DAFTAR PUSTAKA

Aaron-Amper, J., Largo, D. B., Handugan, E. R. B., Nini, J. L., Alingasa, K. M. A., dan Gulayan, S. J. (2020). Culture of the tropical brown seaweed *Sargassum aquifolium*: From hatchery to field out-planting. *Aquaculture Reports*, *16*. https://doi.org/10.1016/j.aqrep.2019.100265

Abasabadi, R. K., Janssens, T. V. W., Bordiga, S., dan Berlier, G. (2024). Probing the effect of the Si/Al ratio in Cu-CHA zeolite catalysts on SO2 exposure: in situ DR UV-vis spectroscopy and deactivation measurements. *Catalysis Science and Technology*, *14*(11), 3076–3085. https://doi.org/10.1039/d4cy00129j

Abriyani, E., Wibiksana, K. T., Syahfitri, F., Apriliyanti, N., dan Salmaduri, A. R. (2023). Metode spektrofotometri Uv-vis dalam analisis penentuan kadar vitamin c pada sampel yang akan diuji. *Jurnal Pendidikan dan Konseling (JPDK)*, 5(1), 1610-1613.

Akbar, M. R., Pramesti, R., dan Ridlo, A. (2018). Aktivitas Antioksidan Rumput Laut *Acanthophora muscoides (Linnaeus*) Bory Dari Pantai Krakal Gunung Kidul Yogyakarta. *Journal of Marine Research*, *7*(1).

Anwar, E., Erianto, H., dan Putri, K. S. S. (2018). Preparation of powder from brown seaweed *(Sargassum Plagyophyllum)* by freeze-drying with maltodextrin as a stabilizer. *International Journal of Applied Pharmaceutics*, *10*(Special Issue 1), 348–353. https://doi.org/10.22159/ijap.2018.v10s1.77

Arsianti, A., Bahtiar, A., Wangsaputra, V. K., Azizah, N. N., Fachri, W., Nadapdap, L. D., Fajrin, A. M., Tanimoto, H., dan Kakiuchi, K. (2020). Phytochemical composition and evaluation of marine algal Sargassum polycystum for antioxidant activity and in vitro cytotoxicity on hela cells. *Pharmacognosy Journal*, *12*(1), 88–94. https://doi.org/10.5530/pj.2020.12.14

Badmus, U. O., Taggart, M. A., dan Boyd, K. G. (2019). The effect of different drying methods on certain nutritionally important chemical constituents in edible brown seaweeds. *Journal of Applied Phycology*, *31*(6), 3883–3897. https://doi.org/10.1007/s10811-019-01846-1

Barrow, M., Ganzon-Fortes, E. T., dan Diego-Mcglone, M. L. S. (2015). Photosynthetic and nutrient uptake physiology of Padina species in high and low nutrient waters in Bolinao, Pangasinan, Philippines. *Botanica Marina*, *58*(3), 219–228. https://doi.org/10.1515/bot-2014-0070

Bijang, C. M., Tehubijuluw, H., dan Ghereds Kaihatu, T. (2018). Biosorpsi Ion Logam Kadmium (Cd 2+) Pada Biosorben Rumput Laut Coklat *(Padina australis)* Asal Pantai Liti Pulau Kisar Biosorption Of Cadmium (Cd 2+) Metal Ion In Brown Seaweed Biosorbent *(Padina australis)* From Liti Beach, Kisar Island. In *J. Chem. Res* (Vol. 6, Issue 1).

Bitwell, C., Indra, S. Sen, Luke, C., dan Kakoma, M. K. (2023). A review of modern and conventional extraction techniques and their applications for extracting phytochemicals from plants. In *Scientific African* (Vol. 19). Elsevier B.V. https://doi.org/10.1016/j.sciaf.2023.e01585

Blikra, M. J., Altintzoglou, T., Løvdal, T., Rognså, G., Skipnes, D., Skåra, T., Sivertsvik, M., dan Noriega Fernández, E. (2021). Seaweed products for the future: Using current tools to develop a sustainable food industry. In *Trends in Food Science and Technology* (Vol. 118, pp. 765–776). Elsevier Ltd. https://doi.org/10.1016/j.tifs.2021.11.002

Botterweck, A. A. M., Verhagen, H., Goldbohm, R. A., Kleinjans, J., dan Van Den Brandt, P. A. (2000). Research Section Intake of Butylated Hydroxyanisole and Butylated Hydroxytoluene and Stomach Cancer Risk: *Results from Analyses in the Netherlands Cohort Study*. www.elsevier.com/locate/foodchemtox

Cahyaningrum, K., Husni, A., Budhiyanti, S. A., Perikanan, J., dan Pertanian, F. (2016). Antioxidant Activity of Brown Seaweed *(Sargassum polycystum)* Extracts. In *Agritech* (Vol. 36, Issue 2).

Cascais, M., Monteiro, P., Pacheco, D., Cotas, J., Pereira, L., Marques, J. C., dan Gonçalves, A. M. M. (2021). Effects of heat treatment processes: Health benefits and risks to the consumer. In *Applied Sciences (Switzerland)* (Vol. 11, Issue 18). MDPI. https://doi.org/10.3390/app11188740

Chakraborty, K., Maneesh, A., dan Makkar, F. (2017). Journal of Aquatic Food Product Technology Antioxidant Activity of Brown Seaweeds Antioxidant Activity of Brown Seaweeds. *Journal of Aquatic Food Product Technology*, *26*(4), 406–419. https://doi.org/10.1080/10498850.2016.1201711

Charles, A. L., Sridhar, K., dan Alamsjah, M. A. (2020). Effect of drying techniques on color and bioactive potential of two commercial edible Indonesian seaweed cultivars. *Journal of Applied Phycology*, *32*(1), 563–572. https://doi.org/10.1007/s10811-019-01916-4

Chen, J., Li, M., Yang, R., Luo, Q., Xu, J., Ye, Y., dan Yan, X. (2016). Profiling lipidome changes of *Pyropia haitanensis* in short-term response to high-temperature stress. *Journal of Applied Phycology*, *28*(3), 1903–1913. https://doi.org/10.1007/s10811-015-0733-z

Cho, M., Lee, H. S., Kang, I. J., Won, M. H., dan You, S. (2011). Antioxidant properties of extract and fractions from *Enteromorpha prolifera*, a type of green seaweed. *Food Chemistry*, *127*(3), 999–1006. https://doi.org/10.1016/j.foodchem.2011.01.072

Cotas, J., Leandro, A., Monteiro, P., Pacheco, D., Figueirinha, A., Goncąlves, A. M. M., Da Silva, G. J., dan Pereira, L. (2020). Seaweed phenolics: From extraction to applications. In *Marine Drugs* (Vol. 18, Issue 8). MDPI AG. https://doi.org/10.3390/MD18080384

Cruces, E., Rojas-Lillo, Y., Ramirez-Kushel, E., Atala, E., López-Alarcón, C., Lissi, E., dan Gómez, I. (2016). Comparison of different techniques for the preservation and extraction of phlorotannins in the kelp *Lessonia spicata (Phaeophyceae)*: assays of DPPH, ORAC-PGR, and ORAC-FL as testing methods. *Journal of Applied Phycology*, *28*(1), 573–580. https://doi.org/10.1007/s10811-015-0602-9

Dai, F., Zhuang, Q., Huang, G., Deng, H., dan Zhang, X. (2023). Infrared Spectrum Characteristics and Quantification of OH Groups in Coal. *ACS Omega*, *8*(19), 17064–17076. https://doi.org/10.1021/acsomega.3c01336

Darvin, M. E., Lademann, J., von Hagen, J., Lohan, S. B., Kolmar, H., Meinke, M. C., dan Jung, S. (2022). Carotenoids in Human Skin In Vivo: Antioxidant and Photo-Protectant Role against External and Internal Stressors. In *Antioxidants* (Vol. 11, Issue 8). MDPI. https://doi.org/10.3390/antiox11081451

Diachanty, S., Nurjanah, N., dan Abdullah, A. (2017). Antioxidant Activities of Various Brown Seaweeds from Seribu Islands. *Jurnal Pengolahan Hasil Perikanan Indonesia*, *20*(2), 305. https://doi.org/10.17844/jphpi.v20i2.18013

Djapiala, F. Y., Montolalu, L. A., dan Mentang, F. (2013). Kandungan total fenol dalam rumput laut *Caulerpa racemosa* yang berpotensi sebagai antioksidan. *Media teknologi hasil perikanan,* 1(2).

Dwimayasanti, R. (2018). Rumput Laut : Antioksidan Alami Penangkal Radikal Bebas. *Oseana*, *43*(2), 13–23.

El-Beltagi, H. S., Mohamed, A. A., Mohamed, H. I., A Ramadan, K. M., Barqawi, A. A., dan Mansour, A. T. (2022). Phytochemical and Potential Properties of Seaweeds and Their Recent Applications*: A Review*. https://doi.org/10.3390/md20060342

ElGamal, R., Song, C., Rayan, A. M., Liu, C., Al-Rejaie, S., dan ElMasry, G. (2023). Thermal Degradation of Bioactive Compounds during Drying Process of Horticultural and Agronomic Products: A Comprehensive Overview. In *Agronomy* (Vol. 13, Issue 6). MDPI. https://doi.org/10.3390/agronomy13061580

Everette, J. D., Bryant, Q. M., Green, A. M., Abbey, Y. A., Wangila, G. W., dan Walker, R. B. (2010). Thorough study of reactivity of various compound classes toward the folin-Ciocalteu reagent. *Journal of Agricultural and Food Chemistry*, *58*(14), 8139–8144. https://doi.org/10.1021/jf1005935

FAO. (2024). The State of World Fisheries and Aquaculture 2024. In *Nature and Resources* (Vol. 35, Issue 3).

Gammone, M. A., dan D'Orazio, N. (2015). Anti-obesity activity of the marine carotenoid fucoxanthin. In *Marine Drugs* (Vol. 13, Issue 4, pp. 2196–2214). MDPI AG. https://doi.org/10.3390/md13042196

Genç, Y., Bardakci, H., Gdem Yücel, Ç. ˘, Gökçe¸, G., Karatoprak, G., Akkol, E. K., Barak, T. H., dan Sobarzo-Sánchez, E. (2020). marine drugs Oxidative Stress and Marine Carotenoids: Application by Using Nanoformulations. *Mar. Drugs*, *18*, 423. https://doi.org/10.3390/md18080423

Gómez-Ordóñez, E., dan Rupérez, P. (2011). FTIR-ATR spectroscopy as a tool for polysaccharide identification in edible brown and red seaweeds. *Food Hydrocolloids*, *25*(6), 1514–1520. https://doi.org/10.1016/j.foodhyd.2011.02.009

Goya, L., dan Mateos, R. (2024). Antioxidant and Anti-inflammatory Effects of Marine Phlorotannins and Bromophenols Supportive of Their Anticancer Potential. *Nutrition Reviews*. https://doi.org/10.1093/nutrit/nuae066

Gülçin, I. (2012). Antioxidant activity of food constituents: An overview. In *Archives of Toxicology* (Vol. 86, Issue 3, pp. 345–391). https://doi.org/10.1007/s00204-011-0774-2

Gullón, B., Gagaoua, M., Barba, F. J., Gullón, P., Zhang, W., dan Lorenzo, J. M. (2020). Seaweeds as promising resource of bioactive compounds: Overview of novel extraction strategies and design of tailored meat products. In *Trends in Food Science and Technology* (Vol. 100, pp. 1–18). Elsevier Ltd. https://doi.org/10.1016/j.tifs.2020.03.039

Gunathilake, T., Akanbi, T. O., Suleria, H. A. R., Nalder, T. D., Francis, D. S., dan Barrow, C. J. (2022). Seaweed Phenolics as Natural Antioxidants, Aquafeed Additives, Veterinary Treatments and Cross-Linkers for Microencapsulation. In *Marine Drugs* (Vol. 20, Issue 7). MDPI. https://doi.org/10.3390/md20070445

Gupta, S., Cox, S., dan Abu-Ghannam, N. (2011). Effect of different drying temperatures on the moisture and phytochemical constituents of edible Irish brown seaweed. *LWT*, *44*(5), 1266–1272. https://doi.org/10.1016/j.lwt.2010.12.022

Hakim, M. M., dan Patel, I. C. (2020). A review on phytoconstituents of marine brown algae. *Future Journal of Pharmaceutical Sciences*, *6*(1). https://doi.org/10.1186/s43094-020-00147-6

Hidayati, J. R., Ridlo, A., dan Pramesti, R. (2017). Aktivitas antioksidan ekstrak rumput laut Padina sp. dari Perairan Bandengan Jepara dengan metode transfer elektron. *Buletin Oseanografi Marina*, 6(1), 46-52.

Honey, O., Nihad, S. A. I., Rahman, M. A., Rahman, M. M., Islam, M., dan Chowdhury, M. Z. R. (2024). Exploring the antioxidant and antimicrobial potential of three common seaweeds of Saint Martin's Island of Bangladesh. *Heliyon*, *10*(4). https://doi.org/10.1016/j.heliyon.2024.e26096

Husni, A., Putra, D. R., dan Lelana, I. Y. B. (2014). Aktivitas antioksidan *Padina sp*. pada berbagai suhu dan lama pengeringan. *Jurnal Pascapanen dan Bioteknologi Kelautan dan Perikanan*, 9(2), 165-173.

Irwan Nurdiansyah, S., Sofiana, M. S., dan Safitri, I. (2022). Aktivitas Antioksidan Ekstrak Turbinaria Sp. Dengan Menggunakan Tiga Pelarut Yang Berbeda. *Oseanologia* (Vol. 1, Issue 3).

Junopia, A. C., Natsir, H., dan Dali, S. (2020). Effectiveness of Brown Algae *(Padina australis)* Extract as Antioxidant Agent. *Journal of Physics: Conference Series*, *1463*(1). https://doi.org/10.1088/1742-6596/1463/1/012012

Kementerian Kelautan Perikanan. (2023). *Profil Pasar Rumput Laut*. Direktorat Jenderal Penguatan Daya Saing Produk Kelautan dan Perikanan Kementerian Kelautan dan Perikanan Republik Indonesia.

Lantah, P. L., Montolalu, L. A., dan Reo, A. R. (2017). Kandungan fitokimia dan aktivitas antioksidan ekstrak metanol rumput laut *Kappaphycus alvarezii*. *Media Teknologi Hasil Perikanan*, 5(3), 73-79.

Leksono, W. B., Pramesti, R., Santosa, G. W., dan Setyati, W. A. (2018). Jenis Pelarut Metanol Dan N-Heksana Terhadap Aktivitas Antioksidan Ekstrak Rumput Laut Gelidium sp. Dari Pantai Drini Gunungkidul – Yogyakarta. *Jurnal Kelautan Tropis*, *21*(1), 9. https://doi.org/10.14710/jkt.v21i1.2236

Li, B., Lu, F., Wei, X., dan Zhao, R. (2008). Fucoidan: Structure and bioactivity. In *Molecules* (Vol. 13, Issue 8, pp. 1671–1695). https://doi.org/10.3390/molecules13081671

Lomartire, S., dan Gonçalves, A. M. M. (2022). An Overview of Potential Seaweed-Derived Bioactive Compounds for Pharmaceutical Applications. In *Marine Drugs* (Vol. 20, Issue 2). MDPI. https://doi.org/10.3390/md20020141

Longas, M. O., Cheairs, K., Puchalski, M. M., dan Park, J. I. (2011). Reliability of fourier transform infrared spectroscopy in the characterization of human skin. *Advances in Biological Chemistry*, *01*(02), 24–28. https://doi.org/10.4236/abc.2011.12004

Lopez-Hortas, L., Florez-Fernandez, N., Torres, M. D., Ferreira-Anta, T., Casas, M. P., Balboa, E. M., Falque, E., dan Domínguez, H. (2021). Applying seaweed compounds in cosmetics, cosmeceuticals and nutricosmetics. In *Marine Drugs* (Vol. 19, Issue 10). MDPI. https://doi.org/10.3390/md19100552

Lourenço, S. C., Moldão-Martins, M., dan Alves, V. D. (2019). Antioxidants of natural plant origins: From sources to food industry applications. In *Molecules* (Vol. 24, Issue 22). MDPI AG. https://doi.org/10.3390/molecules24224132

Lourenço-Lopes, C., Fraga-Corral, M., Jimenez-Lopez, C., Carpena, M., Pereira, A. G., Garcia-Oliveira, P., Prieto, M. A., dan Simal-Gandara, J. (2021). Biological action mechanisms of fucoxanthin extracted from algae for application in food and cosmetic industries. In *Trends in Food Science and Technology* (Vol. 117, pp. 163–181). Elsevier Ltd. https://doi.org/10.1016/j.tifs.2021.03.012

Machu, L., Misurcova, L., Ambrozova, J. V., Orsavova, J., Mlcek, J., Sochor, J., dan Jurikova, T. (2015). Phenolic content and antioxidant capacity in algal food products. *Molecules*, *20*(1). https://doi.org/10.3390/molecules20011118

Maeda, H., Hosokawa, M., Sashima, T., Funayama, K., dan Miyashita, K. (2005). Fucoxanthin from edible seaweed, Undaria pinnatifida, shows antiobesity effect through UCP1 expression in white adipose tissues. *Biochemical and Biophysical Research Communications*, *332*(2), 392–397. https://doi.org/10.1016/j.bbrc.2005.05.002

Maharany, F., Nurjanah, S. R., Anwar, E., dan Hidayat, T. (2017). Kandungan Senyawa Bioaktif Rumput Laut Padina Australis dan Eucheuma

Cottonii Sebagai Bahan Baku Krim Tabir Surya. *Jurnal Hasil Pengolahan Perikanan Indonesia*, *20*(1), 10–17.

Makkar, H. P. S., Tran, G., Heuzé, V., Giger-Reverdin, S., Lessire, M., Lebas, F., dan Ankers, P. (2016). Seaweeds for livestock diets: A review. In *Animal Feed Science and Technology* (Vol. 212, pp. 1–17). Elsevier. https://doi.org/10.1016/j.anifeedsci.2015.09.018

Maoka, T. (2020). Carotenoids as natural functional pigments. In *Journal of Natural Medicines* (Vol. 74, Issue 1). Springer. https://doi.org/10.1007/s11418-019-01364-x

Mardini, D. D., Sofiana, M. S. J., dan Safitri, I. (2024). Analisis FTIR dari Ekstrak Cair *Sargassum polycystum* dan *Padina australis* Asal Perairan Lemukutan. *Jurnal Laut Khatulistiwa*, *6*(3), 12–17. https://doi.org/10.26418/lkuntan.v6i3.64636

Masduqi, A. F., Izzati, M., dan Prihastanti, E. (2014). Efek Metode Pengeringan Terhadap Kandungan Bahan Kimia Dalam Rumput Laut S*argassumpolycystum*. *Buletin Anatomi Dan Fisiologi*, *22*(1), 1–9.

Masruroh, C. A., Widyarti, D. S., Molukuler, L. B., Seluler, D., Biologi, J., dan Brawijaya, U. (2013). Uji Kemampuan Antioksidan Ekstrak Etanol dan Kloroform Rumput Laut *Gracilaria verrucosa* melalui Penghambatan Peroksidasi Lipid Homogenat Hepar Mencit *(Mus musculus*). In *Jurnal Biotropika* | (Vol. 1, Issue 6).

Matanjun, P., Mohamed, S., Mustapha, N. M., Muhammad, K., dan Ming, C. H. (2008). Antioxidant activities and phenolics content of eight species of seaweeds from north Borneo. *Journal of Applied Phycology*, *20*(4), 367–373. https://doi.org/10.1007/s10811-007-9264-6

Menaa, F., Wijesinghe, U., Thiripuranathar, G., Althobaiti, N. A., Albalawi, A. E., Khan, B. A., dan Menaa, B. (2021). Marine algae-derived bioactive compounds: A new wave of nanodrugs? In *Marine Drugs* (Vol. 19, Issue 9). MDPI. https://doi.org/10.3390/md19090484

Miyashita, K., Mikami, N., dan Hosokawa, M. (2013). Chemical and nutritional characteristics of brown seaweed lipids: A review. In *Journal of Functional Foods* (Vol. 5, Issue 4, pp. 1507–1517). https://doi.org/10.1016/j.jff.2013.09.019

Montingelli, M. E., Benyounis, K., Stokes, J., dan Olabi, A. G. (2016). Pretreatment of macroalgal biomass for biogas production. *Energy Conversion and Management*, *108*, 202–209. https://doi.org/10.1016/j.enconman.2015.11.008

Mostafa, H. S., dan Hashem, M. M. (2024). Microalgae as a source of carotenoids in foods, obstacles and solutions. *Phytochemistry Reviews*. https://doi.org/10.1007/s11101-024-10039-9

Munifah, ifah, dan Wikanta, T. (2006). Astaxanthin: Senyawa Antioksidan Karoten Bersumber dari Biota Laut. *Squalen Bulletin of Marine and Fisheries Postharvest and Biotechnology*, *1*(1).

Nawaly, H., Susanto, A. B., dan Uktolseja, J. L. (2013). Senyawa bioaktif dari rumput laut sebagai antioksidan. In Proceeding Biology Education Conference: *Biology, Science, Enviromental, and Learning* (Vol. 10, No. 1).

Norra, I., Aminah, A., Suri, R., dan Zaidi, J. A. (2017). Effect of drying temperature on the content of fucoxanthin, phenolic and antioxidant activity of Malaysian brown seaweed, Sargassum sp. In *J. Trop. Agric. and Fd. Sc* (Vol. 45, Issue 1).

Nursid, M., Marasskuranto, E., Atmojo, K. B., Hartono, M. P., Nur Meinita, M. D., dan R, R. (2017). Investigation on Antioxidant Compounds from Marine Algae Extracts Collected from Binuangeun Coast, Banten, Indonesia. *Squalen Bulletin of Marine and Fisheries Postharvest and Biotechnology*, *11*(2). https://doi.org/10.15578/squalen.v11i2.243

Nursid, M., dan Novienderi, D. (2017). Kandungan Fukosantin dan Fenolik Total Pada Rumput Laut Cokelat *Padina australis* yang Dikeringkan Dengan Sinar Matahari. *Jurnal Pascapanen Dan Bioteknologi Kelautan Dan Perikanan*, *12*(2). https://doi.org/10.15578/jpbkp.v12i2.341

Nursid, M., Wikanta, T., dan Susilowati, R. (2013). Aktivitas antioksidan, sitotoksisitas dan kandungan fukosantin ekstrak rumput laut coklat dari Pantai Binuangeun, Banten. *Jurnal Pascapanen dan Bioteknologi Kelautan dan Perikanan*, 8(1), 73-84.

Oroian, M., dan Escriche, I. (2015). Antioxidants: Characterization, natural sources, extraction and analysis. In *Food Research International* (Vol. 74, pp. 10–36). Elsevier Ltd. https://doi.org/10.1016/j.foodres.2015.04.018

Pandey, A. K., Chauhan, O. P., dan Semwal, A. D. (2020). Seaweeds – a potential source for functional foods. *Defence Life Science Journal*, *5*(4). https://doi.org/10.14429/dlsj.5.15632

Pereira, L., Sousa, A., Coelho, H., Amado, A. M., dan Ribeiro-Claro, P. J. A. (2003). Use of FTIR, FT-Raman and 13C-NMR spectroscopy for identification of some seaweed phycocolloids. *Biomolecular Engineering*, *20*(4–6), 223–228. https://doi.org/10.1016/S1389-0344(03)00058-3

Pramesti, R. (2013). Aktivitas antioksidan ekstrak rumput laut *Caulerpa serrulata* dengan metode DPPH *(1, 1 difenil 2 pikrilhidrazil). Buletin Oseanografi Marina*, 2(2), 7-15.

Pramesti, R., Ridlo, A., Setyati, W. A., Zainuddin, M., dan Akbar, M. R. (2017). Aktivitas Antioksi dan Rumput Laut *Acanthophora muscoides (Linnaeus) Bory* Dari Pantai Krakal Gunung Kidul Yogyakarta. *Jurnal Disprotek*, 8(1).

Pramesti, R., Susanto, AB., S, W. A., Ridlo, A., Subagiyo, S., dan Oktaviaris, Y. (2016). Struktur Komunitas dan Anatomi Rumput Laut di Perairan Teluk Awur, Jepara dan Pantai Krakal, Yogyakarta. *Jurnal Kelautan Tropis*, *19*(2). https://doi.org/10.14710/jkt.v19i2.822

Premarathna, A. D., Tuvikene, R., Fernando, P. H. P., Adhikari, R., Perera, M. C. N., Ranahewa, T. H., Howlader, M. M., Wangchuk, P., Jayasooriya, A. P., dan Rajapakse, R. P. V. J. (2022). Comparative Analysis Of Proximate Compositions, Mineral and Functional Chemical Groups of 15 Different Seaweed Species. *Scientific Reports*, *12*(1). https://doi.org/10.1038/s41598-022-23609-8

Puasa, E., Mantiri, D., dan Rumengan, A. (2018). Analisis Antibakteri Alga *Padina australis* Hauck di Perairan Teluk Totok dan Perairan Blongko. *Jurnal Pesisir dan Laut Tropis*, 6(1), 14-20.

Purbosari, N., Warsiki, E., Syamsu, K., dan Santoso, J. (2020). Effect of Harvest Age and Solvents on the Phenolic Content of Eucheuma cottonii Extract. *Makara Journal of Science*, *24*(3), 141–147. https://doi.org/10.7454/mss.v24i3.1177

Ranivan, I. A., Rasyid, A. R. A., Setyaningsih, A. W., Rahayu, A. P., dan Hasanah, A. F. (2024). Penentuan Tempat Pembuangan Sampah Kawasan Pantai di Pantai Krakal, Gunungkidul. *Prosiding Hasil Penelitian dan Pengabdian Bidang Pendidikan,* 1(1), 22-27.

Rukminingsih, Adnan, G., dan Latief, M. A. (2020). Metode Penelitian Pendidikan. Penelitian Kuantitatif, Penelitian Kualitatif, Penelitian Tindakan Kelas. In *Journal of Chemical Information and Modeling* (Vol. 53, Issue 9).

Sadvika, I. G. A. S., Wulansari, N. W. A., Suryaningsih, N. P. E., dan Mahendra, A. N. (2022). Potensi *Padina australis* sebagai Marine Drug untuk Aterosklerosis. *Smart Medical Journal*, *5*(1), 1. https://doi.org/10.13057/smj.v5i1.55479

Safitri, I., Warsidah, W., Sofiana, M. S. J., Kushadiwijayanto, A. A., dan Sumarni, T. N. (2021). Total Phenolic Content, Antioxidant and Antibacterial Activities of *Sargassum polycystum* of Ethanol Extract from Waters of Kabung Island. *Berkala Sainstek*, *9*(3), 139. https://doi.org/10.19184/bst.v9i3.27199

Salehi, E. A., Torghabeh, J. A., Ghahremani, H., dan Jahangiri, Y. (2011). Effect of temperature and solvent on the total phenolic compounds Ficus carica leaves of xtraction from e a. *J. Chem. Pharm. Res*, *3*(5), 253–259. www.jocpr.com

Santoso, J., Podungge, F., dan Sumaryanto, H. (2013). Chemical Composition And Antioxidant Activity Of Tropical Brown Algae *Padina australis* From Pramuka Island, District Of Seribu Island, Indonesia. In *Jurnal Ilmu dan Teknologi Kelautan Tropis* (Vol. 5, Issue 2). http://itk.fpik.ipb.ac.id/ej_itkt52

Saptari, T., Triastinurmiatiningsih, T., Sari, B. L., dan Sayyidah, I. N. (2019). Kadar fenolik dan aktivitas antioksidan ekstrak etanol rumput laut coklat *(Padina australis). Fitofarmaka: Jurnal Ilmiah Farmasi*, 9(1), 1-8.

Shahidi, F., dan Ambigaipalan, P. (2015). Phenolics and polyphenolics in foods, beverages and spices: Antioxidant activity and health effects – A review. *Journal of Functional Foods*, *18*, 820–897. https://doi.org/10.1016/J.JFF.2015.06.018

Shahidi, F., dan Zhong, Y. (2015). Measurement of antioxidant activity. In *Journal of Functional Foods* (Vol. 18, pp. 757–781). Elsevier Ltd. https://doi.org/10.1016/j.jff.2015.01.047

Sinurat, A. A. P., Renta, P. P., Herliany, N. E., Negara, B. F., dan Purnama, D. (2019). Uji Aktivitas antibakteri ekstrak metanol rumput laut

gracilaria edulis terhadap bakteri Aeromonas hydrophila. *Jurnal Enggano*, 4(1), 105-114.

Siregar, A. F., Sabdono, A., dan Pringgenies, D. (2012). Potensi Antibakteri Ekstrak Rumput Laut Terhadap Bakteri Penyakit Kulit *Pseudomonas aeruginosa, Staphylococcus epidermidis*, dan *Micrococcus luteus*. *Journal Of Marine Research*, *1*(2).

Sodik, V., Tamat, S., Suwarno, T., dan Noviendri, D. (2022). Ekstraksi Dan Purifikasi Fukosantin Dari Rumput Laut Cokelat *Sargassum Sp*. Sebagai Antioksidan. *Jurnal Riset Kesehatan Poltekkes Depkes Bandung*, *14*(1), 123–133. https://doi.org/10.34011/juriskesbdg.v14i1.2057

Stephani, W., Santosa, G. widi, dan Sunaryo. (2014). Distribusi Makroalgae Di Wilayah Intertidal Pantai Krakal, Kabupaten Gunung Kidul, Yogyakarta. In *Journal* (Vol. 3). http://ejournal-s1.undip.ac.id/index.php/jmr

Stone, S., Langford, Z., Arsyi, R., Lapong, I., Zach, Z., Ruhon, R., Julianto, B., Siradjuddin, I., Wong, A., dan Waldron, S. (2023). Technology adoption by smallholder farmers: the case of drying technology in the Indonesian seaweed industry. *Journal of Agribusiness in Developing and Emerging Economies*. https://doi.org/10.1108/JADEE-01-2023-0011

Stramarkou, M., Papadaki, S., Kyriakopoulou, K., dan Krokida, M. (2017). Effect of drying and extraction conditions on the recovery of bioactive compounds from Chlorella vulgaris. *Journal of Applied Phycology*, *29*, 2947–2960. https://doi.org/10.1007/s10811-017-1181-8

Sugito, dan Dewi Marliyana, S. (2021). Uji Performa Spektrofotometer Serapan Atom Thermo Ice 3000 Terhadap Logam Pb Menggunakan CRM 500 dan CRM 697 di UPT Laboratorium Terpadu UNS. In *Journal Of Laboratory Issn* (Vol. 4, Issue 2). Online.

Suhartati, T. (2017). *Dasar-Dasar Spektrofotometri Uv-Vis Dan Spektrometri Massa Untuk Penentuan Struktur Senyawa Organik*. 1–106.

Suleman, Andayani, S., dan Yuniarti, A. (2022). Identifikasi Senyawa Ekstrak Kasar Pada Rumput Laut Ulva Lactuca Dari Pantai Serangan Bali. In *Universitas Nusa Cendana Suleman dkk* (Vol. 2022). https://ejurnal.undana.ac.id/index.php/JBP/index

Sulistiyani, Y., Sabdono, A., Afiati, N., dan Haeruddin. (2021). Fucoxanthin identification and purification of brown algae commonly found in Lombok Island, Indonesia. *Biodiversitas*, *22*(3), 1527–1534. https://doi.org/10.13057/BIODIV/D220358

Susanto, E., Fahmi, A. S., Agustini, T. W., Rosyadi, S., dan Wardani, A. D. (2017). Effects of Different Heat Processing on Fucoxanthin, Antioxidant Activity and Colour of Indonesian Brown Seaweeds. *IOP Conference Series: Earth and Environmental Science*, *55*(1). https://doi.org/10.1088/1755-1315/55/1/012063

Tanniou, A., Vandanjon, L., Incera, M., Serrano Leon, E., Husa, V., Le Grand, J., Nicolas, J. L., Poupart, N., Kervarec, N., Engelen, A., Walsh, R., Guerard, F., Bourgougnon, N., dan Stiger-Pouvreau, V. (2014). Assessment of the spatial variability of phenolic contents and associated

bioactivities in the invasive alga *Sargassum muticum* sampled along its European range from Norway to Portugal. *Journal of Applied Phycology*, *26*(2), 1215–1230. https://doi.org/10.1007/s10811-013-0198-x

Thiyagarasaiyar, K., Mahendra, C. K., Goh, B.-H., Gew, L. T., dan Yow, Y.-Y. (2021). cosmetics UVB Radiation Protective Effect of Brown Alga Padina australis*: A Potential Cosmeceutical Application of Malaysian Seaweed*. https://doi.org/10.3390/cosmetics8030058

Tziveleka, L. A., Tammam, M. A., Tzakou, O., Roussis, V., dan Ioannou, E. (2021). Metabolites with antioxidant activity from marine macroalgae. In *Antioxidants* (Vol. 10, Issue 9). MDPI. https://doi.org/10.3390/antiox10091431

Wandha, S., Gunawan, S. W., dan Sunaryo. (2014). Distribusi Makroalgae di Wilayah Intertidal Pantai Krakal, Kabupaten Gunung Kidul, Yogyakarta. *Journal of Marine Research*, *3*(4).

Yang, Y., Qi, Y., Alalawy, A. I., Mohammed, G. M., Almasoudi, F. M., dan Salama, E. S. (2022). Potential of Marine Seaweeds for Bioactive Compounds: a Comprehensive Analysis of *Padina australis* Biomass. *Thalassas*, *38*(2), 947–956. https://doi.org/10.1007/s41208-022-00436-2

Zubia, M., Fabre, M. S., Kerjean, V., Lann, K. Le, Stiger-Pouvreau, V., Fauchon, M., dan Deslandes, E. (2009). Antioxidant and antitumoural activities of some Phaeophyta from Brittany coasts. *Food Chemistry*, *116*(3). https://doi.org/10.1016/j.foodchem.2009.03.025

Zubia, M., Payri, C., dan Deslandes, E. (2008). Alginate, mannitol, phenolic compounds and biological activities of two range-extending brown algae, Sargassum mangarevense and Turbinaria ornata (Phaeophyta: Fucales), from Tahiti (French Polynesia). *Journal of Applied Phycology*, *20*(6), 1033–1043. https://doi.org/10.1007/s10811-007-9303-3

Zubia, M., Robledo, D., dan Freile-Pelegrin, Y. (2007). Antioxidant activities in tropical marine macroalgae from the Yucatan Peninsula, Mexico. *Journal of Applied Phycology*, *19*(5), 449–458. https://doi.org/10.1007/s10811-006-9152-5