

DAFTAR PUSTAKA

- Abdel-Sattar, E., S. A. EL-Maraghy, R. S.El-Dine, S. M. Rizk. 2016. Russelioside B, a pregnane glycoside ameliorates hyperglycemia in streptozotocin induced diabetic rats by regulating key enzymes of glucose metabolism. *Chemico-Biological Interactions*. 252: 47-53
- Adiwijono & Asdie A. 1993. Dislipidemia pada Diabetes Mellitus Tipe II, Patologi dan Pendekatan Terapi. *Berkala Ilmu Kedokteran* 25 (4) : 190-201.
- Akbarzadeh, A D. Norouzian, M.R. Mehrabi, Sh. Jamshidi, A. Farhangi, A. Allah Verdi, S.M.A. Mofidian and B. Lame Rad. 2007. Induction of Diabetes By Streptozotocin in Rats. *Idian Journal of Clinical Biochemistry*. 22:60-64
- AlgaBase. 2015. *Sargassum hystrix* J. Agardh. http://www.algaebase.org/search/species/detail/?species_id=F39b3307f275ceb2&sk=0&from=results. Diakses tanggal 27 Mei 2015.
- Alvarez, A., J. Lacalle, M. L. Cañavate, D. Alonso-Alconada, I. Lara-Celador, F. J. Alvarez, and E. Hilario. 2010. Cell death. A comprehensive approximation Nekrosis. *Microscopy Science Technology Application And Education*. 1017-1024
- Arts ICW, Hollman PCH, De Mesquita HBB, Feskens EJM, Kromhout D. 2001. Dietary catechins and epithelial cancer incidence: the Zutphen Elderly Study. *International Journal Cancer* 92:298–302
- Atmadja, W.S., A. Kadi, Sulistidjo & Rachmaniar. 1996. Pengenalan Jenis-jenis Rumput Laut. Puslitbang Oseanologi LIPI. Jakarta
- Badan Standarisasi Nasional. 2006. Standar Nasional Indonesia (SNI) : SNI-01-2354.2-2006 Tentang Penentuan Kadar Air pada Produk Perikanan. Dewan Standarisasi Indonesia, Jakarta.
- Badan Standarisasi Nasional. 2006. Standar Nasional Indonesia (SNI) : SNI-01-2354.1-2006 Tentang Penentuan Kadar Abu pada Produk Perikanan. Dewan Standarisasi Indonesia, Jakarta.
- Badan Standarisasi Nasional. 2006. Standar Nasional Indonesia (SNI) : SNI-01-2354.3-2006 Tentang Penentuan Kadar Lemak pada Produk Perikanan. Dewan Standarisasi Indonesia, Jakarta.

- Badan Standarisasi Nasional. 2006. Standar Nasional Indonesia (SNI) : SNI-01-2354.4-2006 Tentang Penentuan Kadar Protein dengan Metode Total Nitrogen pada Produk Perikanan. Dewan Standarisasi Indonesia, Jakarta.
- Belitz, H.-D., W. Grosch, P. Schieberle. 2009. Food Chemistry. Springer-Verlag, Berlin Heidelberg
- Bold, H. C., and M. J. Wynne. 1985. Introduction to the algae Structure and reproduction. Second edition. United States of America. Prentice-Hall
- Boonchum, W Y. Peerapornpisal, D. Kanjanapothi, J. Pekkoh, C. Pumas, U. Jamjai, D. Amornlerdpison, T. Noiraksar, and P. Vacharapiyasophon. 2011. Antioxidant Activity of some Seaweed from the Gulf of Thailand. International Journal of Agriculture & Biology. 13: 95–99
- Borines, M. G., R. L. de Leon, J. L. Cuello. 2013. Bioethanol production from the macroalgae *Sargassum* spp. Bioresource Technology, 138: 22-29
- Budhiyanti, S.A., S. Raharjo, D. W. Marseno, I. Y.B. Lelana. 2012. Antioxidant Activity of Brown Alga *Sargassum* Species Extract From The Coastline of Java Island. American Journal of Agricultural and Biological Sciences, 7: 337-346.
- Castillo-Gómez, E., S. Coviello, M. Perez-Randoa, Y. Curto, H. Carceller, A. Salvadord, J. Nacher. 2015. Streptozotocin diabetic mice display depressive-like behavior and alterations in the structure, neurotransmission and plasticity of medial prefrontal cortex interneurons. Brain Research Bulletin. 116:45–56
- Chen, L., H. Zhao, C. Zhang, Y. Lu, X. Zhu, Z. Lu. 2016. γ -aminobutyric acid-rich yogurt fermented by *Streptococcus salivarius* subsp. thermophiles fmb5 appears to have anti-diabetic effect on streptozotocin-induced diabetic mice. Journal of Functional Foods. 20: 267–275
- Chowdhury, M.H.T., I. Bangoura, Ji-Y. Kang, N.G. Park, D-H Ahn and Y.-Ki Hong. 2011. Distribution of Florotanin in the Brown Alga *Ecklonia cava* and Comparison of Pretreatments for Extraction. Fish Aquatic Science. 14: 198-204
- Chung, K, Wong TY, Wei C, Huang Y, Lin Y. 1998. Tannins and human health. Critical Reviews in Food Science and Nutrition. 38: 421-464
- Damayanti, P. K. 2016. Aktivitas Antioksidan dan tingkat penerimaan konsumen jus rumput laut cokelat *Sargassum hystrix* sebagai minuman fungsional. Fakultas Pertanian. Universitas Gadjah Mada. Skripsi.
- DiaSys Diagnostic Systems. 2009. Glucose GOD FS. DiaSys Diagnostic Systems GmbH. Germany.

- DiaSys Diagnostic Systems. 2012a. Triglycerides FS. DiaSys Diagnostic Systems GmbH. Germany.
- DiaSys Diagnostic Systems. 2012b. Cholesterol FS. DiaSys Diagnostic Systems GmbH. Germany.
- DiaSys Diagnostic Systems. 2012c. HDL Precipitant . DiaSys Diagnostic Systems GmbH. Germany.
- DiaSys Diagnostic Systems. 2012d. LDL Precipitant. DiaSys Diagnostic Systems GmbH. Germany.
- Fiallos-Juradoa, J., J. Pollierc, T. Mosesc, P. Arendt, N..Barriga-Medinaa, E. Morilloi, V. Arahana, M. L. Torres, A. Goossens, A. Leon-Reyesa. 2016. Saponin determination, expression analysis and functional characterization of saponin biosynthetic genes in *Chenopodium quinoa* leaves. *Plant Science*. 250:188–197
- Golstein, P & G. Kroemer. 2006. Cell death by nekrosis: towards a molecular definition. *Trends in Biochemical Sciences*. 32: 37-43
- Gupta, S and N. Abu-Ghannam. 2011. Bioactive potential and possible health effects of edible brown seaweeds. *Food Science and Technology*. 315-326.
- Harborne, JB. 1987. *Metode Fitokimia : Penuntun Cara Modern Menganalisis Tumbuhan*. Ed ke-2. Bandung : ITB.
- Hawk, C. T., S. L. Leary, T. H. Morris. 2005. *Formulary For Laboratory Animals*. Blackwell Publishing. USA.
- Heo, S. J., E.J. Park, K.W. Lee, Y. J. Jeon. 2005. Antioxidant Activity of Enzymatic Extracts from Brown Seaweed. *Bioresource Technology*. 96:1613-1623
- Husni, A., D. Purwanti, and Ustadi. 2016^a. Blood Glucose Level and Lipid Profile of Streptozotocin-induced Diabetes Rats Treated with Sodium Alginate from *Sargassum crassifolium*. *Journal of Biological Sciences*. 16: 58-64.
- Husni, A., F. P. Anggar, A. Isnansetyo, A. E. Nugroho. 2016^b. Blood Glucose Level and Lipid Profile of Streptozotocin-Induced Diabetic Rats Treated with *Sargassum polycystum* Ekstrakt. *International Journal of Pharmaceutical and Clinical Research*. 8:445-450
- Husni, A., S. Pawestri, A. Isnansetyo. 2016^c. Blood Glucose Level and Lipid Profile of Alloxan-induced Diabetic Rats Treated with NA-Alginate from *Turbinaria ornata* (Turner) J. Agard. *Jurnal Teknologi*. 78:7-4.
- IDF. 2015. *Diabetes Atlas: Seventh Edition*. International Diabetes Federation.

- Jenkins DJA, Wolever TMS, Leeds AR, Gassull MA, Haisman P, Dilawari J, Goff DV, Metz GL, Alberti KGMM. 1978. Dietary fibers, fiber analogs, and glucose-tolerance—importance of viscosity. *British Medical Journal*. 1:1392–1394
- Jeong, T. S., Choi, C. H., Lee, J. Y., & Oh, K. K. 2012. Behaviors of glucose decomposition during acid-catalyzed hydrothermal hydrolysis of pretreated *Gelidium amansii*. *Bioresource Technology*. 116. 435–440.
- Jormalainen, V and Honkanen T. 2008. Macroalgal chemical defenses and their roles in structuring temperate marine communities. In *Algal Chemical Ecology*, Amsler CD (ed). Springer: Berlin; 57-89.
- Kang KA, Zhang R, Lee KH, Chae S, Kim BJ, Kwak YS. 2006. Protective effect of triphlorethol-A from *Ecklonia cava* against ionizing radiation in vitro. *J Radiat Res*.47:61–8
- Kang K, Park Y, Hwang HJ, Kim SH, Lee JG, Shin HC. 2003. Antioxidative properties of brown algae polyphenolics and their perspectives as chemopreventive agents against vascular risk factors. *Archives of Pharmacal Research* 26:286–293
- Kang, C., Y. B. Jin, H. Lee, M. Cha, E. Shon., J. Moon, C. Park, S. Chun, E. Jung, J. Hoang, S.B. Kim, And E. Kim. 2010. Brown alga *Ecklonia cava* attenuates type 1 diabetes by activating AMPK and Akt signaling pathways. *Food and Chemical Toxicology*.48.509–516
- Kavishankar, G.B. & N. Lakshmidēvi. 2014. Anti-diabetic Effect of Novel N-Trisaccharide Isolated from *Cucumis prophetarum* on Streptozotocin-Nicotinamide Induced Type 2 Diabetic Rats. *Phytomedicine*. 21: 624-630.
- Kim, J., M. Yoon, H. Yang, J. Jo, D. Han, Y-J Jeon, and S. Cho. 2014. Enrichment and purification of marine polyphenol florotanin using macroporous adsorption resins. *Food Chemistry*. 162:135-142
- Kim, S.U, W. Lee, G.U Bae, Y.K Kimb. 2012. Anti-diabetic and hypolipidemic effects of *Sargassum yezoense* in db/db mice. *Biochemical and Biophysical Research Communications*. 424.675–680
- Koivikko, R. 2008. Brown Algal Florotanin Improving And Applying Chemical Methods. Turun Yliopisto. University of Turku Finland. Turku
- Koiviko, R. J. Lopen, T. Honken., V. Jormalainen. 2005. Contents of Soluble, cell-Wall-Bound and exuded Phlorotannins in the brown alga *Enteromorpha vesiculosa*, with implication on their ecology functions. *Journal Chemical Ecology*. 31: 195-212

- Krentz AJ, Bailey CJ. 2005. Oral antidiabetic agents. Current role in type 2 diabetes mellitus. *Drugs*. 65:385–411
- Lailatussifa. R, A. Husni, and A. E. Nugroho. 2016. Anti-Stress Activity of *Sargassum polycystum* Exstracs Using a Cold Restraint Stess Model. *Food Science and Biotechnology*. 25:589-594 .F
- Lann, K. L., C. Ferret, E. VanMee, C. Spagnol, M. Lhuilery, C. Payri, V. S. Pouvreu. 2012. Total Phenolic, Size Fractioned, Phenolic and Fucosantin Conten Of Tropical Sargassaceae (Fucales, Phaeophyceae) from the sout Pasific Ocean: spatial and Spesific Variabelity. *Journal Phycological Reserch*. 60:37-50.
- Lee, S.H., M.H. Park, S. J. Heo, S.M. Kang, S.C. Ko, J.S. Han, Y. J. Jeon. 2010. Dieckol isolated from *Ecklonia cava* inhibits α -glucosidase and α -amylase in vitro and alleviates postprandial hyperglycemia in streptozotocin-induced diabetic mice. *Food and Chemical Toxicology*. 48:2633–2637
- Lee, S-H and Y-J Jeon. 2013. Anti-diabetic effects of brown algae derived florotanin, marine polyphenols through diverse mechanisms. *Fitoterapi*. 86:129-136
- Lee, S-H, M.H Park, S.J. Heo, S.M Kang, S.C. Ko, J.S. Han, and Y.J. Jeon. 2010. Dieckol isolated from *Ecklonia cava* inhibits α -glucosidase and α -amylase in vitro and alleviates postprandial hyperglycemia in streptozotocin-induced diabetic mice. *Food and Chemimcal Toxicol*. 48:2633–2637.
- Li, D, L. Chen, S. Chen, X. Zhang, F. Chen, N. Ye. 2012. Comparative evaluation of the pyrolytic and kinetic characteristics of a macroalgae (*Sargassum thunbergii*) and a freshwater plant (*Potamogeton crispus*). *Feul*. 96:185-191
- Li, Y. X., I. Wijesekaraa, Y. Li, S.-K. Kim. 2011. Florotanin as bioactive agents from brown algae. *Process Biochemystri*. 46: 2219–2224
- Li, Y., Qian, Z.J., Ryu, B.M., Lee, S.H., Kim, M.M., Kim, S.K., 2009. Chemical components and its antioxidant properties in vitro: an edible marine brown alga, *Ecklonia cava*. *Bioorganic and Medicinal Chemistry Letters*. 17:1963–1973
- Liu, L., M. Heinrich, S. Myers, S. A. Dworjany. 2012. Towards a better understanding of medicinal uses of the brown seaweed *Sargassum* in Traditional Chinese Medicine: A phytochemical and pharmacological review. *Journal of Ethnopharmacology*. 142:591–619
- Lu, J.M., Y. Wang, H. Yan, P. Lin, W. Gu, J. Yu. 2016. Antidiabetic effect of total saponins from *Polygonatum kingianum* in streptozotocin-induced daibetic rats. *Journal of Ethnopharmacology*. 179:291–300

- Marimuthu, J., Antonisamy, P. Essakimuthu, J. Narayanan, B. Anantham, R. Joy, J. M. Tharmaraj, S. Arumugam. Phytochemical characterization of brown seaweed *Sargassum wightii*. *Asian Pacific Journal of Tropical Disease*.109-113
- Matanjan, P. Mohamed S, Mustapha N. M., Muhammad K. and Ming C. H. (2008) Antioxidant activities and phenolics content of eight species of seaweeds from north Borneo. *Journal of Applied Phycology*. DOI 10.1007/s10811-007-9264-6.
- Matanjan, P., Mohamed, S., Mustapha, N. M., & Muhammad, K. (2009). Nutrient content of tropical edible seaweeds, *Euclima cottonii*, *Caulerpa lentillifera* and *Sargassum polycystum*. *Journal of Applied Phycology*. 21:1-6
- Miyashitaa, K, N. Mikami, M. Hosokawaa. 2013. Chemical and nutritional characteristics of brown seaweed lipids: A review. *Journal of Functional foods*, 1507-1517
- Moree, S. S., G. B. Kavishankarb, J. RAjasha. 2013. Antidiabetic Effect of secosolarisenicol diglucosidase in streptozotocin-induced diabetic rats. *Phytomedicin*. 20: 237-245
- Murray RK, Granner DK, Mayes PA, Rodwell VW. 1996. *Biokimia Harper*. EGC. Jakarta.
- Nakai M, Kageyama N, Nakahara K, Miki W. 2006. Florotanin as Radical Scavengers from the Extract of *Sargassum inggoldianum*. *Mar Biotech* 8: 409–414.
- Ozougwu, J. C., Obimba, K. C., Belonwu, C. D., and Unakalamba, C. B., 2013. The pathogenesis and pathophysiology of type 1 and type 2 diabetes mellitus. *Academic Journals*.4:46-57
- Patra, JK, N.K. Dha, H.N Thatoi. 2011. In vitro bioactivity and phytochemical screening of *Suaeda maritima* (Dumort): A mangrove associate from Bhitarkanika, India. *Asian Pacific Journal of Tropical Medicine*.727-73
- Pejic, R.N & D.T. Lee. 2006. Hypertriglyceridemia. *Journal of the American Board of Family Medicine*.19: 310-316.
- Pratiwi, T. 2013. Uji aktivitas ekstrak metanolik *Sargassum hystrix* dan *Euclima duplicatum* dalam menghambat α -amylase dan α -glukosidase. Fakultas Pertanian. Universitas Gadjah Mada. Skripsi.
- Purwanti, D. 2015. Pengaruh Pemberian Natrium Alginat Dari *Sargassum crassifolium* Terhadap Kadar Glukosa dan Profil Lemak Tikus Wistar yang Diinduksi Streptozotocin. Fakultas Pertanian. Universitas Gadjah Mada. Skripsi.

- Rambhade, S., A. K. Chakraborty, U. K. Patil, A. Rambhade. 2010. Diabetes Mellitus- Its complications, factors influencing complications and prevention- An Overview. *Journal of Chemical and Pharmaceutical Research*. 2:7-25
- Ruperez. P. 2002. Mineral content of edible marine seaweeds. *Food Chemistry*. 79: 23–26.
- Samudra, A. G. B. Dewi, A. E. Nugroho, A. Husni. 2015. Aktivitas Inhibisi α -Amilase dan α -Glukosidase Oleh Ekstrak Polisakarida dan Senyawa Polifenol dari *Eucheuma denticulatum* dan *Sargassum hystrix*. Prosiding seminar nasional dan workshop “perkembangan terkini sains dan klinik. 338-343
- Sanchez-Machado, D. I., Lo ´pez-Cervantes, J., Lo ´pez-Hernandez, J., & Paseiro-Losada, P. 2004. Fatty acids, total lipid, protein and ash contents of processed edible seaweeds. *Food Chemistry*. 85:439–444.
- Santos, A. K.F. S., D.V. Fonseca, P.R.R. Salgado, V. M. Muniz, P. A. Torres, N. S. Lira, C. S. Dias, L. C. M. Pordeus, J.M. Barbosa-Filho, R. N. Almeida. 2015. Antinociceptive activity of *Sargassum polyceratum* and the isolation of its chemical components. *Revista Brasileira de Farmacognosia*. 25:683–689
- Selvaraj, G., S. Kaliamurthi, R. Thirugnasambandan. 2016. Effect of Glycosin alkaloid from *Rhizophora apiculata* in non-insulin dependent diabetic rats and its mechanism of action: In vivo and in silico studies. *Phytomedicine*. 23:632–640
- Senthil, S. L., T. V Kumar, D. Geetharamani, G. Suja, A. Chacko, R. Yesudas. 2015. Fucoidan –An α -amylase inhibitor from *Sargassum wightii* with relevance to NIDDM. *International Journal of Biological Macromolecules*. 81:644–647
- Setiawan, B. dan E. Suhartono. 2005. Stres Oksidatif dan Peran Antioksidan pada Diabetes Melitus. *Majalah Kedokteran*. 55:86-91
- Shibata T, Ishimaru K, Kawaguchi S, Yoshikawa H, Hama Y. 2008. Antioxidant activities of florotanin isolated from Japanese Laminariaceae. *Journal of Applied Phycology*. 20:705–11
- Shibata, T., K. Ishimaru, S. Kawaguchi, H. Yoshikawa, Y. Ham. 2007. Antioxidant activities of phlorotannins isolated from Japanese Laminariaceae. *Journal of Applied Phycology*. 20: 255–261.
- Singh, J. dan Singh, N. 2003. Studies on the Morphological and Rheological Properties of Granular Cold Water Soluble Corn and Potato Starches. *Journal of Food Hydrocolloids*. 17:63-72.

- Solarin, B. B., D. A. Bolaji, O. S. Fakayode and R.O. Akinnigbagbe. 2014. Impacts of an invasive seaweed *Sargassum hystrix* var. *fluitans* (Børgesen 1914) on the fisheries and other economic implications for the Nigerian coastal waters. *IOSR-JAVS*:7.
- Stein, S.A., E. M. Lamos, and S. N. Davis. 2014. A review of the efficacy and safety of oral antidiabetic drugs. *National Institutes of Health Public Access*.12: 153–175
- Subramanian, S. P., G. S. Prasath. 2014. Antidiabetic and antidyslipidemic nature of trigonelline, a major Alkaloid of fenugreek seeds studied in high-fat-fed and low-dose streptozotocin-induced experimental diabetic rats. *Biomedicine and Preventive Nutrition*. 4:475–480.
- Szkudelski, T. 2001. The Mechanism of Alloxan and Streptozotocin Action in B Cells of the Rat Pancreas. *Physiological Research*. 50: 536-546
- Tang, H., Yi, Y., Yao, X., Zhou, D., Lu, T., Jiang, Y., 2002a. Studies on bioactive steroid constituents from *Sargassum carpophyllum*. *Chinese Pharmaceutical Journal*. 37:262–265
- Thomas, N. V., and S.K. Kim. 2011. Potential pharmacological applications of polyphenolic derivatives from marine brown algae. *Environmental Toxicology and Pharmacology*. 32: 325–335
- West E, Simon Or, Morrison Ey. 1996. Streptozotocin alters pancreatic beta-cell responsiveness to glucose within six hours of injection into rats. *West Indian Medical Journal*. 45: 60-62.
- WHO. 2006. Diabetes mellitus : Report of a WHO Study Group. World Health Organisation. Geneva-Switzerland. S5-36
- WHO. 2016. Global Report on Diabetes. World Health Organisation. France.
- Wijesekara, I., Yoon, N.Y., Kim, S.K., 2010. Florotanin from *Ecklonia cava* (Phaeophyceae): biological activities and potential health benefits. *Biofactors*.36:408–414.
- Xie, M., D. Chen, F. Zhang, G. R. Willsky, Debbie C. Crans, W. Ding. 2014. Effects of vanadium (III, IV, V)-chlorodipicolinate on glycolysis and antioxidant status in the liver of STZ-induced diabetic rats. *Journal of Inorganic Biochemistry*. 136: 47–56
- You, H. N., H. A. Lee, M. H. Park, J. H. Lee, J. H. Han. 2015. Phlorofucofuroeckol A isolated from *Ecklonia cava* alleviates postprandial hyperglycemia in diabetic mice. *European Journal of Pharmacology*. 752:92–96



Zubia, M. D. Roblendo, Y. FReile-Pelegrin. 2007. Antioxidant Activities in tropical marine Macroalga from Yucatan peninsula, Mexico. *Journal of Applied Phycology*. 19:449-458

Zubia, M., A. F. Marie, K. Veronique, L. L. Klevri, S.P. Valerie,. M. Fauchon, And D. Eric. 2009. Antioksidant and Antitumoural Activities of some phaeophyta from Brittany coast. *Food Chemistry*.116.693-701