

## DAFTAR PUSTAKA

- Abid, A. R., Marciniak, B., Pędziński, T., & Shahid, M. (2017). Photo-stability and photo-sensitizing characterization of selected sunscreens' ingredients. *Journal of Photochemistry and Photobiology A: Chemistry*.
- Afonso, S., Horita, K., Sousa e Silva, J. P., Almeida, I. F., Amaral, M. H., Lobão, P. A., Costa, P. C., Miranda, M. S., Esteves da Silva, J. C. G., & Sousa Lobo, J. M. (2014). Photodegradation of avobenzene: Stabilization effect of antioxidants. *Journal of Photochemistry and Photobiology B: Biology*, *140*, 36–40.
- Angrish, A., Kumar, R., Chauhan, R., & Sharma, V. (2020). On the IR spectroscopy and chemometric based rapid and non-destructive method for the investigation of sunscreen stains: Application in forensic science. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, *242*, 118708.
- Aziz, H., Alif, A., Syukri, Safni, & Tetra, O. N. (2012). *Proses Primer Fotokimia* (2nd ed.). Universitas Andalas.
- Badan Pengawas Obat dan Makanan. (2020). *Peraturan Badan Pengawas Obat dan Makanan Nomor 30*.
- Bakry, A. M., Abbas, S., Ali, B., Majeed, H., Abouelwafa, M. Y., Mousa, A., & Liang, L. (2016). Microencapsulation of Oils: A Comprehensive Review of Benefits, Techniques, and Applications. *Comprehensive Reviews in Food Science and Food Safety*, *15*(1), 143–182.
- Barranco, A., Cotrino, J., Yubero, F., & González-Elipe, A. R. (2003). Oxygenated polymeric thin films deposited from toluene and oxygen by remote plasma enhanced chemical vapor deposition. *Journal of Vacuum Science & Technology A: Vacuum, Surfaces, and Films*, *21*(5), 1655–1664.

- Bawantari, N. M. Y. F. (2021). *Optimasi Katbopol 940 Dan Propilen Glikol Gel Antiflamasi Ekstrak Etanol Kulit Pisang Ambon*. Universitas Sanata Dharma Yogyakarta.
- Beasley, D. G., & Meyer, T. A. (2010). Characterization of the UVA protection provided by avobenzene, zinc oxide, and titanium dioxide in broad-spectrum sunscreen products. *American Journal of Clinical Dermatology*.
- Beladini, S., Susanto, A. B., & Ridlo, A. (2021). Karakteristik Krim Tabir Surya dari *Kappaphycus alvarezii* Doty 1985 (Florideophyceae : Solieriaceae). *Journal of Marine Research*, 10(3), 395–402.
- Berardesca, E., Zuberbier, T., Sanchez Viera, M., & Marinovich, M. (2019). Review of the safety of octocrylene used as an ultraviolet filter in cosmetics. *Journal of the European Academy of Dermatology and Venereology*, 33(S7), 25–33.
- Binks, B. P., Fletcher, P. D. I., Johnson, A. J., Marinopoulos, I., Crowther, J., & Thompson, M. A. (2017). How the sun protection factor (SPF) of sunscreen films change during solar irradiation. *Journal of Photochemistry and Photobiology A: Chemistry*, 333, 186–199.
- Bolton, J. R., Beck, S. E., & Linden, K. G. (2015). Protocol for the determination of fluence (UV dose) using a low-pressure or low-pressure high-output UV lamp in benchscale collimated beam ultraviolet experiments. *IUVA News*.
- Bonda, C. A., & Lott, D. (2016). Sunscreen Photostability. In *Principles and Practice of Photoprotection* (pp. 247–273). Springer International Publishing.
- Catalano, R., Masion, A., Ziarelli, F., Slomberg, D., Laisney, J., Unrine, J. M., Campos, A., & Labille, J. (2020). Optimizing the dispersion of nanoparticulate TiO<sub>2</sub>-based UV filters in a non-polar medium used in sunscreen formulations – The roles of surfactants and particle coatings. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 599, 124792.

- Chaudhuri, R. K., Ollengo, M. A., Singh, P., & Martincigh, B. S. (2017). 3-(3,4,5-Trimethoxybenzylidene)-2,4-pentanedione: Design of a novel photostabilizer with in vivo SPF boosting properties and its use in developing broad-spectrum sunscreen formulations. *International Journal of Cosmetic Science*, 39(1), 25–35.
- Chisvert, A., Pascual-Martí, M.-C., & Salvador, A. (2001). Determination of UV-filters in sunscreens by HPLC. *Fresenius' Journal of Analytical Chemistry*, 369(7–8), 638–641.
- Craig Bonda. (2009). Sunscreen Photostability 101. *HallStar Company*. [https://s3-us-west.amazonaws.com/drugbank/cite\\_this/attachments/files/000/000/103/original/SunscreenPhotostability101.pdf?1527110179](https://s3-us-west.amazonaws.com/drugbank/cite_this/attachments/files/000/000/103/original/SunscreenPhotostability101.pdf?1527110179)
- D’Orazio, J., Jarrett, S., Amaro-Ortiz, A., & Scott, T. (2013). UV Radiation and the Skin. *International Journal of Molecular Sciences*, 14(6), 12222–12248.
- Dewan Standarisasi Nasional. (1996). *Standar Nasional Indonesia Tabir Surya*.
- Donglikar, M. M., & Deore, S. L. (2016). Development and Evaluation of Herbal Sunscreen. *Pharmacognosy Journal*, 9(1), 83–97.
- Ebrahimzadeh, M. A., Enayatifard, R., Khalili, M., Ghaffarloo, M., Saedi, M., & Charati, J. Y. (2014). Correlation between sun protection factor and antioxidant activity, phenol and flavonoid contents of some medicinal plants. *Iranian Journal of Pharmaceutical Research*.
- Esdaille, B., & Cooper, S. M. (2012). Allergic contact dermatitis caused by polyester-8 (Polycrylene®) in a sunscreen moisturizer. *Contact Dermatitis*, 67(2), 105–
- Fiona Feng, Dennis Zlotnik, E. Z. (2018). *Photostabilisation: for safe, pleasant sunscreens*. <https://www.hallstarbeauty.com/webfoo/wpcontent/uploads/Photostabilisation-Article-Hallstar-Sun-Care>.

- Fitriana, E. N. (2007). *Formulasi Sediaan Sunscreen Ekstrak Rimpang Kunir Putih (Curcuma Mangga Val.) dengan Carbopol 940 sebagai Gelling Agent dan Sorbitol sebagai Humectant*. Universitas Sanata Dharma Yogyakarta.
- Geraldine, E. T., & Hastuti, E. D. (2018). Formulation Of Sunscreen Cream Of Parijoto Fruit Extract (*Medinilla Speciosa* Blume) and In Vitro Spf Value Test. *Jurnal Farmasi Sains Dan Komunitas*, 15(2), 92–98.
- Gonzalez, H., Tarras-Wahlberg, N., Strömdahl, B., Juzeniene, A., Moan, J., Larkö, O., Rosén, A., & Wennberg, A.-M. (2007). Photostability of commercial sunscreens upon sun exposure and irradiation by ultraviolet lamps. *BMC Dermatology*, 7(1), 1.
- HallStar Company. (n.d.-a). *SolaStay P1*.
- HallStar Company. (n.d.-b). *Solastay S1 (Ethylhexyl Methoxycrylene)*.
- HallStar Company. (2012). *Polycrylene*.
- Hanson, K. M., Gratton, E., & Bardeen, C. J. (2006). Sunscreen enhancement of UV-induced reactive oxygen species in the skin. *Free Radical Biology and Medicine*.
- Heckman, C. J., Chandler, R., Kloss, J. D., Benson, A., Rooney, D., Munshi, T., Darlow, S. D., Perlis, C., Manne, S. L., & Oslin, D. W. (2013). Minimal Erythema Dose (MED) Testing. *Journal of Visualized Experiments*, 75.
- Herzog, B., Wehrle, M., & Quass, K. (2009). Photostability of UV Absorber Systems in Sunscreens. *Photochemistry and Photobiology*, 85, 869–878.
- Hiller, J., Klotz, K., Meyer, S., Uter, W., Hof, K., Greiner, A., Göen, T., & Drexler, H. (2019). Systemic availability of lipophilic organic UV filters through dermal sunscreen exposure. *Environment International*, 132, 105068.

- Hübner, A. A., Sarruf, F. D., Oliveira, C. A., Neto, A. V., Fischer, D. C. H., Kato, E. T. M., Lourenço, F. R., Baby, A. R., & Bacchi, E. M. (2020). Safety and Photoprotective Efficacy of a Sunscreen System Based on Grape Pomace (*Vitis vinifera* L.) Phenolics from Winemaking. *Pharmaceutics*, 12(12), 1148.
- Jockusch, S., Bonda, C., & Hu, R. (2014). Avobenzone Photochemistry: Improving Photoprotection by Stabilizing Avobenzone with Ethylhexyl Methoxycrylene. *Monographic Supplement Series: Skin Care*, 9(2).
- Josephine Yauvira. (2018). *Formulasi dan Uji Aktivitas Nanoemulsi Avobenzone dan Oktil Metoksisinamat sebagai Tabir Surya*. Universitas Sumatera Utara.
- Kalangi, S. J. R. (2014). Histofisiologi Kulit. *Jurnal Biomedik (JBM)*, 5(3).
- Khan, M. A. (2018). Sun Protection Factor Determination Studies Of Some Sunscreen Formulations Used in Cosmetics for Their Selection. *Journal of Drug Delivery and Therapeutics*.
- Khan, M. A. (2020). Introduction. In *Handbook of UV Degradation and Stabilization* (pp. 1–8). Elsevier. <https://doi.org/10.1016/B978-1-927885-57-4.50004-8>
- Kockler, J., Oelgemöller, M., Robertson, S., & Glass, B. D. (2012). Photostability of sunscreens. In *Journal of Photochemistry and Photobiology C: Photochemistry Reviews*.
- Kockler, J., Robertson, S., Oelgemöller, M., Davies, M., Bowden, B., Brittain, H. G., & Glass, B. D. (2013). *Butyl Methoxy Dibenzoylmethane* (pp. 87–111).
- Kryczyk-Poprawa, A., Kwiecień, A., & Opoka, W. (2019). Photostability of Topical Agents Applied to the Skin: A Review. *Pharmaceutics*, 12(1), 10.
- Lionetti, N., & Rigano, L. (2017). The New Sunscreens among Formulation Strategy, Stability Issues, Changing Norms, Safety and Efficacy Evaluations. *Cosmetics*.

- Lukes, P., Clupek, M., Babicky, V., & Sunka, P. (2008). Ultraviolet radiation from the pulsed corona discharge in water. *Plasma Sources Science and Technology*, 17(2), 024012.
- Madikizela, L. M., Nkwentsha, N., Mlunguza, N. Y., & Mdluli, P. S. (2017). Physicochemical characterization and In vitro evaluation of the sun protection factor of cosmetic products made from natural clay material. In *South African Journal of Chemistry* (Vol. 70).
- Manikrao Donglikar, M., & Laxman Deore, S. (2016). Sunscreens: A review. *Pharmacognosy Journal*, 8(3), 171–179.
- Mendrok-Edinger, C. (2020). Focus Technology – Sunscreens. In *Handbook of UV Degradation and Stabilization* (pp. 413–432). Elsevier.
- Mohiuddin, A. (2019). Sunscreen and Suntan Preparations. *ARC Journal of Pharmaceutical Sciences*, 5(2).
- Moi, S., Hosamani, B., Kumar, K., Gunaga, S., Raghothama, S., & Gowd, K. H. (2021). Photochemical studies of new synthetic derivatives of avobenzone under sunlight using UV-spectroscopy. *Journal of Photochemistry and Photobiology A: Chemistry*, 420, 113488.
- Mori, S., & Wang, S. Q. (2021). Sunscreens. In *Comprehensive Dermatologic Drug Therapy* (pp. 565-575.e2). Elsevier.
- Moyal, D. D., & Fourtanier, A. M. (2008). Broad-spectrum sunscreens provide better protection from solar ultraviolet–simulated radiation and natural sunlight–induced immunosuppression in human beings. *Journal of the American Academy of Dermatology*, 58(5), S149–S154.
- Muliani. (2021). Waktu Berjemur Terbaik Guna Meningkatkan Vitamin D dalam Pencegahan Coronavirus Disease 2019 (Covid-19). *Jurnal Media Kesehatan*, 14(1), 66–74.

Nahas, A. F., Abdel-Malek, Z. A., Kohli, I., Braunberger, T. L., Lim, H. W., & Hamzavi, I. H. (2019). The potential role of antioxidants in mitigating skin hyperpigmentation resulting from ultraviolet and visible light-induced oxidative stress. *Photodermatology, Photoimmunology & Photomedicine*, 35(6), 420–428.

National Center for Biotechnology Information. (2022a). *Polycrylene*. National Library of Medicine (US). <https://chem.nlm.nih.gov/chemidplus/rn/862993-96-2>

National Center for Biotechnology Information. (2022b). *PubChem Compound Summary for CID 22571, Octocrylene*. National Library of Medicine (US). <https://pubchem.ncbi.nlm.nih.gov/compound/Octocrylene>

National Center for Biotechnology Information. (2022c). *PubChem Compound Summary for CID 51040 avobenzone*. National Library of Medicine (US). <https://pubchem.ncbi.nlm.nih.gov/compound/Avobenzone>

National Center for Biotechnology Information. (2022d). *PubChem Compound Summary for CID 66661267, Solastay S1*. National Library of Medicine (US). <https://pubchem.ncbi.nlm.nih.gov/compound/Ethylhexylmethoxycrylene#section=Names-and-Identifiers>

Nie, Q., & Nie, S. (2019). High-performance liquid chromatography for food quality evaluation. In *Evaluation Technologies for Food Quality* (pp. 267–299). Elsevier.

Nobre, R., & Fonseca, A. P. (2016). Determination Of Sun Protection Factor By Uv-Vis Spectrophotometry. *Health Care : Current Reviews*, 4(2).

Norgard, J. (2007). The Electromagnetic Spectrum. In *National Association of Broadcasters Engineering Handbook* (pp. 3–10). Elsevier.

- Pérez-Sánchez, A., Barrajón-Catalán, E., Herranz-López, M., & Micol, V. (2018). Nutraceuticals for Skin Care: A Comprehensive Review of Human Clinical Studies. *Nutrients*, *10*(4), 403.
- Peruchi, L. M., & Rath, S. (2012). Development and application of a HPLC method for eight sunscreen agents in suncare products. *International Journal of Cosmetic Science*, *34*(3), 226–233.
- Polonini, H. C., Lopes, R. S., Beatriz, A., Gomes, R. S., Silva, A. O., Lima, R. V. de, Nunes, G. A., Brandão, M. A. F., Raposo, N. R. B., & Lima, D. P. de. (2014). Synthesis and Evaluation of Octocrylene-Inspired Compounds for Uv-Filter Activity. *Química Nova*.
- Purwaningsih, S., Salamah, E., & Adnin, M. N. (2015). Efek Fotoprotektif Krim Tabir Surya dengan Penambahan Karaginan Dan Buah Bakau Hitam (*Rhizopora Mucronata Lamk.*). *Jurnal Ilmu Dan Teknologi Kelautan Tropis*, *7*(1), 1–14.
- Puspitasari, A. D., & Wardhani, E. I. K. (2018). Evaluasi Karakteristik Fisika-Kimia dan Nilai SPF Lotion Tabir Surya Ekstrak Daun Kersen (*Muntingia Calabura L.*). *Jurnal Riset Teknologi Industri*, *12*(2), 150–158.
- Puspitosary, S. (2016). *Pengaruh Vitamin C Dan Paparan Sinar Uv Terhadap Efektivitas In Vitro Krim Tabir Surya Avobenzone dan Octyl Methoxycinnamate Dengan Kombinasi Vitamin E Sebagai Fotoprotektor*. Universitas Jember.
- Putri, Y. D., Kartamihardja, H., & Lisna, I. (2019). Formulasi dan Evaluasi Losion Tabir Surya Ekstrak Daun Stevia (*Stevia rebaudiana Bertoni M.*). *Jurnal Sains Farmasi & Klinis*, *6*(1), 32.
- Qian, Y., Zhong, X., Li, Y., & Qiu, X. (2017). Fabrication of uniform lignin colloidal spheres for developing natural broad-spectrum sunscreens with high sun protection factor. *Industrial Crops and Products*, *101*, 54–60.



- Rosita, M. R. E., Murrukmihadi, M., & Suwarmi. (2014). Pengaruh Kombinasi Oxybenzone dan Octyl Methoxycinnamate (Omc) pada Karakteristik Fisik dan Spf dalam Sediaan Krim Tabir Surya. *Farmaseutik*, 10.
- Setiati, S. (2008). Pengaruh Paparan Sinar Ultraviolet B Bersumber dari Sinar Matahari terhadap Konsentrasi Vitamin D (25(OH)D) dan Hormon Paratiroid pada Perempuan Usia Lanjut Indonesia. *Jurnal Kesehatan Masyarakat Nasional*, 2(4).
- Sitorus, M. (2009). *Spektroskopi*. Graha Ilmu.
- Syntheon. (2015). *Formulation Guidelines for Synoxyl HSS*. <https://docplayer.net/50731834-Formulation-guidelines-for-synoxyl-hss.html>
- Tampucci, S., Burgalassi, S., Chetoni, P., & Monti, D. (2017). Cutaneous Permeation and Penetration of Sunscreens: Formulation Strategies and In Vitro Methods. *Cosmetics*, 5(1), 1.
- Tonolli, P. N., Teixeira Tasso, T., & S. Baptista, M. (2020). Nanocosmetics for broadband light protection sun care products. In *Nanocosmetics* (pp. 185–203). Elsevier.
- Vallejo, J. J., MEesa, M., & Gallardo, C. (2011). *Evaluation of the avobenzone photostability in solvents used in cosmetic formulations*. 18, 63–71.
- Wahyud, A. F. (2018). *Hubungan Intensitas Paparan Sinar Matahari dengan Kadar Serum 25(OH)D pada Pasien Osteoarthritis di Kpkm Reni Jaya*. Fakultas Kedokteran Universitas Islam Negeri Syarif Hidayatullah.
- Wang, S. Q., & Lim, H. W. (2016). Principles and practice of photoprotection. *Principles and Practice of Photoprotection*, 1–487.
- Widsten, P. (2020). Lignin-Based Sunscreens—State-of-the-Art, Prospects and Challenges. *Cosmetics*, 7(4), 85.

Wiweka Adi Pratama, & Zulkarnain, A. K. (2015). *Uji Spf In Vitro dan Sifat Fisik Beberapa Produk Tabir Surya Yang Beredar Di Pasaran*. Fakultas Farmasi Ugm Yogyakarta.

Wypych, G. (Ed.). (2020a). Mechanisms of UV Stabilization. In *Handbook of UV Degradation and Stabilization* (pp. 37–71). Elsevier.

Wypych, G. (Ed.). (2020b). UV Stabilizers. In *Handbook of UV Degradation and Stabilization* (pp. 73–149). Elsevier.

Xiongfeng, H., Lvye, L., Qun, X., & Rohrer, J. (2016). *Determination of Sunscreen Agents in Sunscreen Cream*.

Zainuddin, S. (2016). *Formulasi Uji Mutu Fisik Aktivitas Krim Kombinasi Ekstrak Herba Pegagan (Centella Asiatica L.) dan Minyak Zaitun Sebagai Tabir Surya Secara In Vitro*. Universitas Setia Budi.

