

References

- Ahamad, M. N., Saleemullah, M., Shah, H. U., Khalil, I. A., & Saljoqi, A. U. R. (2007). Determination of β carotene content in fresh vegetables using high performance liquid chromatography. Sarhad Journal Agriculture, 23(3), 767-770.
- Ahluwalia, V. K., & Ahluwalia, M. (2005). *A Guide to Aging* (pp. 49-50). New Delhi: Lotus Press.
- Appala, R. N., Chigurupati, S., Appala, R. V. V. S. S., Krishnan Selvarajan, K., & Islam Mohammad, J. (2016). *A Simple HPLC-UV Method for the Determination of Glutathione in PC-12 Cells. Scientifica*, 2016, 1–6. doi:10.1155/2016/6897890
- Baker RB, McLaughlin JJA, Hutner SH, DeAngelis B, Feingold S, Frank O, Baker H. (1981). Water-soluble vitamins in cells and spent culture supernatants of *Poterioochromonas stipitata*, *Euglena gracilis*, and *Tetrahymena thermophila*. *Archive Microbiology* 129:310–313
- Bandeira, R., Uekane, T., Cunha, C., Rodrigues, J., la Cruz, M., Godoy, R., & Fioravante, A. (2013). Comparison of High Performance Liquid Chromatography with Fluorescence Detector and with Tandem Mass Spectrometry methods for detection and quantification of Ochratoxin A in green and roasted coffee beans. *Brazilian Archives Of Biology And Technology*, 56(6), 911-920. doi: 10.1590/s1516-89132013000600004
- Bell, E. C., John, M., Hughes, R. J., & Pham, T. (2013). *Ultra-Performance Liquid Chromatographic Determination of Tocopherols and Retinol in Human Plasma. Journal of Chromatographic Science*, 52(9), 1065–1070. doi:10.1093/chromsci/bmt161
- Bhaskarachary, K. (1995). Carotene content of some common and less familiar foods of plant origin. *Food Chemistry*, 54(2), 189–193. doi:10.1016/0308
- Bunea, A., Andjelkovic, M., Socaciuc, C., Bobis, O., Neacsu, M., Verhé, R., & Camp, J. V. (2008). Total and individual carotenoids and phenolic acids content in fresh, refrigerated and processed spinach (*Spinacia oleracea L.*). *Food Chemistry*, 108(2), 649–656.
- Butu, M., & Rodino, S. (2019). *Fruit and Vegetable-Based Beverages—Nutritional Properties and Health Benefits. Natural Beverages*, 303–338. doi:10.1016/b978-0-12-816689-5.00011-0
- Boligon, A., Janovik, V., Boligon, A., Pivetta, C., Pereira, R., Rocha, J., & Athayde, M. (2012). HPLC Analysis of Polyphenolic Compounds and Antioxidant Activity in *Nasturtium officinale*. *International Journal Of Food Properties*, 16(1), 61-69. Doi: 10.1080/10942912.2010.528111
- Cazzonelli, C. I. (2011). Carotenoids in nature: insights from plants and beyond. *Functional Plant Biology*, 38(11), 833. <https://doi.org/10.1071/FP11192>
- Chen, W., Zhao, Y., Seefeldt, T., & Guan, X. (2008). Determination of thiols and disulfides via HPLC quantification of 5-thio-2-nitrobenzoic acid. *Journal Of Pharmaceutical And Biomedical Analysis*, 48(5), 1375-1380. doi: 10.1016/j.jpba.2008.08.033
- Chowdhury, M. (2016). Determination of amount of Vitamin C (Ascorbic Acid) from supplied commercial tablets by using Iodometric titration
- Dauthy, M. (1995). Fruit and vegetable processing - Ch03 Deterioration factors and their control. Retrieved 8 October 2020, from <http://www.fao.org/3/v5030e/v5030e08.htm>
- De Carvalho, L. M. J., Gomes, P. B., Godoy, R. L. de O., Pacheco, S., do Monte, P. H. F., de Carvalho, J. L. V., ... Ramos, S. R. R. (2012). Total carotenoid content, α -carotene and β -carotene, of landrace pumpkins (*Cucurbita moschata Duch*): A preliminary study. *Food Research International*, 47(2), 337–340. doi:10.1016/j.foodres.2011.07.040
- Dolphin WD. (1970). Photoinduced carotenogenesis in chlorotic *Euglena gracilis*. *Plant Physiology* 46:685–691
- Ernest, Z. and Christopher, P., 2013. *How Is Molecular Polarity Related To Solubility? / Socratic*. [online] Socratic.org. Available at: <<https://socratic.org/questions/how-is-molecular-polarity-related-to-solubility>> [Accessed 11 August 2020].
- Falk J, Munné-Bosch S (2010) Tocochromanol functions in plants: antioxidation and beyond. *Journal Experimental Botany* 61:1549–1566

- Fenech, M., Amaya, I., Valpuesta, V., & Botella, M. (2019). Vitamin C Content in Fruits: Biosynthesis and Regulation. *Frontiers In Plant Science*, 9. doi: 10.3389/fpls.2018.02006
- Figueira, J.A., Pereira, J.A.M. & Câmara, J.S. Food Anal. Methods (2017) 10: 2507. doi: 10.1007/s12161-017-0799-0
- Food Data Chart - Provitamin A (β -carotene). (2020). Retrieved 31 May 2020, from <http://apjcn.nhri.org.tw/server/info/books-phds/books/foodfacts/html/data/data3b.html>
- Forman, H. J., Zhang, H., & Rinna, A. (2009). Glutathione: Overview of its protective roles, measurement, and biosynthesis. *Molecular Aspects of Medicine*, 30(1-2), 1–12. doi:10.1016/j.mam.2008.08.006
- Frusciante, L., Carli, P., Ercolano, M. R., Pernice, R., Di Matteo, A., Fogliano, V., & Pellegrini, N. (2007). Antioxidant nutritional quality of tomato. *Molecular Nutrition & Food Research*, 51(5), 609–617. doi:10.1002/mnfr.200600158
- Fuentes, E., Carle, R., Astudillo, L., Guzmán, L., Gutiérrez, M., Carrasco, G., & Palomo, I. (2013). Antioxidant and Antiplatelet Activities in Extracts from Green and Fully Ripe Tomato Fruits (*Solanum lycopersicum*) and Pomace from Industrial Tomato Processing. *Evidence-Based Complementary And Alternative Medicine*, 2013, 1-9. doi: 10.1155/2013/867578
- García-García, J. D., Rodríguez-Zavala, J. S., Jasso-Chávez, R., Mendoza-Cozatl, D., & Moreno-Sánchez, R. (2009). Chromium uptake, retention and reduction in photosynthetic *Euglena gracilis*. *Archives of Microbiology*, 191(5), 431–440. doi:10.1007/s00203-009-0469-8
- Gissibl, A., Sun, A., Care, A., Nevalainen, H., & Sunna, A. (2019). Bioproducts From *Euglena gracilis*: Synthesis and Applications. *Frontiers In Bioengineering And Biotechnology*, 7. doi: 10.3389/fbioe.2019.00108
- Gerster, H., (1997). Vitamin A-functions, dietary requirements and safety in humans. *International Journal Vitamin and Nutrition Res* 67:71–90
- Grimm P, Risse JM, Cholewa D, Müller JM, Beshay U, Friehs K, Flaschel E, (2015). Applicability of *Euglena gracilis* for biorefineries demonstrated by the production of α -tocopherol and paramylon followed by anaerobic digestion. *Journal Biotechnology* 215:72–79
- Gumel, S.M, Garba,B ., & Ibrahim, H.T. (2012). Comparison of Ascorbic Acid Content of some Selected Fresh and Dried Tropical Vegetables. *Chemsearch Journal* 3(2): 8 – 10.
- Gonzalez-mendoza. D., Cervantes-Garcia. D., Troncoso-Rojas. R., Sanchez-Estrada. A., & Grimaldo. O. (2013). Production of Phenolics and Flavonoids Compounds in *Euglena gracilis* under Copper Stress. *Journal of Pure and Applied Microbiology*. 7. 93-100.)
- GSR - Glutathione reductase, mitochondrial precursor - Homo sapiens (Human) - GSR gene & protein. Retrieved 7 January 2020, from <https://www.uniprot.org/uniprot/P00390>
- Hassan BAR (2012) HPLC Uses and Importance in the Pharmaceutical Analysis and Industrial Field. *Pharmacy Analytics Acta* 3:e133. doi:10.4172/2153-2435.1000e133
- Hasan, M., Sun, A., Mirzaei, M., Te'o, J., Hobba, G., Sunna, A., & Nevalainen, H. (2017). A comprehensive assessment of the biosynthetic pathways of ascorbate, α -tocopherol and free amino acids in *Euglena gracilis* var. *saccharophila*. *Algal Research*, 27, 140-151. doi: 10.1016/j.algal.2017.08.029
- Hosotani K, Kitaoka S. (1984). Determination of provitamin A in *Euglena gracilis* Z by high performance liquid chromatography and changes of the contents under various culture conditions. *Journal Japan Society Nutrition Food Science* 37:519–524
- Inui, H., Miyatake, K., Nakano, Y., & Kitaoka, S. (1983). Production and composition of wax esters by fermentation of *Euglena gracilis*. *Agricultural And Biological Chemistry*, 47(11), 2669-2671. doi: 10.1271/bbb1961.47.2669
- Ishikawa T, Masumoto I, Iwasa N, Nishikawa H, Sawa Y, Shibata H, Nakamura A, Yabuta Y, Shigeoka S. (2006). Functional characterization of D-galacturonic acid reductase, a key enzyme of

- the ascorbate biosynthesis pathway, from *Euglena gracilis*. *Bioscience Biotechnology Biochemistry* 70:2720–2726
- Ishikawa T, Shigeoka S (2008) Recent advances in ascorbate biosynthesis and the physiological significance of ascorbate peroxidase in photosynthesizing organisms. *Biosci Biotechnol Biochem* 72:1143–1154
- Ishikawa, T., Tajima, N., Nishikawa, H., Gao, Y., Rapolu, M., Shibata, H., et al. (2010). Euglena gracilis ascorbate peroxidase forms an intramolecular dimeric structure: its unique molecular characterization. *Biochemistry Journal* 426, 125–134. doi: 10.1042/bj20091406
- Ishikawa, T., Tamaki, S., Maruta, T., & Shigeoka, S. (2017). *Biochemistry and Physiology of Reactive Oxygen Species in Euglena*. *Euglena: Biochemistry, Cell and Molecular Biology*, 47–64. doi:10.1007/978-3-319-54910-1_4
- ITOCHU Announces Conclusion of a Memorandum with euglena Co., Ltd. for the Start of an Overseas Demonstration Project to Culture Euglena | Press Releases | ITOCHU Corporation. (2019). Retrieved 5 January 2020, from <https://www.itochu.co.jp/en/news/press/2019/190619.html>
- Jahanban-Esfahlan, A., Ostadrahimi, A., Tabibiazar, M., & Amarowicz, R. (2019). *A Comparative Review on the Extraction, Antioxidant Content and Antioxidant Potential of Different Parts of Walnut (*Juglans regia L.*) Fruit and Tree. Molecules*, 24(11), 2133. doi:10.3390/molecules24112133
- Jasso-Chavez, R. & Moreno-Sanchez, R. (2003) Cytosol–mitochondria transfer of reducing equivalents by a lactate shuttle in heterotrophic Euglena. *Eur J Biochem* 270, 4942–4951.
- Jasso-Chavez, R., Garcaa-Cano, I., Marin-Hernandez, A., Mendoza-Coatl, D., Rendon, J.L. and Moreno-Sanchez, R. (2005) The bacterial-like lactate shuttle components from heterotrophic Euglena gracilis. *Biochim Biophys Acta* 1709, 181–190
- Jeyakodi. S, Krishnakumar. A., & Chellappan, D. K. (2018). B Carotene-Therapeutic Potential and Strategies to Enhance Its Bioavailability. 7. 001-007. 10.19080/NFSIJ.2018.07.555716.
- Jones, D. P., Coates, R. J., Flagg, E. W., Eley, J. W., Block, G., Greenberg, R. S., Gunter, E. W., Jackson, B. (1992). *Glutathione in foods listed in the national cancer institute's health habits and history food frequency questionnaire*. *Nutrition and Cancer*, 17(1), 57–75. doi:10.1080/01635589209514173
- Kanto. Co. (2020). Retrieved 26 April 2020, from https://www.kanto.co.jp/dcems_media/other/Mightysil_RCB-01E.pdf
- Kato, S., Soshino, M., Takaichi, S., Ishikawa, T., Nagata, N., Asahina, M., & Shinomura, T. (2017). Suppression of the phytoene synthase gene (EgcrtB) alters carotenoid content and intracellular structure of Euglena gracilis. *BMC Plant Biology*, 17(1). doi: 10.1186/s12870-017-1066-7
- Khan, M., Rahman, M., Islam, M., & Begum, S. (2006). A Simple UV-spectrophotometric Method for the Determination of Vitamin C Content in Various Fruits and Vegetables at Sylhet Area in Bangladesh. *Journal Of Biological Sciences*, 6(2), 388-392. doi: 10.3923/jbs.2006.388.392
- Kinsky NI, Goldsmith TH (1960) The carotenoids of the flagellated alga, Euglena gracilis. *Archive Biochemistry Biophysics* 91:271–279
- Kitaoka S, Nakano Y, Miyatake K, Yokota A (1989) Enzymes and their functional location. In: Buetow DE (ed) *Biology of Euglena*, vol 4. Academic Press, New York, pp 1–135
- Kumar, P., Sharma, P. K., Sharma, P. K., & Sharma, D. (2015). Micro-algal Lipids: A Potential Source of Biodiesel. *Journal of Innovations in Pharmaceuticals and Biological Sciences*, 2(2), 135–143.
- Laitinen, H.A., Ewing, G.W., 1977. A History of Analytical Chemistry. American Chemical Society, York, PA. 358 pp.

- Law, M. Y., Charles, S. A., & Halliwell, B. (1983). *Glutathione and ascorbic acid in spinach (Spinacia oleracea) chloroplasts. The effect of hydrogen peroxide and of Paraquat*. *Biochemical Journal*, 210(3), 899–903. doi:10.1042/bj2100899
- Lester, G., Hodges, D., Meyer, R., & Munro, K. (2004). Pre-extraction Preparation (Fresh, Frozen, Freeze-Dried, or Acetone Powdered) and Long-Term Storage of Fruit and Vegetable Tissues: Effects on Antioxidant Enzyme Activity. *Journal Of Agricultural And Food Chemistry*, 52(8), 2167-2173. doi: 10.1021/jf030713b
- Malviya, R & Bansal, V & Pal, O & Sharma, P. (2010). High performance liquid chromatography: A short review. *Journal of Global Pharma Technology*. 2. 22-26.
- Mantri, R., Sanghvi, R., & Zhu, H. (2017). Solubility of Pharmaceutical Solids. *Developing Solid Oral Dosage Forms*, 3-22. doi: 10.1016/b978-0-12-802447-8.00001-7
- Matsumoto, Takahito & Inui, Hiroshi & Miyatake, Kazutaka & Nakano, Yoshihisa & Murakami, Katsusuke. (2009). Comparison of Nutrients in Euglena with those in Other Representative Food Sources. *Eco-Engineering Journal*. 21. 81-86. 10.11450/seitaikogaku.21.81.
- Marcenko, E. (1972). Interaction of Mineral Nutrition and Temperature on the Growth of Euglena gracilis. *Acta Bot, Croat*, 31, 61-70.
- Mercadante AZ, Steck A, Pfander H (1999). "Carotenoids from guava (*Psidium guajava* L.): isolation and structure elucidation". *Journal of Agricultural and Food Chemistry*. 47 (1): 145–51. doi:10.1021/jf980405r. PMID 10563863.
- Minich, D., & Brown, B. (2019). A Review of Dietary (Phyto)Nutrients for Glutathione Support. *Nutrients*, 11(9), 2073. doi: 10.3390/nu11092073
- Mitic, S., Kostic, D., Naskovic- okic, D., & Mitic, M. (2011). *Rapid and Reliable HPLC Method for the Determination of Vitamin C in Pharmaceutical Samples*. *Tropical Journal of Pharmaceutical Research*, 10(1). doi:10.4314/tjpr.v10i1.66549
- Mokrosnop, V. M., Polishchuk, A. V., & Zolotareva, E. K. (2016). *Accumulation of α-tocopherol and β-carotene in Euglena gracilis Cells Under Autotrophic and Mixotrophic Culture Conditions*. *Applied Biochemistry and Microbiology*, 52(2), 216–221. doi:10.1134/s0003683816020101
- Nagy, V., Vidal-Meireles, A., Tengölics, R., Rákhely, G., Garab, G., Kovács, L., & Tóth, S. (2016). Ascorbate accumulation during sulphur deprivation and its effects on photosystem II activity and H₂ production of the green alga *Chlamydomonas reinhardtii*. *Plant, Cell & Environment*, 39(7), 1460-1472. doi: 10.1111/pce.12701
- National Academies Press. (2000). *Dietary reference intakes for vitamin c, vitamin e, selenium, and carotenoids*. Washington, D.C.
- Ngô, H. M., & Bouck, G. B. (1995). *Chapter 5 Isolation of Euglena Flagella*. *Methods in Cell Biology*, 25–29. doi:10.1016/s0091-679x(08)60786-4
- Ogbonna JC. (2009). Microbiological production of tocopherols: current state and prospects. *Application Microbiology Biotechnology* 84:217–225
- Pizzorno J. (2014). Glutathione! *Integr. Med.* 2014;13:8–12.
- Pellegrini, N., Colombi, B., Salvatore, S., Brenna, O. V., Galaverna, G., Del Rio, D., Bianchi, M., Bennet, R.N., Brighenti, F. (2006). *Evaluation of antioxidant capacity of some fruit and vegetable foods: efficiency of extraction of a sequence of solvents*. *Journal of the Science of Food and Agriculture*, 87(1), 103–111. doi:10.1002/jsfa.2682
- Pritwani, R., & Mathur, P. (2017). *β-carotene Content of Some Commonly Consumed Vegetables and Fruits Available in Delhi, India*. *Journal of Nutrition & Food Sciences*, 07(05). doi:10.4172/2155-9600.1000625
- Prominence Modular HPLC | SHIMADZU EUROPA. Retrieved 8 January 2020, from <https://www.shimadzu.eu/prominence>

- Que, F., Hou, X., Wang, G. et al. Advances in research on the carrot, an important root vegetable in the Apiaceae family. *Hortic Res* 6, 69 (2019). <https://doi.org/10.1038/s41438-019-0150-6>
- Rebecca, L. J., Sharmila, S., Paul Das, M., & Seshiah C. (2014). Extraction and purification of carotenoids from vegetables. *Journal of Chemical and Pharmaceutical Research*, 6(4), 594-598.
- Rebou, E. (2013). Absorption of vitamin A and carotenoids by the enterocyte: Focus on transport proteins. *Nutrients* 5:3563–3581
- Redfearn, E.R. (1967) Isolation and determination of ubiquinone. *Methods Enzymol* 10, 381–384.
- Reilly, C. T. n.d. Top 20 Foods High in Antioxidants. Retrieved 5 January 2020, from <https://www.tetonhospital.org/documents/cognitive-health/top-20-foods-high-in-antioxidants.pdf>
- Renzi, M., Righi, F., Quarantelli, C., Quarantelli, A. and Bonomi, A. (2005) Simplified HPLC-UV method for the determination of α-tocopherol in plasma. *Ital J Anim Sci* 4, 191–195.
- Roberts, J.L., & Moreau, R, (2016). Functional Properties of Spinach (*Spinacia Oleraceae*) phytochemicals and bioactives. *Food Funct* 7. 3337-3353. doi: 10.1039/C6FO00051G
- Robb-Nicholson, C., 2020. *By The Way, Doctor: What's The Right Amount Of Vitamin C For Me? - Harvard Health.* [online] Harvard Health. Available at: <<https://www.health.harvard.edu/staying-healthy/whats-the-right-amount-of-vitamin-c-for-me>> [Accessed 9 August 2020].
- Rodríguez-Zavala, J.S., Ortiz-Cruz, M.A. and MorenoSaúncez, R. (2006) Characterization of an aldehyde dehydrogenase from *Euglena gracilis*. *J Eukaryot Microbiol* 53, 36–42.
- Rodríguez-Zavala, J., Ortiz-Cruz, M., Mendoza-Hernández, G., & Moreno-Sánchez, R. (2010). Increased synthesis of α-tocopherol, paramylon and tyrosine by *Euglena gracilis* under conditions of high biomass production. *Journal Of Applied Microbiology*, 109(6), 2160-2172. doi: 10.1111/j.1365-2672.2010.04848.x
- Rosati, C., Aquilani, R., Dharmapuri, S., Pallara, P., Marusic, C., Tavazza, R., Bouvier, F., Camara, B. and Giuliano, G., 2000. Metabolic engineering of β-carotene and lycopene content in tomato fruit. *The Plant Journal*, 24(3), pp.413-420.
- Saini, S. (2015). VITAMIN 'C' CONTENT IN LOCALLY AVAILABLE VEGETABLES OF RETAIL SHOPS IN DISTRICT KURUKSHETRA.
- Shigeoka S, Yokota A, Nakano Y, Kitaoka S (1979) The effect of illumination on the L-ascorbic acid content in *Euglena gracilis* z. *Agriculture Biology Chemistry* 43: 2053–2058
- Shigeoka, S, Nakano, Y, and Kitaoka, S. (1980). Occurrence of L-ascorbic acid in *Euglena gracilis* Z. *Bull. Univ. Osaka Prefecture Ser. B Agriculture. Biology.* 32, 43–48.
- Shigeoka S, Onishi T, Nakano Y, Kitaoka S (1986) The contents and subcellular distribution of tocopherols in *Euglena gracilis*. *Agriculture Biology Chemistry* 50:1063–1065
- Shigeoka, S., Onishi, T., Nakano, Y., & Kitaoka, S. (1987a). Characterization and physiological function of glutathione reductase in *Euglena gracilis* z. *Biochemical Journal*, 242(2), 511-515. doi: 10.1042/bj2420511
- Shigeoka, S, Onishi, T, Nakano, Y, & Kitaoka, S. (1987b). Photoinduced biosynthesis of glutathione in *Euglena gracilis*. *Agricultural And Biological Chemistry*, 51(8), 2257-2258. doi: 10.1271/bbb1961.51.2257
- Shigeoka, S., Onishi, T., Nakano, Y., & Kitaoka, S. (1987c). Requirement for Vitamin B, for Growth of *Euglena gracilis*. Retrieved 8 January 2020, from <https://www.microbiologyresearch.org/docserver/fulltext/micro/133/1/mic-133-1-25.pdf?Expires=1578499924&id=id&accname=guest&checksum=B0F679DF7988CE80F7C291DCEE273EAA>
- Shigeoka S, Ishiko H, Nakano Y, Mitsunaga T (1992) Isolation and properties of γ-tocopherol methyltransferase in *Euglena gracilis*. *Biochimica Biophysica Acta* 1128:220–226

- Shiroma, S., Tanaka, M., Sasaki, T., Ogawa, T., Yoshimura, K., & Sawa, Y. et al. (2019). Chloroplast development activates the expression of ascorbate biosynthesis-associated genes in *Arabidopsis* roots. *Plant Science*, 284, 185-191. doi: 10.1016/j.plantsci.2019.04.012
- Shui, G., & Leong, L. (2004). Analysis of polyphenolic antioxidants in star fruit using liquid chromatography and mass spectrometry. *Journal Of Chromatography A*, 1022(1-2), 67-75. doi: 10.1016/j.chroma.2003.09.055
- Smirnoff N. (2000). Ascorbic acid: metabolism and functions of a multi-facetted molecule. *Curriculum Opinion Plant Biology* 3:229–235
- Smirnoff N. (2001). L-ascorbic acid biosynthesis. *Vitamin Hormones* 61:241–266
- Solace, M., & Mandra, P. (2020). Is a euglena a plant-like or animal-like protist? | Socratic. Retrieved 31 May 2020, from <https://socratic.org/questions/is-a-euglena-a-plant-like-or-animal-like-protist>
- Steel, R. G. D. & Torrie, J. H. (1960). Principles and Procedures of Statistics with Special Reference to the Biological Sciences. McGraw Hill.
- Suzuki, K., Mitra, S., Iwata, O., Ishikawa, T., Kato, S., & Yamada, K. (2015). *Selection and characterization of Euglena anabaenavar. minoras a new candidate Euglena species for industrial application*. *Bioscience, Biotechnology, and Biochemistry*, 79(10), 1730–1736.
- Sylvester, P., & Shah, S. (2005). Mechanisms mediating the antiproliferative and apoptotic effects of vitamin E in mammary cancer cells. *Frontiers in bioscience : a journal and virtual library*. 10. 699-709. 10.2741/1565.
- Takaichi S. (2011) Carotenoids in algae: Distributions, biosynthesis and functions. *Marine Drugs* 9:1101–1118
- Takeyama, H., Kanamaru, A., Yoshino, Y., Kakuta, H., Kawamura, Y., and Matsunaga, T. (1997). Production of antioxidant vitamins, β-carotene, vitamin C, and vitamin E, by two-step culture of *Euglena gracilis* Z. *Biotechnology. Bioengineering. Bioengineering*. 53, 185–190. doi: 10.1002/(SICI)1097-0290(19970120)53:2<185::AID-BIT8>3.0.CO;2-K
- Tang, G. (2010). *Spinach and Carrots. Bioactive Foods in Promoting Health*, 381–392. doi:10.1016/b978-0-12-374628-3.00025-6
- Takahashi, S., & Badger, M. (2011). Photoprotection in plants: a new light on photosystem II damage. *Trends In Plant Science*, 16(1), 53-60. doi: 10.1016/j.tplants.2010.10.001
- Tamaki, S., Kato, S., Shinomura, T., Ishikawa, T., & Imaishi, H. (2019). Physiological role of β-carotene monohydroxylase (CYP97H1) in carotenoid biosynthesis in *Euglena gracilis*. *Plant Science*, 278, 80-87. doi: 10.1016/j.plantsci.2018.10.017
- Tee, E.-S., & Lim, C.-L. (1991). *Carotenoid composition and content of Malaysian vegetables and fruits by the AOAC and HPLC methods*. *Food Chemistry*, 41(3), 309–339. doi:10.1016/0308-8146(91)90057-u
- The Haemocytometer. (2020). Retrieved 30 May 2020, from <http://simulab.ltt.com.au/4/laboratory//studynotes/SNHaemo.htm>
- Ugolini, L., Righetti, L., Carbone, K., Paris, R., Malaguti, L., & Di Francesco, A. et al. (2017). Postharvest application of brassica meal-derived allyl-isothiocyanate to kiwifruit: effect on fruit quality, nutraceutical parameters and physiological response. *Journal Of Food Science And Technology*, 54(3), 751-760. doi: 10.1007/s13197-017-2515-x
- USDA. (2015). Retrieved 31 May 2020, from <https://ods.od.nih.gov/pubs/usdandb/VitA-βCarotene-Content.pdf>
- UV/Vis spectrometry basics - Chromedia. (2020). Retrieved 26 April 2020, from <https://www.chromedia.org/chromedia?waxtrapp=fotjtbEsHiemBpdmBIIEcCAtB&subNav=lnijabEsHiemBpdmBIIEcCAtBN>
- Valpuesta V & Botella MA. (2004) Biosynthesis of L-ascorbic acid in plants: new pathway for an old antioxidant. *Trends Plant Science*, 9:573–577

- Wang, Y., Seppänen-Laakso, T., Rischer, H., & Wiebe, M. G. (2018). *Euglena gracilis* growth and cell composition under different temperature, light and trophic conditions. *PLOS ONE*, 13(4), e0195329.
- Watada, A. E. 1982. A High-Performance Liquid Chromatography Method For Determining Ascorbic Acid Content Of Fresh Fruits And Vegetables. *Ucanr.Edu*, 1982, https://ucanr.edu/sites/Postharvest_Technology_Center/_files/228119.pdf.
- Watanabe, F., Yoshimura, K., & Shigeoka, S. (2017). Biochemistry and Physiology of Vitamins in Euglena. *Advances In Experimental Medicine And Biology*, 65-90. doi: 10.1007/978-3-319-54910-1_5
- Wax, E. (2019). Vitamin C: MedlinePlus Medical Encyclopedia. Retrieved 30 December 2019, from <https://medlineplus.gov/ency/article/002404.htm>
- Weber, D., and Grune, T. (2012). The contribution of β-carotene to vitamin A supply of humans. *Mol. Nutr. Food Res.* 56, 251–258. doi: 10.1002/mnfr.201100230
- Weschawalit, S., Thongthip, S., Phutrakool, P., & Asawanonda, P. (2017). *Glutathione and its antiaging and antimelanogenic effects. Clinical, Cosmetic and Investigational Dermatology, Volume 10*, 147–153. doi:10.2147/ccid.s128339.
- Whistance GR, Threlfall DR. (1970). Biosynthesis of photoquinones. *Biochemistry Journal* 117:593–600
- Wierzbicka, G., Hagen, T., & Tones, D. (1989). Glutathione in food. *Journal Of Food Composition And Analysis*, 2(4), 327-337. doi: 10.1016/0889-1575(89)90004-5
- Wilson, D., Nash, P., Buttar, H., Griffiths, K., Singh, R., & De Meester, F. et al. (2017). The Role of Food Antioxidants, Benefits of Functional Foods, and Influence of Feeding Habits on the Health of the Older Person: An Overview. *Antioxidants*, 6(4), 81. doi: 10.3390/antiox6040081
- Wiseman, E.M., Bar-El Dadon, S., and Reifen, R. (2017). The vicious cycle of vitamin a deficiency: a review. *Crit. Rev. Food Sci. Nutr.* 57, 3703–3714. doi: 10.1080/10408398.2016.1160362
- Yahia, E., Contreras-Padilla, M., & Gonzalez-Aguilar, G. (2001). Ascorbic Acid Content in Relation to Ascorbic Acid Oxidase Activity and Polyamine Content in Tomato and Bell Pepper Fruits During Development, Maturation and Senescence. *LWT - Food Science And Technology*, 34(7), 452-457. doi: 10.1006/fstl.2001.0790
- Young, V.R. (1994) Adult amino acid requirements: the case for a major revision in current recommendations. *J Nutr* 124, 1517S–1523S.
- Zeng, M., Hao, W., Zou, Y., Shi, M., Jiang, Y., & Xiao, P. et al. (2016). Fatty acid and metabolomic profiling approaches differentiate heterotrophic and mixotrophic culture conditions in a microalgal food supplement 'Euglena'. *BMC Biotechnology*, 16(1). doi: 10.1186/s12896-016-0279-4