DAFTAR PUSTAKA

A.V. Costa, B.C.B. Freitas, G.M. Rosa, L. Moraes, M.G. Morais, B.G. Mitchell, Operational and economic aspects of Spirulina-based biorefinery, Bioresour. Technol. 292 (2019), 121946.https://doi.org/10.1016/j.biortech.2019.121946

Adjali, A., Clarot, I., Chen, Z., Marchioni, E., & Boudier, A. (2022). Physicochemical degradation of phycocyanin and means to improve its stability: A short review. *Journal of Pharmaceutical Analysis*, *12*(3), 406–414. https://doi.org/10.1016/j.jpha.2021.12.005

Ajandouz, E. H., Tchiakpe, L. S., Ore, F. D., Benajiba, A., & Puigserver, A. (2001). Effects of pH on Caramelization and Maillard Reaction Kinetics in Fructose-Lysine Model Systems. *Journal of Food Science*, *66*(7), 926–931. https://doi.org/10.1111/j.1365-2621.2001.tb08213.x

Akhtar, M.; Ding, R. Covalently cross-linked proteins & polysaccharides: Formation, characterisation and potential applications. Curr. Opin. Colloid Interface Sci. 2017, 28, 31–36.

Alade, O. S., Mahmoud, M., Al Shehri, D. A., & Sultan, A. S. (2021). Rapid determination of emulsion stability using turbidity measurement incorporating artificial neural network (ANN): Experimental validation using video/optical microscopy and kinetic modeling. *ACS omega*, *6*(8), 5910-5920.

Alexander, P., Brown, C., Dias, C., Moran, D., & Rounsevell, M. D. A. (2019). Sustainable proteins production. Proteins: Sustainable Source, Processing and Applications. https://doi.org/10.1016/ b978-0-12-816695-6.00001-5

Almoselhy, R. I. (2020). Applications of differential scanning calorimetry (DSC) in oils and fats research. a review. *American Research Journal of Agriculture*.

Amine, C., Dreher, J., Helgason, T., & Tadros, T. (2014). Investigation of emulsifying properties and emulsion stability of plant and milk proteins using interfacial tension and interfacial elasticity. *Food Hydrocolloids*, *39*, 180-186.

AOAC (1990). By Authority Of THE UNITED STATES OF AMERICA Legally Binding Document.

Astuti, W. M., Dewi, E. N., & Kurniasih, R. A. (2019). Pengaruh perbedaan jenis pelarut dan suhu pemanasan selama ekstraksi terhadap stabilitas mikrokapsul fikosianin dari Spirulina platensis. *Jurnal Ilmu dan Teknologi Perikanan*, *1*(1), 7-14.

Asyhari, M. H., Palupi, N. S., & Faridah, N. (2018). Karakteristik kimia konjugat isolat protein kedelai-laktosa yang berpotensi dalam penurunan alergenisitas. *Journal of Food Technology & Industry/Jurnal Teknologi & Industri Pangan*, *29*(1).

A'yun, Q., Demicheli, P., De Neve, L., Wu, J., Balcaen, M., Setiowati, A. D., ... & Van der Meeren, P. (2020). Dry heat induced whey protein–lactose conjugates largely improve the heat stability of O/W emulsions. *International Dairy Journal*, *108*, 104736.

Bai, L., Huan, S., Rojas, O. J., & McClements, D. J. (2021). Recent innovations in emulsion science and technology for food applications. Journal of Agricultural and Food Chemistry, 69(32), 8944-8963.

Bealer, E. J., Onissema-Karimu, S., Rivera-Galletti, A., Francis, M., Wilkowski, J., Salas-de La Cruz, D., & Hu, X. (2020). Protein–Polysaccharide Composite Materials: Fabrication and Applications. *Polymers*, *12*(2), 464. https://doi.org/10.3390/polym12020464

Becker, E. W. (2007). Micro-algae as a source of protein. Biotechnology Advances, 25: 207–210.

Benelhadj, S., Gharsallaoui, A., Degraeve, P., Attia, H., & Ghorbel, D. (2016). Effect of pH on the functional properties of Arthrospira (Spirulina) platensis protein isolate. *Food Chemistry*, *194*, 1056–1063. https://doi.org/10.1016/j.foodchem.2015.08.133

Bernaerts, T.M.M., Panozzo, A., Doumen, V., Foubert, I., Gheysen, L., Goiris, K., Moldenaers, P., Hendrickx, M.E., and van Loey, A.M. 2017. "Microalgal biomass as a (multi)functional ingredient in food products: Rheological properties of microalgal suspensions as affected by mechanical and thermal processing." Algal Research 25: 452–463 https://doi.org/10.1016/j.algal.2017.05.014

Bertrand, E., El Boustany, P., Faulds, C., & Berdagué, J. L. (2018). The Maillard reaction in food: an introduction. *Reference module in food science*, np.

Bertsch, P., Böcker, L., Mathys, A., & Fischer, P. (2021). Proteins from microalgae for the stabilization of fluid interfaces, emulsions, and foams. *Trends in Food Science & Technology*, *108*, 326–342. https://doi.org/10.1016/j.tifs.2020.12.014

Bleakley, S., and Hayes, M. 2017. "Algal proteins: Extraction, application, and challenges concerning production." Foods 6 (5): 1–34 https://doi.org/10.3390/foods6050033

Bocker., L, ¨ P. Bertsch, D. Wenner, S. Teixeira, J. Bergfreund, S. Eder, P. Fischer, A. Mathys, Effect of Arthrospira platensis microalgae protein purification on emulsification mechanism and efficiency, J. Colloid Interface Sci. 584 (2021) 344–353, https://doi.org/10.1016/j.jcis.2020.09.067.

Borowitzka, M.A. 1995. Microalgae as sources of pharmaceuticals and other biologically active compounds. Kluwer Academic Publishers. v.7.

Braga, A. R. C., Nunes, M. C., & Raymundo, A. (2023). The Experimental Development of Emulsions Enriched and Stabilized by Recovering Matter from Spirulina Biomass: Valorization of Residue into a Sustainable Protein Source. *Molecules*, *28*(17), 6179. https://doi.org/10.3390/molecules28176179

Candraningrum, R. G. S., Setiowati, A. D., & Hidayat, C. (2023). Electrostatic-Maillard formation of coconut protein Concentrate-Pectin conjugate for Oil-in-Water Emulsion: Effects of Ratio, Temperature, and pH. *Journal of the Saudi Society of Agricultural Sciences*, *22*(1), 18–24. https://doi.org/10.1016/j.jssas.2022.05.004

Chagas, B. M. E., Dorado, C., Serapiglia, M. J., Mullen, C. A., Boateng, A. A., Melo, M. A. F., & Ataíde, C. H. (2016). Catalytic pyrolysis-GC/MS of Spirulina: Evaluation of a highly proteinaceous biomass source for production of fuels and chemicals. *Fuel*, *179*, 124–134. https://doi.org/10.1016/j.fuel.2016.03.076

Chang, M., & Liu, K. (2024). *Arthrospira platensis* as future food: A review on functional ingredients, bioactivities and application in the food industry. *International Journal of Food Science & Technology*, *59*(3), 1197–1212. https://doi.org/10.1111/ijfs.16882

Charnock, H. M., Pickering, G. J., & Kemp, B. S. (2022). The Maillard reaction in traditional method sparkling wine. *Frontiers in Microbiology*, *13*, 979866. https://doi.org/10.3389/fmicb.2022.979866

Chen, W., Ma, X., Wang, W., Lv, R., Guo, M., Ding, T., Ye, X., Miao, S., & Liu, D. (2019). Preparation of modified whey protein isolate with gum acacia by ultrasound maillard reaction. *Food Hydrocolloids*, *95*, 298–307. https://doi.org/10.1016/j.foodhyd.2018.10.030

Chen, Y., Chen, J., Chang, C., Chen, J., Cao, F., Zhao, J., Zheng, Y., & Zhu, J. (2019). Physicochemical and functional properties of proteins extracted from three microalgal species. *Food Hydrocolloids*, *96*, 510–517. https://doi.org/10.1016/j.foodhyd.2019.05.025

Cheng, H.; Zhang, H.; Li, D.; Duan, H.; Liang, L. Impact of oil type on the location, partition and chemical stability of resveratrol in oil-in-water emulsions stabilized by whey protein isolate plus gum Arabic. Food Hydrocoll. 2020, 109, 106119.

Chronakis, I. S., Nicoleta Galatanu, A., Nylander, T. and rn Lindman, B. (2000). The behaviour of protein preparations from blue-green algae (*Arthrospira platensis* strain Pacifica) at the air/water interface. www.elsevier.nl/locate/colsurfa

Cortez-Trejo, M. C., Figueroa-Cárdenas, J. D., Quintanar-Guerrero, D., Baigts-Allende, D. K., Manríquez, J., & Mendoza, S. (2022). Effect of pH and protein-polysaccharide ratio on the intermolecular interactions between amaranth proteins and xanthan gum to produce electrostatic hydrogels. *Food Hydrocolloids*, *129*, 107648. https://doi.org/10.1016/j.foodhyd.2022.107648

Costa, A.V., B.C.B. Freitas, G.M. Rosa, L. Moraes, M.G. Morais, B.G. Mitchell, Operational and economic aspects of Spirulina-based biorefinery, Bioresour. Technol. 292 (2019), 121946, https://doi.org/10.1016/j.biortech.2019.121946.

Dai, L., Hinrichs, J. and Weiss, J. (2020). Emulsifying properties of acidhydrolyzed insoluble protein fraction from Chlorella protothecoides: Formation and storage stability of emulsions. Food Hydrocolloids, 108.

Damodaran S. Protein stabilization of emulsions and foams. Journal of Food Sci 2005;70: R54–66.

De Meutter, J., & Goormaghtigh, E. (2021). Evaluation of protein secondary structure from FTIR spectra improved after partial deuteration. *European Biophysics Journal*, *50*, 613-628.

De Oliveira, F.C.; Coimbra, J.S.d.R.; de Oliveira, E.B.; Zuñiga, A.D.G.; Rojas, E.E.G. Food protein-polysaccharide conjugates obtained via the *Maillard* reaction: A review. Crit. Rev. Food Sci. Nutr. 2016, 56, 1108–1125.

Dianingsih, N., Purnomo, E. H., & Muchtadi, T. R. (2016). Sifat Reologi dan Stabilitas Fisik Minuman Emulsi Minyak Sawit. *Jurnal Teknologi dan Industri Pangan*, *27*(2), 165-174.

Dickinson E. Hydrocolloids at interfaces and the influence on the properties of dispersed systems. Food Hydrocoll 2003;17:25–39.

Ding, D. (2021, June). Effects of emulsifier on emulsification, physical and chemical properties of soybean protein. In *IOP Conference Series: Earth and Environmental Science* (Vol. 792, No. 1, p. 012017). IOP Publishing.

Djamaludin, H., & Chamidah, A. (2021). Kualitas ekstrak minyak mikroalga Spirulina sp. dengan metode ekstraksi yang berbeda. *Prosiding Simposium Nasional Kelautan dan Perikanan*, *8*.

Dong, D.; Hua, Y. Glycinin-gum arabic complex formation: Turbidity measurement and charge neutralization analysis. Food Res. Int. 2016, 89, 709–715.

Dong, Z., Yu, S., Zhai, K., Bao, N., Rashed, M. M. A., & Wu, X. (2023). Fabrication and Characterization of Complex Coacervation: The Integration of Sesame Protein Isolate-Polysaccharides. *Foods*, *12*(19), 3696. https://doi.org/10.3390/foods12193696

Du, Y., Shi, S., Jiang, Y., Xiong, H., Woo, M. W., Zhao, Q., Bai, C., Zhou, Q., & Sun, W. (2013). Physicochemical properties and emulsion stabilization of rice dreg glutelin conjugated with κ-carrageenan through Maillard reaction. *Journal of the Science of Food and Agriculture*, *93*(1), 125–133. https://doi.org/10.1002/jsfa.5739

Durowoju, I. B., Bhandal, K. S., Hu, J., Carpick, B., & Kirkitadze, M. (2017). Differential Scanning Calorimetry — A Method for Assessing the Thermal Stability and Conformation of Protein Antigen. *Journal of Visualized Experiments*, *121*, 55262. https://doi.org/10.3791/55262

Eghbal, N.; Yarmand, M.S.; Mousavi, M.; Degraeve, P.; Oulahal, N.; Gharsallaoui, A. Complex coacervation for the development of composite edible films based on LM pectin and sodium caseinate. Carbohyd. Polym. 2016, 151, 947–956.

Elise, C. Y., Syafrizayanti, S., & Salim, M. (2021). Pemurnian Fikosianin dari Spirulina platensis dengan Metode Liquid Biphasic Flotation (LBF) dan Penentuan Aktivitas Antioksidannya. *Jurnal Riset Kimia*, *12*(2).

Fathollahy, I., Farmani, J., Kasaai, M. R. and Hamishehkar, H. (2021). Characteristics and functional properties of Persian lime (Citrus latifolia) seed protein isolate and enzymatic hydrolysates. LWT, 140.

Feng, S., Guo, Y., Liu, F., Li, Z., Chen, K., Handa, A., & Zhang, Y. (2023). The impacts of complexation and glycated conjugation on the performance of soy protein isolate-gum Arabic composites at the o/w interface for emulsion-based delivery systems. *Food Hydrocolloids*, *135*, 108168. https://doi.org/10.1016/j.foodhyd.2022.108168

Garcia, E. S., Van Leeuwen, J. J. A., Safi, C., Sijtsma, L., Van Den Broek, L. A. M., Eppink, M. H. M., Wijffels, R. H., & Van Den Berg, C. (2018). Techno-Functional Properties of Crude Extracts from the Green Microalga *Tetraselmis suecica*. *Journal of Agricultural and Food Chemistry*, *66*(29), 7831–7838. https://doi.org/10.1021/acs.jafc.8b01884

Geada, P., Moreira, C., Silva, M., Nunes, R., Madureira, L., Rocha, C. M. R., Pereira, R. N., Vicente, A. A. and Teixeira, J. A. (2021). Algal proteins: Production strategies and nutritional and functional properties. Bioresource Technology, 332.

Genicot, S., Pr´echoux, A., Correc, G., Kervarec, N., Simon, G., Craigie, J.S., 2018. Carrageenans: new tools for new applications, in: Blue Biotechnology. John Wiley & Sons, Ltd, pp. 371–416. doi: 10.1002/9783527801718.ch12.

Gentile, L. Protein-polysaccharide interactions and aggregates in food formulations. Curr. Opin. Colloid Interface Sci. 2020, 48, 18–27.

He, S. (2023). Study on Physicochemical Properties of Food Protein. *Molecules*, *28*(24), 8145. https://doi.org/10.3390/molecules28248145

He, W., Xiao, N., Zhao, Y., Yao, Y., Xu, M., Du, H., Wu, N., & Tu, Y. (2021). Effect of polysaccharides on the functional properties of egg white protein: A review. *Journal of Food Science*, *86*(3), 656–666. https://doi.org/10.1111/1750-3841.15651

Hedenskog, G., and Hofsten, A. v. 1970. The Ultrastructure of *Arthrospira platensis*A New Source of Microbial Protein. v.23.

Hokazono, E., Ota, E., Goto, T., Fukumoto, S., Kayamori, Y., Uchiumi, T., & Osawa, S. (2021). Development of a protein assay with copper chelator chromeazurol B, based on the biuret reaction. *Analytical Biochemistry*, *630*, 114320.

Huang, Y., Bai, Y., Jin, W., Shen, D., Lyu, H., Zeng, L., ... & Liu, Y. (2021). Common Pitfalls and Recommendations for Using a Turbidity Assay to Study Protein Phase Separation. *Biochemistry*, *60*(32), 2447-2456.

Ibanoglu, E. (2005). Effect of hydrocolloids on the thermal denaturation of proteins. *Food Chemistry*, *90*(4), 621–626. https://doi.org/10.1016/j.foodchem.2004.04.022

Ismail, H. A., Richard, I., Ramaiya, S. D., Zakaria, M. H., & Lee, S. Y. (2023). Browning in Relation to Enzymatic Activities and Phytochemical Content in Terap Peel (Artocarpus odoratissimus Blanco) during Postharvest Ripening. *Horticulturae*, *9*(1), 57.

Ji, S., Correding, M., & Goff, H. D. (2008). Aggregation of casein micelles and κ-carrageenan in reconstituted skim milk. Food Hydrocolloids, 22, 56–64.

Käferböck, A., Smetana, S., de Vos, R., Schwarz, C., Toepfl, S. and Parniakov, O. (2020). Sustainable extraction of valuable components from Spirulina assisted by pulsed electric fields technology. Algal Research, 48.

Kamba, E. A., Itodo, A. U., & Ogah, E. (2013). Utilization of different emulsifying agents in the preparation and stabilization of emulsions. *International Journal of Materials and Chemistry*, *3*(4), 69-74.

Kato, A.; Minaki, K.; Kobayashi, K. Improvement of emulsifying properties of egg white proteins by the attachment of polysaccharide through *Maillard* reaction in a dry state. J. Agric. Food Chem. 1993, 41, 540–543.

Khoo, K. S., Chew, K. W., Yew, G. Y., Leong, W. H., Chai, Y. H., Show, P. L., & Chen, W.-H. (2020). Recent advances in downstream processing of microalgae lipid recovery for biofuel production. *Bioresource Technology*, *304*, 122996. https://doi.org/10.1016/j.biortech.2020.122996

Kumar, K., Srivastav, S., and Sharanagat, V.S. 2021. Ultrasound assisted extraction (UAE) of bioactive compounds from fruit and vegetable processing byproducts: A review. Ultrasonics Sonochemistry https://doi.org/10.1016/j.ultsonch.2020.10532

Lam RSH, Nickerson MT. Food proteins: a review on their emulsifying properties using a structure–function approach. Food Chem 2013;141:975–84.

Li, D., Wu, G., Zhang, H., & Qi, X. (2020). The soy protein isolate-Octacosanol-polysaccharides nanocomplex for enhanced physical stability in neutral conditions: Fabrication, characterization, thermal stability. *Food Chemistry*, *322*, 126638. https://doi.org/10.1016/j.foodchem.2020.126638

Li, Y.; Zhang, X.; Zhao, Y.; Ding, J.; Lin, S. Investigation on complex coacervation between fish skin gelatin from cold-water fish and gum arabic: Phase behavior, thermodynamic, and structural properties. Food Res. Int. 2018, 107, 596–604.

Lim, H.R., K.S. Khoo, K.W. Chew, C.-K.K. Chang, H.S.H. Munawaroh, P.S. Kumar, N.D. Huy, P.L. Show, Perspective of Spirulina culture with wastewater into a sustainable circular bioeconomy, Environ. Pollut. 284 (2021), 117492, https://doi.org/10.1016/j.envpol.2021.117492.

Lin, S., Yang, X., Jia, S., Weeks, A. M., Hornsby, M., Lee, P. S., ... & Chang, C. J. (2017). Redox-based reagents for chemoselective methionine bioconjugation. *Science*, *355*(6325), 597-602.

Liu, Y., Zhao, G., Zhao, M., Ren, J., & Yang, B. (2012). Improvement of functional properties of peanut protein isolate by conjugation with dextran through

Maillard reaction. *Food Chemistry*, *131*(3), 901–906. https://doi.org/10.1016/j.foodchem.2011.09.074

Lowry, O. H., Rosebrough, N. J., Farr, A. L. and Randall, R. J. (1951). PROTEIN MEASUREMENT WITH THE FOLIN PHENOL REAGENT*.

Lund, M. N., & Ray, C. A. (2017). Control of Maillard reactions in foods: Strategies and chemical mechanisms. *Journal of agricultural and food chemistry*, *65*(23), 4537-4552.

Magpusao, J., Giteru, S., Oey, I. and Kebede, B. (2021). Effect of high pressure homogenization on microstructural and rheological properties of A. platensis, Isochrysis, Nannochloropsis and Tetraselmis species. Algal Research, 56.

Maleki, S. J., & Hurlburt, B. K. (2002). Food allergy: recent advances in food allergy research.

Mao, Y., Huang, M., Bi, J., Sun, D., Li, H., & Yang, H. (2023). Effects of kappa-carrageenan on egg white ovalbumin for enhancing the gelation and rheological properties via electrostatic interactions. *Food Hydrocolloids*, *134*, 108031. https://doi.org/10.1016/j.foodhyd.2022.108031

Martinez-Alvarenga, M. S., Martinez-Rodriguez, E. Y., Garcia-Amezquita, L. E., Olivas, G. I., Zamudio-Flores, P. B., Acosta-Muniz, C. H., & Sepulveda, D. R. (2014). Effect of Maillard reaction conditions on the degree of glycation and functional properties of whey protein isolate – Maltodextrin conjugates. *Food Hydrocolloids*, *38*, 110–118. https://doi.org/10.1016/j.foodhyd.2013.11.006.

Maruszczak, K., Rasmussen, C., Ceutz, F. R., Ørgaard, A., Elmelund, E., Richter, M. M., ... & Wewer Albrechtsen, N. J. (2022). Arginine-induced glucagon secretion and glucagon-induced enhancement of amino acid catabolism are not influenced by ambient glucose levels in mice. *American Journal of Physiology-Endocrinology and Metabolism*, *323*(3), E207-E214.

Matos, Â.P. 2019 "Microalgae as a Potential Source of Proteins." In Proteins: Sustainable Source, Processing and Applications, pp. 63–96. Elsevier. https://doi.org/10.1016/b978-0-12-816695-6.00003-9

Mauliasari, E. S., Agustini, T. W., & Amalia, U. (2019). Stabilisasi fikosiani Spirulina platensis dengan perlakuan mikroenkapsulasi dan pH. *Jurnal Pengolahan Hasil Perikanan Indonesia*, *22*(3), 526-534.

McClements DJ. Food emulsions: principles, practices, and techniques. Third edition ed. Boca Raton, FL: CRC Press; 2015

McClements, D. J., & Gumus, C. E. (2016). Natural emulsifiers—Biosurfactants, phospholipids, biopolymers, and colloidal particles: Molecular and physicochemical basis of functional performance. *Advances in Colloid and interface Science*, *234*, 3-26.

McClements, D. J., L. Bai, C. Chung, Recent advances in the utilization of natural emulsifiers to form and stabilize emulsions, Annu. Rev. Food Sci. Technol. 8 (2017) 205–236, https://doi.org/10.1146/annurev-food-030216-030154.

McHugh, D.J., 2003. A guide to the seaweed industry. FAO Fish. Tech. Pap. 441, Food and Agricultural Organization of the United Nations (FAO), Rome. 105p

Menegotto, A.L.L., Souza, L.E.S. de, Colla, L.M., Costa, J.A.V., Sehn, E., Bittencourt, P.R.S., Moraes Flores, É.L. de, Canan, C., and Colla, E. 2019. "Investigation of techno-functional and physicochemical properties of *Arthrospira platensis* protein concentrate for food enrichment." LWT 114: 1–8 https://doi.org/10.1016/j.lwt.2019.108267

Mir, N. A., Riar, C. S., & Singh, S. (2021). Improvement in the functional properties of quinoa (Chenopodium quinoa) protein isolates after the application of controlled heat-treatment: Effect on structural properties. *Food Structure*, *28*, 100189.

Necas, J., Bartosikova, L., 2013. Carrageenan: a review. Veterinarní ́ Medicína 58, 187–205. https://doi.org/10.17221/6758-VETMED.

Nooshkam, M., Varidi, M., Zareie, Z., & Alkobeisi, F. (2023). Behavior of protein-polysaccharide conjugate-stabilized food emulsions under various destabilization conditions. *Food Chemistry: X*, *18*, 100725. https://doi.org/10.1016/j.fochx.2023.100725

Nursten, H. E. (2005). *The Maillard Reaction: Chemistry, Biochemistry andImplications. Cambridge: The Royal Society of Chemistry*.

Ossa, J. S. H., Wagner, J. R., & Palazolo, G. G. (2022). Impact of environmental stresses on the stability of acidic oil-in-water emulsions prepared with tofu whey concentrates. *Current Research in Food Science*, *5*, 498-505.

Parimi, N.S., M. Singh, J.R. Kastner, K.C. Das, L.S. Forsberg, P. Azadi, Optimization of protein extraction from *Arthrospira platensis* to generate a potential co-product and a biofuel feedstock with reduced nitrogen content, Front. Energy Res. 3 (2015) 1–9, https://doi.org/10.3389/fenrg.2015.00030.

Park, W., Kim, H.-J., Li, M., Lim, D., Kim, J., Kwak, S.-S., Kang, C.-M., Ferruzzi, M., & Ahn, M.-J. (2018). Two Classes of Pigments, Carotenoids and C-Phycocyanin, in Spirulina Powder and Their Antioxidant Activities. *Molecules*, *23*(8), 2065. https://doi.org/10.3390/molecules23082065

Parveen, I., M. Maraz, K., Iqbal Mahmud, Md., & A. Khan, R. (2019). Seaweed Based Bio Polymeric Film and Their Application: A Review on Hydrocolloid Polysaccharides. *Scientific Review*, *55*, 93–102. https://doi.org/10.32861/sr.55.93.102

Pastoriza, S., Rufián-Henares, J. Á., García-Villanova, B., & Guerra-Hernández, E. (2016). Evolution of the Maillard reaction in glutamine or arginine-dextrinomaltose model systems. *Foods*, *5*(4), 86.

Perrechil, F. A., & Cunha, R. L. (2013). Stabilization of multilayered emulsions by sodium caseinate and kappa- carrageenan. Food Hydrocolloids, 30, 606–613.

Phong, W.N., Show, P.L., Ling, T.C., Juan, J.C., Ng, E.P., and Chang, J.S. 2018. "Mild cell disruption methods for bio-functional proteins recovery from microalgae—Recent developments and future perspectives.” Algal Research 31: 506–516 https://doi.org/10.1016/j.algal.2017.04.005

Piculell, L., 2006. Gelling carrageenans. In: Stephen, A.M., Phillips, G.O. (Eds.), Food Polysaccharides and Their Applications, 2nd Edition, Chapter 8. Taylor & Francis, CRC Press, pp. 239–287.

Pillai, P.K.S.; Stone, A.K.; Guo, Q.; Guo, Q.; Wang, Q.; Nickerson, M.T. Effect of alkaline de-esterified pectin on the complex coacervation with pea protein isolate under different mixing conditions. Food Chem. 2019, 284, 227–235.

Pirestani, S., Nasirpour, A., Keramat, J., & Desobry, S. (2017). Preparation of chemically modified canola protein isolate with gum Arabic by means of *Maillard* reaction under wet-heating conditions. Carbohydrate Polymers, 155, 201–207.

Poojary, M. M., & Lund, M. N. (2022). Chemical Stability of Proteins in Foods: Oxidation and the Maillard Reaction. *Annual Review of Food Science and Technology*, *13*(1), 35–58. https://doi.org/10.1146/annurev-food-052720-104513

Prihastuti, D., & Abdassah, M. (2019). Karaginan dan Aplikasinya di Bidang Farmasetika. *Majalah Farmasetika*, *4*(5), 146-154.

Purdi, T. S., Setiowati, A. D., & Ningrum, A. (2023). Ultrasound-assisted extraction of Spirulina platensis protein: Physicochemical characteristic and techno-functional properties. *Journal of Food Measurement and Characterization*, *17*(5), 5474–5486. https://doi.org/10.1007/s11694-023-02051-y

Purnamayati, L., Dewi, E. N., & Kurniasih, R. A. (2016). Karakteristik fisik mikrokapsul fikosianin spirulina pada konsentrasi bahan penyalut yang berbeda. *J. Teknol. Has. Pertan*, *9*, 1-8.

Rizwan, M., Mujtaba, G., Memon, S. A., Lee, K., & Rashid, N. (2018). Exploring the potential of microalgae for new biotechnology applications and beyond: A review. Renewable and Sustainable Energy Reviews, 92, 394–404. https://doi.org/10.1016/j. rser.2018.04.034

Rusli, Z., & Setiani, L. A. (2020). Modifikasi Metode Analisis Daya Hambat terhadap Proses Denaturasi Protein yang Diinduksi oleh Panas. *Chemical Engineering Research Articles*, *3*(2), 55-62.

Safi, C., Charton, M., Pignolet, O., Silvestre, F., Vaca-Garcia, C., and Pontalier, P.Y. 2013. “Influence of microalgae cell wall characteristics on protein extractability and determination of nitrogen-to-protein conversion factors.” Journal of Applied Phycology 25 (2): 523–529 https://doi.org/10.1007/s10811-012-9886-1

Schwenzfeier, A., Lech, F., Wierenga, P. A., Eppink, M. H. M. and Gruppen, H. (2013). Foam properties of algae soluble protein isolate: Effect of pH and ionic strength. Food Hydrocolloids, 33: 111–117.

Seo, C. W., & Yoo, B. (2022). Effect of Milk Protein Isolate/κ-Carrageenan Conjugates on Rheological and Physical Properties of Whipping Cream: A Comparative

Study of Maillard Conjugates and Electrostatic Complexes. *Food Science of Animal Resources*, *42*(5), 889–902. https://doi.org/10.5851/kosfa.2022.e42

Setiowati, A. D., Saeedi, S., Wijaya, W., & Van der Meeren, P. (2017). Improved heat stability of whey protein isolate stabilized emulsions via dry heat treatment of WPI and low methoxyl pectin: Effect of pectin concentration, pH, and ionic strength. *Food Hydrocolloids*, *63*, 716-726.

Setiowati, A. D., Wijaya, W., & Van Der Meeren, P. (2020). Whey protein-polysaccharide conjugates obtained via dry heat treatment to improve the heat stability of whey protein stabilized emulsions. *Trends in Food Science & Technology*, *98*, 150–161. https://doi.org/10.1016/j.tifs.2020.02.011

Shen, Y., Hong, S., Singh, G., Koppel, K., & Li, Y. (2022). Improving functional properties of pea protein through "green" modifications using enzymes and polysaccharides. *Food Chemistry*, *385*, 132687. https://doi.org/10.1016/j.foodchem.2022.132687

Shmueli, M. D., Hizkiahou, N., Peled, S., Gazit, E., & Segal, D. (2017). Total proteome turbidity assay for tracking global protein aggregation in the natural cellular environment. *Journal of Biological Methods*, *4*(2).

Silva, S. C., Almeida, T., Colucci, G., Santamaria-Echart, A., Manrique, Y. A., Dias, M. M., & Barreiro, M. F. (2022). Spirulina (Arthrospira platensis) protein-rich extract as a natural emulsifier for oil-in-water emulsions: Optimization through a sequential experimental design strategy. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 648, 129264.

Singh, K., Tripathi, S., & Chandra, R. (2021). Maillard reaction product and its complexation with environmental pollutants: A comprehensive review of their synthesis and impact. *Bioresource Technology Reports*, *15*, 100779.

Soto-Sierra, L., Stoykova, P. and Nikolov, Z. L. (2018). Extraction and fractionation of microalgae-based protein products. Algal Research, 36: 175– 192

Sovia, E., Sasongko, L. D. N., & Sigit, J. I. (2014). Aktivitas inhibisi ekstrak bawang putih dan S-metil sistein terhadap reaksi glikasi albumin secara in vitro. *Maranatha Journal of Medicine and Health*, *10*(2), 150879.

Srivastava, A. K., Pandey, A. K., Jain, S., & Misra, N. (2015). FT-IR spectroscopy, intra-molecular C−H⋯O interactions, HOMO, LUMO, MESP analysis and biological activity of two natural products, triclisine and rufescine: DFT and QTAIM approaches. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, *136*, 682–689. https://doi.org/10.1016/j.saa.2014.09.082

Subhashree, S. N., Sunoj, S., Xue, J., & Bora, G. C. (2017). Quantification of browning in apples using colour and textural features by image analysis. *Food Quality and Safety*, *1*(3), 221-226.

Sun, X., Wang, H., Li, S., Song, C., Zhang, S., Ren, J., & Udenigwe, C. C. (2022). *Maillard*-Type Protein–Polysaccharide Conjugates and Electrostatic Protein–Polysaccharide Complexes as Delivery Vehicles for Food Bioactive

Ingredients: Formation, Types, and Applications. *Gels*, *8*(2), 135. https://doi.org/10.3390/gels8020135

Suseno, R., Palupi, N. S., & Prangdimurti, E. (2016). Alergenisitas sistem glikasi isolat protein kedelai-fruktooligosakarida. *Agritech*, *36*(4), 450-458.

Taragjini, E., Ciardi, M., Musari, E., Villaró, S., Morillas-España, A., Alarcón, F. J., & Lafarga, T. (2022). Pilot-scale production of A. platensis: protein isolation following an ultrasound-assisted strategy and assessment of techno-functional properties. Food and Bioprocess Technology, 15(6), 1299-1310. https://doi.org/10.1007/s11947-022-02789-1

Tatulian, S. A. (2019). FTIR analysis of proteins and protein–membrane interactions. *Lipid-Protein Interactions: Methods and Protocols*, 281-325.

Teuling, E., Schrama, J. W., Gruppen, H. and Wierenga, P. A. (2019). Characterizing emulsion properties of microalgal and cyanobacterial protein isolates. Algal Research, 39.

Usui, M.; Tamura, H.; Nakamura, K.; Ogawa, T.; Muroshita, M.; Azakami, H.; Kanuma, S.; Kato, A. Enhanced bactericidal action and masking of allergen structure of soy protein by attachment of chitosan through *Maillard*-type protein-polysaccharide conjugation. Nahrung 2004, 48, 69–72

van de Velde, F., de Hoog, E. H., Oosterveld, A., & Tromp, R. H. (2015). Protein-polysaccharide interactions to alter texture. *Annual review of food science and technology*, *6*, 371-388.

van Outersterp, R. E., Moons, S. J., Engelke, U. F., Bentlage, H., Peters, T. M., van Rooij, A., ... & Martens, J. (2021). Amadori rearrangement products as potential biomarkers for inborn errors of amino-acid metabolism. *Communications biology*, *4*(1), 367.

Wang, J., Zheng, H., Zhang, S., Li, J., Zhu, X., Jin, H., & Xu, J. (2021). Improvement of protein emulsion stability through glycosylated black bean protein covalent interaction with (−)-epigallocatechin-3-gallate. *RSC advances*, *11*(4), 2546-2555.

Wang, K., Li, Y., Sun, J., & Zhang, Y. (2023). The physicochemical properties and stability of myofibrillar protein oil-in-water emulsions as affected by the structure of sugar. *Food Chemistry: X*, *18*, 100677.

Wang, Q., Wang, Y., Huang, M., Hayat, K., Kurtz, N. C., Wu, X., Ahmad, M., & Zheng, F. (2021). Ultrasound-assisted alkaline proteinase extraction enhances the yield of pecan protein and modifies its functional properties. *Ultrasonics Sonochemistry*, *80*, 105789. https://doi.org/10.1016/j.ultsonch.2021.105789

Wang, Q., Xiang, X., Xie, Y., Wang, K., Wang, C., Nie, X., & Wang, P. (2022). Maillard reaction between oligopeptides and reducing sugar at body temperature: The putative anti-glycation agents. *Frontiers in Nutrition*, *9*, 1062777.

Wang, W., Sheng, H., Zhou, J., Yuan, P., Zhang, X., Lu, M., & Gu, R. (2021). The effect of a variable initial pH on the structure and rheological properties of whey protein and monosaccharide gelation via the Maillard reaction. *International Dairy Journal*, *113*, 104896. https://doi.org/10.1016/j.idairyj.2020.104896

Wang, Y., Gan, J., Li, Y., Nirasawa, S., & Cheng, Y. (2019). Conformation and emulsifying properties of deamidated wheat gluten-maltodextrin/citrus pectin conjugates and their abilities to stabilize β-carotene emulsions. *Food Hydrocolloids*, *87*, 129–141. https://doi.org/10.1016/j.foodhyd.2018.07.050

Wang, Y., Yuan, C., Cui, B., & Liu, Y. (2018). Influence of cations on texture, compressive elastic modulus, sol-gel transition and freeze-thaw properties of kappa-carrageenan gel. *Carbohydrate Polymers*, *202*, 530–535. https://doi.org/10.1016/j.carbpol.2018.08.146

Wang, Zhang, W., & Ren, F. (2017). Effect of carrageenan addition on the rennet-induced gelation of skim milk. Journal of the Science of Food and Agriculture, 97(2). 4178–4182.

Warnakulasuriya, S.N.; Nickerson, M.T. Review on plant protein-polysaccharide complex coacervation, and the functionality and applicability of formed complexes. J. Sci. Food Agric. 2018, 98, 5559–5571

Wen, C., Zhang, J., Qin, W., Gu, J., Zhang, H., Duan, Y., & Ma, H. (2020). Structure and functional properties of soy protein isolate-lentinan conjugates obtained in Maillard reaction by slit divergent ultrasonic assisted wet heating and the stability of oil-in-water emulsions. *Food Chemistry*, *331*, 127374. https://doi.org/10.1016/j.foodchem.2020.127374

Wong, C. W., Wijayanti, H. B., & Bhandari, B. R. (2015). Maillard reaction in limited moisture and low water activity environment. *Water stress in biological, chemical, pharmaceutical and food systems*, 41-63.

Xiao, Q., Bai, X., & He, Y. (2020). Rapid screen of the color and water content of fresh-cut potato tuber slices using hyperspectral imaging coupled with multivariate analysis. *Foods*, *9*(1), 94.

Xu, Y., Han, M., Huang, M., & Xu, X. (2021). Enhanced heat stability and antioxidant activity of myofibrillar protein-dextran conjugate by the covalent adduction of polyphenols. *Food Chemistry*, *352*, 129376. https://doi.org/10.1016/j.foodchem.2021.129376

Yang, A., Deng, H., Zu, Q., Lu, J., Wu, Z., Li, X., ... & Chen, H. (2018). Structure characterization and IgE-binding of soybean 7S globulin after enzymatic deglycosylation. *International Journal of Food Properties*, *21*(1), 171-182.

Yücetepe, A., Yavuz-Düzgün, M., Şensu, E., Bildik, F., Demircan, E., & Özçelik, B. (2021). The impact of pH and biopolymer ratio on the complex coacervation of *Arthrospira platensis* protein concentrate with chitosan. *Journal of Food Science and Technology*, *58*(4), 1274–1285. https://doi.org/10.1007/s13197-020-04636-7

Zha, F., Dong, S., Rao, J., & Chen, B. (2019). The structural modification of pea protein concentrate with gum Arabic by controlled Maillard reaction enhances its functional properties and flavor attributes. *Food Hydrocolloids*, *92*, 30–40. https://doi.org/10.1016/j.foodhyd.2019.01.046

Zhai JL, Wooster TJ, Hoffmann SV, Lee TH, Augustin MA, Aguilar MI. Structural rearrangement of beta-lactoglobulin at different oil–water interfaces and its effect on emulsion stability. Langmuir 2011;27:9227–36.

Zhang, A., Yu, J., Wang, G., Wang, X., & Zhang, L. (2019). Improving the emulsion freeze-thaw stability of soy protein hydrolysate-dextran conjugates. LWT-Food Science and Technology, 116, 108506.

Zhang, C., Ning, Y., Jia, Y., Kang, M., He, Y., Xu, W., & Shah, B. R. (2022). Interaction investigation and phase transition of carrageenan/lysozyme complex system. *Food Science and Technology*, *42*.

Zhang, Q., Ames, J. M., Smith, R. D., Baynes, J. W., & Metz, T. O. (2009). A perspective on the Maillard reaction and the analysis of protein glycation by mass spectrometry: probing the pathogenesis of chronic disease. *Journal of proteome research*, *8*(2), 754-769.

Zhang, X., Wang, Q., Liu, Z., Zhi, L., Jiao, B., Hu, H., Ma, X., Agyei, D., & Shi, A. (2023). Plant protein-based emulsifiers: Mechanisms, techniques for emulsification enhancement and applications. *Food Hydrocolloids*, *144*, 109008. https://doi.org/10.1016/j.foodhyd.2023.109008

Zhang, Z., Holden, G., Wang, B., & Adhikari, B. (2023). Maillard reaction-based conjugation of Spirulina protein with maltodextrin using wet-heating route and characterisation of conjugates. *Food Chemistry*, *406*, 134931. https://doi.org/10.1016/j.foodchem.2022.134931

Zhang, Z., Wang, B., Holden, G., Chen, J., & Adhikari, B. (2023). Improving functional properties of Spirulina protein by covalent conjugation followed by complex coacervation processes. *Future Foods*, *7*, 100239. https://doi.org/10.1016/j.fufo.2023.100239

Zhou, X., Iqbal, A., Li, J., Liu, C., Murtaza, A., Xu, X., ... & Hu, W. (2021). Changes in browning degree and reducibility of polyphenols during autoxidation and enzymatic oxidation. *Antioxidants*, *10*(11), 1809.

Zia, K.M., Tabasum, S., Nasif, M., Sultan, N., Aslam, N., Noreen, A., Zuber, M., 2017. A review on synthesis, properties and applications of natural polymer based carrageenan blends and composites. Int. J. Biol. Macromol. 96, 282–301. https:// doi.org/10.1016/j.ijbiomac.2016.11.095.

Zinoviadou, K.G.; Scholten, E.; Moschakis, T.; Biliaderis, C.G. Properties of emulsions stabilised by sodium caseinate-chitosan complexes. Int. Dairy J. 2012, 26, 94–101.