed.). *Developments in Applied Phycology 9*. Springer International Publishing, Cham.
- Reshi, Z. A., Ahmad, W., Lukatkin, A. S., dan Javed, S. Bin. 2023. From Nature to Lab: A Review of Secondary Metabolite Biosynthetic Pathways, Environmental Influences, and In Vitro Approaches. *Metabolites*. **13**(895).
- Riyanti. 2021. *Marine sponges and their associated bacteria as bioresource for the production of antimicrobial compounds*. PhD thesis, Justus Liebig Giessen University, German.
- Rukmini, R., Siahaan, S., dan Sari, I. D. 2019. Analisis Implementasi Kebijakan Program Pengendalian Resistensi Antimikroba (PPRA). *Buletin Penelitian Sistem Kesehatan*. **22**(2): 106–116.
- Ryu, B., Kim, Y. S., dan Jeon, Y. J. 2021. Seaweeds and their natural products for preventing cardiovascular associated dysfunction. *Marine Drugs*. **19**(9).
- Saleh, A. dan Elatroush, H. 2020. Impact of Different Geographical Locations on Genetic Variation and Phytochemical Constituents of Two Medicinal Marine Algae. *Taekholmia*. **40**(1): 12–26.
- de Santi, I. I., Pacheco, B. S., Venzke, D., Freitag, R. A., de Almeida, L. S., Colepicolo, P., Fujii, M. T., Dias, D., dan Pereira, C. M. P. 2021. Sterols in red macroalgae from antarctica: extraction and quantification by Gas Chromatography–Mass spectrometry. *Polar Biology*. **44**(5): 987–995.
- Schmid, R., Petras, D., Nothias, L. F., Wang, M., Aron, A. T., Jagels, A., Tsugawa, H., Rainer, J., Garcia-Aloy, M., Dührkop, K., Korf, A., Pluskal, T., Kameník, Z., Jarmusch, A. K., et al. 2021. Ion identity molecular networking for mass spectrometry-based metabolomics in the GNPS environment. *Nature Communications*. **12**(3832): 1–12.
- Sefton, A. 2019. The Biology of Bacteria. (C. Y. W. Tong, C. Rosmarin, dan A. Sefton, Ed.). *Tutorial Topics in Infection for the Combined Infection Training Programme*.
- Seo, E., Lee, J. W., Lee, D., Seong, M. R., Kim, G. H., Hwang, D. S., dan Lee, S. J. 2021. Eco-friendly erucamide–polydimethylsiloxane coatings for marine anti-biofouling. *Colloids and Surfaces B: Biointerfaces*. **207**(112003): 1–9.

- Singh, N., Singh, A. P., dan Singh, A. P. 2021. Solubility: An overview. *International Journal of Pharmaceutical Chemistry and Analysis*. **7**(4): 166–171.
- Staehr, C., Aalkjaer, C., dan Matchkov, V. V. 2023. The vascular Na,K-ATPase: clinical implications in stroke, migraine, and hypertension. *Clinical Science*. **137**(20): 1595–1618.
- Subramanya, S. H., Czyż, D. M., Acharya, K. P., dan Humphreys, H. 2021. The potential impact of the COVID-19 pandemic on antimicrobial resistance and antibiotic stewardship. *VirusDisease*. **32**(2): 330–337.
- Sudatti, D. B., Duarte, H. M., Soares, A. R., Salgado, L. T., dan Pereira, R. C. 2020. New Ecological Role of Seaweed Secondary Metabolites as Autotoxic and Allelopathic. *Frontiers in Plant Science*. **11**(347): 1–9.
- Sudatti, D. B., Oliveira, A. S., da Gama, B. A. P., Fujii, M. T., Rodrigues, S. V., dan Pereira, R. C. 2021. Variability in Seaweed Chemical Defense and Growth Under Common Garden Conditions. *Frontiers in Marine Science*. **8**(October): 1–8.
- Suhendar, U., Imran, Z., dan Krisanti, M. 2023. Struktur Komunitas Padang Lamun Di Perairan Kupang Barat Kabupaten Kupang Provinsi Nusa Tenggara Timur. *INNOVATIVE: Journal of Social Science Research*. **3**(2): 9241–9249.
- Sukandar, T. K., Sukmiwati, M., dan Diharmi, A. 2021. Active Fraction of Brown Seaweed *Sargassum cinereum*. *Berkala Perikanan Terubuk*. **49**(3): 1363–1369.
- Syamsuddin, R. 2024. Seaweed *Kappaphycus alvarezii* Cultivation for Seagrass Ecosystem Conservation. *IntechOpen*. Advance Access published 2024: doi:doi: 10.5772/intechopen.106762.
- Tan, J., Lim, P., Phang, S., dan Anicia Q. Hurtado. 2017. Biodiversity, Biogeography and Molecular Genetics of the Commercially Important Genera *Kappaphycus* and *Eucheuma* - Tropical Seaweed Farming Trends, Problems and Opportunities: Focus on *Kappaphycus* and *Eucheuma* of Commerce, hal. 29–43, in *Developments in Applied Phycology* 9.
- Tan, J., Lim, P. E., Phang, S. M., Rahiman, A., Nikmatullah, A., Sunarpi, H., dan Hurtado, A. Q. 2014. *Kappaphycus malesianus* sp. nov.: a new species of *Kappaphycus* (Gigartinales, Rhodophyta) from Southeast Asia. *Journal of Applied Phycology*. **26**(2): 1273–1285.
- Tanna, B. dan Mishra, A. 2018. *Metabolomics of Seaweeds: Tools and Techniques*. Elsevier Inc., Gujarat.
- Tanvir, R., Sajid, I., Rehman, Y., dan Hasnain, S. 2023. Fatty acid based antimicrobials from *Streptomyces* sp. SORS-24, an endophyte isolated from *Sonchus oleraceus*. *Letters in Applied Microbiology*. **76**(8).
- Thien, V. Y., Yong, W. T. L., dan Chin, G. J. W. L. 2016. Morphological and Molecular Studies of Undescribed *Kappaphycus* Species. *International Journal*

- of Marine Science*. **6**(33): 1–7.
- Tisera, W. L. dan Tanody, A. S. 2020. Analisis Kesesuaian Lahan Budidaya Rumput Laut Jenis *Kappaphycus alvarezii* (Doty) Doty di Perairan Kabupaten Sumba Timur. *Partner*. **25**(1): 1297.
- Turner, S. F., Cardinal, L. B., dan Burton, R. M. 2015. Research Design for Mixed Methods : A Triangulation-based Framework and Roadmap. *Organizational Research Methods* 1-25. 1–25.
- Uddin, T. M., Chakraborty, A. J., Khusro, A., Zidan, B. R. M., Mitra, S., Emran, T. Bin, Dhama, K., Ripon, M. K. H., Gajdács, M., Sahibzada, M. U. K., Hossain, M. J., dan Koirala, N. 2021. Antibiotic resistance in microbes: History, mechanisms, therapeutic strategies and future prospects. *Journal of Infection and Public Health*. **14**(12): 1750–1766.
- Ulmillah, A., Alghifari, A., dan Widiani, N. 2023. Uncovering the Antioxidant Power: Investigating the Skin and Flesh of Crystal Guava with Chloroform and Methanol Extractions and DPPH Assay. *Biology, Medicine, & Natural Product Chemistry*. **12**(1): 323–328.
- Warsito, M. F. 2018. Analisis Metabolomik : Metode Modern dalam Pengujian Kualitas Produk Herbal. *BioTrends*. **9**(2): 38–47.
- Wibowo, J. T., Kellermann, M. Y., Versluis, D., Putra, M. Y., Murniasih, T., Mohr, K. I., Wink, J., Engelmann, M., Praditya, D. F., Steinmann, E., dan Schupp, P. J. 2019. Biotechnological Potential of Bacteria Isolated from the Sea Cucumber *Holothuria leucospilota* and *Stichopus vastus* from Lampung, Indonesia. *Marine Drugs*. **17**(11): 1–25.
- Widyartini, D. S., Samiyarsih, S., Retno, T., Paಿಂದian, A., dan Kholilullah, I. 2021. Anatomical Structure of *Sargassum Polycystum* Thallus from Menganti and Karimunjawa Beaches, Central Java Indonesia. *Journal of Hunan University (Natural Sciences)*. **48**(10): 265–274.
- Yusuf, M., Indriati, S., Attahmid, N. F., Saleh, R., dan Rifai, A. 2022. Effect of Extraction Time on the Bioactive Compounds of Bottle Gourd (*Lagenaria Siceraria*) Using Gas Chromatography-Mass Spectrometry. *Bulletin of Pharmaceutical Sciences. Assiut University*. **45**(1): 139–151.
- Zamora-Quintero, A. Y., Torres-Beltrán, M., Guillén Matus, D. G., Oroz-Parra, I., dan Millán-Aguiñaga, N. 2022. Rare actinobacteria isolated from the hypersaline Ojo de Liebre Lagoon as a source of novel bioactive compounds with biotechnological potential. *Microbiology (United Kingdom)*. **168**(2): 1–16.
- Zhang, Q. W., Lin, L. G., dan Ye, W. C. 2018. Techniques for extraction and isolation of natural products: A comprehensive review. *Chinese Medicine (United Kingdom)*. **13**(20): 1–26.
- Zhu, Y. Z., Liu, J. W., Wang, X., Jeong, I. H., Ahn, Y. J., dan Zhang, C. J. 2018. Anti-BACE1 and antimicrobial activities of steroidal compounds isolated from marine *urechis unicinctus*. *Marine Drugs*. **16**(3).