

**DAFTAR PUSTAKA**

- Aashigari, S., Goud, G.S., Sneha S., Vykuntam U. and Potnuri, N. 2018. Stability Studies Of Pharmaceutical Products. *World Journal of Pharmaceutical Research*, p. 479-492. DOI: 10.20959/wjpr20191-13872.
- Abood,R.M., Talengonkar,S., Tariq,m., Ahmad,F,J., 2013. Microemulsion as a tool for the transdermal delivery of ondansetron for the treatment of chemotherapy induced nausea and vomiting. *Colloids and Surfaces B: Biointerfaces* p. 143-151
- Alankar, S. 2009. A review on peppermint essential oil. *Asian Journal of Pharmaceutical and Clinical Research*, 2(2), p. 27–33.
- Anggraeni, Y., Haryanto, I., Hendradi, E. 2012. Physical and Chemical Characteristic Of Meloxicam From Nanostructured Lipid Carriers System Using Some Concentration Ratios Of Monostearin And Alpha-Tocopherol Acetate Lipid Matrix. *Asian Journal of Pharmaceutical and Clinical Research*, 1(1), 132–137.
- Annisa, R., Hendradi, E., Melani, D. 2016. Pengembangan Sistem Nanostructured Lipid Carriers (NLC) Meloxicam dengan Lipid Monostearin dan Miglyol 808 Menggunakan Metode Emulsifikasi. *Journal of Tropical Pharmacy and Chemistry*, 3(3), p. 156-169. <https://doi.org/10.25026/jtpc.v3i3.102>
- Atmaja, T. 2019. Studi Perbandingan Stabilitas Fisik Dan Penetrasi Apms Dalam Sistem Penghantaran Nlc, Sln Dan Nanoemulsi (Lipid padat kombinasi oleum cacao-beeswax dan lipid cair minyak zaitun). *Skripsi*. Fakultas Farmasi. Universitas Airlangga: Surabaya
- Attama, A. A., Schicke, B. C. and Müller-Goymann, C. C. 2006. Further Characterization of Theobroma Oil-Beeswax Admixtures as Lipid Matrices for Improved Drug Delivery Systems. *European Journal of Pharmaceutics and Biopharmaceutics*, p. 294-306. Doi:10.1016/j.ejpb.2006.06.010
- Baumann, L., 2007. Skin ageing and its treatment. *The Journal of Pathology: A Journal of the Pathological Society of Great Britain and Ireland*, 211(2), pp.241-251.
- Beama C, Erawati T, and Soeratri W. 2019. Nanostructure Lipid carrier (NLC) as a Skin Delivery System. *Dama Academic Scholarly & Scientific Research Society*, p. 1-4. doi:10.15373/22501991

- Chen, J., Jiang, Q., Wu, Y., Liu, P., Yao, Jun., Lu, Q., Zhang, H., Duan, J. 2015. Potential of essential oils as penetration Enhancers for transdermal administration of ibuprofen to treat dysmenorrhoea. *Molecules*, p. 18219-18236. doi: 10.3390/molecules201018219.
- Church, J., Lundin J., Diaz D., Mercado D., Wilner M. 2019. Identification and characterization of bilgewater emulsions. *Science of the Total Environment*, p. 981–995. doi: 10.1016/j.scitotenv.2019.06.510.
- Das, A. and Ahmed, A. B. 2017. Natural permeation Enhancer for transdermal drug delivery system and permeation evaluation: A review. *Asian Journal of Pharmaceutical and Clinical Research*, p. 5-9.
- De Barcelos, I. P. and Haas, R. H. 2019. Coq10 and aging. *Biology*, 8(2), p.1-22. doi: 10.3390/biology8020028.
- Deapsari, F., Erawati, T. M. and Soeratri, W. 2017. Penetration of Ubiquinone (Q10) Nanoemulsion Using Olive Oil Through Rat Skin. *International Journal of Pharmaceutical and Clinical Research*, p. 169-172.
- Depkes RI, 2014. *Farmakope Indonesia* Ed.V. Jakarta. Departemen Kesehatan Republik Indonesia.
- Dickinson, E. 2009. *Hydrocolloids and emulsion stability*, Handbook of Hydrocolloids: Second Edition. Woodhead Publishing Limited. doi: 10.1533/9781845695873.23.
- Erawati, T., Hariyadi, D., Rosita, N., Purwanti, T. 2019. The Anti-inflammatory Activity of p- methoxycinnamic acid (PMCA) in the Nanostructured Lipid Carrier (NLC) system using combinations of solid lipid, beeswax-oleum cacao and liquid lipid, Virgin Coconut oil (VCO). *Research Journal of Pharmacy and Technology*, p. 3619–3625. doi: 10.5958/0974-360X.2019.00617.6.
- Erawati, T., Putri, D., Maharani, A., Rosita, N., Soeratri, W. 2019. Characteristics and Stability of Nanostructured Lipid Carrier ( NLC ) Aleurites Moluccana Seed Oil ( AMS oil ) Using Various Combinations of Beeswax and Oleum Cacao. *International Journal of Drug Delivery Technology*, 9(1), pp. 94-97.
- Erawati, T., Hendradi, E. and Soeratri, W. 2014. Praformulation Study of PMethoxycinnamic Acid (PMCA) Nanoemulsion Using Vegetable Oils (Soybean Oil, Corn Oil, VCO). *International Journal of Pharmacy and Pharmaceutical Sciences*, p. 99-101.

- Fang, C., Suwayeh, S., Fang, J. 2012. Nanostructured Lipid Carriers (NLCs) for Drug Delivery and Targeting. *Recent Patents on Nanotechnology*, p. 41-55. doi: 10.2174/18722105130105.
- Franke A.A., Morrison C.M., Bakke J.L., Custer L.J., Li, X. and Cooney, R.V., 2010. Coenzyme Q10 in human blood: native levels and determinants of oxidation during processing and storage. *Free Radical Biology and Medicine*, 48(12), pp.1610-1617.
- Ganesan, P. and Narayanasamy, D., 2017. Lipid nanoparticles: Different preparation techniques, characterization, hurdles, and strategies for the production of solid lipid nanoparticles and Nanostructured Lipid Carriers for oral drug delivery. *Sustainable Chemistry and Pharmacy*, 6, pp.37-56.
- Ghodrati, M., Farahpour, M. R. and Hamishehkar, H. 2019. Encapsulation of Peppermint essential oil in Nanostructured Lipid Carriers: In-vitro antibacterial activity and accelerative effect on infected wound healing. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, p. 161–169. doi: 10.1016/j.colsurfa.2018.12.043.
- Handayani, D. and Dominica, D. 2018. Jurnal Farmasi dan Ilmu Kefarmasian Indonesia Vol. 5 No. 1 Juli 2018 36', 5(1), pp. 36-44.
- Hasegawa, R., Saito, K., Takaoka, T., & Ishikita, H. (2017). pK<sub>a</sub> of ubiquinone, menaquinone, phyloquinone, plastoquinone, and rhodoquinone in aqueous solution. *Photosynthesis Research*, 133(1–3), 297–304. <https://doi.org/10.1007/s11120-017-0382-y>
- Hong, I. K., Kim, S. I., & Lee, S. B. 2018. Effects of HLB value on oil-in-water emulsions: Droplet size, rheological behavior, zeta-potential, and creaming index. *Journal of Industrial and Engineering Chemistry*. pp. 123-131.
- Hua, Susan. 2015. Lipid-based nano-delivery systems for skin delivery of drugs and bioactives. *Front Pharmacol*. Vol. 6, p. 219
- Inui, M., Ooe, M., Fujii, K., Matsunaka, H., Yoshida, M., and Ichibashi, M. 2008. Mechanisms of inhibitory effects of CoQ10 on UVB-induced wrinkle formation in vitro and in vivo. *Biofactors*, 32(1–4):237–243.
- Kaur, S, Nautyal, U., Singh, R., Singh, S., Devi, A. 2015. Nanostructure Lipid Carrier (NLC): The New Generation of Lipid Nanoparticles. *Asian Pacific Journal of Health Sciences*, p. 76-93.
- Khurana, S., Jain, N. K. and Bedi, P. M. S. 2013. Development and Characterization of a Novel Controlled Release Drug Delivery System

- Based on Nanostructured Lipid Carriers Gel for Meloxicam. *Life Sciences*, p. 763-772. Doi: 10.1016/j.lfs.2013.09.027.
- Lakshmi, P., Samratha, K., Prasanthi, B., Veeresh, B., Chennuri, A. 2017. Oils As Penetration Enhancers for Improved Transdermal Drug Delivery: a Review. *International Research Journal of Pharmacy*, 8(4), pp. 9–17. doi: 10.7897/2230-8407.080440.
- Lim, J., Gang, H., Yoon, S., Kim, H., Suk, J., Kim, D., and Lim, J. 2010. Preparation and Its Stability of a Coenzyme Q10 Nanoemulsion by High Pressure Homogenization with Different Valve Type Conditions. *Korean J. Food Sci. Technology*, Vol. 42 No. 5, p. 565-570.
- Loolaie, M., Moasefi, N., Rasouli, H., and Adibi, H. 2017. Peppermint and Its Functionality: A Review. *Archives of Clinical Microbiology*, p. 1-16
- Loo, Basri, M., Ismail, Lau, Tejo, B. A., Kanthimathi, M. 2013. Effect of compositions in Nanostructured Lipid Carriers (NLC) on skin hydration and occlusion. *International Journal of Nanomedicine*, p. 13–22. doi: 10.2147/IJN.S35648.
- Lucangioli, S., Tripodi, V. 2012. The Importance Of The Formulation In The Effectiveness Of Coenzyme Q10 Supplementation In Mitochondrial Disease Therapy. *Der Pharmacia Sinica* 3 (4), p. 406 – 407.
- MSDS. 2011. MSDS CoQ10. Diakses dari: <https://s3-us-west-2.amazonaws.com/drugbank/msds/DB09270.pdf?1446047089>, pada tanggal 26 Desember 2019).
- Muller, R.H., Radike, M., Wissing, S.A., 2007. Solid Lipid Nanoparticles (SLN) and Nanostructured Lipid Carrier (NLC) in Cosmetic and Dermatological Preparations. *Adv Drug Deliv*, p. 131-155.
- Naseri, N., Valizadeh, H. and Zakeri-Milani, P. 2015. Solid lipid nanoparticles and Nanostructured Lipid Carriers: Structure preparation and application. *Advanced Pharmaceutical Bulletin*, p. 305-313. doi:10.15171/apb.2015.043.
- Nielsen, J. B. 2006. Natural oils affect the human skin integrity and the percutaneous penetration of benzoic acid dose-dependently. *Basic and Clinical Pharmacology and Toxicology*, p. 575–581. doi: 10.1111/j.1742-7843.2006.pto\_388.x.
- Purbowati, G. 2017. Penetrasi In Vitro Tretinoin dalam Sistem Nanoemulsi Dibandingkan Sistem Emulsi Konvensional pada Kosmetika

- Antiaging* (Menggunakan Fase Minyak Virgin Coconut Oil). *Skripsi*. Fakultas Farmasi. Universitas Airlangga: Surabaya
- Purohit, D. K., Nandgude, T. D. and Poddar, S. S. 2016. Nano-lipid Carriers for Topical Application: Current Scenario. *Asian Journal of Pharmaceutics*, 9 (5), p. 1-9.
- Remington, J.P., 2005. *The Science and Practice of Pharmacy*. 21th Ed., Philadelphia: Philadelphia University of the Sciences, p. 313, 316, 763.
- Rezania, D. 2019. Optimasi Formula Emulgel Minyak *Virgin Coconut Oil* Kelapa Kopyor (*Cocos nucifera L.*) dan Uji Aktivitas Antibakteri Terhadap *Propionibacterium acnes* ATCC 11827. *Skripsi*. Fakultas Farmasi. Universitas Airlangga: Surabaya.
- Rachmawati, B. 2019. Studi Perbandingan Pelepasan dan Stabilitas Fisik Apms dalam Sistem Nanostructured Lipid Carriers (NLC), Solid Lipid Nanoparticles (SLN), dan Nanoemulsi (NE) (Lipid Padat Kombinasi Oleum Cacao-Beeswax dan Lipid Cair Minyak Zaitun). *Skripsi*. Fakultas Farmasi. Universitas Airlangga: Surabaya
- Rosita, N. and Erawati, T. 2014. In Vitro Effectivity Para Methoxy Cinnamic Acid (PMCA) in Solid Lipid Nanostructure (SLN) System Using Cetyl Alcohol as Lipid Formulated in HPC-H Gel Base. *World Journal of Pharmaceutical Research*.
- Rowe, R. C., Sheskey, P. J., and Quinn M. E. 2009. *Handbook of Pharmaceutical Excipients*, Sixth Edition, London : The Pharmaceutical Press, p. 5 – 6; 17 – 19; 75 – 76; 389 – 390; 466 – 468; 470 – 472; 473 – 474; 549 – 553; 675 – 678.
- Savardekar, P. and Bajaj, A. 2016. Nanoemulsions - A Review. *International Journal of Research in Pharmacy and Chemistry*, 6 (2), p. 312-322.
- Sharma, A. and Baldi, A. 2018. Nanostructured Lipid Carriers : A Review. *Journal of Developing Drugs*, pp. 1-12
- Shoviantari, Fenita., 2017. Efektivitas, Iritabilitas, dan Stabilitas Fisik Coenzyme Q10 Dalam Sistem Penghantaran Nanoemulsi dan *Nanostructured Lipid Carriers* sebagai Kosmetika Antiaging. *Tesis*. Fakultas Farmasi Universitas Airlangga.
- Sinko, P. J. and Singh, Y. 2011. *Martin's Physical Pharmacy and Pharmaceutical Science-Physical Chemical and Biopharmaceutical Principle in The Pharmaceutical Science 6th Edition*. Philadelphia
- Sweetman, S.C. 2009. *Martindale: The Complete Drug Reference*, 36th Ed. London: Pharmaceutical Press, p. 2407.

- Tadros, T. F. 2013. *Emulsion Formation and Stability*. Singapore: WileyVCH.
- Tamjidi, F. 2013. Nanostructured Lipid Carriers (NLC): A Potential Delivery System for Bioactive Food Molecules. *Innovative Food Science and Emerging Technologies*, p. 29-43. Doi: 10.1016/j.ifset.2013.03.002.
- Tian, Y., Chen, L., & Zhang, W. (2015). Influence of Ionic Surfactants on the Properties of Nanoemulsions Emulsified by Nonionic Surfactants Span 80/Tween 80. *Journal of Dispersion Science and Technology*, 37(10), 1511–1517.
- Tu, Y. and Quan, T. 2016. Oxidative stress and human skin connective tissue aging. *Cosmetics*, p. 1–12. doi: 10.3390/cosmetics3030028.
- Uprit S., Sahu R.K., Roy A. 2013. Preparation And Characterization Of Minoxidil Loaded Nanostructured Lipid Carrier Gel For Effective Treatment Of Alopecia. *Saudi Pharmaceutical Journal*, p. 379–385.
- Villalba, J. M., Parrado, C., Santos-Gonzalez, M., & Alcain, F. J. (2010). Therapeutic use of coenzyme Q10 and coenzyme Q10-related compounds and formulations. *Expert Opinion on Investigational Drugs*, 19(4), 535–554.
- Vipul, A. and Devesh, S. 2012. Stability Testing of Active Pharmaceutical Ingredient (API). *Journal of Pharmaceutical and Scientific Innovation*, p. 18-23.
- Wei Keat, Ng., Yazan, L. S., Yap, L. H., Nor Hafiza, W. A. G., How, C. W., Abdullah, R., 2014. Thymoquinone-loaded Nanostructured Lipid Carrier exhibited cytotoxicity towards breast cancer cell lines (MDA-MB-231 and MCF-7) and cervical cancer cell lines (HeLa and SiHa). *BioMed Research International*.
- Witayaudom, P. & Klinkesorn, U. 2017. Effect of surfactant concentration and solidification temperature on the characteristics and stability of Nanostructured Lipid Carrier prepared from rambutan (*Nephelium lappaceum L.*) kernel fat. *Journal of Colloid and Interface Science*, p.1082 -1092
- Yang, S., Yap, P., Krishnan, T., Yusoff, K., Chan, K. 2018. Mode of Action: Synergistic Interaction of Peppermint (*Mentha x piperita L. Carl*) Essential Oil and Meropenem Against Plasmid-Mediated Resistant *E. coli*. *ACG Publications*, pp. 582-594
- Yoon, G., Woo, J. and Yoon, P. I. 2013. Solid Lipid Nanoparticles (SLNs) and Nanostructured Lipid Carriers (NLCs): Recent Advances in Drug Delivery. *Journal of Pharmaceutical Investigation*, p. 353-362. Doi: 10.1007/s40005-013-0087-y.