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DAFTAR PUSTAKA

Agatonovic-Kustrin, S., Kustrin, E., Gegechkori, V., & Morton, D. W. (2019). High-performance thin-layer chromatography hyphenated with micro chemical and biochemical derivatizations in bioactivity profiling of marine species. *Marine Drugs*, *17*(3), 1–14. https://doi.org/10.3390/md170 30148

Antarti, A. N., & Lisnasari, R. (2018). Uji Aktivitas Antioksidan Ektrak Ethanol Daun Family Solanum Menggunakan Metode Reduksi Radikal Bebas DPPH. *JPSCR : Journal of Pharmaceutical Science and Clinical Research*, *3*(2), 62. https://doi.org/10.20961/jpscr.v3i2.15378

Anusha, G., Sunayana, R., Ponnam, M., & Kumar, B. A. (2020). Asian Journal of Pharmaceutical Research and Development. *Asian Journal of Pharmaceu tical Research and Development*, *8*(6), 77–80.

Aruna Prakash, Fred Rigelhof, E. M. (2009). Antioxidant Activity. *Medallion Laboratories Analytical Progres*, (4). https://doi.org/10.1201/noe14200845 97.ch21

Astri Astuti. (2020). Formulasi Serum Anti-Aging Minyak Atsiri Lada Hitam (Piper Nigrum L.) dan Uji Aktivitas Antioksidan Menggunakan Metode DPPH. *Skripsi*, 1–74. https://dspace.uii.ac.id/bitstream/handle/123456 789 /29310/16612049 Astri Astuti.pdf?sequence=1&isAllowed=y

Athanasiadis, V., Chatzimitakos, T., Kalompatsios, D., & Palaiogiannis, D. (2023). *Evaluation of the Efficacy and Synergistic Effect of α - and δ - Tocopherol as Natural Antioxidants in the Stabilization of Sunflower Oil and Olive Pomace Oil during Storage Conditions*.

Attimarad, M., Mueen Ahmed, K. K., Aldhubaib, B. E., & Harsha, S. (2011). High-performance thin layer chromatography: A powerful analytical technique in pharmaceutical drug discovery. *Pharmaceutical Methods*, *2*(2), 71–75. https://doi.org/10.4103/2229-4708.84436

Azyyati Adzhani, Fitrianti Darusman, & Ratih Aryani. (2022). Kajian Efek Radiasi Ultraviolet terhadap Kulit. *Bandung Conference Series: Pharmacy*, *2*(2), 106–112. https://doi.org/10.29313/bcsp.v2i2.3551

Budiasih, S., Masyitah, I., Jiyauddin, K., Kaleemullah, M., Samer, A. D., Fadli, A.

UNIVERSITAS
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

M., & Yusuf, E. (2019). *Formulation and Characterization of Cosmetic Serum Containing Argan Oil as Moisturizing Agent*. (Bromo 2018), 297–304. https://doi.org/10.5220/0008361702970304

Budiati, A., Aulena, D. N., Khirana, R. D. A. C., & Fitriyani, D. (2024). The Effectiveness of Sunscreen Cream with Ethanol Extract of Sungkai Leaves (Peronema canescens Jack). *Journal of Natural Product for Degenerative Diseases*, *2*(1), 39–47. https://doi.org/10.58511/jnpdd.v2i1.7456

Cunha dos Santos, T., Pompermayer Machado, L., Pimentel Santos, A. L. V., Campos Martins, R. C., Cavalcanti, D. N., Wolff Bueno, G., Madeira Sanches, A. L., & Concha Obando, J. M. (2024). Dermocosmetic properties of bioproducts from Sargassum macroalgae: chemical aspects, challenges, and opportunities. *Frontiers in Marine Science*, *11*(November). https://doi .org/10.3389/fmars.2024.1500778

de Freitas Junior, R. A., Lossavaro, P. K. de M. B., Kassuya, C. A. L., Paredes-Gamero, E. J., Farias Júnior, N. C., Souza, M. I. L., Silva-Comar, F. M. de S., Cuman, R. K. N., Silva, D. B., Toffoli-Kadri, M. C., & Silva-Filho, S. E. (2022). Effect of Ylang-Ylang (Cananga odorata Hook. F. & Thomson) Essential Oil on Acute Inflammatory Response In Vitro and In Vivo. *Molecules*, *27*(12). https://doi.org/10.3390/molecules27123666

Dewi Zulfa, A., Salsabila, A., & Gina Septiani, A. (2023). Uji Aktivitas Antioksidan Serum Wajah Ekstrak Daun Jambu Air (*Syzygium aqueum (Burm.f.) Alston*) Menggunakan Metode DPPH. *Pharmacoscript*, *6*(2), 219–232. https://doi.org/10.36423/pharmacoscript.v6i2.1363

Do Nascimento, L. D., de Moraes, A. A. B., da Costa, K. S., Galúcio, J. M. P., Taube, P. S., Costa, C. M. L., Cruz, J. N., Andrade, E. H. de A., & de Faria, L. J. G. (2020). Bioactive natural compounds and antioxidant activity of essential oils from spice plants: New findings and potential applications. *Biomolecules*, *10*(7), 1–37. https://doi.org/10.3390/biom10070988

Dobros, N., Spałek, O., & Zieli, A. (2024). *Applications of Selected Cold-Pressed Plant Oils from Seeds*.

Endang Lukitaningsih, Rumiyati, S. N. (2017). Skrinning Aktivitas Antioksidan,

STABILITAS DAN KARAKTERISTIK FISIKA EMULSI GEL MINYAK KENANGA (Cananga odorata) SEBAGAI ANTIAGING
DAN IRITASI PRIMERNYA SECARA IN VIVO
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Antiaging dan Penghambatan Tyrosinase dari Ekstrak Etanolik dan Etil Asetat Daging Buah dan Kulit Buah Langsat *(Lansium domesticum Corr)* Secara *In Vitro*. 6.

Ermawati, D. E. (2017). Optimization Emulgator Composition Of Water In Oil Emulsion Of Strawberry Fruits (Fragaria vesca L.) Based On Simplex Lattice Design Method. *JPSCR : Journal of Pharmaceutical Science and Clinical Research*, *2*(02), 78. https://doi.org/10.20961/jpscr.v2i02.14398

Farida, I. (2011). *Formulasi dan Pengujian Sifat Fisik Krim Aromaterapi Minyak Bunga Kenanga (canangium ordoratum, Baill.) Dengan Basis Krim Susu*. h 43.

Ficai, A., Ilie, C., Stancu, A. I., Oprea, E., Dit, L. M., Badea, I. A., Buleandra, M., Brîncoveanu, O., Ghica, M. V., Avram, I., Elena, C., Pîrvu, D., & Mititelu, M. (2024). Formulations with Cyclodextrin Complexes and Volatile Oils with Antimicrobial Activity. *Gels*, *10*(10), 645.

Fitraneti, E., Rizal, Y., Riska Nafiah, S., Primawati, I., & Ayu Hamama, D. (2024). Pengaruh Paparan Sinar Ultraviolet terhadap Kesehatan Kulit dan Upaya Pencegahannya : Tinjauan Literatur. *Scientific Journal*, *3*(3), 185–194. https://doi.org/10.56260/sciena.v3i3.147

FLORENCE, A. T. D. A. (1989). Physicochemical Principles of Pharmacy. *American Journal of Health-System Pharmacy*, *46*(8), 1678–1678. https://doi.org/10.1093/ajhp/46.8.1678

Gulcin, İ., & Alwasel, S. H. (2023). DPPH Radical Scavenging Assay. *Processes*, *11*(8). https://doi.org/10.3390/pr11082248

Hidayat, I. R., Zuhrotun, A., & Sopyan, I. (2021). Design-expert Software s. *Majalah Farmasetika*, *6*(1), 99–120.

Hidayati, N., Sutaryono, Santi, C., & Addin, Q. (2022). Optimasi Formula Gel Aromaterapi Minyak Atsiri Bunga Kenanga (*Cananga odorata*) Dengan Variasi Carbopol 940 dan Gliserin Menggunakan Metode *Simplex Lattice Design* (SLD). *CERATA Jurnal Ilmu Farmasi*, *13*(1), 10–17. https://doi.org/10.61902/cerata.v13i1.451

Hong, I. K., Kim, S. I., & Lee, S. B. (2018). Effects of HLB value on oil-in-water

UNIVERSITAS GADJAH MADA
STABILITAS DAN KARAKTERISTIK FISIKA EMULSI GEL MINYAK KENANGA (Cananga odorata) SEBAGAI ANTIAGING DAN IRITASI PRIMERNYA SECARA IN VIVO
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

emulsions: Droplet size, rheological behavior, zeta-potential, and creaming index. *Journal of Industrial and Engineering Chemistry*, *67*, 123–131. https://doi.org/10.1016/j.jiec.2018.06.022

Hutapea, E. E., Musfiroh, I., Studi, P., Apoteker, P., Farmasi, F., & Padjadjaran, U. (2021). Farmaka Farmaka. *Farmaka*, *18*(1), 53–59.

Indrasetiawan, P., Aoki-Utsubo, C., Hanafi, M., Hartati, S. R. I., Wahyuni, T. S., Kameoka, M., Yano, Y., Hotta, H. A. K., & Hayashi, Y. (2019). Antiviral activity of cananga odorata against hepatitis B virus. *Kobe Journal of Medical Sciences*, *65*(2), E71–E79.

Islam, M. T., Ciotti, S., & Ackermann, C. (2004). *Rheological Characterization of Topical Carbomer Gels Neutralized to Different pH*. *21*(7), 1192–1199.

Khaira, Z., Monica, E., & Yoedistira, C. D. (2022). Formulasi dan Uji Mutu Fisik Sediaan Serum Mikroemulsi Ekstrak Biji Melinjo *Gnteum gnemon L*. *Sainsbertek Jurnal Ilmiah Sains & Teknologi*, *3*(1), 299–309. https://doi.org /10.33479/sb.v3i1.197

Khan, B. A., Ahmad, S., Khan, M. K., Hosny, K. M., Bukhary, D. M., Iqbal, H., Murshid, S. S., Halwani, A. A., Alissa, M., & Menaa, F. (2022). Fabrication and Characterizations of Pharmaceutical Emulgel Co-Loaded with Naproxen-Eugenol for Improved Analgesic and Anti-Inflammatory Effects. *Gels*, *8*(10). https://doi.org/10.3390/gels8100608

Khan, M. F., Sheraz, M. A., Ahmed, S., Kazi, S. H., & Ahmad, I. (2014). Emulsion Separation, Classification and Stability Assessment. *Journal of Pharmacy and Pharmaceutical Sciences*, *2*(2), 56–62.

Kowalska, M., Ziomek, M., & Zbikowska, A. (2015). Stability of cosmetic emulsion containing different amount of hemp oil. *International Journal of Cosmetic Science*, *37*(4), 408–416. https://doi.org/10.1111/ics.12211

Kurniawan, M. F., Sugihartini, N., & Yuwono, T. (2018). Permeability and Physical Characteristics Emulgel of Clove Oil with Addition of Enhancers. *Medical Sains*, *3*(1), 1–10.

Kusuma, I. W., Murdiyanto, Arung, E. T., Syafrizal, & Kim, Y. ung. (2014). Antimicrobial and antioxidant properties of medicinal plants used by the

UNIVERSITAS GADJAH MADA
STABILITAS DAN KARAKTERISTIK FISIKA EMULSI GEL MINYAK KENANGA (Cananga odorata) SEBAGAI ANTIAGING DAN IRITASI PRIMERNYA SECARA IN VIVO
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Bentian tribe from Indonesia. *Food Science and Human Wellness*, *3*(3–4), 191–196. https://doi.org/10.1016/j.fshw.2014.12.004

Lasmiani, N. M. E. (2024). *Protection Factor (SPF) Sediaan Krim Ekstrak Etanol Bunga Kenanga (Cananga odorata (Lamk.)Hook.) dengan Metode Spektrofotometri Uv-Vis*. Universitas Mahasaraswati Denpasar.

Lebanov, L., Chung Lam, S., Tedone, L., Sostaric, T., Smith, J. A., Ghiasvand, A., & Paull, B. (2021). Radical scavenging activity and metabolomic profiling study of ylang-ylang essential oils based on high-performance thin-layer chromatography and multivariate statistical analysis. *Medallion Laboratories Analytical Progres*, *1179*(April), 122861. https://doi.org/10.1016 /j.jchromb.2021.122861

Lin, T., Zhong, L., & Santiago, J. L. (2018). *Anti-Inflammatory and Skin Barrier Repair Effects of Topical Application of Some Plant Oils*. https://doi.org/10.3390/ijms19010070

Mahajan, V. K. (2022). *CosmoDerma Perfumes and associated allergens : A brief review*. *2*(21), 1–12. https://doi.org/10.25259/CSDM

Manchanda, Y., Das, S., Sarda, A., & Biswas, P. (2018). Controversies in the Management of Cutaneous Adverse Drug Reactions Systemic Cortico steroids in the Management of SJS / TEN : Is it Still. *Indian Journal of Dermatology*, *63*(2), 125–130. https://doi.org/10.4103/ijd.IJD

Mardikasari, S. A., Akib, N., & Suryani, S. (2020). Formulasi Dan Uji Stabilitas Krim Asam Kojat Dalam Pembawa Vesikel Etosom. *Majalah Farmasi Dan Farmakologi*, *24*(2), 49–53. https://doi.org/10.20956/mff.v24i2.10390

McClements, D. J. (2016). *Food Emulsions PRINCIPLES, PRACTICES, AND TECHNIQUES*.

McLain, V. C. (2007). Final report on the safety assessment of Polyethylene. *International Journal of Toxicology*, *26*(SUPPL. 1), 115–127. https://doi.org /10.1080/10915810601163962

Meliala, D. I. P., Wahyudi, W., & Nelva, N. (2020). Formulasi dan Uji Aktivitas Krim Tabir Surya Ekstrak Biji Kakao (*Theobroma cacao L.*) Dengan Kombinasi Avobenzen dan Octyl Methoxycinnamate. *Jurnal Penelitian*

UNIVERSITAS GADJAH MADA
STABILITAS DAN KARAKTERISTIK FISIKA EMULSI GEL MINYAK KENANGA (Cananga odorata) SEBAGAI ANTIAGING DAN IRITASI PRIMERNYA SECARA IN VIVO
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Farmasi & Herbal, *2*(2), 50–58. https://doi.org/10.36656/jpfh.v2i2.278

Michalak, M. (2022). Michalak M. Plant-Derived Antioxidants: Significance in Skin Health and the Ageing Process. Int J Mol Sci. 2022;23(2):8–12. *International Journal of Molecular Sciences*, *23*(2), 8–12.

Mikulcová, V., Kašpárková, V., Humpolíček, P., & Buňková, L. (2017). Formulation, characterization and properties of hemp seed oil and its emulsions. *Molecules*, *22*(5), 1–13. https://doi.org/10.3390/molecules22050700

Nimse, S. B., & Pal, D. (2015). Free radicals, natural antioxidants, and their reaction mechanisms. *RSC Advances*, *5*(35), 27986–28006. https://doi.org/10.1039/c4ra13315c

Nurhaini, R., Arrosyid, M., & Putri, H. (2022). Formulasi dan Uji Aktivitas Antibakteri Deodoran Krim Dengan Variasi Minyak Atsiri Bunga Kenanga (*Cananga odorata var. Macrophylla*) Sebagai Penghilang Bau Badan. *CERATA Jurnal Ilmu Farmasi*, *13*(1), 26–30. https://doi.org/10.61902/cerata.v13i1.453

Nurkhasanah, M. A., Si, A., Mochammad, S., Bachri, S., Si, M., Si, D. S., & Yuliani, M. P. (2023). *Antioksidan dan Stres Oksidatif*.

Nurman, S., Yulia, R., Noor, E., & Sunarti, T. C. (2019). *The Optimization of Gel Preparations Using the Active Compounds of Arabica Co ff ee Ground Nanoparticles*.

Osborne, D. W., Dahl, K., & Parikh, H. (2019). Determination of Particle Size and Microstructure in Topical Pharmaceuticals. *AAPS Advances in the Pharmaceutical Sciences Series*, *36*(September), 89–106. https://doi.org/10.1007/978-3-030-17355-5_3

Park, Y. H., & Kim, H. J. (2021). Formulation and stability of horse oil-in-water emulsion by HLB system. *Food Science and Biotechnology*, *30*(7), 931–938. https://doi.org/10.1007/s10068-021-00934-8

Piplani, M, Anjana Devi, Rishu Yadav, Pankaj Bhateja and Mona Piplani. (2025). A Systematic Review On Emulgel. School of Pharmacy, Maharaja Agrasen University, Baddi, Solan - 174103, Himachal Pradesh, India. 16(8), 2211–

UNIVERSITAS
GADJAH MADA
**STABILITAS DAN KARAKTERISTIK FISIKA EMULSI GEL MINYAK KENANGA (Cananga odorata) SEBAGAI ANTIAGING
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

2227. https://doi.org/10.13040/IJPSR.0975-8232.16(8).2211-27

Prabhaker, M., Chandra, M. P., Uttam, S., Anshul, G., & Sahu, C. (2017). Descriptive Statistics and Normality Tests for Statistical Data. *Annals of Cardiac Anaesthesia*, *20*(4), 456–458. https://doi.org/10.4103/aca.ACA

Pratiwi, P. D., Rizki, N. P., & Sciences, H. (2023). Optimization Of Carbopol 940 and Glycerol Concentration In Antioxidant Gel Of Alstonia Scholaris L. Leaf Extract With Simplex Lattice Design Method. *Indonesian Journal of Cosmetics*, *1*(1), 29–35.

Pratiwi, T. B., Nurbaeti, S. N., Ropiqa, M., Fajriaty, I., Nugraha, F., & Kurniawan, H. (2023). Uji Sifat Fisik pH Dan Viskositas Pada Emulsi Ekstrak Bintangur (Calophyllum soulattri Burm. F.). *Indonesian Journal of Pharmaceutical Education*, *3*(2), 226–234. https://doi.org/10.37311/ijpe.v3i2.19466

Pujiarti, R., Ohtani, Y., & Ichiura, H. (2011). Physicochemical properties and chemical compositions of Melaleuca leucadendron leaf oils taken from the plantations in Java, Indonesia. *Journal of Wood Science*, *57*(5), 446–451. https://doi.org/10.1007/s10086-011-1183-0

Pujiarti, R., Ohtani, Y., & Ichiura, H. (2017). Chemical Compositions, Antioxidant and Antifungal Activities of Melaleuca leucadendron Linn. Leaf Oils from Indonesia. *Wood Research Journal*, *3*(1), 23–29. https://doi.org/10.51850/wrj.2012.3.1.23-29

Pujiarti, R., Widowati, T. B., Kasmudjo, & Sunarta, S. (2015). Kualitas, komposisi kimia, dan aktivitas antioksidan minyak kenanga (. *Bagian Teknologi Hasil Hutan, Fakultas Kehutanan Universitas Gadjah Mada*, *Vol.9 No.1*(1), 3–11.

Putri, A. I. E., & Ariyanto, H. D. (2022). Effect of Hydrophilic- Lipophilic Balance (HLB) Value on the Stability of Cosmetic Lotion Based on Walnut Oil (Canarium Indicium L.) Oil-in-Water Emulsion. *Journal of Vocational Studies on Applied Research*, *4*(2), 53–60. https://doi.org/10.14710/jvsar.v4i2.15376

Rachmawati, R. C., Retnowati, R., & Juswono, U. P. (2013). Isolasi Minyak Atsiri

UNIVERSITAS GADJAH MADA
STABILITAS DAN KARAKTERISTIK FISIKA EMULSI GEL MINYAK KENANGA (Cananga odorata) SEBAGAI ANTIAGING DAN IRITASI PRIMERNYA SECARA IN VIVO
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Kenanga (*Cananga odorata*) Menggunakan Metode Distilasi Uap Termodifikasi dan Karakterisasinya Berdasarkan Sifat Fisik dan KG-SM. *Kimia Student Journal*, *1*(2), 276–282.

Ramadhani, R. A., Riyadi, D. H. S., Triwibowo, B., & Kusumaningtyas, R. D. (2017). Review Pemanfaatan Design Expert untuk Optimasi Komposisi Campuran Minyak Nabati sebagai Bahan Baku Sintesis Biodiesel. *Jurnal Teknik Kimia Dan Lingkungan*, *1*(1), 11–16. https://doi.org/10.33795/jtkl .v1i1.5

Rifqi, P. H., Idha, K., & Riesta, P. (2024). Teknik Aplikasi Sampel Pada Pengujian Kuantitatif Kromatografi Lapis Tipis: Tinjauan Terhadap Area dan Faktor Retensi. *Media Farmasi*, *20*(2), 143–150.

Ristianti, V., Monica, E., & Aziz, N. (2023). Formulasi dan Evaluasi Sediaan Serum Wajah yang Mengandung Minyak Atsiri Kulit Buah Jeruk Keprok Citrus reticulata Blanco Sebagai Anti Acne. *Sainsbertek Jurnal Ilmiah Sains & Teknologi*, *4*(1), 58–65. https://doi.org/10.33479/sb.v4i1.240

Rowe, R. C. (2006). Handbook of Pharmaceutical Excipients. In *AusIMM Bulletin* (Number 1).

Salima, T., Nurwaini, S., Farmasi, F., & Surakarta, U. M. (2023). Stabilitas Fisik dan Uji Aktivitas Antibakteri Emulgel Minyak Atsiri Rosemari *(Rosmarinus officinalis)* Terhadap Staphylococcus aureus. *2*(2), 189–200.

Sari, A. N., Permata, B. R., & Permatasari, D. A. I. (2023). Formulasi Sediaan Facemist Antibakterial dan Identifikasi Minyak Atsiri Bunga Kenanga (*Cananga odorata*) Menggunakan GC-MS. *Parapemikir : Jurnal Ilmiah Farmasi*, *12*(3), 367. https://doi.org/10.30591/pjif.v12i3.5524

Sari, P. K. N., Zulkarnain, A. K., & Lukitaningsih, E. (2023). Evaluation of the Physical Properties and Anti-aging Microemulgel Sunscreen. *Tropical Journal of Natural Product Research*, *7*(February), 2414–2420.

Sarker, D. K. (2013). What is an emulsion? *Pharmaceutical Emulsions*, 15–48. https://doi.org/10.1002/9781118648384.ch2

Sedky, N. K., Abdel-Kader, N. M., Issa, M. Y., Abdelhady, M. M. M., Shamma, S. N., Bakowsky, U., & Fahmy, S. A. (2023). Co-Delivery of Ylang Ylang

UNIVERSITAS GADJAH MADA
STABILITAS DAN KARAKTERISTIK FISIKA EMULSI GEL MINYAK KENANGA (Cananga odorata) SEBAGAI ANTIAGING DAN IRITASI PRIMERNYA SECARA IN VIVO
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Oil of Cananga odorata and Oxaliplatin Using Intelligent pH-Sensitive Lipid-Based Nanovesicles for the Effective Treatment of Triple-Negative Breast Cancer. *International Journal of Molecular Sciences*, *24*(9). https://doi.org /10.3390/ijms24098392

Setiawan, F., Nurdianti, L., & Sri, N. (2021). Formulation and Effectivity of the Antioxidant Gel Preparation Containing Zeaxanthin As Anti Aging. *International Journal of Applied Pharmaceutics*, *13*(special issue 4), 152–156. https://doi.org/10.22159/IJAP.2021.V13S4.43846

Setiawan, P. A., Rahmawanty, D., & Sari, D. I. (2023). Formulasi dan Evaluasi Sifat Fisik Sediaan Serum Wajah Ekstrak Daun Singkong (Manihot esculenta) dengan Variasi Konsentrasi Xanthan Gum. *Jurnal Pharmascience*, *10*(2), 394. https://doi.org/10.20527/jps.v10i2.15214

Shahin, M., Abdel Hady, S., Hammad, M., & Mortada, N. (2011). Novel jojoba oil-based emulsion gel formulations for clotrimazole delivery. *AAPS PharmSciTech*, *12*(1), 239–247. https://doi.org/10.1208/s12249-011-9583-4

Sharmeen, J. B., Mahomoodally, F. M., Zengin, G., & Maggi, F. (2021). Essential oils as natural sources of fragrance compounds for cosmetics and cosme ceuticals. *Molecules*, *26*(3). https://doi.org/10.3390/molecules2603 0666

Shreya Shanbhag, Akshatha Nayak, Reema Narayan, U. Y. N. (2019). Anti-aging and sunscreens: Paradigm Shift in Cosmetics. *Advanced Pharmaceutical Bulletin*, *9*(3), 348–359. https://doi.org/10.15171/jcvtr.2015.24

Siramon, P., & Ohtani, Y. (2007). Antioxidative and antiradical activities of Eucalyptus camaldulensis leaf oils from Thailand. *Journal of Wood Science*, *53*(6), 498–504. https://doi.org/10.1007/s10086-007-0887-7

Sumule, A. (2020). Optimasi Carbopol 940 dan Gliserin dalam Formula Gel Lendir Bekicot (Achatina fulica Ferr) sebagai Antibakteri Staphylococcus aureus dengan Metode Simplex Lattice Design Optimization of Carbopol 940 and Glycerine in Snail (Achatina fulica Ferr) Mucus Gel . *Pharmaceutical Journal of Indonesia*, *17*(01), 108–117.

Sun, R., Fang, B., Lu, Y., & Du, W. (2017). *Rheology and Rheokinetics of Triethanolamine Modified Carboxymethyl Hydroxyethyl Cellulose*. *2691*

STABILITAS DAN KARAKTERISTIK FISIKA EMULSI GEL MINYAK KENANGA (Cananga odorata) SEBAGAI ANTIAGING
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Winarni, Prof. Dr. apt. Abdul Karim Zulkarnain, M.Si ; Prof. Dr.rer.nat. apt. Endang Lukitaningsih, M.Si
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

(June). https://doi.org/10.1080/01932691.2017.1339608

Supartono, G. W. P. S. (2014). Ekstraksi Minyak Kenanga (Cananga odorata) Untuk Pembuatan Skin Lotion Penolakan Serangga. *Ekstraksi Minyak Kenanga (Cananga Odorata) Untuk Pembuatan Skin Lotion Penolak Serangga.*, *37*(1), 114798.

Suryadewi, K. A. (2025). Optimasi Jumlah Karbopol 1 , 5 %, Triethanolamine , dan Air terhadap Sifat Fisik Emulgel Astaxanthin dan Ekstrak Wortel dan vitamin C (Sulastri dkk ., 2021). β-karoten merupakan senyawa karotenoid hidrokarbon. *OBAT: Jurnal Riset Ilmu Farmasi Dan Kesehatan*, *3*, 266–287. doi: https://doi.org/10.61132/obat.v3i4.1558

Tan, L. T. H., Lee, L. H., Yin, W. F., Chan, C. K., Abdul Kadir, H., Chan, K. G., & Goh, B. H. (2015). Traditional uses, phytochemistry, and bioactivities of Cananga odorata (ylang-ylang). *Evidence-Based Complementary and Alternative Medicine*, *2015*. https://doi.org/10.1155/2015/896314

Torrado, J. J., Anaya, B. J., Kara, A., Ongoren, B., Esteban-Ruiz, S., Laguna, A., Guillén, A., Saro, M. G., & Serrano, D. R. (2024). Unraveling the Impact of the Oil Phase on the Physicochemical Stability and Skin Permeability of Melatonin Gel Formulations. *Gels*, *10*(9). https://doi.org/10.3390/gels10090595

Utomo, A. R., Retnowati, R., & Juswono, U. P. (2013). Pengaruh konsentrasi minyak kenanga (Cananga odorata) terhadap aktivitasnya sebagai antiradikal bebas. *Kimia Student Journal*, *5*(2), 1–5. https://media.neliti.com/media/publications/245847-pengaruh-volume-minyak-kenanga-cananga-o-387610e6.pdf

Wang, Q., Zhang, H., Han, Y., Cui, Y., & Han, X. (2023). Study on the relationships between the oil HLB value and emulsion stabilization. *RSC Advances*, *13*(35), 24692–24698. https://doi.org/10.1039/d3ra04592g

Zhang, Z., Geng, Y., Wang, R., Yan, Z., Sun, M., Meng, S., Zhang, Y., Yang, H., Li, Y., & Zhu, Y. (2025). Fabrication of Thixotropic Polymeric Gel System and Its Gelation Mechanism. *Polymers*, *17*(17), 1–27. https://doi.org/10.3390/polym17172397

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Zilles, C., Duarte, L. P., Zimmer, A. R., Kulkamp-guerreiro, I. C., & Contri, R. V. (2023). *Nanoemulsion Containing Kojic Dipalmitate and Rosehip Oil : A Promising Formulation to Treat Melasma*. 1–16.