

References

- Abad, M. J., Bedoya, L. M., & Bermejo, P. (2011). Marine Compounds and their Antimicrobial Activities. *Fortamex*, 1293–1306. <https://doi.org/10.2174/138955708784912148>.
- Abou Zeid, A.H., Aboutabl, E.A., Sleem, A.A., and El-Rafie, H.M. (2014). Water soluble polysaccharides extracted from *Pterocladia capillacea* and *Dictyopteris membranacea* and their biological activities. *Carbohydrate Polymers*, 113, 62–66.
- Acharya., T. (2015). Isolation and identification of *Salmonella typhi* and *Paratyphi*. Retrieved from <http://microbeonline.com/media-used-culture-identification-salmonella/> [2017, Nov 17].
- Aiyelabola, T. O., Isabirye, D. A., Akinkunmi, E. O., Ogunkunle, O. A., & Ojo, I. A. O. (2016). Synthesis, Characterization, and Antimicrobial Activities of Coordination Compounds of Aspartic Acid.
- Arenas, F., & Fernandez, C. (2000). Size structure and dynamics in a population of *Sargassum muticum* (Phaeophyceae). *Journal of Phycology*, 36, 1012–1020.
<https://doi.org/10.1046/j.1529-8817.2000.99235.x>.
- Astitva G. (2018). *Sargassum*: Occurrence, structure and reproduction. Retrieved from <http://www.biologydiscussion.com/algae/sargassum-occurrence-structure-and-reproduction/53784> [2018, Jul 10].
- Bajpai, V. K. (2016). Antimicrobial bioactive compounds from marine algae: A mini review. *Indian Journal of Geo-Marine Sciences*, 45(9), 1076–1085.
- Centers for Disease Control and Prevention [CDC]. (2013). Antibiotic resistance threats. Retrieved from <https://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf#page=73> [2017, Nov 17].
- Centers for Disease Control and Prevention [CDC]. (2017). Salmonellosis (Nontyphoidal). Retrieved from <https://wwwnc.cdc.gov/travel/yellowbook/2018/infectious-diseases-related-to-travel/salmonellosis-nontyphoidal> [2017, Feb 18].

- Centers for Disease Control and Prevention [CDC]. (2018). Salmonella Question and Answers. Retrieved from <https://www.cdc.gov/salmonella/general/index.html#two> [2017, Nov 17].
- Chojnacka, K., Saeid, A., Witkowska, Z., & Tuhy, Ł. (2012). Biologically Active Compounds in Seaweed Extracts -the Prospects for the Application. *The Open Conference Proceedings Journal*, (3), 20–28. <https://doi.org/10.2174/1876326X01203020020>.
- CLSI. (2017). *Performance standards for antimicrobial susceptibility testing*, 27th Ed. Wayne, PA: Clinical and Laboratory Standards Institute.
- Crump, J. A., Sjölund-Karlsson, M., Gordon, M. A., & Parry, C. M. (2015). Epidemiology, clinical presentation, laboratory diagnosis, antimicrobial resistance, and antimicrobial management of invasive Salmonella infections. *Clinical Microbiology Reviews*, 28(4), 901–937. <https://doi.org/10.1128/CMR.00002-15>.
- De Jesus Raposo, M. F., De Morais, A. M. B., & De Morais, R. M. S. C. (2015). Marine polysaccharides from algae with potential biomedical applications. *Marine Drugs*, 13(5), 2967–3028. <https://doi.org/10.3390/md13052967>.
- de Jong, H. K., Parry, C. M., van der Poll, T., & Wiersinga, W. J. (2012). Host-Pathogen Interaction in Invasive Salmonellosis. *PLoS Pathogens*, 8(10), 1–9. <https://doi.org/10.1371/journal.ppat.1002933>.
- Demirel, Z., Yilmaz-Koz, F., Karabay-Yavasoglu, U., Ozdemir, G., & Sukatar, A. (2009). Antimicrobial and antioxidant activity of brown algae from the Aegean sea. *Journal of the Serbian Chemical Society*, 74(6), 619–628. <https://doi.org/10.2298/JSC0906619D>.
- Departemen Kelautan dan Perikanan [DKP]. (2008). Statistik Departemen Kelautan dan Perikanan 2007. Jakarta: DKP.
- Desbois, A., & Smith, V. (2009). Antibacterial free fatty acids: activities, mechanisms of action and biotechnological potential. *Applied Microbiology And Biotechnology*, 85(6), 1629-1642. doi: 10.1007/s00253-009-2355-3.

- Deyab, M.A. & Abou-Dobara, M.I. (2013). Antibacterial activity of some marine algal extracts against most nosocomial bacterial infections. *The Egyptian Journal of Experimental Biology*, (9), 2, 281-286.
- Dhargalkar, V. K., & Kavlekar, D. (2004). Seaweeds – A field Manual - National Institute of Oceanography. *National Institute of Oceanography*, 36.
- Díaz-Villa, T., Sansón, M., & Afonso-Carrillo, J. (2005). Seasonal variations in growth and reproduction of *Sargassum orotavicum* (Fucales, Phaeophyceae) from the Canary Islands. *Botanica Marina*, 48(1), 18–29. <https://doi.org/10.1515/BOT.2005.003>.
- dos Santos Amorim, R. das N., Rodrigues, J. A. G., Holanda, M. L., Quinderé, A. L. G., de Paula, R. C. M., Melo, V. M. M., & Benevides, N. M. B. (2012). Antimicrobial effect of a crude sulfated polysaccharide from the red seaweed *Gracilaria ornata*. *Brazilian Archives of Biology and Technology*, 55(2), 171–181. <https://doi.org/10.1590/S1516-89132012000200001>.
- Dulgr, B., Hacıoglu, N., Erduoan, H., & Aysel, V. (2009). Antimicrobial activity of some brown algae from Turkey. *Asian Journal of Chemistry*, 21(5), 4113–4117.
- El Gamal, A. A. (2010). Biological importance of marine algae. *Saudi Pharmaceutical Journal*, 18(1), 1–25. <https://doi.org/10.1016/j.jsps.2009.12.001>.
- El Shoubaky, G. A., & El Rahman Salem, E. A. (2014). Active ingredients fatty acids as antibacterial agent from the brown algae *Padina pavonica* and *Hormophysa triquetra*. *Journal of Coastal Life Medicine*, 2(7), 535–542. <https://doi.org/10.12980/JCLM.2.2014JCLM-2014-0025>.
- El Shafay, S.M., Ali, S.S., and El-Sheekh, M.M. (2016). Antimicrobial activity of some seaweeds species from Red sea, against multidrug resistant bacteria. *Egyptian Journal of Aquatic Research*, 42, 65–74.
- Encyclopedia Britannica. (2017). Brown algae. Retrieved from <https://www.britannica.com/science/brown-algae> [2018, Jan 10].

- Eng, S. K., Pusparajah, P., Ab Mutalib, N. S., Ser, H. L., Chan, K. G., & Lee, L. H. (2015). Salmonella: A review on pathogenesis, epidemiology and antibiotic resistance. *Frontiers in Life Science*, 8(3), 284–293. <https://doi.org/10.1080/21553769.2015.1051243>.
- Eom, S. H., Kim, Y. M., & Kim, S. K. (2012). Antimicrobial effect of phlorotannins from marine brown algae. *Food and Chemical Toxicology*, 50(9), 3251–3255. <https://doi.org/10.1016/j.fct.2012.06.028>.
- Fayad, S. Nehmé, R., Tannoury, M., Lesellier, E., Pichon, C., & Morin, P. (2017). Macroalgae *Padina pavonica* water extracts obtained by pressurized liquid extraction and microwave-assisted extraction inhibit hyaluronidase activity as shown by capillary electrophoresis. *Journal of Chromatography A*. <http://dx.doi.org/10.1016/j.chroma.2017.03.033>.
- Godlewska, K., Michalak, I., Tuhy, L., & Chojnacka, K. (2016). Plant growth biostimulants based on different methods of seaweed extraction with water. *BioMed Research International*. <http://dx.doi.org/10.1155/2016/5973760>.
- Handayani, T., Sutarno, & Setyawan, A. D. (2004). Analisis Komposisi Nutrisi Rumpun Laut Sargassum crassifolium. *Biofarmasi*, 2(2), 45–52. <https://doi.org/1693-2242>.
- Hays, J. (2018). Weather and climate in Indonesia | Facts and Details. Retrieved from http://factsanddetails.com/indonesia/Nature_Science_Animals/sub6_8a/entry-4079.html [2018, Jul 10].
- He, F., Yang, Y., Yang, G., & Yu, L. (2010). Studies on antibacterial activity and antibacterial mechanism of a novel polysaccharide from *Streptomyces virginia* H03. *Food Control*, 21(9), 1257–1262. <https://doi.org/10.1016/j.foodcont.2010.02.013>.
- Hierholthzer, A., Chatellard, L., Kierans M., Akunna J.C., and Collier P.J. (2013). The impact and mode of action of phenolic compounds extracted from brown seaweed on mixed anaerobic microbial cultures. *Journal of Applied Microbiology*, 114(4), 964-73. <http://doi.org/10.1111/jam/12114/>.
- Hinds, C., Oxenford, H., Cumberbatch, J., F. Fardin & Cashman, A. (2016). *Golden Tides: Management Best Practices for Influxes of Sargassum in the Caribbean with a Focus on Clean-up*. Centre for

- Resource Management and Environmental Studies (CERMES), The University of the West Indies, Cave Hill Campus, Barbados. 17 pp.
- Holdt, S. L., & Kraan, S. (2011). Bioactive compounds in seaweed: Functional food applications and legislation. *Journal of Applied Phycology*, 23(3), 543–597. <https://doi.org/10.1007/s10811-010-9632-5>.
- Hurley, Daniel & McCusker, Matthew & Fanning, Séamus & Martins, Marta. (2014). Salmonella–Host Interactions – Modulation of the Host Innate Immune System. *Frontiers in immunology*, 5, 481. <http://doi.org/10.3389/fimmu.2014.00481>.
- Hwang, R. L., Tsai, C. C., & Lee, T. M. (2004). Assessment of temperature and nutrient limitation on seasonal dynamics among species of *Sargassum* from a coral reef in southern Taiwan. *Journal of Phycology*, 40(3), 463–473. <https://doi.org/10.1111/j.1529-8817.2004.03086.x>.
- Ilg, K., Endt, K., Misselwitz, B., Stecher, B., Aebi, M., & Hardt, W. D. (2009). O-antigen-negative *Salmonella enterica* serovar typhimurium is attenuated in intestinal colonization but elicits colitis in streptomycin-treated mice. *Infection and Immunity*, 77(6), 2568–2575. <https://doi.org/10.1128/IAI.01537-08>.
- Kadam, S.U., O’Donnell, C.P., Rai, D.K., Hossain, M.B., Burgess, C.M., Walsh, D., and Tiwari, B.K. (2015). Laminarin from Irish brown seaweeds *Ascophyllum nodosum* and *Laminaria hyperborea*: Ultrasound assisted extraction, characterization and bioactivity. *Marine Drugs*, 13, 4270–4280.
- Kadi, A. (1998). Rumpaut laut (*Algae*): Jenis, Reproduksi, Produksi, Budidaya, dan Pascapanen. Jakarta: P30-LIPI.
- Kadi, A. (2005). Beberapa Catatan Kehadiran Marga *Sargassum*. *Oseana*, 30(4), 19–29. <https://doi.org/0216-1877>.
- Kandasamy, S., Khan, W., Kulshreshtha, G., Evans, F., Critchley, A. T., Fitton, J. H., ... Prithiviraj, B. (2015). The fucose containing polymer (FCP) rich fraction of *ascophyllum nodosum* (L.) Le Jol. protects *Caenorhabditis elegans* against *Pseudomonas aeruginosa* by triggering innate immune

- signaling pathways and suppression of pathogen virulence factors. *Algae*, 30(2), 147–161.
<https://doi.org/10.4490/algae.2015.30.2.147>.
- Keffer, J., Huecas, S., Hammill, J., Wipf, P., Andreu, J., & Bewley, C. (2013). Chrysopaentins are competitive inhibitors of FtsZ and inhibit Z-ring formation in live bacteria. *Bioorganic & Medicinal Chemistry*, 21(18), 5673-5678. doi: 10.1016/j.bmc.2013.07.033.
- Kemer, K., Paransa, D. S. J., Rumengan, A. P., & Mantiri, D. M. H. (2015). Antibakteri Dari Beberapa Ekstrak Pada Alga Coklat. *Jurnal LPPM Bidang Sains Dan Teknologi*, 2(2000), 73–81.
- Le Lann, K., Connan, S., & Stiger-Pouvreau, V. (2012). Phenology, TPC and size-fractioning phenolics variability in temperate Sargassaceae (Phaeophyceae, Fucales) from Western Brittany: Native versus introduced species. *Marine Environmental Research*, 80, 1–11.
<https://doi.org/10.1016/j.marenvres.2012.05.011>.
- Li, X., & Ma, S. (2015). Advances in the discovery of novel antimicrobials targeting the assembly of bacterial cell division protein FtsZ. *European Journal Of Medicinal Chemistry*, 95, 1-15. doi: 10.1016/j.ejmech.2015.03.026.
- Li, Y., Wijesekara, I., Li, Y., & Kim, S. (2011). Phlorotannins as bioactive agents from brown algae. *Process Biochemistry*, 46(12), 2219-2224. doi: 10.1016/j.procbio.2011.09.015.
- Malve, H. (2016). Exploring the ocean for new drug developments: Marine pharmacology. *Journal of Pharmacy & Bioallied Sciences*, 8(2), 83–91. <http://doi.org/10.4103/0975-7406.171700>.
- Manivannan, K., Karthikai devi, G., Anantharaman, P., & Balasubramanian, T. (2011). Antimicrobial potential of selected brown seaweeds from Vedalai coastal waters, Gulf of Mannar. *Asian Pacific Journal of Tropical Biomedicine*, 1(2), 114–120. [https://doi.org/10.1016/S2221-1691\(11\)60007-5](https://doi.org/10.1016/S2221-1691(11)60007-5).
- May-Lin, B. Y., & Ching-Lee, W. (2013). Seasonal growth rate of Sargassum species at Teluk Kemang, Port Dickson, Malaysia. *Journal of Applied Phycology*, 25(3), 805–814.
<https://doi.org/10.1007/s10811-012-9963-5>.

- Mayakun, J., & Prathep, A. (2005). Seasonal variations in diversity and abundance of macroalgae at Samui Island, Surat Thani Province, Thailand. *Sci. Technol*, 27(3), 653–663. Retrieved from http://rdo.psu.ac.th/sjstweb/journal/27-Suppl-3/04_macro_algae.pdf
- National Oceanic and Atmosphere Administration. (2018). What is *Sargassum*?. Retrieved from <https://oceanexplorer.noaa.gov/facts/sargassum.html> [2018, Jul 4].
- NN, A. (2015). A Review on the Extraction Methods Use in Medicinal Plants, Principle, Strength and Limitation. *Medicinal & Aromatic Plants*, 4(3), 3–8. <https://doi.org/10.4172/2167-0412.1000196>
- Nwabor, O. F., Dickson, I. D., & Ajibo, Q. C. (2015). Epidemiology of *Salmonella* and *Salmonellosis*. *International Letters of Natural Sciences*, 47(November), 54–73. <https://doi.org/10.18052/www.scipress.com/ILNS.47.54>.
- Oiraksar, T. N., Anthachitra, V. M., Uranapratheprat, A. B., & Omatsu, T. K. (2017). Growth and reproductive seasonal pattern of *Sargassum polycystum* C. Agardh (Sargassaceae, Phaeophyceae) population in Samaesarn Island, Chon Buri Province, Thailand, 66(0).
- Patchanee, P. (2008). *Epidemiology of Salmonella Enterica Related To Swine Production System and Food Safety*. The Ohio State University. Retrieved from http://etd.ohiolink.edu/view.cgi?acc_num=osu1226946581 [2018, Nov 17].
- Pandithurai, M., Murugesan, S., & Sivamurugan, V. (2015). Antibacterial activity of various solvent extracts of marine brown alga *Spatoglossum asperum*. *International Journal of Pharmacological Research*, 5(6), 133–138. <https://doi.org/10.7439/ijpr>.
- Pérez, M. J., Falqué, E., & Domínguez, H. (2016). Antimicrobial action of compounds from marine seaweed. *Marine Drugs*, 14(3), 1–38. <https://doi.org/10.3390/md14030052>.
- Puspita, M., Deniel, M., Widowati, I., Radjasa, O. K., Douzenel, P., Bedoux, G., & Bourgougnom, N. (2016). Antioxidant and antibacterial activity of solid-liquid and enzyme-assisted extraction of phenolic compound from three species of tropical *Sargassum*. *IOP Conference Series: Earth and Environmental Science*, 55. <https://doi.org/10.1088/1742-6596/755/1/011001>.

- Rajasulochana, P., Dhamotharan, R., Krishnamoorthy, P., & Murugesan, S. (2009). Antibacterial Activity of the Extracts of Marine Red and Brown Algae. *Marsland Press Journal of American Science*, 5(3), 20–25.
- Rajauria, G.; Abu-Ghannam, N. (2013). Isolation and partial characterization of bioactive fucoxanthin from *Himanthalia elongata* brown seaweed: A TLC-based approach. *International Journal of Analytical Chemistry*.
- Sánchez-Vargas, F. M., Abu-El-Haija, M. A., & Gómez-Duarte, O. G. (2011). Salmonella infections: An update on epidemiology, management, and prevention. *Travel Medicine and Infectious Disease*, 9(6), 263–277. <https://doi.org/10.1016/j.tmaid.2011.11.001>.
- Shannon, E., & Abu-ghannam, N. (2016). Antibacterial Derivatives of Marine Algae : An Overview of Pharmacological Mechanisms and Applications. <https://doi.org/10.3390/md14040081>.
- Shibata, H., Iimuro, M., Uchiya, N., Kawamori, T., Nagaoka, M., & Ueyama, S. et al. (2003). Preventive Effects of Cladosiphon Fucoidan Against *Helicobacter pylori* Infection in Mongolian gerbils. *Helicobacter*, 8(1), 59-65. doi: 10.1046/j.1523-5378.2003.00124.x.
- Sridharan, M. C., & Dhamotharan, R. (2012). Antibacterial activity of marine brown alga *Turbinaria conoides*. *Journal of Chemical and Pharmaceutical Research*, 4(4), 2292–2294.
- Vijayabaskar, P., & Shiyamala, V. (2011). Antibacterial Activities of Brown Marine Algae (*Sargassum wightii* and *Turbinaria ornata*) from the Gulf of Mannar Biosphere Reserve. *Advances in Biological Research*, 5(2), 99–102.
- Warnadi, S., Setyaningsih., A. I., and Kasih, W. A. (2018). *IOP Conf. Ser.: Earth Environ. Sci.* 145 012145. doi :10.1088/1755-1315/145/1/012145.
- Wei, Y.; Liu, Q.; Xu, C.; Yu, J.; Zhao, L.; Guo, Q. (2015). Damage to the membrane permeability and cell death of *Vibrio parahaemolyticus* caused by phlorotannins with low molecular weight from *Sargassum thunbergii*. *Journal of Aquatic Food Product and Technology*, 25(3), 323-333.
- Wiseno, H. (2018). BMKG: Beginning of Dry Season is in Late April-June 2018. *Netral People*.
- Retrieved from

<http://www.en.netralnews.com/news/currentnews/read/19312/bmkg.beginning.of.dry.season.is.in.late.april.june.2018>. [2018, Jul 10].

World Health Organization [WHO]. (2014). Antimicrobial resistance: Global report on surveillance. France: WHO.

World Health Organization [WHO]. (2018). Salmonella (non-typhoidal). Retrieved from <http://www.who.int/mediacentre/factsheets/fs139/en/> [2018, Nov 17].

World Weather and Climate Information. (2016). Climate: Average monthly weather in Jakarta, Indonesia. Retrieved from <https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,Jakarta,Indonesia> [2018, Jul 10].

Wouthuyzen, S., & Timur, A. (2010). Application of alos avnir-2 images for assessing and managing the coastal zone resources in Indonesia pi no 325. Jakarta: LIPI Oseanografi.

Zheng, C., Yoo, J., Lee, T., Cho, H., Kim, Y., & Kim, W. (2005). Fatty acid synthesis is a target for antibacterial activity of unsaturated fatty acids. *FEBS Letters*, 579(23), 5157-5162. doi: 10.1016/j.febslet.2005.08.028.