

DAFTAR PUSTAKA

- Agustin, V., & Gunawan, S. (2019). Uji fitokimia dan aktivitas antioksidan ekstrak mentimun (*Cucumis sativus*). *Tarumanagara Medical Journal*, *1*(3), 662–667.
- Ahadian, S., Finbloom, J. A., Mofidfar, M., Diltemiz, S. E., Nasrollahi, F., Davoodi, E., Hosseini, V., Mylonaki, I., Sangabathuni, S., Montazerian, H., Fetah, K., Nasiri, R., Dokmeci, M. R., Stevens, M. M., Desai, T. A., & Khademhosseini, A. (2020). Micro and nanoscale technologies in oral drug delivery. *Advanced Drug Delivery Reviews*, *157*, 37–62. <https://doi.org/10.1016/j.addr.2020.07.012>
- Aprilliani, A., Supriyanta, J., & Badriah, L. (2022). Formulasi dan Uji Aktivitas Antioksidan Handbody Lotion Ekstrak Etanol 70% Buah Mentimun (*Cucumis sativus* L.) Dengan Metode DPPH. *Jurnal Farmagazine*, *9*(1), 20. <https://doi.org/10.47653/farm.v9i1.596>
- Asworo, R. Y., & Widwiastuti, H. (2023). Pengaruh Ukuran Serbuk Simplisia dan Waktu Maserasi terhadap Aktivitas Antioksidan Ekstrak Kulit Sirsak. *Indonesian Journal of Pharmaceutical Education*, *3*(2), 256–263. <https://doi.org/10.37311/ijpe.v3i2.19906>
- Aulton, M., & Taylor, K. (2013). *Aulton's Pharmaceutics: Desain dan Pembuatan Obat (edisi 4)*. Elseiver.
- Ayucitra, A., Indraswati, N., Mulyandasari, V., Yulianus Kurniawan Dengi2), G. F., & Yudha, A. (2016). Potensi Senyawa Fenolik Bahan Alam Sebagai Antioksidan Alami Minyak Goreng Nabati. *J. Teknik*, *10*(1), 1–10. <http://jurnal.wima.ac.id/index.php/teknik/article/view/155>
- Boddu, S., & Neau, S. (2010). Desain dan evaluasi tablet matriks lepas lambat metoprolol tartrat menggunakan turunan selulosa. *Pengembangan Obat Dan Farmasi Industri*, *36*(3), 369–379.
- Cetin, M., & Sahin, S. (2016). Microparticulate and nanoparticulate drug delivery systems for metformin hydrochloride. *Drug Delivery*, *23*(8), 2796–2805. <https://doi.org/10.3109/10717544.2015.1089957>
- Chaudhary, P., Janmeda, P., Docea, A. O., Yeskaliyeva, B., Abdull Razis, A. F., Modu, B., Calina, D., & Sharifi-Rad, J. (2023). Oxidative stress, free radicals and antioxidants: potential crosstalk in the pathophysiology of human diseases. *Frontiers in Chemistry*, *11*(May), 1–24. <https://doi.org/10.3389/fchem.2023.1158198>
- Dhandapani, N. V., Shrestha, A., Shrestha, N., Thapa, A., Sandip, G., & Sharma Bhattarai, R. (2012). Pelletization by Extrusion-Spheronization: A detailed review Pelletization by Extrusion-Spheronization-A detailed review. *All Res. J. Biol*, *3*(April 2020), 10–23.
- Evania, D., Punjastuti, B., Yunitasari, P., & Maryati, S. (2022). The Impact of Cucumber (*Cucumissativus*) Juice on Blood Pressure in Elderly With Hypertension. *KnE Life Sciences*, *2022*, 481–487. <https://doi.org/10.18502/cls.v7i2.10346>
- Fadlilah, A. R., & Lestari, K. (2023). Review : Peran Antioksidan Dalam Imunitas

- Tubuh. *Farmaka*, 21(2), 171–178.
- Garcia, M. A., Martino, M. N., & Zaritzky, N. E. (2018). Microstructural characterization of plasticized starch-based films. *International Journal of Pharmaceutics*, 536(1), 148–158.
- Hakim, A. R., & Saputri, R. (2017). Identifikasi Senyawa Kimia Ekstrak Etanol Mentimun (*Cucumis sativus* L.) dan Ekstrak Etanol Nanas (*Ananas comosus* (L) Merr.). *Jurnal Pharmascience*, 4(1), 34–38. <https://doi.org/10.20527/jps.v4i1.5753>
- Hatmayana, R., Noval, N., Mahdiyah, D., Ramadhani, R. A., & Auliyani, N. (2022). Karakterisasi Nanokapsul Ekstrak Daun Serunai (*Chromolaena odorata* L.) dengan Variasi Kitosan-Alginat Menggunakan Metode Emulsi-Difusi. *Jurnal Surya Medika*, 8(3), 187–194. <https://doi.org/10.33084/jsm.v8i3.4512>
- Ibroham, M. H., Jamilatun, S., & Kumalasari, I. D. (2022). A Review: Potensi Tumbuhan-Tumbuhan di Indonesia sebagai Antioksidan Alami. *Jurnal UMJ*, 1–13. <http://jurnal.umj.ac.id/index.php/semnaslit>
- Idemudia, O. U., & Enogieru, A. B. (2024). Phytochemical and Pharmacological Activities of *Cucumis sativus*: An Updated Review. *Tropical Journal of Natural Product Research*, 8(7), 7612–7623. <https://doi.org/10.26538/tjnpr/v8i7.1>
- Indrawati, T. (2012). Sistem Penghantaran Obat Yang Ditahan Di Lambung. *Gastroretentive*, 1(2), 1–200.
- Insanu, M., Zahra, A. A., Sabila, N., Silviani, V., Haniffadli, A., Rizaldy, D., & Fidrianny, I. (2022). Phytochemical and Antioxidant Profile: Cucumber Pulp and Leaves Extracts. *Open Access Macedonian Journal of Medical Sciences*, 10(A), 616–622. <https://doi.org/10.3889/oamjms.2022.8337>
- Kemenkes. (2017). Farmakope Herbal Indonesia edisi II. In *Kementerian Kesehatan RI (II)*. Kementerian Kesehatan RI. <https://doi.org/10.2307/jj.2430657.12>
- Kumar, D., Kumar, S., Singh, J., Narender, Rashmi, Vashistha, B. D., & Singh, N. (2010). Free radical scavenging and analgesic activities of *Cucumis sativus* L. fruit extract. *Journal of Young Pharmacists*, 2(4), 365–368. <https://doi.org/10.4103/0975-1483.71627>
- Kumar, R., Sharma, A., & Singh, H. (2023). Role of excipients in formulation stability: A case study of antioxidant-loaded microparticles. *Journal of Drug Delivery Science and Technology*, 84. <https://doi.org/10.1016/j.jddst.2023.104512>
- Kumar, Sahoo, D., & Dali, M. (2016). Sferonisasi: Teknik yang menjanjikan dalam pengembangan sistem penghantaran obat terkontrol oral. *Jurnal Ilmu Farmasi Asia*, 11(6), 733–741.
- Lengyel, M., Kállai-Szabó, N., Antal, V., Laki, A. J., & Antal, I. (2019). Microparticles, microspheres, and microcapsules for advanced drug delivery. *Scientia Pharmaceutica*, 87(3). <https://doi.org/10.3390/scipharm87030020>
- Li, Y., Wang, X., & Sun, J. (2022). Chitosan-based aggregates for controlled drug delivery: Effects of viscosity and particle size. *Carbohydrate Polymers*, 276. <https://doi.org/10.1016/j.carbpol.2021.118788>

- Lieberman, H. A., Lachman, L., Schwartz, J. B., & Kanig, J. L. (2016). *Pharmaceutical dosage forms: Tablets*. CRC Press. <https://doi.org/10.1201/9781315382182>
- Malvern, P. (2023). *Mastersizer 3000 Smarter particle sizing* (Vol. 0).
- Mu'nisa. (2023). Antioksidan Pada Tanaman Dan Peranannya terhadap Penyakit Degeneratif. In *Brilian Internasional Surabaya*. website: www.brilianinternasional.com
- Mudjiran, & Karneli, Y. (2024). Analisis aktivitas antioksidan dalam menghambat radikal bebas. *Sains Dan Ilmu Terapan*, 2(2), 55–59.
- Muley, S., Nandgude, T., & Poddar, S. (2016). Extrusion–spheronization a promising pelletization technique: In-depth review. *Asian Journal of Pharmaceutical Sciences*, 11(6), 684–699. <https://doi.org/10.1016/j.ajps.2016.08.001>
- Nugroho, G., & Wahidin. (2024). Skrining Fitokimia dan Uji Antioksidan Sampel MAadu Hutan, Madu Budidaya dan Madu Merek dengan Metode DPPH (1,1-Diphenyl-2-Picrylhydrazil). *Scientica*, 2(12), 820–833.
- Nurkhasanah, M. A., Si, A., Mochammad, S., Bachri, S., Si, M., Si, D. S., & Yuliani, M. P. (2023). *Antioksidan dan Stres Oksidatif*.
- Pradana, A. T., Nawatila, R., & Rachman, M. R. (2022). Karakteristik Fisik Mikropartikel Kuersetin Dengan Kombinasi Kitosan-Natrium Tripolifosfat Menggunakan Metode Orifice Ionic Gelation. *Jurnal Ilmiah Ibnu Sina (JIIS): Ilmu Farmasi Dan Kesehatan*, 7(1), 133–142. <https://doi.org/10.36387/jiis.v7i1.845>
- Pratama, R., Abdassah, M., & Chaerunisaa, A. Y. (2021). Review : Stabilitas Bahan Alam dalam Mikroenkapsulasi. *Majalah Farmasetika*, 6(3), 213. <https://doi.org/10.24198/mfarmasetika.v6i3.33172>
- Putri, C. E. E., Wulandar, D. M., Hasyim, U. H., Hasyim, I., & Ramadhan, M. S. (2024). Optimasi Waktu Maserasi Pada Ekstraksi Daun Pegagan (*Centella Asiatica*) Terhadap Uji Aktivitas Antioksidani. *Jurnal UMJ, April*, 1–10.
- Putri, S. Y., Isadiartuti, M.Si., Apt., D., Isnaeni, I., Aulya Farah Fahreza, Alvina Violita Mulyanto Putri, Zulfa Diana, Nafa Nazilatul Fatihah, I Gede Rekyadji Arimbawa, Alya Fakhirah, Talitha Nabilla Wijayanata, Muhammad Pramudya Pangestu, Azzalia Firdanthi, Oudrey Addriana, & Umi Aida Rohma. (2024). The Effectiveness of Vitamin E Soft Capsules as an Antioxidant. *Berkala Ilmiah Kimia Farmasi*, 11(1), 5–11. <https://doi.org/10.20473/bikfar.v11i1.51902>
- Rafiee, M. H., & Rasool, B. K. A. (2022). An Overview of Microparticulate Drug Delivery System and its Extensive Therapeutic Applications in Diabetes. *Advanced Pharmaceutical Bulletin*, 12(4), 730–746. <https://doi.org/10.34172/apb.2022.075>
- Rahayu, A., Sukarjati, Slamet, P., & Ambarwati, N. (2022). Sistem Penghantaran Obat. In *Gerbang Media Aksara : Yogyakarta*. <http://www.jstor.org/stable/resrep19672>
- Raviteja, V. G., Selvam, P. R., & Chandy, V. (2022). Extrusion Spheronization and the Recent Advancements in Pellets. *Human*, 24(1), 205–223. www.ijppr.humanjournals.com

- Samran, Dalimunte, G. I., & Sumardi. (2023). *Enkapsulasi Bahan Alam*. Pustaka Bangsa Press.
- Santos, A. (2020). Mikropartikel berbasis kitosan untuk penghantaran obat: Metode dan aplikasi. *Jurnal Internasional Makromolekul Biologi*, 164, 1593–1606.
- Santoso, R., Jafar, G., & Hayati, E. U. (2020). Effect of Microcrystalline Cellulose in the Extrusion-Spheronisation Process of Microparticulate-Making Technology: A Systematic Review. *The 2st National Conference on Education, Social Science, and Humaniora*, 6–12.
- Santoso, R., Mardhiani, Y. D., & Wulandari, T. F. (2022). Pemanfaatan Ekstrak Daun Katuk *Sauropus Androgynus* (L) Merr Dalam Formulasi Sediaan Mikropartikel Dengan Metode Ekstrusi Sferonisasi. *IKRAITH-Teknologi*, 6(3), 95–102. <https://doi.org/10.37817/ikraith-teknologi.v6i3.2310>
- Sayuti, K., & Yenrina, R. (2015). *Antioksidan Alam dan Sintetik*. Andalas University Press.
- Shariff, A. H. M., Baharin, S., Wahab, R. A., Huyop, F., Mohamad, N. R., Zakaria, M., Roslan, J., Huda, N., & Julmohammad, N. (2021). Antioxidant activity, total phenolic and chlorophyll content of keningau grown cucumis sativus l. At two growth stages. *Jurnal Teknologi*, 83(3), 37–44. <https://doi.org/10.11113/JURNALTEKNOLOGI.V83.15547>
- Sheskey, P. J., Cook, W. G., & Cable, C. G. (2017). *Handbook of Pharmaceutical Excipients (Eighth edition)* (8th ed.). Pharmaceutical Press and the American Pharmacist Association.
- Sinha, V. R., Agrawal, M., Agarwall, A., & Singh G, G. D. (2009). Extrusion-spheronization: process variables and characterization. *Crit Rev Ther Drug Carrier Syst.*, 26(3), 275–331. <https://doi.org/10.1615/critrevtherdrugcarriersyst.v26.i3.20>
- Sinha, V. R., Singla, A. K., & Wadhawan, S. (2014). Chitosan microspheres as a potential carrier for drugs. *International Journal of Pharmaceutics*, 274(1), 1–33. <https://doi.org/10.1016/j.ijpharm.2003.12.026>
- Suryadarma, P., Suryani, A., & Mangunwidjaja, D. (2024). *Evaluasi sifat fisik sediaan tablet dari ekstrak pedicel buah merah dan serbuk inulin komersial secara kempa langsung*. 18(3), 561–567. <https://doi.org/10.21107/agrointek.v18i3.16948>
- Webb, P. A., & Orr, C. (1997). *Analytical methods in fine particle technology*. Micromeritics Instrument Corp.
- Yul, Y. adriana. (2024). Uji Antioksidan Dan Formulasi Clay Mask Ekstrak Buah Mentimun (*Cucumis sativus* L.) Dengan Adsorben Bentonit Dan Kaolin. *ISTA Online Teknologi Journal*, 5(1), 32–45. <https://doi.org/10.62702/ion.v5i1.107>
- Zhang, X., Li, Y., & Chen, D. (2020). Particle size-dependent bioavailability of antioxidant-loaded microparticles. *Nanomaterials*, 10(8). <https://doi.org/10.3390/nano10081563>