

DAFTAR PUSTAKA

- Ahmad, Z. dan Damayanti (2018) "Penuaan Kulit: Patofisiologi dan Manifestasi Klinis," *Berkala Ilmu Kesehatan Kulit dan Kelamin – Periodical of Dermatology and Venereology*, 30(03), hal. 208–215. Tersedia pada: [http://download.garuda.ristekdikti.go.id/article.php?article=850430&val=7405&title=Penuaan Kulit: Patofisiologi dan Manifestasi Klinis](http://download.garuda.ristekdikti.go.id/article.php?article=850430&val=7405&title=Penuaan%20Kulit:%20Patofisiologi%20dan%20Manifestasi%20Klinis).
- Aizah, S. (2016) "Antioksidan Memperlambat Penuaan Dini Sel Manusia," *Prosiding Seminar Nasional IV Hayati*, hal. 182–185.
- Alifah, D. dan Susilawati, Y. (2018) "Review Artikel: Potensi Tumbuhan Sebagai Anti Aging," *Farmaka*, 16, hal. 581–590.
- Ananta, K. D. dan Santoso, B. (2018) "Kajian Ikatan 3D Molekuler Senyawa Terpilih Ketumbar (*Coriandrum sativum*) dan Adas Bintang (*Anisi Stellati*) terhadap sintase 6, 7-dimetil-8-ribitillumazin (2VI5, 2C92) *Mycobacterium tuberculosis*," *STIKES PKU Muhammadiyah Surakarta*, hal. 320–327.
- Andarina, R. dan Djauhari, T. (2017) "Antioksidan dalam dermatologi," 4(1), hal. 39–48.
- Ardhie, A. M. (2011) "Radikal Bebas dan Peran Antioksidan Dalam Mencegah Penuaan," 24(1), hal. 4–9.
- Ba, L. C., Hu, J. Y. dan Wang, S. Q. (2012) "The role of antioxidants in photoprotection: A critical review," *Journal of American Dermatology*, 67(5), hal. 1013–1024. doi: 10.1016/j.jaad.2012.02.009.
- Berzosa, C. *et al.* (2011) "Acute Exercise Increases Plasma Total Antioxidant Status and Antioxidant Enzyme Activities in Untrained Men," 2011. doi: 10.1155/2011/540458.
- Bojić, M. *et al.* (2019) "The effect of flavonoid aglycones on the CYP1A2, CYP2A6, CYP2C8 and CYP2D6 enzymes activity," *Molecules*, 24(17). doi: 10.3390/molecules24173174.
- Carpenter, T. S. *et al.* (2014) "A Method to Predict Blood-Brain Barrier Permeability of Drug-Like Compounds Using Molecular Dynamics Simulations," *Biophysical Journal*, 107(3), hal. 630–641. doi: 10.1016/j.bpj.2014.06.024.
- Chung, K. F. *et al.* (2008) "Notes on *Acmella* (Asteraceae: Heliantheae) in Taiwan," *Botanical Studies*, 49(1), hal. 73–82.
- Daina, A., Michielin, O. dan Zoete, V. (2017) "SwissADME: A free web tool to evaluate pharmacokinetics, drug-likeness and medicinal chemistry

- friendliness of small molecules,” *Scientific Reports*, 7(January), hal. 1–13. doi: 10.1038/srep42717.
- Daina, A. dan Zoete, V. (2016) “A BOILED-Egg To Predict Gastrointestinal Absorption and Brain Penetration of Small Molecules,” *ChemMedChem*, hal. 1117–1121. doi: 10.1002/cmdc.201600182.
- Dewi, N. L. P. L. dan Ginarsih, N. M. A. (2021) “Molecular Docking Ellagic Acid Sebagai Agen Anti-photoaging Secara In Silico,” *Acta Holistica Pharmacia*, 3(1), hal. 22–30.
- Djalil, A. D. *et al.* (2012) “Toxicity Prediction of Photosensitizers Bearing Carboxylic Acid Groups by ECOSAR and Toxtree,” *Journal of Pharmacology and Toxicology*, 7(5), hal. 219–230. doi: 10.3923/jpt.2012.219.230.
- Dro, W. (2002) “Free Radicals in the Physiological Control of Cell Function,” hal. 47–95.
- Ekawati dan Wulandari (2021) “Review : Pengaruh Suplementasi Astaxanthin dalam Mencegah Photoaging,” (April), hal. 64–72. Tersedia pada: <https://ejournal2.undip.ac.id/index.php/generics/article/view/11147>.
- Fan, J., Fu, A. dan Zhang, L. (2019) “Progress in molecular docking,” *Quantitative Biology*, 7(2), hal. 83–89. doi: 10.1007/s40484-019-0172-y.
- Felicia Fraulein Setiawan dan Istyastono, E. P. (2015) “Uji In Silico Senyawa 2,6-Dihidroksiantraquinon Sebagai Ligan Pada Reseptor Estrogen Alfa,” *Jurnal Farmasi Sains dan Komunitas*, 12(2), hal. 76–79.
- Fisher, G. J. *et al.* (2002) “Mechanisms of photoaging and chronological skin aging,” *Archives of Dermatology*, 138(11), hal. 1462–1470. doi: 10.1001/archderm.138.11.1462.
- Forli, S. *et al.* (2016) “Computational protein-ligand docking and virtual drug screening with the AutoDock suite,” 11(5), hal. 905–919. doi: 10.1038/nprot.2016.051.Computational.
- Frimayanti, N., Lukman, A. dan Nathania, L. (2021) “Studi molecular docking senyawa 1,5-benzothiazepine sebagai inhibitor dengue DEN-2 NS2B/NS3 serine protease,” *Chempublish Journal*, 6(1), hal. 54–62.
- Ganceviciene, R. *et al.* (2012) “Skin anti-aging strategies,” *Dermato-Endocrinology*, 4(3), hal. 37–41. doi: 10.4161/derm.22804.
- Gitawati, R. (2008) “Interaksi Obat Dan Beberapa Implikasinya,” *Media Litbang Kesehatan*, 18(4), hal. 175–184. Tersedia pada: <https://media.neliti.com/media/publications/160648-ID-none.pdf>.

- Guedes, I. A., de Magalhães, C. S. dan Dardenne, L. E. (2014) "Receptor-ligand molecular docking," *Biophysical Reviews*, 6(1), hal. 75–87. doi: 10.1007/s12551-013-0130-2.
- Haerani, A. *et al.* (2018) "Artikel Tinjauan: Antioksidan Untuk Kulit," *Farmaka, Universitas Padjadjaran, Bandung*, 16(2), hal. 135–151.
- Hamzah, N., Dhuha, N. S. dan Ramadhan, R. (2015) "Studi In Silico Hubungan Kuantitatif Struktur-Aktivitas (HKSA) Senyawa Turunan Benzimidazole, Docking Molekul, Penelusuran Farmakofor, Virtual Screening, Uji Toksisitas, Profil Farmakokinetik Sebagai Anti-Tuberkolosis," *Jurnal Farmasi UIN Alauddin Makassar*, 3(3), hal. 92–103.
- Hani, R. C. dan Milanda, T. (2016) "Review: Manfaat Antioksidan Pada Tanaman Buah Di Indonesia," *Farmaka*, 14(1), hal. 184–190.
- Helfrich, Y. R., Sachs, D. L. dan Voorhees, J. J. (2008) "Overview of skin aging and photoaging," *Dermatology nursing / Dermatology Nurses' Association*, 20(3).
- Karim, M. Al (2018) "Analisis Docking Molekuler Senyawa Flavonoid dan Steroid terhadap Enzim Siklooksigenase dan Fosfolipase," *Skripsi*.
- Kelutur, F. J., Mustarichie, R. dan Umar, A. K. (2020) "Virtual Screening Kandungan Senyawa Kipas Laut (*Gorgonia mariae*) sebagai Anti-Asma," *ALCHEMY Jurnal Penelitian Kimia*, 16(2), hal. 48. doi: 10.20961/alchemy.16.2.39965.48-59.
- Langhammer, A. J. dan Nilsen, O. G. (2014) "In vitro inhibition of human CYP1A2, CYP2D6, and CYP3A4 by six herbs commonly used in pregnancy," *Phytotherapy Research*, 28(4), hal. 603–610. doi: 10.1002/ptr.5037.
- Lapenna, S. dan Worth, A. (2011) *Analysis of the Cramer classification scheme for oral systemic toxicity - Implications for its implementation in Toxtree*, JRC Scientific and Technical Reports. doi: 10.2788/39716.
- Latif, M. S., Rusdiana, T. dan Gozal, D. (2018) "Pengaruh P-Glycoprotein (P-GP) Terhadap Bioavailabilitas Atorvastatin," *Farmaka*, 15.
- Ley, J. P. *et al.* (2006) "Isolation and synthesis of acmellonate, a new unsaturated long chain 2-ketol ester from *Spilanthes acmella*," *Natural Product Research*, 20(9), hal. 798–804. doi: 10.1080/14786410500246733.
- Lipinski, C. A. *et al.* (1997) "Experimental and computational approaches to estimate solubility and permeability in drug discovery and development settings," *Advanced Drug Delivery Reviews*, 23(6), hal. 3–25.

- Lumbantobing, H. (2010) “Analisa Komposisi Minyak Atsiri Bunga Jotang (*spilanthes paniculata*) Dengan Menggunakan Spektrometer GC-MS.”
- Masriany, M., Rifaldi, R. dan Sukmawaty, E. (2022) “Studi In Silico Senyawa Cendawan Endofit Sebagai Kandidat Obat Antiangiogenesis Hemangioma,” *Jurnal Ilmu Pertanian Indonesia*, 27(1), hal. 62–69. doi: 10.18343/jipi.27.1.62.
- Murray, R. K., Granner, D. K. dan Rodwell, V. W. (2006) *Biokimia HARPER*.
- Muttaqin, F. Z. (2019) “Studi Molecular Docking, Molecular Dynamic, Dan Prediksi Toksisitas Senyawa Turunan Alkaloid Naftiridin Sebagai Inhibitor Protein Kasein Kinase 2-A Pada Kanker Leukemia,” *Pharmacoscript*, 2(1), hal. 49–64. doi: 10.36423/pharmacoscript.v2i1.241.
- Nabi, N. G. dan Shrivastava, M. (2016) “UK Journal of Pharmaceutical and Biosciences Available at www.ukjpb.com Estimation of Total Flavonoids and Antioxidant Activity of *Spilanthes acmella* Leaves,” 4(6), hal. 29–34. doi: 10.20510/ukjpb/4/16/134657.
- National Center for Biotechnology Information (2021a) *PubChem Compound Summary for CID 22311, Limonene*. Tersedia pada: <https://pubchem.ncbi.nlm.nih.gov/compound/Limonene>. (Diakses: 2 Desember 2021).
- National Center for Biotechnology Information (2021b) *PubChem Compound Summary for CID 73170, alpha-Amyrin*. Tersedia pada: <https://pubchem.ncbi.nlm.nih.gov/compound/alpha-Amyrin>. (Diakses: 2 Desember 2021).
- Nosaka, Y. dan Nosaka, A. Y. (2017) “Generation and Detection of Reactive Oxygen Species in Photocatalysis,” *Chemical Reviews*, 117(17), hal. 11302–11336. doi: 10.1021/acs.chemrev.7b00161.
- Padhan, D., Pattnaik, S. dan Behera, A. K. (2017) “Growth-arresting Activity of *Acmella* Essential Oil and its Isolated Component D-Limonene (1, 8 P-Mentha Diene) against *Trichophyton rubrum* (Microbial Type Culture Collection 296),” *Pharmacognosy Magazine*, 13 (Suppl(62), hal. 179–188. doi: 10.4103/pm.pm.
- Parikesit, A. A., Anurogo, D. dan Putranto, R. A. (2017) “Pemanfaatan bioinformatika dalam bidang pertanian dan kesehatan (The utilization of bioinformatics in the field of agriculture and health),” *E-Journal Menara Perkebunan*, 85(2), hal. 105–115. doi: 10.22302/iribb.jur.mp.v85i2.237.
- Parwata, M. O. A. (2016) “Bahan Ajar Antioksidan,” *Kimia Terapan Program Pascasarjana Universitas Udayana*, (April), hal. 1–54.

- Patlewicz, G. *et al.* (2008) "An evaluation of the implementation of the Cramer classification scheme in the Toxtree software," *SAR and QSAR in Environmental Research*, 19(5–6), hal. 495–524. doi: 10.1080/10629360802083871.
- Pirenantyo, P. dan Limantara, L. (2008) "Pigmen Spirulina sebagai Senyawa Antikanker," *Indonesian Journal of Cancer*, 4, hal. 155–163.
- Prachayasittikul, S. *et al.* (2009) "Bioactive metabolites from *Spilanthes acmella* Murr.," *Molecules*, 14(2), hal. 850–867. doi: 10.3390/molecules14020850.
- Prachayasittikul, Veda *et al.* (2013) "Review Article : High Therapeutic Potential of *Spilanthes Acmella* ;," *EXCLI journal*, 12, hal. 291–312.
- Pratiwi, D., Insanu, M. dan Damayanti, S. (2016) "Studi in Silico Senyawa Antioksidan Alami Golongan Steroid Pada Reseptor Sistem Reproduksi," *Indonesia Natural Research Pharmaceutical Journal*, 1(1), hal. 22–35.
- Preetha, J. P. dan Karthika, K. (2009) "Cosmeceuticals - An evolution," *International Journal of ChemTech Research*, 1(4), hal. 1217–1223.
- Rahim, R. A. *et al.* (2021) "Potential antioxidant and anti-inflammatory effects of *spilanthes acmella* and its health beneficial effects: A review," *International Journal of Environmental Research and Public Health*, 18(7). doi: 10.3390/ijerph18073532.
- Ramsewak, R. S., Erickson, A. J. dan Nair, M. G. (1999) "Bioactive N-isobutylamides from the flower buds of *Spilanthes acmella*," *Phytochemistry*, 51(6), hal. 729–732. doi: 10.1016/S0031-9422(99)00101-6.
- Rani, A. S. *et al.* (2019) "*Spilanthes acmella*- an important medicinal plant," 5(December), hal. 15–26.
- Rasuani, N. M. (2019) "Pengaruh Variasi Ekstrak Daun Kelor (*Moringa Oleifera*) Terhadap Pembuatan Masker Wajah Peel-Off Gel," *Politeknik Negeri Sriwijaya*, hal. 7–26.
- Rosidah dan Tjitraresmi, A. (2017) "Potensi Tanaman Melastomataceae Sebagai Antioksidan : Review," *Farmaka*, 16(1), hal. 24–33.
- Sari, I. W., Junaidin dan Pratiwi, D. (2020) "Studi Molecular Docking Senyawa Flavonoid Herba Kumis Kucing (*Orthosiphon Stamineus*) Pada Reseptor - Glukosidase Sebagai Antidiabetes Tipe 2," VII(2), hal. 54–60.
- Thomas, T. (2011) "Antibacterial action of gradient extracts of flower heads of *Spilanthes paniculata* Wall," *Ex DC. Plant Sciences Feed*, 1(January), hal. 186–189.

- Tzanetakou, I. P. *et al.* (2012) “‘ Is obesity linked to aging?’. Adipose tissue and the role of telomeres.” *Ageing Research Reviews*, 11(2), hal. 220–229. doi: 10.1016/j.arr.2011.12.003.
- Ulfa, A. S. Y. dan Mahadewa, T. G. B. (2013) “Sawar Darah Otak,” *Fakultas Kedokteran, Universitas Udayana*, 2(9), hal. 1–21.
- Werdhasari, A. (2014) “Peran Antioksidan Bagi Kesehatan,” *Jurnal Biomedik Medisiana Indonesia*, 3(2), hal. 59–68.
- Winata, I. P. dan Putri, A. D. (2019) “Biji Mahoni Sebagai Antioksidan,” *Jurnal Penelitian Perawat Profesional*, 1(1), hal. 2714–9757. Tersedia pada: <http://jurnal.globalhealthsciencegroup.com/index.php/JPPP/article/download/83/65>.
- Wongsawatkul, O. *et al.* (2008) “Vasorelaxant and antioxidant activities of *spilanthes acmella* Murr,” *International Journal of Molecular Sciences*, 9(12), hal. 2724–2744. doi: 10.3390/ijms9122724.
- Zuraida, Z., Yerizel, E. dan Anas, E. (2015) “Pengaruh Pemberian Ekstrak Rosella (*Hibiscus sabdariffa* Linn) Terhadap Kadar Malondialdehid dan Aktivitas Katalase Tikus yang Terpapar Karbon Tetraklorida,” *Jurnal Kesehatan Andalas*, 4(3), hal. 795–802. doi: 10.25077/jka.v4i3.366.