

DAFTAR PUSTAKA

1. Lapeer h. Hypomelanosis and hypermelanosis. In: fitzspatrick's dermatology in general medicine.8th ed. New york; 2012. P. 819
2. Lee SY, Baek N, Nam TG. Natural, semisynthetic and synthetic tyrosinase inhibitors. *J Enzyme Inhib Med Chem*. 2016;31(1):1–13.
3. Baumann L, Saghari S. Skin pigmentation and pigmentation disorder. In: Baumann L, Saghari S, Weisberg E, editors. *Cosmetic Dermatology and Practice*. 2009. p. 98–108.
4. Zolghadri S, Bahrami A, Hassan KM, Munoz J, Garcia MF, Garcia CF, et al. A comprehensive review on tyrosinase inhibitors. *J Enzyme Inhib Med Chem*. 2019;34(1):279–309.
5. Pillaiyar T, Manickam M, Namasivayam V. Skin whitening agents: medicinal chemistry perspective of tyrosinase inhibitors. *J Enzyme Inhib Med Chem*. 2017 Jan 18;32(1):403–25.
6. Jiang j, Akinseye o, Pandya ag. International journal of women's dermatology the effect of melasma on self-esteem : a pilot study. *Int j women's dermatology*. 2018;4(1):38–42.
7. Miot HA, Penna GDO, Ramos MC, Lúcia M, Penna F, Schmidt SM, et al. Profile of dermatological consultations in Brazil. *An Bras Dermatol*. 2018;93:916–28.
8. Mir MM, Jalali S. Prevalence of Skin Diseases: A Community Based Survey. *Int J Adv Med Sci*. 2018;3(12):3–5.
9. Mohammad A, Amin SS, Arif T, Dorjay K, Raj D, Bansal R. Hyperpigmented Skin Conditions: A Study Of Pattern and Prevalence from A Tertiary care hospital of North India. *Int J Curr Adv Res*. 2017;6(4):3562–5.
10. Asditya A, Sukanto H. Studi Retrospektif: Profil Pasien Melasma. *BIKKK*. 2017;29:220–8.
11. Jusuf KN. Pattern of pigmentation disorder in Cosmetic Dermatology Clinic H. Adam Malik General Hospital, Medan, 2012 – 2015. *J Gen Proced Dermatol Venereol Indones*. 2017;2(1):1-6.
12. Salim yessy F, Yenny SW, Lestari S. Insiden Melasma Di Poliklinik Kulit dan Kelamin RSUP Dr. M. Djamil Padang Tahun 2012-2015. *JKA*. 2018;7:1–2.
13. Yenny SW. Clinico-Epidemiological Features of Melasma : A Retrospective Study from Dermatology-Venereology Department of Education Center Hospital in West Sumatera , Indonesia. *Int J PharmTech Res*. 2020;13(04):388–92.
14. Chang T. Natural Melanogenesis Inhibitors Acting Through the Down Regulation of Tyrosinase Activity. *Materials (Basel)*. 2012;5:1661–85.
15. D'Mello SAN, Finlay GJ, Baguley BC, Askarian-Amiri ME. Signaling pathways in melanogenesis. *Int J Mol Sci*. 2016;17(7):1–18.
16. Huang HC, Chang SJ, Wu CY, Ke HJ, Chang TM. Shogaol inhibits - MSH-induced melanogenesis through the acceleration of ERK and PI3K/Akt-mediated MITF degradation. *Biomed Res Int*. 2014;2014:4–10.

17. Sarkar R, Chugh S, Garg VK. Newer and upcoming therapies for melasma. *Indian J Dermatol Lepr.* 2012;78(4):417–28.
18. Sarkar R, Arora P, Garg KV. Cosmeceuticals for Hyperpigmentation: What is Available? *J Cutan Aesthet Surg.* 2013;6(1):4–12.
19. Draelos ZD. The Art and Science of New Advances in Cosmeceuticals. *Clin Plast Surg.* 2011;38:397–407.
20. Charissa M, Djajadisastra J, Elya B. Uji Aktivitas Antioksidan dan Penghambatan Tirosinase serta Uji Manfaat Gel Ekstrak Kulit Batang Taya (*Nauclea subdita*) terhadap Kulit. *JKI.* 2017;6(2):98–107.
21. Kaur H, Nagpal M, Aggarwal G. Journal of Drug Delivery and Therapeutics Potential benefits of phytochemicals for treatment of hyperpigmentation. *J Drug Deliv Ther.* 2019;9(2):420–7.
22. Pillaiyar T, Namasivayam V, Manickam M, Jung SH. Inhibitors of Melanogenesis: An Updated Review. *J Med Chem.* 2018;61(17):7395–418.
23. Sato K, Toriyama M. Depigmenting Effect of Catechins. *Molecules.* 2009;14:4425–32.
24. Ko RK, Kim GO, Hyun CG, Jung DS, Lee NH. Compounds with Tyrosinase Inhibition, Elastase Inhibition and DPPH Radical Scavenging Activities from the Branches of *Distylium racemosum* Sieb .et Zucc. *Phyther Res.* 2011;25:1451–6.
25. Ali A, Akhtar N, Khan MS. In vivo evaluation: the effects of a cream containing Acacia bark extract on skin melanin and erythema content. *Postep Dermatol Alergol.* 2012;29:369–72.
26. Hilmi HL, Rahayu D. Aktivitas Farmakologi Gambir (*Uncaria Gambir* Roxb.). *Farmaka.* 2011;16:134–41.
27. Andasuryani, Purwanto YA, Budiastra IW, Syamsu K. Prediksi kandungan katekin gambir (*Uncaria gambir roxb*) dengan Spektroskopi NIR. *J Teknol Ind Pertan.* 2014;24:43–52.
28. Amos. Kandungan katekin gambir sentra produksi di indonesia. *J Standarisasi.* 2010;12:149–55.
29. Aditya M, Ariyanti PR. Manfaat Gambir (*Uncaria gambir Roxb*) sebagai Antioksidan Benefits of Gambir (*Uncaria gambir Roxb*) as Antioxidant. *Majority.* 2016;5:129–33.
30. Musdja Y. Antioxidant Activity of Catechins Iisolate of *Uncaria Gambier roxb* in Male Rats. *Int J Heal Life Sci.* 2018;4:34–46.
31. Anggraini T, Tai A, Yoshino T, Itani T. Antioxidative activity and catechin content of four kinds of *Uncaria gambir* extracts from West Sumatra, Indonesia. *African J Biochem Res.* 2011;5:33–8.
32. Burger P, Landreau A, Azoulay S, Michel T, Fernandez X. Skin Whitening Cosmetics: Feedback and Challenges in the Development of Natural Skin Lighteners. *Cosmetics.* 2016;3(4):36.
33. Oktaviana M. Pengaruh pemberian katekin gambir (*uncaria gambir roxb.*) Terhadap ekspresi gen enzim tirosinase pada cell line mouse melanoma b16f10. Universitas Andalas, Padang. 2020
34. Puspitasari P, Wiraguna AAGP, Pangkahila W. Krim ekstrak teh hijau 20% (*Camellia sinensis*) mencegah peningkatan jumlah melanin sama efektif dengan krim hidrokuinon 4% pada kulit marmut (*Cavia porcellus*)

- yang dipajan sinar ultraviolet B. *J Biomedik*. 2017;4(2):101–6.
35. Magdalena AB, Bardi S, Indriyanti W, Maelaningsih FS. Formulasi Krim Antihiperpigmentasi Ekstrak Kulit Buah Delima (*Punica granatum* L.). *IJPST*. 2016;1(3):1-9
 36. Irsyad M. Pengaruh penambahan ekstrak gambir (*Uncaria gambir*, roxb) terhadap karakteristik skin lotion. Universitas Andalas, Padang; k2019
 37. Liony, B. Pengaruh Penambahan Ekstrak Gambir terhadap Sifat Fisik dan pada Hasil Jadi Sediaan Krim. Universitas Negeri Surabaya. 2013
 38. Nakamura K, Yoshikawa N, Yamaguchi Y. Characterization of mouse melanoma cell lines by their mortal malignancy using an experimental metastatic model. *Life Sci*. 2002;70:791–8.
 39. Hindritiani R, Dhianawaty D, Sujatno M, Sutedja E. Penurunan Aktivitas Tirosinase dan Jumlah Melanin oleh Fraksi Etil Asetat Buah Malaka (*Phyllanthus emblica*) pada Mouse Melanoma B16 Cell-Line Reduction of Tyrosinase Activity and Melanin Amount by Ethyl Acetate Fraction from Malaka (*Phyllanthus emblica*). *MKB*. 2013;45(38):118–24.
 40. Villareal MO, Han J, Yamada P, Shigemori H, Isoda H. Hirseins inhibit melanogenesis by regulating the gene expressions of MITF and melanogenesis enzymes. *Exp Dermatol*. 2009;19:450–7.
 41. Kumar KJS, Yang J, Chu F, Chang S, Wang S. Lucidone, a Novel Melanin Inhibitor from the Fruit of *Lindera erythrocarpa* Makino. *Phyther Res*. 2010;1165:1158–65.
 42. Xie S, Chen Z. Down-Regulation of Melanin Synthesis and Transfer by Paeonol and Its Mechanisms. *Am Chinese Med*. 2007;35:139–51.
 43. Bu J, Chen Z, Zhou W, Fu Y, Li L, Li C. Inhibition of MITF and Tyrosinase by Paeonol-Stimulated JNK / SAPK to Reduction of Phosphorylated CREB. *Am J Chin Med*. 2008;36(2):245–63.
 44. Lee Y, Kim H, Lee KJ, Jeon HW, Cui S, Lee YM, et al. Inhibitory effect of glyceollin isolated from soybean against melanogenesis in B16 melanoma cells. *MBM Rep*. 2010;1:461–7.
 45. Cho M, Ryu M, Jeong Y, Chung Y, Kim D, Cho H, et al. Cardamonin suppresses melanogenesis by inhibition of Wnt/b-catenin signaling. *Biochem Biophys Res Commun*. 2009;390(3):500–5.
 46. Molina FGA, Uñoz JLM, Arón R V, Ópez JNRO. A Review on Spectrophotometric Methods for Measuring the Monophenolase and Diphenolase Activities of Tyrosinase. *J Agric Food Chem*. 2007;55:9739–49.
 47. Carter M, Shieh J. Cell Culture Technique. In: *Guide to Research Techniques in Neuroscience*. 2nd ed. 2015. p. 295–310.
 48. Juwita NK, Djajadisastra J. Uji penghambatan tirosinase yang mengandung ekstrak kulit batang nangka (*Artocarpus heterophyllus*). *Maj Ilmu Kefarmasian*. 2011;8(3):127–40.
 49. Hastiningsih I. Krim ekstrak etanol kulit batang pohon nangka (*Artocarpus heterophyllus*) sama efektifnya dengan krim hidrokuinon dalam mencegah peningkatan jumlah melanin pada kulit marmut (*Cavia porcellus*) yang dipapar sinar UV B. Universitas Udayana, Bali ; 2015.

50. Oktaviana M, Yenny SW. Tinjauan Pustaka Perkembangan Penggunaan Kosmeseutikal Herbal Pada Terapi Melasma. *J Kesehat Andalas*. 2019;8(3):717–25.
51. Wiraguna AAGP. Krim ekstrak etanol biji mengkudu (*Morinda citrifolia*) sama efektifnya dengan krim hidrokuinon dalam mencegah peningkatan jumlah melanin kulit marmut (*Cavia porcellus*) yang dipapar sinar ultraviolet B. *J e-Biomedik*. 2017;5(1):1–6.
52. Parveen N, Kamal Z, Ali A, Ali AS. Microarray as high throughput tool for tyrosinase gene expression analysis. *MOJ Proteomics Bioinform*. 2017;6:250–3.
53. Battyani Z, Xerri L, Hassoun J, Bonerandi J-J, Grob J-J. Tyrosinase Gene Expression in Human Tissues. *Pigment Cell Res*. 1993;6(6):400–5.
54. Barber RD, Harmer DW, Coleman RA, Clark BJ. GAPDH as a housekeeping gene: Analysis of GAPDH mRNA expression in a panel of 72 human tissues. *Physiol Genomics*. 2005;21(March 2005):389–95.
55. De Assis LVM, Moraes MN, da Silveira Cruz-Machado S, Castrucci AML. The effect of white light on normal and malignant murine melanocytes: A link between opsins, clock genes, and melanogenesis. *Biochim Biophys Acta - Mol Cell Res*. 2016;1863(6):1119–33.
56. Isnawati A, Raini M, Sampurno OD, Mutiatikum D, Widowati L, Gitawati R. Karakterisasi Tiga Jenis Ekstrak Gambir Dari Sumatera Barat. *Bul Penelit Kesehat*. 2012;40:201–8.
57. Rahmawati N, Bakhtiar A, Putra P. Isolasi Katekin dari Gambir (*Uncaria gambir* (Hunter) Roxb) untuk Sediaan Farmasi dan Kosmetik. *J Penelit Farm Indones*. 2012;1:6–10.
58. Nasution AH, Asmarantaka RW, Lukman M Baga. Efisiensi Pemasaran Gambir di Kabupaten Lima Puluh Kota, Sumatera Barat. *BILP*. 2015;221–39.
59. Hurst WJ, Krake SH, Bergmeier SC, Payne MJ, Miller KB, Stuart DA. Impact of fermentation, drying, roasting and Dutch processing on flavan-3-ol stereochemistry in cacao beans and cocoa ingredients. *Chem Cent J*. 2011;5:1–8.
60. Yeni Gu, Syamsu K, Mardiyanti E, Muchtar H. Penentuan Teknologi Proses Pembuatan Gambir Murni dan Katekin Terstandar dari Gambir Asalan. *JLI*. 2017;7:1–10.
61. Donna D, Damanik P, Surbakti N, Hasibuan R. Ekstraksi Katekin dari Daun Gambir (*Uncaria gambir roxb*) dengan Metode Maserasi. *JTK USU*.
62. Sazwi NN, Nalina T, Haji Z, Rahim A. Antioxidant and cytoprotective activities of Piper betle, Areca catechu, *Uncaria gambir* and betel quid with and without calcium hydroxide. *Complement Altern Med*. 2013;13:1–12.
63. Kim DS, Park SH, Kwon SB, Li K, Youn SW, Park KC. Epigallocatechin-3-gallate and hinokitiol reduce melanin synthesis via decreased MITF production. *Arch Pharm Res*. 2004;27(3):334–9.
64. Ni Z, Mu Y, O. G. Treatment of melasma with Pycnogenol®. *Phyther Res*. 2002;16(6):567–71.
65. Muddathir AM, Yamauchi K, Batubara I, Mohieldin EAM, Mitsunaga T. South African Journal of Botany Anti-tyrosinase, total phenolic content

- and antioxidant activity of selected Sudanese medicinal plants. *South African J Bot.* 2017;109:9–15.
66. Kim YC, Choi SY, Park EY. Anti-melanogenic effects of black, green, and white tea extracts on immortalized melanocytes. *J Vet Sci.* 2015;16(2):135–43.
 67. Zhang X, Li J, Li Y, Liu Z, Lin Y, Huang J. Anti melanogenic effect of epigallocatechin-3-gallate (EGCG), epicatechin -3-gallate (ECG) and galocatechin-3-gallate 9GCG) via down regulation of cAMP/CREB?MITF signaling pathway in B16F10 melanoma cells. *Fitoterapia.* 2020;1:104634.
 68. Reygaert WC. Green Tea Catechins: Their Use in Treating and Preventing Infectious Diseases. *Biomed Res Int.* 2018;2018:1–9.
 69. Park J, Chung H, Bang SH, Han A-R, Seo E-K, Chang SE, et al. (2015) (E)-4-(3,4-Dimethoxyphenyl)but-3-en-1-ol Enhances Melanogenesis through Increasing Upstream Stimulating Factor-1-Mediated Tyrosinase Expression. *PLoS ONE* 10(11): e0141988
 70. Merysia M, Pangkahila W. Cream of leaf pare extract (momordica caharantia l) 4% takes the improvement of effective melanin numbers with 4% hydroquinon cream on marmut skin (cavia porcellus) heart which uses uvb ultraviolet light. *Indonesian Journal of Anti-Aging Medicine.* 2018 : 24-27
 71. Lee, T. H., Seo, J. O., Baek, S. H., Kim, S. Y. 2014. Inhibitory effects of resveratrol on melanin synthesis in ultraviolet B-induced pigmentation in guinea pig skin. *Biomolecules and Therapeutics*, 2014.22(1), pp. 35–40.
 72. Giantari, I. W. I. Prayoga N. P. L. Laksmiani. Aktivitas Agen Pencerah Kulit Dari Katekin Secara *In Silico*. *Jurnal kimia (journal of chemistry)* 2019: 13 (2), 196-200.
 73. Laksmiani E. The activity of avocado (*Persea americana* Mill) seed extract containing catechin as a skin lightening agent. *J Pharm Pharmacogn Res.* 2020 8(5) : 451
 74. Idana F. Krim ekstrak daun pegagan (*Centella asiatica*) menghambat peningkatan ekspresi MITF (*Microphthalmia Transcription Factor*) dan jumlah melanin kulit marmut yang dipapar sinar UVB. Universitas Udayana. 2021
 75. Prabowo AO. Pemberian krim ekstrak etanol daun asam jawa (*Tamarindus indica*) 3 % menghambat peningkatan ekspresi enzim tirosinase dari jumlah melanin pada kulit marmut yang dipapar sinar UVB. Universitas Udayana. 2021

