



DAFTAR PUSTAKA

- Afrianti, R., Yenti, R., & Meustika, D. (2015). Uji Aktifitas Analgetik Ekstrak Etanol Daun Pepaya (*Carica papaya L.*) pada Mencit Putih Jantan yang di Induksi Asam Asetat 1%. *Jurnal Sains Farmasi & Klinis*, 1(1), 54. <https://doi.org/10.29208/jsfk.2014.1.1.12>
- Ahlawat, J., Guillama Barroso, G., Masoudi Asil, S., Alvarado, M., Armendariz, I., Bernal, J., Carabaza, X., Chavez, S., Cruz, P., & Escalante, V. (2020). Nanocarriers as potential drug delivery candidates for overcoming the blood–brain barrier: challenges and possibilities. *Acs Omega*, 5(22), 12583–12595.
- Amalia, R. F., Purwaningsih, H., Susanti, D., & Pratiwi, V. M. (2020). Analisis Pengaruh Rasio Pelarut Etanol Terhadap Kinerja Nanopartikel Silika Mesopori dari Sekam Padi sebagai Material Pengantar Obat. *Jurnal Teknik ITS*, 9(1), F66–F71.
- Ariastuti, R., Fitrawan, L. O. M., Nugroho, A. E., & Pramono, S. (2020). Antidiabetes of combination of fractionated-extracts of andrographis paniculata and centella asiatica in neonatal streptozotocin-induced diabetic rats. *Indonesian Journal of Pharmacy*, 31(4), 312–322. <https://doi.org/10.22146/ijp.1135>
- Atanase, L. I., & Riess, G. (2013). Block copolymer stabilized nonaqueous biocompatible sub-micron emulsions for topical applications. *International journal of pharmaceutics*, 448(2), 339–345.
- Badran, M. M., Taha, E. I., Tayel, M. M., & Al-Suwayeh, S. A. (2014). Ultra-fine self nanoemulsifying drug delivery system for transdermal delivery of meloxicam: Dependency on the type of surfactants. *Journal of Molecular Liquids*, 190, 16–22. <https://doi.org/https://doi.org/10.1016/j.molliq.2013.10.015>
- Bali, V., Ali, M., & Ali, J. (2010). Study of surfactant combinations and development of a novel nanoemulsion for minimising variations in bioavailability of ezetimibe. *Colloids and Surfaces. B, Biointerfaces*, 76(2), 410–420. <https://doi.org/10.1016/j.colsurfb.2009.11.021>
- Berlian, H., & Arif, B. (2017). Review Artikel: penggunaan teknologi nano pada formulasi obat herbal. *Farmaka*, 15(2), 29–41.
- BPOM. (2021). Peraturan Badan Pengawas Obat Dan Makanan Nomor 18 Tahun 2021 Tentang Pedoman Uji Farmakodinamik Praklinik Obat Tradisional. *Badan Pengawas Obat dan Makanan RI*, 1BPOM. (2021). Peraturan Badan Pengawas Obat Dan Makanan Nomor 18 Tahun 2021 Tentang Pedoman Uji Farmakodinamik Praklinik Obat Tradisional. *Badan Pengawas Obat Dan Makanan RI*, 1, 15–24., 15–24.
- Chincholkar, M. (2018). Analgesic mechanisms of gabapentinoids and effects in experimental pain models: a narrative review. *British journal of anaesthesia*, 120(6), 1315–1334.



- Choi, S.-G., Won, S.-R., & Rhee, H.-I. (2010). Chapter 153 - Oleic Acid and Inhibition of Glucosyltransferase. Dalam V. R. Preedy & R. R. Watson (Ed.), *Olives and Olive Oil in Health and Disease Prevention* (hlm. 1375–1383). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-12-374420-3.00153-4>
- Danimayostu, A. A., Martien, R., Lukitaningsih, E., & Danarti, R. (2022). Formulation Of Topical Self-Nanoemulsifying Drug Delivery Systems (SNEDDS) Of Vitamin D3. *Interest: Jurnal Ilmu Kesehatan*, 255–263.
- Dave, N., & Joshi, T. (2017). A concise review on surfactants and its significance. *Int. J. Appl. Chem.*, 13(3), 663–672.
- Domer, F. R. (1971). *Animal experiments in pharmacological analysis*.
- Dou, Y.-X., Zhou, J.-T., Wang, T.-T., Huang, Y.-F., Chen, V. P., Xie, Y.-L., Lin, Z.-X., Gao, J.-S., Su, Z.-R., & Zeng, H.-F. (2018). Self-nanoemulsifying drug delivery system of bruceine D: a new approach for anti-ulcerative colitis. *International Journal of Nanomedicine*, 13, 5887–5907. <https://doi.org/10.2147/IJN.S174146>
- Dubin, A. E., & Patapoutian, A. (2010). Nociceptors: the sensors of the pain pathway. *The Journal of clinical investigation*, 120 11, 3760–3772. <https://api.semanticscholar.org/CorpusID:43163143>
- Dugasani, S., Pichika, M. R., Nadarajah, V. D., Balijepalli, M. K., Tandra, S., & Korlakunta, J. N. (2010). Comparative antioxidant and anti-inflammatory effects of [6]-gingerol, [8]-gingerol, [10]-gingerol and [6]-shogaol. *Journal of Ethnopharmacology*, 127(2), 515–520. <https://doi.org/10.1016/j.jep.2009.10.004>
- Edy, A. J., & Nugroho, T. E. (2019). Pengaruh Pemberian Analgesik Kombinasi Parasetamol Dan Morfin Terhadap Kadar Ureum Serum Pada Tikus Wistar Jantan. *Jurnal Kedokteran Diponegoro*, 8(1), 323–332.
- Elisa, P. N., Nurahmanto, D., & Agustian Rosyidi, V. (2021). Optimasi Tween 80 dan Propilen Glikol dalam Self -Nanoemulsifying Drug Delivery System (SNEDDS) Minyak Atsiri Daun Kemangi (*Ocimum basilicum*). *Journal Pustaka Ilmu Kesehatan*, 9(2), 78–83.
- El-Laithy, H. M. (2008). Self-nanoemulsifying drug delivery system for enhanced bioavailability and improved hepatoprotective activity of biphenyl dimethyl dicarboxylate. *Current Drug Delivery*, 5(3), 170–176.
- Erliyana, M., Widyaningsih, W., Wumu, D. A., & Wulansari, W. F. (2022). Formulation of self-nano emulsifying drug delivery system (SNEDDS) Red Ginger extract (*Zingiber Officinale* var. *rubrum*). *Media Farmasi: Jurnal Ilmu Farmasi*, 19(2), 133. <https://doi.org/10.12928/mf.v19i2.21655>
- Fajrin, F. A., Nugroho, A. E., Nurrochmad, A., & Susilowati, R. (2020). Ginger extract and its compound, 6-shogaol, attenuates painful diabetic neuropathy in mice via reducing TRPV1 and NMDAR2B expressions in the spinal cord. *Journal of Ethnopharmacology*, 249, 112396. <https://doi.org/https://doi.org/10.1016/j.jep.2019.112396>



- Gharibzahedi, S. M. T., Hernández-Ortega, C., Welti-Chanes, J., Putnik, P., Barba, F. J., Mallikarjunan, K., Escobedo-Avellaneda, Z., & Roohinejad, S. (2019). High pressure processing of food-grade emulsion systems: Antimicrobial activity, and effect on the physicochemical properties. *Food Hydrocolloids*, 87, 307–320. <https://doi.org/https://doi.org/10.1016/j.foodhyd.2018.08.012>
- Gonçalves, A., Nikmaram, N., Roohinejad, S., Estevinho, B. N., Rocha, F., Greiner, R., & McClements, D. J. (2018). Production, properties, and applications of solid self-emulsifying delivery systems (S-SEDS) in the food and pharmaceutical industries. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 538, 108–126. <https://doi.org/https://doi.org/10.1016/j.colsurfa.2017.10.076>
- Gupta, A., Eral, H. B., Hatton, T. A., & Doyle, P. S. (2016). Nanoemulsions: formation{,} properties and applications. *Soft Matter*, 12(11), 2826–2841. <https://doi.org/10.1039/C5SM02958A>
- Hanaa, M., Saleh, A.-S., & Shaimaa, E. (2013). Design and optimization of self-nanoemulsifying drug delivery systems of simvastatin aiming dissolution enhancement. *African journal of pharmacy and pharmacology*, 7(22), 1482–1500.
- Harborne, J. B. (1987). Metode fitokimia: Penuntun cara modern menganalisis tumbuhan. *Bandung: Penerbit ITB*, 78.
- Ilmi, H., Pamungkas, I. R., Tumewu, L., Hafid, A. F., & Widyawaruyanti, A. (2021). Analgesic and antipyretic activities of ethyl acetate fraction tablet of Andrographis paniculata in animal models. *Evidence-Based Complementary and Alternative Medicine*, 2021, 1–8.
- Indriani, V., Tobing, N. E. K. P., & Rijai, L. (2018). Formulasi Self-Nanoemulsifying Drug Delivery System (SNEDDS) Ekstrak Biji Ramania (Bouea macrophylla Griff) dengan Asam Oleat (Oleic Acid) sebagai Minyak Pembawa. *Proceeding of Mulawarman Pharmaceuticals Conferences*, 8(November 2018), 276–284. <https://doi.org/10.25026/mpc.v8i1.334>
- Irawati, R., Rumi, A., & Parumpu, F. A. (2021). Gambaran Tingkat Pengetahuan Swamedikasi Obat Analgesik Pada Mahasiswa-Mahasiswi Universitas Tadulako Di Kota Palu. *Jurnal Health Sains*, 2(3), 350–361.
- Jadhav, H. B., & Annapur, U. S. (2022). Triglycerides of medium-chain fatty acids: a concise review. *Journal of Food Science and Technology*, 0123456789. <https://doi.org/10.1007/s13197-022-05499-w>
- Jaiswal, M., Dudhe, R., & Sharma, P. K. (2015). Nanoemulsion: an advanced mode of drug delivery system. *3 Biotech*, 5(2), 123–127.
- Kaneko, J. J., Harvey, J. W., & Bruss, M. L. (2008). *Clinical biochemistry of domestic animals*. Academic press.
- Kibbe, A. H. (2000). *Handbook of pharmaceutical excipients: cellulose, silicified microcrystalline*. Washington: American Public Health Association.



- Lara, A. D., Elisma, & Sani, F. K. (2021). Uji Aktivitas Analgesik Infusa Daun Jeruju (Acanthus ilicifolius L.) Pada Mencit Putih Jantan (Mus musculus) Test The Analgesic Activity Of Jeruju Leaf Infusion (Acanthus ilicifolius L.) On Male White Mice (Mus musculus). *Indonesian Journal of Pharma Science*, 3(2), 71–80.
- Lawrence, M. J., & Rees, G. D. (2000). Microemulsion-based media as novel drug delivery systems. *Advanced Drug Delivery Reviews*, 45(1), 89–121. [https://doi.org/10.1016/s0169-409x\(00\)00103-4](https://doi.org/10.1016/s0169-409x(00)00103-4)
- Lestiono, L., & Kresnamurti, A. (2020). Aktivitas Analgesik Ekstrak Etanol Bulu Babi (Echinometra Mathaei) Pada Mencit Putih Jantan. *Journal of Herbal, Clinical and Pharmaceutical Science (HERCLIPS)*, 1(02), 7. <https://doi.org/10.30587/herclips.v1i02.1352>
- Li, J., Zhang, Y., Liu, S., Li, W., Sun, Y., Cao, H., Wang, S., & Meng, J. (2023). A network pharmacology integrated pharmacokinetics strategy to investigate the pharmacological mechanism of absorbed components from crude and processed Zingiberis Rhizoma on deficiency-cold and hemorrhagic syndrome. *Journal of Ethnopharmacology*, 301. <https://doi.org/10.1016/j.jep.2022.115754>
- Liza, J., Sinka, D., Nemes, D., Ujhelyi, Z., Judit, V., Fenyvesi, F., & Gyöngyösi, A. (2022). *Self-Nano and Microemulsifying Drug Delivery Systems Containing Curcumin*.
- Ma, T. Y., Hollander, D., Krugliak, P., & Katz, K. (1990). PEG 400, a hydrophilic molecular probe for measuring intestinal permeability. *Gastroenterology*, 98(1), 39–46.
- Mahboubi, M. (2019). Zingiber officinale Rosc. essential oil, a review on its composition and bioactivity. *Clinical Phytoscience*, 5(1), 1–12. <https://doi.org/10.1186/s40816-018-0097-4>
- Makadia, H. A., Bhatt, A. Y., Parmar, R. B., Paun, J. S., & Tank, H. M. (2013). Self-nano emulsifying drug delivery system (SNEDDS): future aspects. *Asian J. Pharm. Res*, 3(1), 21–24.
- Marina, A. M., Che Man, Y. B., & Amin, I. (2009). Virgin coconut oil: emerging functional food oil. *Trends in Food Science & Technology*, 20(10), 481–487. <https://doi.org/https://doi.org/10.1016/j.tifs.2009.06.003>
- Martien, R., Adhyatmika, A., Irianto, I. D. K., Farida, V., & Sari, D. P. (2012). Perkembangan teknologi nanopartikel sebagai sistem penghantaran obat. *Majalah Farmaseutik*, 8(1), 133–144.
- McClements, D. J., & Rao, J. (2011). Food-grade nanoemulsions: formulation, fabrication, properties, performance, biological fate, and potential toxicity. *Critical Reviews in Food Science and Nutrition*, 51(4), 285–330. <https://doi.org/10.1080/10408398.2011.559558>
- Nik Norulaini, N. A., Setianto, W. B., Zaidul, I. S. M., Nawi, A. H., Azizi, C. Y. M., & Omar, A. K. M. (2009). Effects of supercritical carbon dioxide extraction parameters on virgin coconut oil yield and medium-chain



- triglyceride content. *Food Chemistry*, 116(1), 193–197. <https://doi.org/https://doi.org/10.1016/j.foodchem.2009.02.030>
- Nugroho, B. H., Citrariana, S., Sari, I. N., Oktari, R. N., & Munawwarah, M. (2017). Formulasi dan evaluasi SNEDDS (Self Nanoemulsifying Drug Delivery System) ekstrak daun pepaya (*Carica papaya L.*) sebagai analgesik. *Jurnal Ilmiah Farmasi*, 13(2), 77–85. <https://doi.org/10.20885/jif.vol13.iss2.art5>
- Nurismawati, D. A., & Priani, S. E. (2021). Kajian Formulasi dan Karakterisasi Self-nanoemulsifying Drug Delivery System (SNEDDS) sebagai Pengantar Agen Antihiperlipidemia Oral. *Jurnal Riset Farmasi*, 1(2), 114–123. <https://doi.org/10.29313/jrf.v1i2.455>
- Owoyele, B. V., & Bakare, A. O. (2018). Analgesic properties of aqueous bark extract of *Adansonia digitata* in Wistar rats. *Biomedicine & Pharmacotherapy*, 97, 209–212. <https://doi.org/https://doi.org/10.1016/j.biopha.2017.10.079>
- Panossian, A., Hovhannisyan, A., Mamikonyan, G., Abrahamian, H., Hambardzumyan, E., Gabrielian, E., Goukasova, G., Wikman, G., & Wagner, H. (2000). Pharmacokinetic and oral bioavailability of andrographolide from *Andrographis paniculata* fixed combination Kan Jang in rats and human. *Phytomedicine*, 7(5), 351–364. [https://doi.org/https://doi.org/10.1016/S0944-7113\(00\)80054-9](https://doi.org/https://doi.org/10.1016/S0944-7113(00)80054-9)
- Patel, J., Kevin, G., Patel, A., Raval, M., & Sheth, N. (2011). Design and development of a self-nanoemulsifying drug delivery system for telmisartan for oral drug delivery. *International Journal of Pharmaceutical Investigation*, 1(2), 112–118. <https://doi.org/10.4103/2230-973X.82431>
- Peng, P. W. H., Wijeyesundera, D. N., & Li, C. C. F. (2007). Use of gabapentin for perioperative pain control—a meta-analysis. *Pain Research and Management*, 12(2), 85–92.
- Permatasari, D., Purwati, A. I., & Yunianto, P. (2022). Simultaneous Isolation of 6-Gingerol, 6-Shogaol, and 6-Paradol from *Zingiber Officinale* Using Vacuum Liquid Chromatography. *Jurnal Sains Natural*, 12(4), 153. <https://doi.org/10.31938/jsn.v12i4.434>
- Prentice, D. E., & Majeed, S. K. (1978). Oral toxicity of polyethylene glycol (PEG 200) in monkeys and rats. *Toxicology Letters*, 2(2), 119–122. [https://doi.org/https://doi.org/10.1016/0378-4274\(78\)90084-X](https://doi.org/https://doi.org/10.1016/0378-4274(78)90084-X)
- Raji, Y., Udoh, U. S., Oluwadara, O. O., Akinsomisoye, O. S., Awobajo, O., & Adeshoga, K. (2002). Anti-inflammatory and analgesic properties of the rhizome extract of *Zingiber officinale*. *African Journal of Biomedical Research*, 5(3).
- Raman, S., Murugaiyah, V., & Parumasivam, T. (2022). *Andrographis paniculata* Dosage Forms and Advances in Nanoparticulate Delivery Systems: An Overview. *Molecules*, 27(19). <https://doi.org/10.3390/molecules27196164>



- Rao, M. R. P., Aghav, S., Sukre, G., & Kumar, M. (2014). Determination of Required HLB of Capryol 90. *Journal of Dispersion Science and Technology*, 35(2), 161–167. <https://doi.org/10.1080/01932691.2013.777824>
- Rowe, R. C., Sheskey, P., & Quinn, M. (2009). *Handbook of pharmaceutical excipients*. Libros Digitales-Pharmaceutical Press.
- Saadé, N. E., & Jabbur, S. J. (2008). Nociceptive behavior in animal models for peripheral neuropathy: spinal and supraspinal mechanisms. *Progress in neurobiology*, 86(1), 22–47.
- Sabila, R., Megantara, S., & Saputri, F. A. (2020). Review: Sintesis Senyawa Turunan Andrografolid pada Gugus Hidrosil C-14. *Jurnal Farmasi Sains dan Terapan*, 7(2), 55–63. <https://doi.org/10.33508/JFST.V7I2.2508>
- Sadeq, Z. A. (2020). Review on nanoemulsion: Preparation and evaluation. *International Journal of Drug Delivery Technology*, 10(1), 187–189. <https://doi.org/10.25258/ijddt.10.1.33>
- Sari, D. K., & Lestari, R. S. D. (2015). Pengaruh waktu dan kecepatan pengadukan terhadap emulsi minyak biji matahari (*Helianthus annuus* L.) dan air. *Jurnal Integrasi Proses*, 5(3).
- Setya, S., Talegaonkar, S., & Razdan, B. K. (2014). Nanoemulsions: formulation methods and stability aspects. *World J. Pharm. Pharm. Sci*, 3(2), 2214–2228.
- Sharma, S., Sharma, Y. P., & Bhardwaj, C. (2018). HPLC quantification of andrographolide in different parts of *Andrographis paniculata* (Burm.f.) Wall. ex Nees. ~ 168 ~ *Journal of Pharmacognosy and Phytochemistry*, 7(3), 168–171.
- Sianturi, S., Butarbutar, M. E. T., & Simanjuntak, S. (2022). POTENSI ANALGESIK EKSTRAK ETANOL DAUN KARAMUNTING (*Rhodomyrtus tomentosa*) PADA MENCIT JANTAN (*Mus musculus* L.) DENGAN METODE INDUKSI KIMIA. *Journal of Pharmaceutical And Sciences*, 5(1), 86–93.
- Silalahi, M. (2020). Sambiroto (*Andrographis paniculata*) dan Bioaktivitasnya. *BEST Journal (Biology Education, Sains and Technology)*, 3(1), 76–84. <https://doi.org/10.30743/best.v3i1.2448>
- Singh, A. K., Chaurasiya, A., Awasthi, A., Mishra, G., Asati, D., Khar, R. K., & Mukherjee, R. (2009). Oral bioavailability enhancement of exemestane from self-microemulsifying drug delivery system (SMEDDS). *Aaps Pharmscitech*, 10(3), 906–916.
- Solans, C., & Solé, I. (2012). Nano-emulsions: Formation by low-energy methods. *Current Opinion in Colloid and Interface Science*, 17, 246–254.
- Srikandi, S., Humaeroh, M., & Sutamihardja, R. (2020). Kandungan Gingerol Dan Shogaol Dari Ekstrak Jahe Merah (*Zingiber Officinale Roscoe*) Dengan Metode Maserasi Bertingkat. *al-Kimiya*, 7(2), 75–81. <https://doi.org/10.15575/ak.v7i2.6545>



- Sudjaswadi, R. (1995). Ketersediaan hayati salisilat setelah pemberian sediaan kapsul asetosal yang didispersikan dalam campuran poli-etilen glikol (peg) 4000-tween 80 (1: 2)= The bioavailability of salicylate after administration of capsul. *Majalah Farmasi Indonesia*, 6(1995).
- Sulkhan, A. A. R., Artanti, A. N., Ermawati, D. E., & Prihapsara, F. (2019). Optimization of Self-Nanoemulsifying Drug Delivery System (SNEDDS) of *Annona muricata L.* leaves chloroform extract using VCO (Virgin Coconut Oil) as an oil phase. *IOP Conference Series: Materials Science and Engineering*, 578(1). <https://doi.org/10.1088/1757-899X/578/1/012046>
- Suresha, R. N., Amoghimath, S., Vaibhavi, P. S., Shruthi, S. L., Jayanthi, M. K., & Kalabharathi, H. L. (2014). Evaluation of analgesic activity of perindopril in albino mice. *Journal of Advanced Pharmaceutical Technology & Research*, 5(3), 129.
- Syukri, Martien, R., Lukitaningsih, E., & Nugroho, A. E. (2018). Novel Self-Nano Emulsifying Drug Delivery System (SNEDDS) of andrographolide isolated from *Andrographis paniculata* Nees: Characterization, in-vitro and in-vivo assessment. *Journal of Drug Delivery Science and Technology*, 47, 514–520. <https://doi.org/https://doi.org/10.1016/j.jddst.2018.06.014>
- Syukri, Taher, M., Martien, R., Lukitaningsih, E., Nugroho, A. E., & Zakaria, Z. A. (2021). Self-nanoemulsifying delivery of andrographolide: Ameliorating islet beta cells and inhibiting adipocyte differentiation. *Advanced Pharmaceutical Bulletin*, 11(1), 171–180. <https://doi.org/10.34172/apb.2021.018>
- Syukri, Y., Kholidah, Z., & Chabib, L. (2020). Fabrikasi dan Studi Stabilitas Self-Nano Emulsifying Propolis menggunakan Minyak Kesturi sebagai Pembawa. *Jurnal Sains Farmasi & Klinis*, 6(3), 265–273.
- Syukri, Y., Nugroho, A. E., Martien, R., & Lukitaningsih, E. (2015). Validasi Penetapan Kadar Isolat Andrografolid dari Tanaman Sambiloto (*Andrographis paniculata* Nees) Menggunakan HPLC. *Jurnal Sains Farmasi & Klinis*, 2(1), 8. <https://doi.org/10.29208/jsfk.2015.2.1.42>
- Tadros, T., Izquierdo, P., Esquena, J., & Solans, C. (2004). Formation and stability of nano-emulsions. *Advances in Colloid and Interface Science*, 108–109, 303–318. <https://doi.org/10.1016/j.cis.2003.10.023>
- Tamimi, A. A. P., De Queljoe, E., & Siampa, J. P. (2020). UJI EFEK ANALGESIK EKSTRAK ETANOL DAUN KELOR (*Moringa oleifera* Lam.) PADA TIKUS PUTIH JANTAN GALUR WISTAR (*Rattus norvegicus*). *Pharmacon*, 9(3), 325. <https://doi.org/10.35799/pha.9.2020.30015>
- Thakkar, H. P., Khunt, A., Dhande, R. D., & Patel, A. A. (2015). Formulation and evaluation of Itraconazole nanoemulsion for enhanced oral bioavailability. *Journal of Microencapsulation*, 32(6), 559–569. <https://doi.org/10.3109/02652048.2015.1065917>



- Thakur, A. K., Rai, G., Chatterjee, S., & Kumar, V. (2015). Analgesic and anti-inflammatory activity of *Andrographis paniculata* and andrographolide in diabetic rodents. *EC Pharmaceutical Science*, 1, 19–28.
- Tumewu, L., Pamungkas, I. R., Ilmi, H., Hafid, A. F., Tantular, I. S., Wahyuni, T. S., & Widyawaruyanti, A. (2021). The Role of Andrographolide in *Andrographis paniculata* as a Potential Analgesic for Herbal Medicine based Drug Development. *Research Journal of Pharmacy and Technology*, 14(12), 6269–6274.
- Verri, W. A., Vicentini, F. T. M. C., Baracat, M. M., Georgetti, S. R., Cardoso, R. D. R., Cunha, T. M., Ferreira, S. H., Cunha, F. Q., Fonseca, M. J. V., & Casagrande, R. (2012). Chapter 9 - Flavonoids as Anti-Inflammatory and Analgesic Drugs: Mechanisms of Action and Perspectives in the Development of Pharmaceutical Forms. Dalam Atta-ur-Rahman (Ed.), *Studies in Natural Products Chemistry* (Vol. 36, hlm. 297–330). Elsevier. <https://doi.org/https://doi.org/10.1016/B978-0-444-53836-9.00026-8>
- Vogel, H. G., Maas, J., Hock, F. J., & Mayer, D. (2013). *Drug discovery and evaluation: safety and pharmacokinetic assays*. Springer.
- Wadhwa, J., Nair, A., & Kumria, R. (2011). Self-emulsifying therapeutic system: a potential approach for delivery of lipophilic drugs. *Brazilian Journal of Pharmaceutical Sciences*, 47, 447–465.
- Winarti, L., Suwaldi, S., Martien, R., & Hakim, L. (2018). Formulation of insulin self nanoemulsifying drug delivery system and its in vitro-in vivo study. *Indonesian Journal of Pharmacy*, 29(3), 157.
- Yan, Y., Fang, L.-H., & Du, G.-H. (2018). Andrographolide. Dalam *Natural Small Molecule Drugs from Plants* (hlm. 357–362). Springer Singapore. https://doi.org/10.1007/978-981-10-8022-7_60
- Yang, Q., Wang, Q., Feng, Y., Wei, Q., Sun, C., Firempong, C. K., Adu-Frimpong, M., Li, R., Bao, R., Toreniyazov, E., Ji, H., Yu, J., & Xu, X. (2019). Anti-hyperuricemic property of 6-shogaol via self-micro emulsifying drug delivery system in model rats: formulation design, in vitro and in vivo evaluation. *Drug Development and Industrial Pharmacy*, 45(8), 1265–1276. <https://doi.org/10.1080/03639045.2019.1594885>
- Yuda, P., Setiawati, N. M. W., Dewi, N., Sanjaya, D. A., & Cahyaningsih, E. (2019). Aktivitas Analgesik Ekstrak Daun Liligundi (*Vitex Trifolia L.*) Pada Mencit. *Jurnal Farmasains*, 6(2), 73–78.
- Yukuyama, M. N., Kato, E. T. M., de Araujo, G. L. B., Löbenberg, R., Monteiro, L. M., Lourenco, F. R., & Bou-Chakra, N. A. (2019). Olive oil nanoemulsion preparation using high-pressure homogenization and d-phase emulsification—A design space approach. *Journal of Drug Delivery Science and Technology*, 49, 622–631.
- Zick, S. M., Djuric, Z., Ruffin, M. T., Litzinger, A. J., Normolle, D. P., Alrawi, S., Feng, M. R., & Brenner, D. E. (2008). Pharmacokinetics of 6-gingerol, 8-gingerol, 10-gingerol, and 6-shogaol and conjugate metabolites in healthy



human subjects. *Cancer Epidemiology Biomarkers & Prevention*, 17(8), 1930–1936.