

## DAFTAR PUSTAKA

- Ali, H.E.A., Shanab, S.M.M., Abo-State, M.A.M., Shalaby, E.A.A., El Demerdash, U.M.N., Abdullah, M.A., 2014. Screening of microalgae for antioxidant activities, carotenoids and phenolic contents. *Appl. Mech. Mater.* 625, 156–159. <https://doi.org/10.4028/www.scientific.net/AMM.625.156>
- Altschul, S.F., Madden, T.L., Schäffer, A.A., Zhang, J., Zhang, Z., Miller, W., Lipman, D.J., 1997. Gapped BLAST and PSI-BLAST : a new generation of protein database search programs. *Nucleic Acid Res.* 25, 3389–3402.
- Anbudhasan, P., Surendraraj, A., Karkuzhali, S., Sathishkumaran, P., 2014. Natural antioxidants and its benefits. *Int. J. Food Nutr. Sci.* 3, 225–232.
- Badarinath, A. V, Rao, K.M., Madhu, C., Chetty, S., Ramkanth, S., Rajan, T.V.S., Gnanaprakash, K., 2010. A Review on In-vitro Antioxidant Methods: Comparisons, Correlations and Considerations. *Int. J. PharmTech Res.* 2, 1276–1285.
- Banskota, A.H., Sperker, S., Stefanova, R., McGinn, P.J., O’Leary, S.J.B., 2019. Antioxidant properties and lipid composition of selected microalgae. *J. Appl. Phycol.* 31, 309–318. <https://doi.org/10.1007/s10811-018-1523-1>
- Bellinger, E.G., Sigee, D.C., 2010. *Freshwater Algae : Identification and Use as Bioindicators.* Wiley-Blackwell.
- Bhattacharya, A., Sood, P., Citovsky, V., 2010. The roles of plant phenolics in defence and communication during *Agrobacterium* and *Rhizobium* infection. *Mol. Plant Pathol.* 11, 705–719. <https://doi.org/10.1111/j.1364-3703.2010.00625.x>
- Cardoso, L.C., Serrano, C.M., Rodríguez, M.R., 2012. Extraction of Carotenoids and Fatty Acids from Microalgae Using Supercritical Technology \*. *Sci. Res.* 2012, 877–883.
- Chibi, F., Rchid, H., Aarsalane, W., Nmila, R., 2018. Antioxidant Activity and Total Phenolic Content of the Red Alga *Halopitys incurvus* Harvested from El Jadida Coast ( Morocco ). *Int. J. Pharmacogn. Phytochem.* 10, 176–181. <https://doi.org/10.25258/phyto.10.5.1>
- Chisti, Y., 2007. Biodiesel from microalgae. *Biotechnol. Adv.* 25, 294–206. <https://doi.org/10.1016/B978-0-08-101023-5.00010-8>
- Deng, X., Fei, X., Li, Y., 2011. The effects of nutritional restriction on neutral lipid accumulation in *Chlamydomonas* and *Chlorella*. *African Journl Microbiol. Res.* 5, 260–270. <https://doi.org/10.5897/AJMR10.557>
- Duong, V.T., Li, Y., Nowak, E., Schenk, P.M., 2012. Microalgae Isolation and Selection for Prospective Biodiesel Production. *Energies* 1835–1849. <https://doi.org/10.3390/en5061835>
- Fogg, G.E., 1965. *Algal Cultures and Phytoplankton Ecology.* *Int. Rev. Der Gesamten Hydrobiol. Und Hydrog.*
- Gardner, R., Peters, P., Peyton, B., Cooksey, K.E., 2011. Medium pH and nitrate concentration effects on accumulation of triacylglycerol in two members of the chlorophyta 1005–1016. <https://doi.org/10.1007/s10811-010-9633-4>
- Garg, N., Abdel-Aziz, S.M., Aeron, A., 2016. *Microbes in Food and Health.* Springer, Switzerland.
- Ghanbari, R., Zarei, M., Ebrahimpour, A., Abdul-Hamid, A., Ismail, A., Saari, N.,

2015. Angiotensin-I converting enzyme (ACE) inhibitory and anti-oxidant activities of sea cucumber (*actinopyga lecanora*) hydrolysates. *Int. J. Mol. Sci.* 16, 28870–28885. <https://doi.org/10.3390/ijms161226140>
- Gürlek, C., Yarkent, Ç., Köse, A., Tuğcu, B., Gebeloğlu, I.K., Öncel, S., Elibol, M., 2019. Screening of antioxidant and cytotoxic activities of several microalgal extracts with pharmaceutical potential. *Health Technol. (Berl)*. <https://doi.org/10.1007/s12553-019-00388-3>
- Hadiyanto, Azim, M., 2012. *Mikroalga Sumber Pangan dan Energi Masa Depan, pertama*. ed. UPT UNDIP Press Semarang ISBN:., Semarang.
- Hajimahmoodi, M., Faramarzi, M.A., Mohammadi, N., Soltani, N., Oveisi, M.R., Nafissi-Varcheh, N., 2010. Evaluation of antioxidant properties and total phenolic contents of some strains of microalgae. *J. Appl. Phycol.* 22, 43–50. <https://doi.org/10.1007/s10811-009-9424-y>
- Hättenschwiler, S., Vitousek, P.M., 2000. Hattenschwiller & Vitousek 2000 Polyphenols and nutrient cycling 15, 238–243. [https://doi.org/10.1016/S0169-5347\(00\)01861-9](https://doi.org/10.1016/S0169-5347(00)01861-9)
- Hegewald, E., Hanagata, N., 2017. Phylogenetic studies on Scenedesmaceae (Chlorophyta). *Arch. Hydrobiol. Suppl. Algal. Stud.* 29, 2017. <https://doi.org/10.1127/algol>
- Hernandi, R., Dharma, A., Armaini, A., 2019. Penapisan, isolasi, dan karakterisasi mikroalga yang berpotensi sebagai sumber biodiesel dari perairan Danau Kerinci, Jambi. *J. Litbang Ind.* 9, 11–16.
- Humbert, J.F., Dorigo, U., Be, A., 2002. Comparison of eukaryotic phytobenthic community composition in a polluted river by partial 18S rRNA gene cloning and sequencing. *Microb. Ecol.* 372–380. <https://doi.org/10.1007/s00248-002-2024-x>
- Ibrahim, M.A., Koorbanally, N.A., Islam, M.S., 2014. Antioxidative activity and inhibition of key enzymes linked to type-2 diabetes ( $\alpha$ -Glucosidase and  $\alpha$ -Amylase) by *khaya senegalensis*. *Acta Pharm.* 64, 311–324. <https://doi.org/10.2478/acph-2014-0025>
- Itam, A., Wulandari, A., Rahman, M.M., Ferdinal, N., 2018. Preliminary Phytochemical Screening , Total Phenolic Content , Antioxidant and Cytotoxic Activities of *Alstonia scholaris* R . Br Leaves and Stem Bark Extracts. *J. Pharm. Sci. Res.* 10, 518–522.
- Khoddami, A., Wilkes, M.A., Roberts, T.H., 2013. Techniques for analysis of plant phenolic compounds. *Molecules* 18, 2328–2375. <https://doi.org/10.3390/molecules18022328>
- Knaggs, A.R., 2001. The biosynthesis of shikimate metabolites. *Nat. Prod. Rep.* 18, 334–355. <https://doi.org/10.1039/b001717p>
- Kumar, P.S., Sudha, S., 2015. Evaluation of Alpha-Amylase and Apha-Glucosidase Inhibitory Properties of Selected Seaweeds from Gulf of Mannar. *Int. Res. J. Pharm.* 3, 128–130.
- Lai, H.Y., Lim, Y.Y., 2011. Evaluation of antioxidant activities of the methanolic extracts of selected ferns in Malaysia. *Int. J. Environmental Sci. Dev.* 2, 442–447.
- Lehninger, A.L., 1982. *Dasar-dasar Biokimia*. Erlangga, Jakarta.
- Li, Y., 2008. Articles: Biocatalysts and Bioreactor design. *Biotechnol* 815–820. <https://doi.org/10.1021/bp.070371k>

- Matsunaga, T., Matsumoto, M., Maeda, Y., Sugiyama, H., Sato, R., Tanaka, T., 2009. Characterization of marine microalga, *Scenedesmus* sp. strain JPCC GA0024 toward biofuel production. *Biotechnol Lett* 1367–1372. <https://doi.org/10.1007/s10529-009-0029-y>
- Mcdougall, G.J., Shpiro, F., Dobson, P., Smith, P., Blake, A., Stewart, D., Crop, S., 2002. Different polyphenolic components of soft fruits inhibit  $\alpha$ -amylase and  $\alpha$ -glucosidase. *Qual. Heal. Nutr.* 5196.
- Murugesan S, M, A.B., S, B., M, K., S, D.T., 2015. In vitro antidiabetic activity of methanolic extracts of selected marine algae. *Eur. J. Pharm. Med. Res.* 2, 256–260.
- Nair, S.S., Kavrekar, V., Mishra, A., 2013. In vitro studies on alpha amylase and alpha glucosidase inhibitory activities of selected plant extracts. *Eur. J. Exp. Biol.* 3, 128–132.
- Narayanan, G.S., Kumar, G., Seepana, S., Elankovan, R., Arumugan, S., Premalatha, M., 2018. Isolation, identification and outdoor cultivation of thermophilic freshwater microalgae *Coelastrella* sp. FI69 in bubble column reactor for the application of biofuel production. *Biocatal. Agric. Biotechnol.* <https://doi.org/10.1016/j.bcab.2018.03.022>
- Oroian, M., Escriche, I., 2015. Antioxidants : Characterization , natural sources , extraction and analysis. *Food Res. Int. J.* 74, 10–36.
- Palanisamy, U., Manaharan, T., Teng, L.L., Radhakrishnan, A.K.C., Subramaniam, T., Masilamani, T., 2011. Rambutan rind in the management of hyperglycemia. *Food Res. Int.* 44, 2278–2282. <https://doi.org/10.1016/j.foodres.2011.01.048>
- Pandithurai, Murugesan, Bhuvaneswari, Thennarasan, S., 2015. In vitro  $\alpha$ -amylase and  $\alpha$ -glucosidase inhibition activity of methanolic extract of marine brown alga *Spatoglossum asperum*. *Int. J. Adv. Pharm.* 4, 83–87. <https://doi.org/10.7439/ijap>
- Paul, J.P., 2012. Screening of Anti-Diabetic Properties of Fucoidan Extracted from *Padina Distromatica* Hauck (Brown Seaweed) From Hare Island, Thoothukudi, Tamil Nadu, India. *Int. J. Innov. Drug Discov.* 2, 4–15.
- Pedro, A.S., Acién, F.G., 2013. Bioresource Technology Marine microalgae selection and culture conditions optimization for biodiesel production. *Bioresour. Technol.* 134, 353–361. <https://doi.org/10.1016/j.biortech.2013.02.032>
- Pereira, A.M., Lisboa, C.R., Alberto, J., Costa, V., 2018. High protein ingredients of microalgal origin : Obtainment and functional properties. *Innov. Food Sci. Emerg. Technol.* 47, 187–194. <https://doi.org/10.1016/j.ifset.2018.02.015>
- Phoboo, S., Shetty, K., Obeid, T. El, 2015. In Vitro Assays of Anti-diabetic and Anti- hypertensive Potential of Some Traditional Edible Plants of Qatar In Vitro Assays of Anti-diabetic and Anti- hypertensive Potential of Some Traditional Edible Plants of Qatar. *Med. Act. Plants* 4, 22–29. <https://doi.org/10.7275/R59P2ZK6>
- Procházková, G., Brányiková, I., Zachleder, V., Brányik, T., 2013. Effect of nutrient supply status on biomass composition of eukaryotic green microalgae. *Appl. Phycol.* <https://doi.org/10.1007/s10811-013-0154-9>
- Putri, M., Chaidir, Z., Syafrizayanti, 2016. Isolasi dan identifikasi mikroalga yang terdapat di perairan Lembah Harau Payakumbuh, Sumatera Barat sebagai



- salah satu agen penghasil senyawa antibakteri. Universitas Andalas.
- Rahul, V., Agrawal, P., Sharma, M., Shukla, S., 2016. Total phenolics, flavonoids and antioxidant potential of organic extract of fresh water algal sample collected from a marine lake. *Indian J. Geo-Marine Sci.* 45, 1320–1326.
- Ratha, S.K., Prasanna, R., Prasad, R.B.N., Sarika, C., Dhar, D.W., Saxena, A.K., 2013. Modulating lipid accumulation and composition in microalgae by biphasic nitrogen supplementation. *Aquaculture* 392–395, 69–76. <https://doi.org/10.1016/j.aquaculture.2013.02.004>
- Robyt, J.F., 2005. Inhibition, activation, and stabilization of  $\alpha$ -amylase family enzymes. *Biologia (Bratisl)*. 16, 17–26.
- Rukmana, S., 2015. Perbandingan sekuense kapang *Trichoderma* sp. berdasarkan internal transcribed spacer (ITS) rDNA dengan menggunakan data base NCBI. *Biol. Fak. Sains Dan Teknol. Univ. Malik Ibrahim Malang* 3, 54–67.
- Safafar, H., Wagenen, J. Van, Møller, P., Jacobsen, C., 2015. Carotenoids, phenolic compounds and tocopherols contribute to the antioxidative properties of some microalgae species grown on industrial wastewater. *Marine drugs* 13, 7339–7356. <https://doi.org/10.3390/md13127069>
- Salehi, P., Asghari, B., Esmaeili, M.A., Dehghan, H., Ghazi, I., 2013.  $\alpha$ -Glucosidase and  $\alpha$ -amylase inhibitory effect and antioxidant activity of ten plant extracts traditionally used in Iran for diabetes. *J. Med. Plants Res.* 7, 257–266. <https://doi.org/10.5897/JMPR11.1320>
- Sales, P.M. de, Souza, P.M. de, Dartora, M., Resck, I.S., Simeoni, L.A., Fonseca-Bazzo, Y.M., Magalhaes, P. de O., Silveira, D., 2017. *Pouteria torta* epicarp as a useful source of  $\alpha$ -amylase inhibitor in the control of type 2 diabetes. *Food Chem. Toxicol.* 109, 962–969. <https://doi.org/10.1016/j.fct.2017.03.015>
- Saputro, T.B., Purwani, K.I., Ermavitalini, D., Saifulloh, A.F., 2019. Isolation of high lipid content microalgae from Wonorejo river, Surabaya, Indonesia and its identification using *rbcL* marker gene. *Biodiversitas* 20, 1380–1388. <https://doi.org/10.13057/biodiv/d200530>
- Schroeter, H., Boyd, C., Spencer, J.P.E., Williams, R.J., Cadenas, E., Rice-Evans, C., 2002. MAPK signaling in neurodegeneration: Influences of flavonoids and of nitric oxide. *J Neurobiol. Aging* 23, 861–880. [https://doi.org/10.1016/S0197-4580\(02\)00075-1](https://doi.org/10.1016/S0197-4580(02)00075-1)
- Selvarajan, R., Felföldi, T., Tauber, T., Sanniyasi, E., Sibanda, T., Tekere, M., 2015. Screening and evaluation of some green algal strains (*Chlorophyceae*) isolated from freshwater and soda lakes for biofuel production. *Energies* 8, 7502–7521. <https://doi.org/10.3390/en8077502>
- Setyani, W., Setyowati, H., Palupi, D.H.S., Rahayunnissa, H., Hariono, M., 2019. Antihyperlipidemia and antihyperglycemic studies of *Arcangelisia flava* (L.) Merr. phenolic compound: incorporation of in vivo and in silico study at molecular level. *Indones. J. Pharm. Sci. Technol.* 6, 84. <https://doi.org/10.24198/ijpst.v6i2.20211>
- Shanab, S.M.M., Mostafa, S.S.M., Shalaby, E.A., Mahmoud, G.I., 2012. Aqueous extracts of microalgae exhibit antioxidant and anticancer activities. *Asian Pac. J. Trop. Biomed.* 2, 608–615. [https://doi.org/10.1016/S2221-1691\(12\)60106-3](https://doi.org/10.1016/S2221-1691(12)60106-3)
- Shetty, V., Sibi, G., 2015. Relationship Between Total Phenolics Content and

- Antioxidant Activities of Microalgae Under Autotrophic, Heterotrophic and Mixotrophic Growth. *J. Food Resour. Sci.* 4, 1–9. <https://doi.org/10.3923/jfrs.2015.1.9>
- Singh, S.P., Singh, P., 2015. Effect of temperature and light on the growth of algae species: A review. *Renew. Sustain. Energy Rev.* 50, 431–444. <https://doi.org/10.1016/j.rser.2015.05.024>
- Spiden, E.M., Scales, P.J., Yap, B.H.J., Kentish, S.E., Hill, D.R.A., Martin, G.J.O., 2015. The effects of acidic and thermal pretreatment on the mechanical rupture of two industrially relevant microalgae: *Chlorella* sp. and *Navicula* sp. *ALGAL* 7, 5–10. <https://doi.org/10.1016/j.algal.2014.11.006>
- Sugiwati, S., Kardono, L.B.S., Bintang, M., 2006.  $\alpha$ -Glucosidase inhibitory activity and hypoglycemic effect of *Phaleria macrocarpa* fruit pericarp extracts by oral administration to rats. *J. Appl. Sci.* <https://doi.org/10.3923/jas.2006.2312.2316>
- Suresh, J., Rajan, D., Nagamani, 2014. Anti-Diabetic Activity of Aerial Parts of *Xanthium*. *World J. Pharm. Pharm. Sci.* 3, 2185–2200.
- Sylvie, D.D., Anatole, P.C., Cabral, B.P., Veronique, P.B., 2014. Comparison of in vitro antioxidant properties of extracts from three plants used for medical purpose in Cameroon: *Acalypha racemosa*, *Garcinia lucida* and *Hymenocardia lyrata* 4, S625–S632. <https://doi.org/10.12980/APJTB.4.201414B168>
- Thorat, I.D., Jagtap, D.D., Mohapatra, D., Joshi, D.C., Sutar, R.F., Kapdi, S.S., 2013. Antioxidants, Their Properties, Uses in Food Products and Their Legal Implications. *Int. J. food Stud.* 2, 81–104.
- Xu, Z., 2012. Important Antioxidant Phytochemicals in Agricultural Food Products. *Anal. Antioxidant-Rich Phytochem.* 1–24. <https://doi.org/10.1002/9781118229378.ch1>
- Yingying, S., Hui, W., Ganlin, G., Yinfang, P., Binlun, Y., 2014. The isolation and antioxidant activity of polysaccharides from the marine microalgae *Isochrysis galbana*. *Carbohydr. Polym.* 113, 22–31. <https://doi.org/10.1016/j.carbpol.2014.06.058>
- Yudha, A.P., 2008. Senyawa Antibakteri dari Mikroalga *Dunaliella* sp. pada Umur Panen yang Berbeda. INSTITUT PERTANIAN BOGOR.