DAFTAR PUSTAKA

Agardh, C. 1820. *Sargassum cristaefolium* (Internet) <http://www.algaebase.org> (diakses 5 Maret 2015).

Agardh, J. 1860. *Turbinaria conoides* (Internet) <http://www.algaebase.org> (diakses 5 Maret 2015).

Ale, M.T.; Maruyama, Hiroko; Tamauchi, H.; Mikkelsen, J.D. & Meyer, A. 2011. Fucoidan from *Sargassum* sp. And *Fucus vesiculosus* reduced cell viability of lung carcinomaand melanoma cells in vitro and activated natural killer cells in mice in vivo. *International Journal of Biological Macromolecule,* 49 (2011) 331-336. Doi:10.3390/md9102106.

Anonim. 2014. *Chromatography* (Internet) <biotechniquesden.blogspot.com> (diakses 20 Agustus 2014).

Anonim. 2009. *Kanker* (Internet) <http://www.ccrc.farmasi.ugm.ac.id/> (diakses 20 Agustus 2014).

Atashrazm, F.; Lowenthal, R.M.; Woods, G.M.; Holloway, A.F. & Dickinson, J.L. 2015. Fucoidan and Cancer: A Multifunctional Molecule with Antitumor Potential. *Marine Drugs,* 2015, 13, 2327-2346. Doi:10.3390/md13042327.

Bilan, M.I.; Grachev, A.; Shaskov, A.N.N. & Usov, A. 2006. Stucture of A Fucoidan from The Brown Seaweed *Fucus serratus* L. *Carbohydrate Research,* 341 (2006) 238-245. Doi:10.1016/j.carres.2005.11.009.

Bilan, M.I.; Grachev, A.A.; Shashkov, A.S.; Kelly, M.; Sanderson, C.J.; Nifantiev, N.E. & Usov, A.I. 2010. Further Studies on The Composition and Structure of A Fucoidan Preparation from The Brown Alga *Saccharina latissima*. *Carbohydrate Research,* 345(14):2038–2047. Doi:10.1016/j.carres.2010.07.009.

Bilan, M.I.; Shashkov, A.S. & Usov, A.I. 2014. Structure of A Sulfated Xylofucan from The Brown Alga *Puctaria plantaginea*. *Carbohydrate Research,* 393 (2014) 1-8. Doi.org/10.1016/j.carres.2014.04.022.

Blackburn, Elizabeth; Druker, Brian; Hartsumuran, Leland; King, Mary-Claire & Weinberg, Robert. Tanpa Tahun. *Cell Biology Cancer* (Internet) < https://www-.learner.org/resources/series- 187.html> (diakses 28 April 2015).

Brummer, Yolanda & Cui, Steve. 2005. Understanding Carbohydrate Analysis. *Food Carbohydrates: Chemistry, Physical Properties, and Applications.*

Cancer Chemoprevention Research Center (CCRC). Tanpa tahun. *Uji Sitotoksik Metode MTT*, (Internet) <ccrc.farmasi.ugm.ac.id> (diakses 2 Agustus 2014).

Cumashi, A.; Ushakova, N.A.; Preobrazhenskaya, M.E.; D' Incecco, A.; Piccoli, A.; Totani, L.; Tinari, N.; Morozevich, G.E.; Berman, A.E.; Bilan, M.I.; Usov, A.I.; Ustyuzhanina, N.E.; Grachev, A.A.; Sanderson, C.J.; Kelly, M.; Rabinovich, G.A.; Iacobelli, S. & Nifantiev, N.E. 2007. A Comparative Study of The Anti-Inflammatory, Anticoagulant, Antiangiogenic, and Antiadhesive Activities of Nine Different Fucoidan from Brown Seaweeds. *Glycobiology,* 17(5):541–542. Doi:10.1093 /glycob /cwm014.

Dawson, E.Y. 1956. *How to Know The Seaweeds*. Lowa: Wm.c Brown Company Publisher

Dodgson, K.S.; & Price, R.G. 1962. A Note on the Determination of The Ester Sulphate Content of Sulphated Polysaccharides. *Biochemistry,* 84, 106-110.

Dorfner, Konrad & Hartomo, Anton J. 1995. *Iptek Pertukaran Ion*. Yogyakarta: Andi Offset Yogyakarta.

Duarte, M.E.; Cardoso, M.A.; Noseda, M.D. & Cerezo, A.S. 2001. Structural Studies on Fucoidan from The Brown Seaweed *Sargassum stenophyllum*. *Carbohydrate Research,* 333(4):281–293.

Ermakova, S.; Sokolova, R.; Kim, S.M.; Um, B.; Isakov,V. & Ziyagintseva, T. 2011. Fucoidan from Brown Seaweeds *Sargassum honery, Eclonia cava, Costaria costata*: Structural Characteristic and Anticancer Activity. *App Biochem Biotechnol,* (2011) 164:841-850. Doi 10.1007/s12010-011-9178-2.

FAO. 1998. *Specific Identification Guide for fishery Purpose, The Living Marine Resources of The Western Central Pacific.* Rome: FAO.

Graville. 1830. *Padina fraseri* (Internet) <http://www.algaebase.org> (diakses 5 Maret 2015).

Hahn, T.; Lang, S.; Ulber, R. & Muffler, K. 2012. Novel Procedures for The Extraction of Fucoidan from Brown Algae. *Process Biochemistry,* 47 (2012) 1691–1698. Doi.org/10.1016/j.procbio.2012.06.016.

Hariyano; Tahalea, M.; Samal, K. & T., Agam. 2010. *Koleksi Bibit Alga cokelat (Padina australis) dengan Metode Rentangan Net* (Internet), <http://www.google.com> (diakses 2 juli 2015).

Herdayana, Sumar. 2006. *Kimia Pemisahan*. Bandung: PT. Remaja Rosdakarya.

Hodges, G.M.; Livingstone, D.C. & Franks L.M. 1973. The Localization of Tripsin in Cultured Mammalian Cells. *J. cell Sci.* 12, 887-902 (1973).

Holtkamp, A.D. 2009. *Isolation, Characterization, Modification and Application of Fucoidan from Fucus vesiculosus*. Dissertation: Carolo Wilhelmina University.

Jiang, Zedong; Okimura, T.; Yokose, T.; Yamasaki, Y.; Yamaguchi, K. & Oda, T. 2010. Effect of Sulfated Fucan, Ascophyllan, from The Brown Alga *Ascophyllum nodosum* on Various Cell Lines: A Comparative Study on Ascophyllan and Fucoidan. *Journal of bioscience and bioengineering,* Vol 110 no. 1, 113-117, 2010. Doi:10.1016/j.jbiosc.2010.01.007.

Johnson, D.K. Tanpa Tahun. Methods For Quantitative Analysis of Uronic Acids in Biomass. *The U.S. Department of Energi by Midwest Research Institute*.

Kawamoto, Hitoshi; Miki, Y.; Kimura, T.; Tanaka, K.; Nakagawa, T.; Kawamukai, M & Matsuda, H. 2006. Effect of Fucoidan from Mozuku on Human Stomach Cell Lines. *Food Sci. Technol. Res.,* 12 (3), 218-222, 2006.

Kim E.J.; Park S.Y.; Lee J.Y. & Park J.H. 2010. Fucoidan Present in Brown Algae Induces Apoptosis of Human Colon Cancer Cells. *BMC Gastroenterol,* 10: 96.

Kim, Hyeseon; Lee, Ara; Jung, Won-Kyo & Jeon, Taeck J. 2015. Effects of Fucoidan on Cell Morphology and Migration in Osteoblasts. *Food Sci. Biotechnol*, 24(2): 699-704 (2015).

Kim, Kyung Tae. 2012. *Seasonal Variation of Seaweed Components and Novel Biological Fungtion of Fucoidan Extracted from Brown Algae in Quebec*. Thesis: Laval University.

Kim W.J.; Kim H.G.; Oh H.R.; Lee K.B.; Lee Y.K. & Park Y.I. 2007. Purification and Anticoagulant Activity of A Fucoidan from Korean *Undaria pinnatifida* Sporophyll. *Algae,* 22(3):247–252.

Koo J.G.; Jo K.S.; Do J.R. & Woo S.J. 1995. Isolation and Purification of Fucoidan from *Laminaria religiosa* and *Undaria pinnatifida* in Korea. *J. Korean Fish. Soc*. 28: 227-236.

Kraan, Stefan. 2012. Algal Polysaccharides, Novel, Applications and Outlook. *Carbohydrates – Comprehensive Studies on Glycobiology and Glycotechnology*. Doi.org/10.5772/51572.

Kurita, Osamu; Fujiwara, Takayuki & Yamazaki, Eiji. 2008. Characterization of The Pectin Extracted from Citrus Peel in The Presence of Citric Acid. *Carbohydrate Polymers,* 74 (2008) 725–730. Doi:10.1016/j.carbpol.2008.04.033.

Ledesma, Blanca H. & Herrero, Miguel. 2014. *Bioactive Compounds from Marine Foods*. Spain: IFT Press.

Lee, H.; Kim, J.S. & Kim, E. 2012. Fucoidan from Seaweed *Fucus vesiculosus* Inhibit Migration and Invation of Human Lung Cancer Cell via p13k-akt-mTOR Pathway. *Plos ONE,* 7(11):e50624.

Lee, Robert Edward. 2008. *Phycology*. Cambridge: Cambridge University press.

Lee, Y.K.; Lim, D.J.; Lee, Y.H. & Park, Y.I. 2006. Variation in Fucoidan Contents and Monosaccharide Compositions of Korean *Undaria pinnatifida* (Harvey) Suringar (Phaeophyta). *Algae* 21: 157-160.

Lehninger, Albert L. 1982. *Principle of Biochemistry*. New York: Worth Publisher, Inc.

Lestari, Diyah Erlina & Utomo, Setyo Budi. 2007. Karakteristik kinerja resin penukar ion pada system air bebas minerak (GCA 01) RSG-GAS. *Seminar Nasional III SDM Teknologi Nuklir,* Yogyakarta 21-22 November 2007, ISSN 1978-0176.

Li, B.; Lu, F.; Wei, F. & Zhao, R. 2008. Fukoidan: Structure and Bioactivity. *Molecules* 2008, 13, 1671-1695. Doi: 10.3390/molecules13081671.

Mak, Wilfred W.F. 2012. *Extraction, Characterization and Antioxidant Activity of Fucoidan from New Zealand Undaria pinnatifida (Harvey) Suringar.* Thesis: Auckland University of Technology.

Marudhupandi, T.; Kumar, T.; Lakshmanasenthil, S.; Suja, G. & Vinothkumar, T. 2014. Invitro Anticancer Activity of Fucoidan from *Turbinaria conoides* against A549 Cell Lines. *International Journal of Biological Macromolecule,* 72 (2015) 919-923. Doi.org/10.1016/j.ijbiomac.2014.10.005.

Masuko, T.; Minami, A.; Iwasaki, N.; Majima, T.; Nishimura, S. & Lee, Y. 2005. Carbohydrate Analysis by A Phenol Sulfuric Acid Method in Microplate. *Analytical Biochemistry,* 339 (2005) 69-72. Doi:10.1016/j.ab.2004.12.001.

Men'shova, R.V.; Lepeshkin, F.D.; Ermakova, S.P.; Pokrovskii, O.I. & Zvyagintseva, T.N. 2013. Effect of Pretreatment Condition of Brown Algae by Supercritical Fluids on Yield and Structural Characteristics of Fucoidans. *Chemistry of Natural Compounds*, vol. 48. No. 6 January 2013.

Moghadamtousi, S.; Karimian, H.; Khanabdali, R.; Razafi; Firrozinia; Zandi & Kadir, A. 2014. Anticancer and Antitumour Potential of Fucoidan and Fucoxanthin Two Main Metabolites Isolates from Brown Algae. *The scientific world journal,* vol. 2014. Doi.org/10.1155/2014/768323.

Morya V.K.; Kim J. & Kim E.K. 2012. Algal Fucoidan: Structural and Size-Dependent Bioactivities and Their Perspectives. *Appl Microbiol Biotechnol,* (2012) 93:71–82. Doi.10.1007/s00253-011-3666-8.

Na, Ye Seul; Kim, J.W.; Kim, S.; Park, J.; Lee, S.; Kim, S.; Synytsya, A. & Park, Y. 2010. Purification, Characterization and Immunostimulating Activity of Water Soluble Polysaccharides Isolated from *Capsosiphon fulvescen. International immunopharmacology,* 10 (2010) 364-370. Doi:10.1016/j.intimp.2009.12.011.

Noguchi P.; Wallace, R.; Johnson, J.;Earley, E.M.; O'Brien, S.; Ferrone, S. 1979. Characterization of WiDr: A Human Colon Carcinoma Cell Line. *In Vitro*, Vol. 15, No. 6 (Jun., 1979), pp. 401-408.

Nur, M. Anwar & Adijuwana, Hendra. 1988. *Teknik Spektroskopi dalam Analisis Biologi*. Bogor: Departemen Pendidikan dan Kebudayaan Direktorat Jenderal Pendidikan Tinggi Pusat Antar Universitas Ilmu Hayat Institut Pertanian Bogor.

Nursid, Muhammad. 2012. *Isolasi dan Identifikasi Senyawa Berpotensi Antitumor dari Kapang yang Berasosiasi dengan Organisme Laut*. Disertasi: Universitas Gadjah Mada.

Panji, Tri. 2011. *Teknik Spektroskopi untuk Elusidasi Struktur Molekul*. Bogor: Graha Ilmu.

Plumb, Jane A. Tanpa Tahun. Cell Sensitivity Assay: The MTT assay. *Methods in Molecular Medicine*, *Cancer Cell Culture,* vol. 88.

Pretsch, Erno; Bulhman, P. & Badertscher, M. 2009. *Structure Determination of Organic Compounds, Tables of Spectral Data.* Berlin: Springer.

Sastrohamidjojo, Hardjono. 2005. *Kimia Organik, Stereokimia, Karbohidrat, Lemak dan Protein.* Yogyakarta: UGM press.

Senthilkumar, K.; Manivasagan, P.; Venkatesan, J. & Kim, S.K. 2013. Brown Seaweed Fucoidan: Biological Activity and Apoptosis, Growth Signaling Mechanism in Cancer, *International Journal of Biological Macromolecules,* 60 (2013) 366–374. Doi.org/10.1016/j.ijbiomac.2013.06.030.

Sheets, Rebecca. 2000. History and Characterization of the Vero Cell Line. *The Vaccines and Related Biological Products Advisory Committee Meeting*.

Sinurat, Ellya. 2011. *Isolasi dan Karakterisasi serta Uji Aktivitas Fukoidan sebagai Antikoagulan dari Rumput Laut Cokelat (Sargassum crassifolium).* Tesis: Universitas Indonesia.

Suparmi & Sahri, Achmad. 2009. Mengenal Potensi Rumput Laut : Kajian Pemanfaatan Sumber Daya Rumput Laut dari Aspek Industri dan Kesehatan. *Sultan agung vol xliv no. 118.*

Synytsya, Andriy; Kim, W.J.; Kim, S.M.; Pohl, R.; Synytsya, Alla; Kvasnicka, F.; Copikova, J. & Park, Y. 2010. Structure and Antitumor Activity of Fucoidan Isolated from Sporophyll of Korean Brown Seaweeds *Undaria pinnatifida*. *Carbohydrat polimer,* 81 (2010) 41-48. Doi:10.1016/j.carbpol.2010.01.052.

Tako, M.; Yoza, E. & Tohma, S. 2000. Chemical Characterization of Acetyl Fucoidan and Alginate from Commercially Cultured *Cladosiphon okamuranus. Botanica marina* vol. 43, 2000, pp. 393-398.

Thinh P.D.; Menshova R.V.; Ermakova S.P.; Anastyuk S.D.; Ly, B.M. & Zvyagintseva, T.N. 2013. Structural Characteristics and Anticancer Activity of Fucoidan from

The Brown Alga *Sargassum mcclurei*. *Marine Drugs,* 2013, 11, 1456-1476. Doi:10.3390/md11051456.

Trono, G.C. 1998. *Seaweeds* (Internet) <http://www.google.com> (diakses, 1 Juli 2015).

Vo, T.S. & Kim, S.K. 2013. Fucoidan as A Natural Bioactive Ingredient for Fungtional Foods. *Journal of international foods,* 5 (2013)16-27. Doi.org/10.1016/j.jff.2012.08.007.

Waryono, Tarsoen. 2001. Biogeografi Alga Makro (Rumput) Laut di Kawasan Pesisir Indonesia. *Makalah dalam Seminar Ikatan Geografi Indonesia (IGI),* vol. 2001.

World Health Organization. 2011. *Cancer* (Internet) <http://www.who.int/mediacentre-/factsheets/fs297/en/> (diakses 5 Maret 2015).

Yang, C.; Chung, D. & You, S.G. 2008. Determination of Physicochemical Properties of Sulphated Fucans from Sporophyll of *Undaria pinnatifida* using Light Scattering Technique. *Food Chemistry,* 111 (2008) 503–507. Doi:10.1016/j.foodchem.2008.03.085.

Yu, Long; Xue, Changhu; Chang, Yaoguang; Xu, Xiaoqi; Ge, Lei; Liu, Guanchen & Wang, Yanchao. 2014. Structure Elucidation of Fucoidan Composed of A Novel Tetrafucose Repeating Unit from Sea Cucumber *Thelenota ananas. Food Chemistry*, 146 (2014) 113–119. Doi.org/10.1016/j.foodchem.2013.09.033.

Zong, A.; Cao, H. & Wang, F. 2012. Anticancer Polysaccharides from Natural Resources: A Review of Recent Research. *Carbohydrate Polymers,* 90 (2012) 1395– 141. Doi.org/10.1016/j.carbpol.2012.07.026.