

DAFTAR PUSTAKA

- Abd, H., Al-Najjar, A. dan Biotechnology, B.S., 2006. *Isolation and Identification of Agar Degrading Bacteria and Study of the Genetic Nature of This Characteristic.* Baghdad: Al-Nahrain University.
- Abidin, Z. dan Rudyanto, M., 2015. Isolation and Characterization of Agarose from *Gracilaria verrucosa* Seaweeds. *Jurnal Ilmu Kefarmasian Indonesia*, 13(1), hal.69–75.
- Abiola, C. dan Oyetayo, V.O., 2016. Isolation and Biochemical Characterization of Microorganisms Associated with the Fermentation of Kersting's Groundnut (*Macrotyloma geocarpum*). *Research Journal of Microbiology*, [daring] 11(2–3), hal.47–55. <https://doi.org/10.3923/jm.2016.47.55>.
- Andansari, S.E., Desty Rusdiana, S. dan Achmad, R., 2014. Konversi Rumput Laut Menjadi Monosakarida Secara Hidrotermal. *Jurnal Teknik Pomits*, 3(2), hal.126–129.
- Aoki, T., Araki, T. dan Kitamikado, M., 1990. Purification and Characterization of A Novel Beta-Agarase from *Vibrio* sp. AP-2. *European journal of biochemistry*, 187(2), hal.461–465. <https://doi.org/10.1111/j.1432-1033.1990.tb15326.x>.
- Araki, T., Hayakawa, M., Lu, Z., Karita, S. dan Morishita, T., 1998. Purification and Characterization of Agarases from A Marine Bacterium, *Vibrio* sp. PO-303. *Journal of marine biotechnology*, 6(4), hal.260–265.
- Ariyani, S.B., Asmawit dan Utomo, P.P., 2014. Optimasi Waktu Inkubasi Produksi Enzim Selulase Oleh *Aspergillus niger* Menggunakan Fermentasi Substrat Padat. *Biopropal Industri*, 5(2), hal.61–67.
- Astuti, R.I., Putera Saju, Y.B., Aribah, D. dan Wahyudi, A.T., 2022. Skrining dan Identifikasi Bakteri Laut Penghasil Enzim Selulase yang Berasosiasi dengan Spons. *Jurnal Ilmu Pertanian Indonesia*, 27(1), hal.70–75. <https://doi.org/10.18343/jipi.27.1.70>.
- Bannikova, G.E., Lopatin, S.A., Varlamov, V.P., Kuznetsov, B.B., Kozina, I. V, Miroshnichenko, M.L., Chernykh, N.A., Turova, T.P. dan Bonch-Osmolovskaia, E.A., 2008. The Thermophilic Bacteria Hydrolyzing Agar: Characterization of Thermostable Agarase. *Prikladnaia biokhimiia mikrobiologii*, 44(4), hal.404–409.
- Br Sembiring, S.C., Warouw, V., Wullur, S., Bara, R.A., Salaki, M. dan Ginting, E.L., 2019. Isolasi dan Penapisan Bakteri Penghasil Kitinase dan Protease yang Bersimbiosis dengan Spons *Dragmacidon* sp dari Teluk Manado, Sulawesi Utara. *Sembiring Jurnal Ilmiah Platax*, 9(1), hal.123–141.
- Brooke, D., Movahed, N. dan Bothner, B., 2015. Universal Buffers for Use in Biochemistry and Biophysical Experiments. *AIMS Biophysics*, 2(3), hal.336–342. <https://doi.org/10.3934/biophy.2015.3.336>.
- Chai, T., Chen, C., Rosen, A. dan Levin, R.E., 1968. Detection and Incidence of Specific Species of Spoilage Bacteria on Fish. *Applied microbiology*, 16(11), hal.1738–1741. <https://doi.org/10.1128/aem.16.11.1738-1741.1968>.
- Chen, H.-M., Zheng, L., Lin, W. dan Yan, X.-J., 2004. Product Monitoring and Quantitation of Oligosaccharides Composition in Agar Hydrolysates by

- Precolumn Labeling HPLC. *Talanta*, 64(3), hal.773–777. <https://doi.org/10.1016/j.talanta.2004.04.002>.
- Chen, X., Li, L., Chan, Z., Zeng, R., Lin, M. dan Lin, H., 2019. One-step Process for Environment-friendly Preparation of Agar Oligosaccharides from *Gracilaria lemaneiformis* by The Action of *Flammeovirga* sp. OC4. *Frontiers in Microbiology*, 10(724), hal.1–12. <https://doi.org/10.3389/fmicb.2019.00724>.
- Chi, W.J., Chang, Y.K. dan Hong, S.K., 2012. Agar Degradation by Microorganisms and Agar-Degrading Enzymes. *Applied Microbiology and Biotechnology*, 94(4), hal.917–930. <https://doi.org/10.1007/s00253-012-4023-2>.
- Darmawan, M., Santoso, J., Fransiska, D. dan Marsella, M., 2020. Pengaruh Praperlakuan Alkali dan Asam terhadap Karakteristik Mutu Bakto Agar dari Rumput Laut *Gelidium* sp. *Jurnal Pascapanen dan Bioteknologi Kelautan dan Perikanan*, 15(1), hal.33. <https://doi.org/10.15578/jpbkp.v15i1.645>.
- Day, D. dan Yaphe, W., 1975. Enzymatic Hydrolysis of Agar: Purification and Characterization of β Neoagarotetraose Hydrolase from *Pseudomonas atlantica*. *Canadian Journal of Microbiology*, 23(6), hal.672–679. <https://doi.org/10.1139/m77-100>.
- Fahlevi, M., Bakti, D. dan Sitepu, S., 2018. Karakterisasi Molekuler *Elaeidobius kamerunicus* Faust. (Coleoptera;Curculionidae) Asal Sumatera Utara Menggunakan Metode Amplified Fragment Length Polymorphism (Aflp). *Jurnal Agroekoteknologi*, 6(2l), hal.941–953.
- Ferguson, W.J., Braunschweiger, K.I., Braunschweiger, W.R., Smith, J.R., McCormick, J.J., Wasemann, C.C., Jarvis, N.P., Bell, D.H. dan Good, N.E., 1980. Hydrogen Ion Buffers for Biological Research. *Analytical Biochemistry*, 104(2), hal.300–310. [https://doi.org/10.1016/0003-2697\(80\)90079-2](https://doi.org/10.1016/0003-2697(80)90079-2).
- Fitria, F., Rahmani, N., Pujiyanto, S., Raharjo, B. dan Yopi, Y., 2017. Pemurnian Parsial dan Karakterisasi Enzim Xilanase dari Bakteri Laut *Bacillus safencis* strain LBF P20 Asal Pulau Pari Jakarta. *Agritech*, 37(1), hal.31. <https://doi.org/10.22146/agritech.17004>.
- Fu, X.T. dan Kim, S.M., 2010. Agarase: Review of Major Sources, Categories, Purification Method, Enzyme Characteristics and Applications. *Marine Drugs*, 8(1), hal.200–218. <https://doi.org/10.3390/md8010200>.
- Fu, X.T., Lin, H. dan Kim, S.M., 2008. Purification and Characterization of a novel β -agarase, AgaA34, from *Agarivorans albus* YKW-34. *Applied Microbiology and Biotechnology*, 78(2), hal.265–273. <https://doi.org/10.1007/s00253-007-1303-3>.
- Gu, X., Zhao, L., Tan, J., Zhang, Q., Fu, L. dan Li, J., 2022. Characterization of A Novel β -Agarase from Antarctic Macroalgae-associated Bacteria Metagenomic Library and Anti-Inflammatory Activity of The Enzymatic Hydrolysates. *Frontiers in Microbiology*, hal.1–12. <https://doi.org/10.3389/fmicb.2022.972272>.
- Gupta, V., Trivedi, N., Kumar, M., Reddy, C.R.K. dan Jha, B., 2013. Purification and Characterization of exo- β -Agarase from an Endophytic Marine Bacterium and Its Catalytic Potential in Bioconversion of Red Algal Cell Wall Polysaccharides into Galactans. *Biomass and Bioenergy*, [daring] 49, hal.290–298. <https://doi.org/10.1016/j.biombioe.2012.12.027>.
- Hadiyanti, N., Supriyadi, S. dan Pardono, P., 2018. Keragaman Beberapa Tumbuhan

- Ciplukan (*Physalis* spp.) di Lereng Gunung Kelud, Jawa Timur. *Berita Biologi*, 17(2). <https://doi.org/10.14203/beritabiologi.v17i2.3238>.
- Hafizah, N.F., Teh, A.H. dan Furusawa, G., 2019. Biochemical Characterization of Thermostable and Detergent-Tolerant β -Agarase, PdAgaC, from *Persicobacter* sp. CCB-QB2. *Applied Biochemistry and Biotechnology*, 187(3), hal.770–781. <https://doi.org/10.1007/s12010-018-2849-5>.
- Handayani, W., Brigiyantri, L., Sudarko dan Ratnadewi, A., 2023. Optimum pH Buffer of Phosphate and Carbonate on The Crude Extraction of Uricase Enzyme from Goat Liver. *Indonesian Chimica Letters*, 2(1), hal.6–9. <https://doi.org/10.19184/icl.v2i1.365>.
- Insan, A.I. dan Widyartini, D.S., 2012. Increasing The Quality of “Agar” *Gracilaria gigas* Seaweed with The Addition of Carrageenan Biota Through The “Smog Steam” Model Heating. *Jurnal Litbang Provinsi Jawa Tengah*, 10(2), hal.157–167.
- Isnaini, R.F., 2012. Komposisi Kimia dan Profil Polisakarida Rumput Laut Hijau Santi. *Jurnal Akuatika*, 66, hal.37–39.
- Jaeger, P.A., McElfresh, C., Wong, L.R. dan Ideker, T., 2015. Beyond Agar: Gel Substrates with Improved Optical Clarity and Drug Efficiency and Reduced Autofluorescence For Microbial Growth Experiments. *Applied and Environmental Microbiology*, 81(16), hal.5639–5649. <https://doi.org/10.1128/AEM.01327-15>.
- Jahromi, S.T. dan Barzkar, N., 2018. Future Direction in Marine Bacterial Agarases for Industrial Applications. *Applied Microbiology and Biotechnology*, 102(16), hal.6847–6863. <https://doi.org/10.1007/s00253-018-9156-5>.
- Jam, M., Flament, D., Allouch, J., Potin, P., Thion, L., Kloareg, B., Czjzek, M., Helbert, W., Michel, G. dan Barbeyron, T., 2005. The endo- β -agarases AgaA and AgaB from The Marine Bacterium *Zobellia galactanivorans*: Two Parologue Enzymes with Different Molecular Organizations and Catalytic Behaviours. *Biochemical Journal*, 385(3), hal.703–713. <https://doi.org/10.1042/BJ20041044>.
- Jeon, E.J., Choi, J.W., Cho, M.S. dan Jeong, K.J., 2021. Enhanced Production of Neoagarobiose from Agar with *Corynebacterium glutamicum* Producing Exo-Type and Endo-Type β -Agarases. *Microbial Biotechnology*, 14(5), hal.2164–2175. <https://doi.org/10.1111/1751-7915.13899>.
- Kang, J.Y., Song, H.Y. dan Kim, J.M., 2023. Agarolytic Pathway in the Newly Isolated *Aquimarinina* sp. Bacterial Strain ERC-38 and Characterization of a Putative β -agarase. *Marine Biotechnology*, 25(2), hal.314–327. <https://doi.org/10.1007/s10126-023-10206-7>.
- Kawaroe, M., Pratiwi, I. dan Sunudin, A., 2017. Isolation and Characterization of Marine Bacteria from Macroalgae *Gracilaria salicornia* and *Gelidium latifolium* on Agarolitic Activity for Bioethanol Production. *IOP Conference Series: Earth and Environmental Science*, 65(1). <https://doi.org/10.1088/1755-1315/65/1/012025>.
- Kusumaningrum, A., Wayan Gunam, I.B. dan Mahaputra Wijaya, I.M., 2019. Optimasi Suhu dan pH Terhadap Aktivitas Enzim Endoglukonase Menggunakan Response Surface Methodology (RSM). *Jurnal Rekayasa Dan Manajemen Agroindustri*, 7(2), hal.243. <https://doi.org/10.24843/jrma.2019.v07.i02.p08>.

- Kwon, S.W., Lee, S.Y., Kim, B.Y., Weon, H.Y., Kim, J.B., Go, S.J. dan Lee, G.B., 2007. *Bacillus niabensis* sp. nov., Isolated from Cotton-waste Composts for Mushroom Cultivation. *International Journal of Systematic and Evolutionary Microbiology*, 57(8), hal.1909–1913. <https://doi.org/10.1099/ijjs.0.64178-0>.
- Lakshmikanth, M., Manohar, S. dan Lalitha, J., 2009. Purification and Characterization of β -Agarase from Agar-Liquefying Soil Bacterium, *Acinetobacter* sp., AG LSL-1. *Process Biochemistry*, 44(9), hal.999–1003. <https://doi.org/https://doi.org/10.1016/j.procbio.2009.04.025>.
- Lantz, H., Dominguez Del Angel, V., Hjerde, E., Sterck, L., Capella-Gutierrez, S., Notredame, C., Vinnere Pettersson, O., Amselem, J., Bouri, L., Bocs, S., Klopp, C., Gibrat, J.F., Vlasova, A., Leskosek, B.L., Soler, L. dan Binzer-Panchal, M., 2018. Ten Steps to Get Started in Genome Assembly and Annotation. *F1000Research*, 7. <https://doi.org/10.12688/f1000research.13598.1>.
- Leon, O., Quintana, L., Peruzzo, G. dan Slebe, J.C., 1992. Purification and Properties of an Extracellular Agarase from *Alteromonas* sp. Strain C-1. *Applied and Environmental Microbiology*, 58(12), hal.4060–4063. <https://doi.org/10.1128/aem.58.12.4060-4063.1992>.
- Li, J., Sha, Y., Seswita-Zilda, D., Hu, Q. dan He, P., 2014. Purification and Characterization of Thermostable Agarase from *Bacillus* sp. BI-3, A Thermophilic Bacterium Isolated from Hot Spring. *Journal of Microbiology and Biotechnology*, 24(1), hal.19–25. <https://doi.org/10.4014/jmb.1308.08055>.
- Liao, L., Xu, X.-W., Jiang, X.-W., Cao, Y., Yi, N., Huo, Y.-Y., Wu, Y.-H., Zhu, X.-F., Zhang, X.-Q. dan Wu, M., 2011. Cloning, Expression, and Characterization of A New Beta-Agarase from *Vibrio* sp. strain CN41. *Applied and Environmental Microbiology*, 77(19), hal.7077–7079. <https://doi.org/10.1128/AEM.05364-11>.
- Long, M., Yu, Z. dan Xu, X., 2010. A novel β -agarase with High pH Stability from Marine *Agarivorans* sp. LQ48. *Marine Biotechnology*, 12(1), hal.62–69. <https://doi.org/10.1007/s10126-009-9200-7>.
- Lu, X., Chu, Y., Wu, Q., Gu, Y., Han, F. dan Yu, W., 2009. Cloning, Expression and Characterization of a New Agarase-encoding Gene from Marine *Pseudoalteromonas* sp. *Biotechnology Letters*, 31(10), hal.1565–1570. <https://doi.org/10.1007/s10529-009-0042-1>.
- Ma, C., Lu, X., Shi, C., Li, J., Gu, Y., Ma, Y., Chu, Y., Han, F., Gong, Q. dan Yu, W., 2007. Molecular Cloning and Characterization of A Novel β -Agarase, AgaB, from Aarine *Pseudoalteromonas* sp. CY24. *Journal of Biological Chemistry*, 282(6), hal.3747–3754. <https://doi.org/10.1074/jbc.M607888200>.
- Macedo, G.A. dan Pio, T.F., 2005. A Rapid Screening Method for Cutinase Producing Microorganisms. *Brazilian Journal of Microbiology*, 36(4), hal.388–394. <https://doi.org/10.1590/S1517-83822005000400016>.
- Majidah, R., Lubis, S.. dan Harahap, D., 2023. Potensi Enzim Selulase dari Bakteri Termofilik di Kawasan Wisata Ie Suum Kabupaten Aceh Besar. *Journal of Biological Sciences and Applied Biology*, 3(1), hal.25–34. <https://doi.org/10.22373/kenanga.v..i>.
- Mardiana, N.A., Murniasih, T., Rukmi, W.D. dan Kusnadi, J., 2020. Potensi Bakteri Laut Sebagai Sumber Antibiotik Baru Penghambat *Saccharomyces Aureus*. *Jurnal Teknologi Pertanian*, 21(1), hal.49–56.

- <https://doi.org/10.21776/ub.jtp.2020.021.01.6>.
- Marzuki, I., Noor, A., Nafie, N. La dan Djide, M.N., 2014. Isolasi dan Identifikasi Bakteri Shimbion Spons Penghasil Enzim Amilase Asal Pantai Melawai Balikpapan. *dr. Aloei Saboe*, 1(2), hal.11–18. <https://doi.org/10.17605/OSF.IO/8WTRV>.
- Mehrshad, M., Amoozegar, M.A., Didari, M., Bagheri, M., Shahzadeh Fazeli, S.A., Schumann, P., Spröer, C., Sánchez-Porro, C. dan Ventosa, A., 2013. *Bacillus halosaccharovorans* sp. nov., A Moderately Halophilic Bacterium from a Hypersaline Lake. *International Journal of Systematic and Evolutionary Microbiology*, 63(PART8), hal.2776–2781. <https://doi.org/10.1099/ijs.0.046961-0>.
- Miller, G.L., 1959. Use of Dinitrosalicylic Acid Reagent for Determination of Reducing Sugar. *Analytical Chemistry*, 31(3), hal.426–428. <https://doi.org/10.1021/ac60147a030>.
- Murdinah dan Sinurat, E., 2011. Perbaikan Sifat Fungsional Agar-Agar Dengan Penambahan Berbagai Jenis Gum. *Jurnal Pascapanen dan Bioteknologi Kelautan dan Perikanan*, 6(1), hal.91–99.
- Nazarudin, 2017. Aktivitas dan SDS-PAGE xilanase. *Jurnal Keguruan dan Ilmu Pendidikan*, 1(2)(92), hal.78–84.
- Noer, S., 2021. Identifikasi Bakteri secara Molekular Menggunakan 16S rRNA. *EduBiologia: Biological Science and Education Journal*, 1(1), hal.1. <https://doi.org/10.30998/edubiologia.v1i1.8596>.
- Ohta, Y., Hatada, Y., Miyazaki, M., Nogi, Y., Ito, S. dan Horikoshi, K., 2005. Purification and Characterization of a Novel Alpha-Agarase from A *Thalassomonas* sp. *Current microbiology*, 50(4), hal.212–216. <https://doi.org/10.1007/s00284-004-4435-z>.
- Ohta, Y., Nogi, Y., Miyazaki, M., Li, Z., Hatada, Y., Ito, S. dan Horikoshi, K., 2004. Enzymatic Properties and Nucleotide and Amino Acid Sequences of a Thermostable β -Agarase from The Novel Marine Isolate, JAMB-A94. *Bioscience, Biotechnology and Biochemistry*, 68(5), hal.1073–1081. <https://doi.org/10.1271/bbb.68.1073>.
- Pambudi, A., Bachtiara, E., MS, Y. dan Prasetiya, F., 2021. Identifikasi Komunitas Diatom Yang Berasosiasi Pada Makroalga *Padina* sp. di Perairan Pulau Pramuka dan Semak Daun Melalui Pendekatan Metagomik. *Journal of Fisheries and Marine Research*, 5(1), hal.70–77.
- Pananjung, Asri, N., Nuryadi, M.. dan Ulfa, E., 2011. Identifikasi 16S rRNA dan Uji Zimografi Bakteri Asal Pantai Papuma Penghasil Enzim Fibrinolitik sebagai Anti Atherothrombosis.
- Pandya, Y., Bakshi, M., Sharma, A., Pandya, Y.H. dan Pandya, H., 2022. Agar-Agar Extraction, Structural Properties and Applications: A Review. *The Pharma Innovation Journal*, 11(6), hal.1151–1157.
- Panjaitan, F.J., Bachtiar, T., Arsyad, I., Lele, O.K. dan Indriyani, W., 2020. Karakterisasi Mikroskopis dan Uji Biokimia Bakteri Pelarut Fosfat (BPF) dari Rhizosfer Tanaman Jagung Fase Vegetatif. *Jurnal Ilmu Pertanian dan Lingkungan*, 1(1), hal.9–17.

- Patty, S.I., Huwae, R. dan Kainama, F., 2020. Seasonal Variations of Temperature, Salinity and Turbidity of the Lembeh Strait's waters, North Sulawesi. *Jurnal Ilmiah PLATAK*, 8(1), hal.110. <https://doi.org/10.35800/jip.8.1.2020.28293>.
- Praiboon, J., Chantorn, S., Krangkratok, W., Choosawan, P. dan La-ongkham, O., 2023. Evaluating the Prebiotic Properties of Agar Oligosaccharides Obtained from the Red Alga *Gracilaria fisheri* via Enzymatic Hydrolysis. *Plants*, 12(23). <https://doi.org/10.3390/plants12233958>.
- Prescott, H., 2002. *Laboratory Exercises in Microbiology*. 5 ed. *Laboratory exercises in microbiology*. The McGraw Hill Companies.
- Purwaningsih, D. dan Wulandari, D., 2021. Uji Aktivitas Antibakteri Hasil Fermentasi Bakteri Endofit Umbi Talas (*Colocasia esculenta* L) terhadap Bakteri *Pseudomonas aeruginosa*. *Jurnal Sains dan Kesehatan*, 3(5), hal.750–759. <https://doi.org/10.25026/jsk.v3i5.622>.
- Ramos, K.R.M., Valdehuesa, K.N.G., Bañares, A.B., Nisola, G.M., Lee, W.K. dan Chung, W.J., 2020. Overexpression and Characterization of a Novel GH16 β -agarase (Aga1) from *Cellulophaga omnivescoria* W5C. *Biotechnology Letters*, 42(11), hal.2231–2238. <https://doi.org/10.1007/s10529-020-02933-x>.
- Rangian, L., Ginting, E.L., Wullur, S., Kaligis, E., Tilaar, S. dan Tumbol, R., 2018. Amplifikasi Isolat Bakteri Sf1 Simbion Spons. *Jurnal Ilmiah Platax*, 6(2), hal.77–82.
- Rhee, Y.J., Han, C.R., Kim, W.C., Jun, D.Y., Rhee, I.K. dan Kim, Y.H., 2010. Isolation of A Novel Freshwater Agarolytic *Cellvibrio* sp. KY-YJ-3 and Characterization of Its Extracellular β -agarase. *Journal of Microbiology and Biotechnology*, 20(10), hal.1378–1385. <https://doi.org/10.4014/jmb.1007.07010>.
- Rosmania, Efrinalia, W. dan Rahmi, A., 2022. Validasi Spread Plate Method (sebar) untuk Isolasi dan Pemurnian Bakteri Penghasil Senyawa Antibiotik dari Tanah di Kawasan Jurusan Biologi. *Teknologi dan manajemen pengelolaan laboratorim(temapela)*, 5(1), hal.10.
- Rustigian dan Stuart, 2010. Urea Broth Medium. In: *Merck Microbiology Manual*, 12 ed. hal.1.
- Salosso, Y., 2019. Kandungan Agar dan Senyawa Aktif Makroalga Merah yang Ditemukan di Perairan Arubara Kabupaten Ende. *Prosiding Simposium Nasional Kelautan dan Perikanan VI*, 21(6), hal.351–358.
- Santiago, M. dan Strobel, S., 2013. *Thin layer chromatography*. 1 ed. [daring] *Methods in Enzymology*, Elsevier Inc. <https://doi.org/10.1016/B978-0-12-420067-8.00024-6>.
- Senatang, P., 2023. Uji Skrining Fitokimia Ekstrak Supernatan Dari Bakteri Endofit Kulit pisang. *Jurnal Biologi Makassar*, 8, hal.44–50.
- Seprianto dan Wahyuni, F.D., 2018. Analisis Bioinformatika Gen Potensial Penyandi Halichondrin B Dari Spons Laut Sebagai Kandidat Anti. *Indonesian Journal of Biotechnology and Biodiversity*, 2(2), hal.57–66.
- Setiadarma, W., Mayun Permana, D.G. dan Ayu Nocianitri, K., 2020. Optimasi Waktu Inkubasi *Lactobacillus rhamnosus* SKG 34 Dalam Produksi Enzim Penggumpal Susu. *Jurnal Ilmu dan Teknologi Pangan (ITEPA)*, 9(2), hal.108. <https://doi.org/10.24843/itepa.2020.v09.i02.p01>.

- Silitonga, L.R., Nursyirwani, N. dan Effendi, I., 2020. Isolation, Identification and Sensitivity of Amilolitic Bacteria From Mangrove Ecosystem Sediment in Purnama Marine Station Dumai on the Pathogenic Bacteria. *Asian Journal of Aquatic Sciences*, 2(3), hal.257–266. <https://doi.org/10.31258/ajoas.2.3.257-266>.
- Sinclair, C.G., 1939. *Bergey's Manual of Determinative Bacteriology*. 7 ed. *The American Journal of Tropical Medicine and Hygiene*, Waverly Press Inc. <https://doi.org/10.4269/ajtmh.1939.s1-19.605>.
- Sood, S., Singhal, R., Bhat, S. dan Kumar, A., 2011. Inoculum Preparation. In: M. Moo-Young, ed. *Comprehensive Biotechnology (Third Edition)*, Third Edit. Oxford: Pergamon. hal.230–243.
- Stanier, R.Y., 1941. Studies on Marine Agar-Digesting Bacteria. *Journal of Bacteriology*, 42(4), hal.527–559. <https://doi.org/10.1128/jb.42.4.527-559.1941>.
- Sugano, Y., Matsumoto, T., Kodama, H. dan Noma, M., 1993a. Cloning and Sequencing of agaA, A Unique Agarase 0107 Gene from A Marine Bacterium, *Vibrio* sp. strain JT0107. *Applied and Environmental Microbiology*, 59(11), hal.3750–3756. <https://doi.org/10.1128/aem.59.11.3750-3756.1993>.
- Sugano, Y., Terada, I., Arita, M., Noma, M. dan Matsumoto, T., 1993b. Purification and Characterization of A New Agarase from A Marine Bacterium, *Vibrio* sp. strain JT0107. *Applied and Environmental Microbiology*, 59(5), hal.1549–1554. <https://doi.org/10.1128/aem.59.5.1549-1554.1993>.
- Suranto, P.J., Sulistyawati, W. dan Ginting, S., 2021. Pengolahan Budi Daya Rumput Laut Menjadi Agar-Agar Kertas Untuk Mitra Tani Desa Lontar. *Prosiding SENAPENMAS*, hal.371. <https://doi.org/10.24912/psenapenmas.v0i0.15011>.
- Swartz, M.N. dan Gordon, N., 1959. Agarase from An Agar-Digesting Bacterium. *Journal of Bacteriology*, 77(4), hal.403–409. <https://doi.org/10.1128/jb.77.4.403-409.1959>.
- Utami, S.D., Utaminingsih, S. dan Sophian, A., 2023. Analisis DNA Hasil Isolasi Pada Produk Pangan Olahan Ikan (Surimi Ikan) Menggunakan Nano Photometer. *JRST (Jurnal Riset Sains dan Teknologi)*.
- Vera, J., Alvarez, R., Murano, E., Slebe, J.C. dan Leon, O., 1998. Identification of a Marine Agarolytic *Pseudoalteromonas* Isolate and Characterization of Its Extracellular Agarase. *Applied and environmental microbiology*, 64(11), hal.4378–4383. <https://doi.org/10.1128/AEM.64.11.4378-4383.1998>.
- Wahyuningsih, N. dan Zulaika, E., 2019. Perbandingan Pertumbuhan Bakteri Selulolitik pada Media Nutrient Broth dan Carboxy Methyl Cellulose. *Jurnal Sains dan Seni ITS*, 7(2), hal.7–9. <https://doi.org/10.12962/j23373520.v7i2.36283>.
- Wang, J., Mou, H., Jiang, X. dan Guan, H., 2006. Characterization of A Novel Betaagarase from Marine *Alteromonas* sp. SY37-12 and Its Degrading Products. *Applied Microbiology and Biotechnology*, 71(6), hal.833–839. <https://doi.org/10.1007/s00253-005-0207-3>.
- Wang, W., Wang, J., Yan, R., Zeng, R., Zuo, Y., Wang, D. dan Qu, W., 2021. Expression and Characterization of A Novel Cold-Adapted and Stable β -Agarase Gene agaW1540 from The Deep-Sea Bacterium *Shewanella* sp. WPAGA9. *Marine Drugs*, 19(8). <https://doi.org/10.3390/md19080431>.

- Wantania, L.L., Ginting, E.L. dan Wullur, S., 2016. Isolasi Bakteri Simbion Dengan Spons Dari Perairan Tongkeina, Sulawesi Utara. *Jurnal LPPM Bidang Sains dan Teknologi*, 3(1), hal.57–65.
- Wicaksono, A.N., Firdaus, M. dan Setijawati, D., 2019. Pengaruh Lama Waktu Perendaman yang Berbeda Terhadap Kualitas Agar-agar *Gracilaria verrucosa*. *Techno-Fish*, 3(1), hal.46–59. <https://doi.org/10.25139/tf.v3i1.1763>.
- Woo, W.X., Tan, J.P., Wu, T.Y., Yeap, S.K., Luthfi, A.A.I., Manaf, S.F.A., Jamali, N.S. dan Hui, Y.W., 2024. No Title. *Reviews in Chemical Engineering*, [daring] 40(2), hal.279–303. <https://doi.org/doi:10.1515/revce-2022-0019>.
- Wulandari, D., 2019. Identifikasi Dan Karakterisasi Bakteri Amilolitik Pada Umbi *Colocasia esculenta* L. Secara Morfologi, Biokimia, dan Molekuler. *Jurnal Bioteknologi dan Biosains Indonesia*, 6(2), hal.247–258.
- Yun, E.J., Yu, S. dan Kim, K.H., 2017. Current Knowledge on Agarolytic Enzymes and The Industrial Potential of Agar-Derived Sugars. *Applied Microbiology and Biotechnology*, 101(14), hal.5581–5589. <https://doi.org/10.1007/s00253-017-8383-5>.
- Zhang, W.W. dan Sun, L., 2007. Cloning, Characterization, and Molecular Application of A Beta-agarase Gene from *Vibrio* sp. strain V134. *Applied and Environmental Microbiology*, 73(9), hal.2825–2831. <https://doi.org/10.1128/AEM.02872-06>.
- Zhu, Y., Zhao, R., Xiao, A., Li, L., Jiang, Z., Chen, F. dan Ni, H., 2016. Characterization of An Alkaline β -agarase from *Stenotrophomonas* sp. NTa and The Enzymatic Hydrolysates. *International Journal of Biological Macromolecules*, [daring] 86, hal.525–534. <https://doi.org/10.1016/j.ijbiomac.2016.01.106>.