

DAFTAR PUSTAKA

- Aini, N., Bambang, P., dan Iqmal, T., 2007, Analisis hubungan struktur-aktivitas antioksidan dari isoguenol, eugenol, vanilin dan turunannya, *Indones. J. Chem.*, 7(1), 61-66.
- Ardie, A.M., 2011, Radikal bebas dan peran antioksidan dalam mencegah penuaan, *Medicinus*, 24(1), 4-12.
- Bhagat, S.D., and Marthur, R.K., 1982, Synthesis of new derivatives of eugenol and isoeugenol, *J. Chem. Eng. Data*, 27, 209-210.
- Brand-Williams, W., Cuvelier, M.E., and Berset, C., 1995., Use of a free radical method to evaluate antioxidant activity, *Lebensmittel-Wissenschaft und-Technologie*, 29, 25-30.
- Boots, A.W., Guido, R.M.M., and Hanen, A.B., 2008, Health effects of quercetin: From antioxidant to nutraceutical, *Eur. J. Pharmacol.*, 585, 325-337.
- Chatterjee, D., and Bhattacharjee, P., 2013, Comparative evaluation of the antioxidant efficacy of encapsulated and un-encapsulated eugenol-rich clove extracts in soybean oil: shelf-life and frying stability of soybean oil, *J. Food Eng.*, 117(4), 545–550.
- David, A., Alexander, V., Arulmoli, Radhakrishnan, Parasuraman, dan Subramani, 2016, Overviews of biological importance of quercetin: A bioactive flavonoid, *Pharmacognosy Reviews*, 10(20), 84-89
- Dungir, S.G., Dewa, G.K., dan Vanda, S.K., 2012, Aktivitas antioksidan ekstrak fenolik dari kulit buah manggis (*garcinia mangostana l*). *Jurnal MIPA UNSRAT*, 1(1), 11-15.
- Green, R.J., 2004, Antioxidant activity of peanut plant tissues, *Thesis*, North Caroline State University, *Department of Food Science*, Raleigh.
- Gulcin, I., 2011, Antioxidant activity of eugenol: a structure–activity relationship study, *J. Med. Food*, 14(9), 975-985
- Gurav, S., Deshkar, N., Gulkari, V., Duragkar, N., and Patil, A., 2007, Free radical scavenging activity of *polygala chinensis linn.*, *Pharmacologyline*, 2, 245-253.
- Guzmán, D., Ramis, X., Fernandez-Francos, X., Flor, S.D., and Serra, A., 2017, New bio-based materials obtained by thiol-ene/thiol-epoxy dual curing click procedures from eugenol derivates, *Eur. Poly. J.*, 530-544.
- Guzmán, D., Ramis, X., Fernández-francos, X., De, S., and Serra, A., 2018, Preparation of new biobased coatings from a triglycidyl eugenol derivative through thiol-epoxy click reaction, *Pro. Org. Coat.*, 114, 259-267

- Handayani, 1998, Polimerisasi Kationik Eugenol dan Sifat Pertukaran Kation Polieugenolnya, *Tesis*, FMIPA, Universitas Gadjah Mada.
- Hudson, B.J., 1990, *Food Antioxidants*, Elsevier Applied Science, New York.
- Hui, Y.H., 1996, *Bailey's Industrial Oil and Fat Product 5th Edition*, John Wiley and Sons, New York.
- Júnior, J.R.C., Luiz, A.S.R., Emmanuel, S.M., Norberto, K.V.M., and Pedro, D.L., 2022, Antioxidant activity of eugenol and its acetyl and nitroderivatives: the role of quinone intermediates—a DFT approach of DPPH test, *J. Mol. Model.*, 28(5), 1-27.
- Karadag, A., Ozcelik. B., and Saner, S., 2009, Review of methods to determine antioxidant capacities, *Food Anal. Methods*, 2(1), 41-60.
- Kenepohl, D., 2023, *Organic Chemistry I*, Athabasca University, Athabasca
- Ketaren, S., 1986, *Pengantar teknologi minyak dan lemak pangan*, UI Press, Jakarta.
- Kwak, J.H., In, J.K., Lee, M.S., Choi, E.H., Lee, H., Hong, J.T., Yun, Y.P., Lee, S.J., Seo, S.Y., Suh, Y.G., and Jung, J.K., 2008, Concise synthesis of obovatol: chemoselective ortho-bromination of phenol and survey of Cu-catalyzed diaryl ether couplings, *Arch. Pharm. Res.*, 31(12), 1559- 1563.
- Liang, S., Hammond, G.B., and Xu, B., 2014, Metal-Free regioselective hydrochlorination of unactivated alkenes via a combined acid catalytic system, *Green Chem.*, 1-4.
- Lu, Y., Liu, Y., Xu, Z., Li, H., Liu, H., and Zhu, W., 2012, Halogen bonding for rational drug design and new drug discovery, *Expert Opin. Drug Discov.*, 7 (5), 375-383.
- Mahboub, R., and Memmou, F., 2016. Antimicrobial properties of 6-bromoeugenol and eugenol, *Int. Lett. Nat. Sci.*, 53, 57-64.
- Molyneux, P., 2004, The use of the stable free radical diphenylpicrylhydrazyl (dpph) for estimating antioxidant activity, *Songklanakarin Journal of Science and Technology*, 26 (2), 211-219.
- Mondéjar-López, M., Alberto, J.L., Joaquin, C.G.M., Oussama, A., Lourdes, G.G., and Enrique, N., 2022, Comparative evaluation of carvacrol and eugenol chitosan nanoparticles as eco-friendly preservative agents in cosmetics, *Int. J. Biol. Macromol.*, 206, 288–297.
- Nisa, F.K., 2013, Uji aktivitas senyawa khresin sebagai antioksidan dengan modifikasi gugus pada cincin aktifnya menggunakan metode RM1 dan AB initio, *Skripsi*, FMIPA, Universitas Negeri Semarang.

- Nishio, Y., Mifune, R., Sato, T., Ishikawa, S., and Matsubara, H., 2017, Preparation and properties of a novel solution of hydrogen bromide (HBr) in 1,4-dioxane: An alternative reagent to HBr gas without protic solvents, *Tetrahedron Lett.*, 58, 1190-1193
- Ogata, M., Hoshi, M., Mangala, S., and Endo, T., 2000, Antioxidant activity of eugenol and related monomeric and dimeric compounds, *Chem. Pharm.*, 48(10), 1467-1469
- Onitsuka, S., Yong, Z.J., Ajam, C., Shaikh, Hiroshi, F., and Junji, I., 2012, Silica gel-mediated organic reactions under organic solvent-free conditions, *Molecules*, 17, 11469-11483
- Oroojan, A.A., 2020, Eugenol improves insulin secretion and content of pancreatic islets from male mouse, *Int. J. Endocrinol.*, 2020, 5- 9.
- Pavia, D.L., Lampman, G.M., Kriz, G.S., and Vyvyan, J.A., 2014, *Introduction to Spectroscopy*, Fifth Edition, Departemen of Chemistry, Cengage Learning, Washington.
- Prabawati, S.Y., dan Agustina, A.F., 2015, Pemanfaatan bahan alami eugenol sebagai zat antioksidan, *Jurnal Kaunia*, 11(1), 11–18.
- Putri, R.L., Hidayat, N., dan Rahmah, N.L., 2014, Pemurnian eugenol dari minyak daun cengkeh dengan reaktan basa kuat KOH dan Ba(OH)₂ (kajian konsentrasi reaktan), *Jurnal Industria*, 3(1), 1–12.
- Soesanto, H., 2006, Pembuatan isoeugenol dari eugenol menggunakan pemanasan gelombang mikro, *Skripsi*, Departemen Teknologi Industri Pertanian, Fakultas Teknologi Pertanian, IPB Bogor.
- Sukmawati, Widiastuti, H., dan Miftahuljanna, 2019, Analisis kadar kuersetin pada ekstrak etanol daun miana (*plectranthus scutellarioides* (L.) R.Br.) secara HPLC (*High Performance Liquid Chromatography*), *As-Syifaa Jurnal Farmasi*, 11(1), 38-44.
- Suryanto, E., dan Anwar, C., 2008, Sintesis antioksidan 4,6-dialil-2metoksifenol dari alil eugenol melalui penataan ulang Claisen, *Chem. Prog.*, 1 (1), 1-8.
- Tanemura, K., 2018, Silica gel-mediated hydrohalogenation of unactivated alkenes using hydrohalogenic acids under organic solvent-free conditions, *Tetrahedron Lett.*, 59, 4293-4298.
- Ulanowska, M., and Olas, B., 2021, Biological properties and prospects for the application of eugenol—a review, *Int. J. Mol. Sci.*, 22(7), 3671.
- Widayat, W., Cahyono, B., dan Ngadiwiyan, N., 2012, Rancang bangun dan uji alat proses peningkatan minyak cengkeh pada klaster minyak atsiri kabupaten batang, *Jurnal Ilmu Lingkungan*, 10(2), 64.



Widowati, W., Safitri, R., Rumumpuk, R., dan Siahaan, M., 2005, Penapisan aktivitas superoksida dismutase pada berbagai tanaman, *Jurnal Kedokteran Maranatha*, 5(1), 33-48.