

DAFTAR PUSTAKA

- AlGburri, A., A. Volski, C. Cugini, E. M. Walsh, V.A. Chistyakov, M.S. Mazanko, A.B. Bren, L. M. T. Dicks, & M. L. Chikindas. 2016. Safety properties and probiotic potential of *Bacillus subtilis* KATMIRA1933 and *Bacillus amyloliquefaciens* B-1895. *Advances in Microbiology*. 6: 432–452. doi: 10.4236/aim.2016.66043.
- Andriani, Y., R. Fitri, E. Rochima, & S. D. Fakhruddin. 2017. Characterization of *Bacillus subtilis* and *B. licheniformis* potentials as probiotic bacteria in Vanamei shrimp feed (*Litopenaeus vannamei* Boone, 1931). *Nusantara Bioscience*. 9(2): 188–193. doi: 10.13057/nusbiosci/n090214.
- Angell, A. R., I. Pirozzi, R. de Nys, & N. A. Paul. 2012. Feeding preferences and the nutritional value of tropical algae for the abalone *Haliotis asinina*. *PLoS ONE*. 7(6): e38857. doi: 10.1371/journal.pone.0038857.
- Anggraeni, S. R. & M. B. Ansorge-Schumacher. 2021. Characterization and modeling of thermostable gh50 agarases from *Microbulbifer elongatus* PORT2. *Marine Biotechnology*. 23:809–820. doi: 10.1007/s10126-021-10065-0.
- Aoki, T., T. Araki, & M. Kitamikado. 1990. Purification and characterization of a novel β -agarase from *Vibrio* sp. AP-2. *Eur. J. Biochem*. 187: 461–465.
- Araki, T., M. Hayakawa, L. Zhang, S. Karita, & T. Morishita. 1998. Purification and characterization of agarases from a marine bacterium, *Vibrio* sp. PO-303. *J. Mar. Biotechnol*. 6: 260–265.
- Armisen, R. & Galatas, F. 2009. Agar. in *Handbook of Hydrocolloids*. doi: 10.1533/9781845695873.82.
- Assan, D., F. K. Kuebutornye, V. Hlordzi, H. Chen, J. Mraz, U. F. Mustapha, & E. D. Abarike. 2022. Effects of probiotics on digestive enzymes of fish (finfish and shellfish); status and prospects: a mini review. *Comparative Biochemistry and Physiology*. 257B: 110653. doi: 10.1016/j.cbpb.2021.110653.
- Borriss, R. 2020. *Bacillus*. Chapter 7. Beneficial Microbes in Agro-Ecology. 107–132. doi: 10.1016/B978-0-12-823414-3.00007-1.
- Chi, W., Y. Chang, & S. Hong. 2012. Agar degradation by microorganisms and agar-degrading enzymes. *Appl. Microbiol. Biotechnol*. 94: 917–930. doi: 10.1007/s00253-012-4023-2.
- Chi, W., J. Lim, D. Y. Park, M. Kim, C. Kim, Y. Chang, & S. Hong. 2013. Isolation and characterization of a novel agar degrading bacterium, *Alteromonas macleodii* subsp. GNUM08120 from red macroalgae. *Korean J. Microbiol. Biotechnol*. 41(1): 8–16. doi: 10.4014/kjmb.1208.08001.
- Chiura, H. X. & K. Kita-Tsukamoto. 2000. Purification and characterisation of a novel agarase secreted by a marine bacterium *Pseudoalteromonas* sp. strain CKT1. *Microbes and Environment*. 15(1): 11–22.

- Chung, K. M., S. S. Soo, S. S. Teo, & S. M. Phang. 2011. Analysis of native and alkali-treated agar from species *Gracilaria* (Gracilariaceae, Rhodophyta) collected from Morib Malaysia. *Malaysian Journal of Science*. 30(2): 83–91.
- Clinical and Laboratory Standards Institute. 2015. Performance Standards for Antimicrobial Disk Susceptibility Tests; Approved Standards, 12th edition. CLSI Document M02-A12. 35(1). Clinical and Laboratory Standards Institute, Pennsylvania.
- Cruz, P. M., A. L. Ibanez, O. A. Hermosillo, & H. C. R. Saad. 2012. Use of probiotics in aquaculture. Review Article. *ISRN Microbiology*. 916845: 1–13. doi: 10.5402/2012/916845.
- Damayanti, D., D. S. Yusup, & I. Rusdi. 2018. Pengaruh pemberian pakan beberapa alga makro (*Ulva* sp., *Gracilaria* sp., *Halymenia* sp.) terhadap pertumbuhan abalon *Haliotis squamata*. *Jurnal Metamorfosa*. 5(2): 189–197.
- Dhargalkar, V. K., & X. N. Verlecar. 2004. Seaweeds - a field manual. National Institute of Oceanography. India.
- Di, G., J. Ni, Z. Zhang, W. You, B. Wang, & C. Ke. 2012. Types and distribution of mucous cells of the abalone *Haliotis diversicolor*. *African Journal of Biotechnology*. 11(37): 9127–9140. doi: 10.5897/AJB10.2066.
- Duckworth, M., & J. R. Turvey. 1969. An extracellular agarase from a *Cytophaga* species. *Biochem. J*. 113: 139–142.
- Earl, A. M., R. Losick, & R. Kolter. 2008. Ecology and genomics of *Bacillus subtilis*. *Trends Microbiol*. 16(6): 269. doi: 10.1016/j.tim.2008.03.004.
- Edgar, R. C. 2018. Updating the 97% identity threshold for 16S ribosomal RNA OTUs. *Bioinformatics*. 34(14): 2371–2375. doi: 10.1093/bioinformatics/bty113.
- Ehtisham, M., F. Wani, I. Wani, P. Kaur, & S. Nissar. 2016. Polymerase chain reaction (PCR): Back to basics. *Indian Journal of Contemporary Dentistry*. 2(4): 30–35. doi: 10.5958/2320-5962.2016.00030.9.
- El-Sadoony, M. T., M. Alagawany, A. K. Patra, I. Kar, R. Tiwari, M. A. O. Dawood, K. Dhama, & H. M. R. Abdel-Latif. 2021. The functionality of probiotics in aquaculture: An overview. *Fish and Shellfish Immunology*. 117: 36–52. doi: 10.1016/j.fsi.2021.07.007.
- Elshagabee F. M. F., N. Rokana, R. D. Gulhane, C. Sharma, & H. Panwar. 2017. *Bacillus* as potential probiotics: Status, concerns, and future perspectives. *Front. Microbiol*. 8: 1490. doi: 10.3389/fmicb.2017.01490.
- Erasmus, J. H., P. A. Cook, & V. E. Coyne. 1997. The role of bacteria in the digestion of seaweed by the abalone *Haliotis midae*. *Aquaculture*. 155: 377–386.

- Faturrahman, A. Meryandini, M. Z. Junior, & I. Rusmana. 2011. Isolation and identification of an agar-liquefying marine bacterium and some properties of its extracellular agarases. *Biodiversitas*. 12(4): 192–197. doi: 10.13057/biodiv/d120402
- Faturrahman. 2013a. Seleksi Parsial Probiotik untuk Pertumbuhan Abalon: Isolasi Selektif, Resistensi Antibiotik dan Patogensitas. *Jurnal Ilmiah Pendidikan Biologi, Biologi Edukasi*. 5(1): 1–7.
- Faturrahman. 2013b. Perbaikan Kecernaan *Gracilaria* sp. oleh Abalon (*Haliotis asinina*) Melalui Pemberian Probiotik Pendegradasi Agar-Agar. *Jurnal Penelitian Universitas Mataram*. 17(2): 136–143.
- Faturrahman, A. Meryandini, M. Z. Junior, & I. Rusmana. 2015. The role of agarolytic bacteria in enhancing physiological function for digestive system of abalone (*Haliotis asinina*). *Journal of Applied Environmental and Biological Sciences*. 5(5): 49–56.
- Fu, X. T. & S. M. Kim. 2010. Agarase: Review of major sources, categories, purification method, enzyme characteristics and applications. *Marine Drugs*. 8: 200–218.
- Fu, X. T., H. Lin, & S. M. Kim. 2008. Purification and characterization of a novel β -agarase, AgaA34, from *Agarivorans albus* YKW-34. *Appl. Microbiol. Biotechnol.* 78: 265–273. doi: 10.1007/s00253-007-1303-3.
- Ganesan, M., C. R. K. Reddy, & B. Jha. Impact of cultivation on growth rate and agar content of *Gelidiella acerosa* (Gelidiales, Rhodophyta). *Algal Research*. 12: 398–404. doi: 10.1016/j.algal.2015.10.001.
- Guerrero, P., A. Etxabide, I. Leceta, M. Penalba, & K. De la Caba. 2014. Extraction of agar from *Gelidium sesquipedale* (Rhodopyta) and surface characterization of agar based films. *Carbohydrate Polymer*. 99: 491–498. doi: 10.1016/j.carbpol.2013.08.049.
- Gupta, N. 2019. DNA Extraction and Polymerase Chain Reaction. *Journal of Cytology*. 36: 116–117.
- Hamill, S., S. D. Neill, & R. H. Madden. 2008. Use of hugh and leifson's medium as a simple screening test to aid in the differentiation of *Arcobacter* spp. from background flora during their isolation from foodstuffs. *Letters in Applied Microbiology*. 47: 187–191.
- Han, W., J. Gu, Q. Yan, J. Li, Z. Wu, Q. Gu, & Y. Li. 2012. A polysaccharide-degrading marine bacterium *Flammeovirga* sp. MY04 and its extracellular agarase system. *J. Ocean Univ. China (Oceanic and Coastal Sea Research)*. 11(3): 375–382. doi: 10.1007/s11802-012-1929-3.
- Hurd, C. L., P. J. Harrison, & K. Bischof. 2014. Seaweed ecology and physiology. Cambridge University Press.

- Humaidi, S. Rejeki, & R. W. Ariyati. 2014. Pembesaran siput abalon (*Haliotis squamata*) dalam karamba tancap di area pasang surut dengan padat tebar yang berbeda. *Journal of Aquaculture Management and Technology*. 3(4): 214–221.
- Istiqomah, I., A. Isnansetyo, I. N. Atitus., & A. F. Rohman. 2019. Isolasi bakteri selulolitik *Staphylococcus* sp. JC20 dari saluran pencernaan gurita (*Octopus* sp.) untuk kandidat probiotik ikan. *Jurnal Perikanan Universitas Gadjah Mada*. 21(2): 93–98.
- Janda, J. M. & S. L. Abbott. 2007. 16S rRNA gene sequencing for bacterial identification in the diagnostic laboratory- pluses, perils, and pitfalls. *J. Clin. Microbiol.* 45(9): 2761–2764. doi: 10.1128 JCM.01228-07.
- Johnson, J. S., D. J. Spakowicz, B. Y. Hong, L. M. Petersen, P. Demkowicz, L. Chen, S. R. Leopold, B. M. Hanson, H. O. Agresta, M. Gerstein, E. Sodergren, & G. M. Weinstock. 2019. Evaluation of 16S rRNA gene sequencing for species and strain-level microbiome analysis. *Nature Communications*. 10: 5029. doi: 10.1038/s41467-019-13036-1.
- Kandasamy, K. P., R. K. Subramanian, R. Srinivasan, S. Ragunath, G. Balaji, M. Gracy, M., & K. Latha. 2020. *Shewanella algae* and *Microbulbifer elongatus* from marine macro-algae isolation and characterization of agar-hydrolysing bacteria. *Access Microbiology*. 2: 1–6. doi: 10.1099/acmi.0.000170.
- Kawaroe, M., I. Pratiwi, & A. Sunudin. 2017. Isolation and characterization of marine bacteria from macroalgae *Gracilaria salicornia* and *Gelidium latifolium* on agarolytic activity for bioethanol production. *IOP Conf. Series: Earth and Environmental Science*. 65: 012025. doi :10.1088/1755-1315/65/1/012025.
- Kim, B. J., H. J. Kim, S. D. Ha, S. H. Hwang, D. S. Byun, T. H. Lee, & J. Y. Kong. 1999. Purification and characterization of a-agarase from marine bacterium *Bacillus cereus* ASK202. *Biotechnology Letters*. 21: 1011–1105.
- Kim, D. K., Y. R. Jang, K. H. Kim, M. N. Lee, A. Kim, E. Jo, T. Byun, E.T. Jeong, J. Kwon, B. Kim, & E. Lee. 2011. Isolation and culture properties of a thermophilic agarase-producing strain, *Microbulbifer* sp. SD-1. *Fisheries and Aquatic Sciences*. 14(3): 186–1911. doi: 10.5657/FAS.2011.0186.
- Kirimura, K., N. Masuda, Y. Iwasaki, H. Nakagawa, R. Kobayashi, & S. Usami. 1999. Purification and characterization of a novel β -agarase from an alkalophilic bacterium, *Alteromonas* sp. E-1. *J. Biosci. Bioeng.* 87: 436–441.
- KKP. 2018. Kelautan dan Perikanan Dalam Angka Tahun 2018. Pusat Data Statistik dan Informasi. Kementerian Kelautan dan Perikanan. Indonesia.
- Latorre, J. D., X. Hernandez-Velasco, R. E. Wolfenden, J. L. Vicente, A. D. Woldfenden, A. Menconi, L. R. Bielke, B. M. Hargis, & G. Tellez. 2016. Evaluation and selection of bacillus species based on enzyme production,

- antimicrobial activity, and biofilm synthesis as direct-fed microbial candidates for poultry. *Front. Vet. Sci.* 3: 95. doi: 10.3389/fvets.2016.00095.
- Lee, P. Y., J. Costumbrado, C. Y. Hsu, & Y. H. Kim. 2012. Agarose gel electrophoresis for the separation of DNA fragments. *Journal of Visualized Experiments.* 62(e3923): 1–5. doi: 10.3791/3923.
- Lemus, A., K. Bird, D. F. Kapraun, & F. Koehn. 1991. Agar yield, quality and standing crop biomass of *Gelidium serrulatum*, *Gelidium floridanum* and *Pterocladia capillacea* in Venezuela. *Food Hydrocoll.* 5: 469–479.
- Leon, O., L. Quintana, G. Peruzzo, & J. C. Slebe. 1992. Purification and properties of an extracellular agarase from *Alteromonas* sp. strain C-1. *Appl. Environ. Microbiol.* 58: 4060–4063. doi: 10.1128/aem.58.12.4060-4063.
- Li, J., Y. Sha, D. Seswita-Zilda, Q. Hu, & P. He. 2014. Purification and characterization of thermostable agarase from *Bacillus* sp. BI-3, a thermophilic bacterium isolated from hot spring. *J. Microbiol. Biotechnol.* 24(1): 19–25. doi: 10.4014/jmb.1308.08055.
- Liu, Y., X. Jin, C. Wu, X. Zhu, M. Liu, D.R. Call, & Z. Zhao. 2020. Genome-wide identification and functional characterization of β -agarases in *Vibrio astriarenae* strain HN897. *Frontiers in Microbiology.* 11. doi: 10.3389/fmicb.2020.01404.
- Logan, N. A., & P. D. Vos. 2015. *Bacillus*. In *Bergey's Manual of Systematics of Archaea and Bacteria*. Bergey's Manual Trust. doi: 10.1002/9781118960608.gbm00530.
- Long, M. X., Z. N. Yu, & X. Xu. 2009. A Novel β -Agarase with high pH stability from marine *Agarivorans* sp. LQ48. *Marine Biotechnology.* 12: 62–69. doi: 10.1007/s10126-009-9200-7.
- Ma, C., X. Lu, C. Shi, J. Li, Y. Gu, Y., Ma, Y., Chu, F. Han, Q. Gong, & W. Yu. 2007. Molecular cloning and characterization of a novel beta-agarase, AgaB, from marine *Pseudoalteromonas* sp. CY24. *J Biol Chem.* 282(6): 3747–3754. doi: 10.1074/jbc.M607888200.
- Meinita, M. D. N., H. Q. Luyen, S. Y. Hwang, J. Y. Kang, D. K. Jin, & Y. K. Hong. 2008. Isolation of the agarolytic bacterium *Vibrio cyclotrophicus* DAG-130 from abalone gut. *Journal of Fisheries Science and Technology.* 11(2): 76–81.
- Meinita, M. D. N., N. Akromah, N., Andriyani, Setijanto, D. Harwanto, & T. Liu. 2021. Molecular identification of Gracilaria species (Gracilariales, Rhodophyta) obtained from the South Coast of Java Island, Indonesia. *Biodiversitas.* 22(7): 3046–3056. doi: 10.13057/biodiv/d220759.
- Mukherjee, S., & D. B. Kearns. 2014. The structure and regulation of flagella in *Bacillus subtilis*. *Annu. Rev. Genet.* 48: 319–340. doi:10.1146/annurev-genet-120213-092406.

- Nayak, S. K. 2020. Multifaceted applications of probiotic *Bacillus* species in aquaculture with special reference to *Bacillus subtilis*. *Reviews in Aquaculture*. 1–45. doi: 10.1111/raq.12503.
- Naylor, R. L., Hardy, R.W., Buschmann, A. H., Bush, S. R., Cao, L., Klinger, D. H., Little, D. C., Lubchenco, J., Shumway, S.E., & Troell, M. 2021. A 20-year Retrospective Review of Global Aquaculture. *Nature*. 591: 551–563.
- Nurfajrie, Suminto, & Rejeki, S. 2014. Pemanfaatan Berbagai Jenis Makroalga Untuk Pertumbuhan Abalon (*Haliotis squamata*) dalam Budidaya Pembesaran. *Journal of Aquaculture Management and Technology*. 3(4): 142–150.
- Ohta, Y., Hatada, Y. Miyazaki, M., Nogi, Y., Ito, S., & Horikoshi, K. 2005. Purification and Characterization of a Novel α -Agarase from a *Thalassomonas* sp. *Current Microbiology*. 50: 212–216. doi: 10.1007/s00284-004-4435-z.
- Ohta, Y., Hatada, Y., Nogi, Y., Miyazaki, M., Li, Z., Akita, M., Hidaka, Y., Goda, S., Ito, S., & Horikoshi, K. 2004. Enzymatic properties and nucleotide and amino acid sequences of a thermostable β -agarase from a novel species of deep-sea *Microbulbifer*. 64: 505–514. doi: 10.1007/s00253-004-1573-y.
- Ophardt, C. 2003. Starch-iodine. Virtual chembook. <chemistry.elmhurst.edu/vchembook/548starchiodine.html>.
- Padmesh, S. & Singh, A. Agars: Properties and Applications. Chapter 5. in *Polysaccharides: Properties and Applications*. 75–93. doi: 10.1002/9781119711414.ch5.
- Parashar, S. & Kumar, N. 2018. Studies on agarolytic bacterial isolates from agricultural and industrial soil. *Iranian Journal of Microbiology*. 10(5): 324–333.
- Poindexter, J.S. 2006. Dimorphic Prosthecate Bacteria: The Genera *Caulobacter*, *Asticcacaulis*, *Hyphomicrobium*, *Pedomicrobium*, *Hyphomonas* and *Thiodendron*. Chapter 3.1.3. in *Prokaryotes*. 5: 72–90. doi: 10.1007/0-387-30745-1_4.
- Potin, P., Richard, C., Rochas, C., & Kloareg, B. 1993. Purification and characterization of the α -agarase from *Alteromonas agarlyticus* (Cataldi) comb. nov., strain GJ1B. *Eur. J. Biochem*. 214: 599–607.
- Rajeswari, S., Jaiganesh, R., Muthukumar, R., & Jaganathan, M.K. 2016. Isolation and Characterization of an Agarase Producing Bacteria from Marine Sediment. *International Journal of ChemTech Research*. 9(9): 437–446.
- Reimschuessel, R., Miller, R. A., & Giesecker, C. M. 2013. Antimicrobial Drug Use in Aquaculture. In: Giguère, S., Prescott, J. F., & Dowling, P. M. *Antimicrobial Therapy in Veterinary Medicine*, Fifth Edition. John Wiley & Sons Inc., New Jersey.

- Rejeki, S., R. W. Ariyati, L. L. Widowati, & R. H. Bosma. 2018. The effect of three cultivation methods and two seedling types on growth, agar content and gel strength of *Gracilaria verrucosa*. *Egyptian Journal of Aquatic Research*. 44: 65–70.
- Rimmer, M. A. 2010. Mariculture Development in Indonesia: Prospects and Constraints. *Indonesian Aquaculture Journal*. 5(2): 187–201.
- Rosenberg, G., N. Steinberg, Y. Oppenheimer-Shaanan, T. Olender, S. Doron, J. Ben-Ari, A. Sirota-Madi, Z. Bloom-Ackermann, & I. Kolodkin-Gal. 2016. Not so simple, not so subtle: the interspecies competition between *Bacillus simplex* and *Bacillus subtilis* and its impact on the evolution of biofilms. *Biofilms and Microbiomes*. 2: 15027. doi:10.1038/npjbiofilms.2015.27.
- Sanchez, R. A. R., D. J. Canelon, V. A. Cosenza, E. N. Fissore, L. N. Gerschenson, & M. Ciancia. 2019. *Gracilariopsis hommersandii*, a red seaweed, source of agar and sulfated polysaccharides with unusual structures. *Carbohydrate Polymers*. 213: 138–146. doi: 10.1016/j.carbpol.2019.02.071.
- Santos Junior, V., E. Nizoli, D. Galvan, R. J. Gomes, G. Biz, J. B. Ressute, T. S. Rocha, & W. A. Spinosa. 2022. Micronutrient requirements and effects on cellular growth of acetic acid bacteria involved in vinegar production. *Food Science and Technology*. v42: e05121. doi: 10.1590/fst.05121
- Saraswathi, S., V. Vasanthabharathi, V., Kalaiselvi, & S. Jayalakshmi. 2011. Characterization and optimization of agarase from an estuarine *Bacillus subtilis*. *African Journal of Microbiology Research*. 5(19): 2960–2968. doi: 10.5897/AJMR11.480.
- Shoaib, M., I. Muzammil, M. Hammad, Z. A. Bhutta, & I. Yaseen. 2020. A Mini-review on commonly used biochemical tests for identification of bacteria. *International Journal of Research Publications*. 54(1). doi: 10.47119/IJRP100541620201224
- Shukla, E., A. D. Bendre, & S. M. Gaikwad, S.M. Hydrolases: The most diverse class of enzymes. in *Hydrolases*. IntechOpen. doi: 10.5772/intechopen.102350.
- Setyono, D. E. D. 2004. Abalone (*Haliotis asinina* L): A Prospective Species for Aquaculture in Indonesia. *Oseana*. 29(2): 25–30.
- Suzuki, H., Y. Sawai, T. Suzuki, & K. Kawai. 2003. Purification and characterization of an extracellular β -agarase from *Bacillus* sp. MK03. *J. Biosci. Bioeng*. 93: 456–463.
- Temuujin, U., W. Chi, S. Lee, Y. Chang, & S. Hong. 2011. Overexpression and biochemical characterization of DagA from *Streptomyces coelicolor* A3(2): an endo-type β -agarase producing neoagarotetraose and neoagarohexaose. *Appl. Microbiol. Biotechnol*. 92(4):749–759. doi: 10.1007/s00253-011-3347-7.

- Tripathi, N. & A. Sapra. 2021. Gram Staining. In: StatPearls. StatPearls Publishing, Florida. <ncbi.nlm.nih.gov/books/NBK562156/>
- Vera, J., R. Alvarez, E. Murano, J. Slebe, & O. Leon. 1998. Identification of a marine agarolytic *Pseudoalteromonas* isolate and characterization of its extracellular agarase. *Applied and Environmental Biology*. 64(11): 4378–4383.
- Vuai, S. A. H. 2022. Characterization of agar extracted from *Gracilaria* species collected along Tanzanian coast. *Heliyon*. 8: e09002. doi: 10.1016/j.heliyon.2022. e09002
- Wuertz, S., A. Schroeder, & K. M. Wanka. 2021. Probiotics in Fish Nutrition - long-standing household remedy or native nutraceuticals?. *Water*. 13(1348): 1–19.
- Yang, J., L. C. Chen, Y. Shih, C. Hsieh, C. Y. Chen, W. M. Chen, & C. C. Chen. 2011. Cloning and characterization of β -agarase AgaYT from *Flammeovirga yaeyamensis* strain YT. *Journal of Bioscience and Bioengineering*. 112(3): 225–232. doi: 10.1016/j.jbiosc.2011.05.016.
- Yarnpakdee, S., S. Benjakul, & P. Kingwascharapong. 2015. Physico-chemical and gel properties of agar from *Gracilaria tenuistipitata* from the lake of Songkhla, Thailand. *Food Hydrocolloids*. 51: 217–226. doi: 10.1016/j.foodhyd.2015.05.004.
- Yoon, S. Y., G. H. Chae, S. W. Jang, J. Y. Suh, & K. H. Kong. 2022. A quantitative assay for agarase activity determination using agarose–iodine complex. *Analytical Biochemistry*. 641: 114560. doi: 10.1016/j.ab.2022.114560.
- Yu, S., E. J. Yun, D. H. Kim, S. Y. Park, & K. H. Kim. 2020. Dual agarolytic pathways in a marine bacterium, *Vibrio* sp. strain EJY3: molecular and enzymatic verification. *Appl. Environ. Microbiol.* 86(6):e02724-19. doi: 10.1128/AEM.02724-1.
- Zhang, W. W. & L. Sun. 2007. Cloning, characterization, and molecular application of a beta-agarase gene from *Vibrio* sp. V134. *Appl. Environ. Microbiol.* 73: 2825–2831.
- Zhang, Y., X. Fu., D. Duan, J. Xu, & X. Gao. 2019. Preparation and characterization of agar, agarose, and agarpectin from the red alga *Ahnfeltia plicata*. *Journal of Oceanology and Limnology*. 37(3). doi: 10.1007/s00343-019-8129-6.
- Zhao, J., B. Lu, C. Ke, M. Yang, & K. Kang. 2009. Isolation and identification of a bacterium MA-B22 producing agarase and the optimal cultivation of enzyme production. *Journal of Fisheries of China*. 33(6): 1037-1043.
- Zilda, D. W., G. Patantis, S. S. Prawira, M. T. Sibero, & Y. N. Fawzya. 2021. Screening and identification of agarase-producing bacteria from sediment sample of Bara Caddi sea, South Sulawesi. *JPB Kelautan dan Perikanan*. 16(1): 11–21. doi: 10.15578/jpbkp.v16i1.699.