

DAFTAR PUSTAKA

- Adriani, A., Noorhamdani, N., Ardyati, T., Winarsih, S. (2022). Non-targeted screening with LC-HRMS and In-Silico Study on Diabetic activity of ethyl acetate extract of Sanrego (*Lunasia amara* Blanco). *Research Journal of Pharmacy and Technology*; 15(3), 1077-1084.
- Adystiani, R. (2011). Riset Membuktikan, Penuaan Kulit Dimulai dari Usia 20-an. *Tabloid Bintang*. <http://archive.tabloidbintang.com/gaya-hidup/cantik-asehat/15042-ri-set-membuktikan-penuaan-kulit-dimulai-dari-usia20-an.html>. diakses pada 10 Maret 2020.
- Alves, G.A.D., de Souza, R.O., Rogez, H.L.G., Masaki, H., Fonseca, M.J.V. (2019). *Cecropia obtusa* Extract And Chlorogenic Acid Exhibit Anti Aging Effect In Human Fibroblasts And Keratinocytes Cells Exposed To UV Radiation. *PLoS ONE*, 5, 1-14.
- Annisa, V. (2020). Review Artikel : Metode untuk Meningkatkan Absorpsi Obat Transdermal. *J. Islamic Pharm*, 5(1), 18 -27.
- Ansel, H., Allen, L., Popovich, N. (2011). *Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems*, 9th Edition, Lippincott Williams & Wilkins, Baltimore.
- Anshori, A.M., Wiraguna, A.A.G.P. (2017). Pemberian Oral Ekstrak Kulit Buah Lemon (*Citrus lemon*) Menghambat Peningkatan Ekspresi MMP-1 (Matrix Metaloproteinase-1) dan Penurunan Jumlah Kolagen Pada Tikus Putih Galur Wistar Jantan (*Rattus norvegicus*) Yang Dipajan Sinar UV-B. *Jurnal E-Biomedik(EBm)*, 5(1), 1–5.
- Balupillai, A., Million, H., Widowati, W., Prasad, R.N., Ramasamy, K., Muthusamy, G., Shanmugham, M., Govindasamy, K., Gunaseelan, S. (2015). Caffeic Acid Inhibits UVB-induced Inflammation and Photocarcinogenesis Through Activation of Peroxisome Proliferator-activated Receptor- γ in Mouse Skin. *Photochem. Photobiol.*, 91, 1458–146.
- Bendary, E., Francis, R. R., Ali, H. M. G., Sarwat, M. I., El Hady, S. (2013). Antioxidant And Structure–Activity Relationships (SARs) Of Some Phenolic And Anilines Compounds. *Annals of Agricultural Sciences*, 58(2), 173–181.
- Bhutda, S., Surve, M. V., Anil, A., Kamath, K., Singh, N., Modi, D., Banerjee, A. (2017). Histochemical Staining of Collagen and Identification of Its Subtypes by Picrosirius Red Dye in Mouse Reproductive Tissues. *Bio-protocol*, 7(21), e2592.
- Bitchagno, G.T.M., Koffi, J.G., Simo, I.K., Kagho D.U.K., Ngouela A.S., Lenta

- B.N., Sewald, N. (2021). LC-ToF-ESI-MS patterns of hirsutinolide-like sesquiterpenoids present in the *Elephantopus mollis* Kunth extract and chemophenetic significance of its chemical constituents. *Molecules*, 26(16), 4810.
- Bich Ngoc, T. T., Hoai Nga, N. T., My Trinh, N. T., Thuoc, T. L., Phuong Thao, D. T. (2020). *Elephantopus mollis* Kunth Extracts Induce Antiproliferation And Apoptosis In Human Lung Cancer And Myeloid Leukemia Cells. *Journal of Ethnopharmacology*, 263.
- Binic, I., Lazarevic, V., Ljubenovic, M., Mojsa, J., Sokolovic, D. (2013). Skin Ageing: Natural Weapons And Strategies. *Evidence-Based Complementary and Alternative Medicine*, 2013 (827248).
- Burke, K. E. (2018). Mechanisms Of Aging And Development : A New Understanding Of Environmental Damage To The Skin And Prevention With Topical Antioxidants. *Mechanisms of Ageing and Development*, 172, 123-130.
- But, P. P. H., Hon, P. M., Cao, H., & Che, C. T. (1996). A New Sesquiterpene Lactone From *Elephantopus mollis*. *Planta Medica*, 62(5), 474–476.
- Campone, L., Celano, R., Rizzo, S., Piccinelli, A. L., Rastrelli, L., Russo, M. (2020). Development of an Enriched Polyphenol (Natural Antioxidant) Extract from Orange Juice (*Citrus sinensis*) by Adsorption on Macroporous Resins. *Journal of Food Quality*, 2020(1251957), 1–9.
- Cavinato, M., Waltenberger, B., Baraldo, G., Grade, C. V. C., Stuppner, H., Jansen-Dürr, P. (2017). Plant extracts and natural compounds used against UVB-induced photoaging. *Biogerontology*. Springer Netherlands.
- Cho, Y. H., Bahuguna, A., Kim, H. H., Kim, D. in, Kim, H. J., Yu, J. (2017). Potential Effect Of Compounds Isolated From *Coffea arabica* Against UV-B Induced Skin Damage By Protecting Fibroblast Cells. *Journal of Photochemistry and Photobiology Biology*, 174, 323–332.
- Chuang HM, Chen YS, Harn HJ. (2019). The Versatile Role of Matrix Metalloproteinase for the Diverse Results of Fibrosis Treatment. *Molecules*, 24(22), 4188.
- Citrawan, A., Oki, S., Hendra, G., Sudigdo, A., Ronny, L., Achadiyani., Sunaryati, S. (2019). Pengaruh Krim Asam Traneksamat terhadap Pembentukan Keriput dan Kadar Matriks Metaloproteinaise-1 pada Mencit (*Mus Musculus*) Jantan Galur Balb/c yang dipajjar Sinar Ultraviolet B. *Jurnal Farmasi Klinik*, 8(2), 121-128.
- Dachriyanus. (2004). *Analisis Struktur Senyawa Organik Secara Spektroskopi*, Padang : Andalas University Press, 71-108.
- Damayanti. (2017). Penuaan Kulit dan Perawatan Kulit Dasar pada Usia Lanjut (Skin Aging and Basic Skin Care in Elderly). *Berkala Ilmu Kesehatan Kulit dan*

Kelamin – Periodical of Dermatology and Venereology, 29 (1), 73–80.

- Działo, M., Mierziak, J., Korzun, U., Preisner, M., Szopa, J., Kulma, A. (2016). The Potential Of Plant Phenolics In Prevention And Therapy Of Skin Disorders. *International Journal of Molecular Sciences*, 17(2), 1–41.
- Eichner, A., Stahlberg, S., Sonnenberger, S., Lange, S., Dobner, B., Ostermann, A., Schrader, T. E., Haub, T., Schroeter, A., Huster, D., Neubert, R. H. H. (2017). Influence Of The Penetration Enhancer Isopropyl Myristate On Stratum Corneum Lipid Model Membranes Revealed By Neutron Diffraction And ²H NMR Experiments. *Biochimica et Biophysica Acta - Biomembranes*, 1859(5), 745–755.
- Fatmawaty, Anggreni, Ni, Fadhil, N., Prasasty, V. (2019). Potential In Vitro and In Vivo Antioxidant Activities from *Piper Crocatum* and *Persea Americana* Leaf Extracts. *Biomedical and Pharmacology Journal*. 12(20), 1-10.
- Fernando, S I. P., Kim, M., Son, K. T., Jeong, Y., Jeon, Y. J. (2016). Antioxidant Activity of Marine Algal Polyphenolic Compounds: A Mechanistic Approach. *Journal of Medicinal Food*, 19 (7), 615–628.
- Fisher, G. J., Datta, S., Wang, Z. Q., Li, X. Y., Quan, T., Chung, J. H., Voorhees, J. J. (2000). c-Jun-dependent Inhibition Of Cutaneous Procollagen Transcription Following Ultraviolet Irradiation Is Reversed By All-Trans Retinoic Acid. *Journal of Clinical Investigation*, 106(5), 663–670.
- Fisher, G. J., Kang, S., Varani, J., Bata-Csorgo, Z., Wan, Y., Datta, S., Voorhees, J. J. (2002). Mechanisms of photoaging and chronological skin aging. *Archives of Dermatology*, 138(11), 1462–1470.
- Fraisse, D., Felgines C., Texier O., and Lamaison J. (2011). Caffeoyl Derivatives: Major Antioxidant Compounds of Some Wild Herbs of the Asteraceae Family, *Food and Nutrition Sciences*, 2(3), 181-192.
- Frantz, C., Stewart, K. M., Weaver, V. M. (2010). The Extracellular Matrix At A Glance. *Journal of Cell Science*, 123(24), 4195–4200.
- Fuchino, H., Koide, T., Takahashi, M., Sekita, S., Satake, M. (2001). New Sesquiterpene Lactones From *Elephantopus mollis* And Their Leishmanicidal Activities. *Planta Medica*, 67(7), 647–653.
- Garcia, L.M., Exposito, R.M., de Cordova, M.L.F., Martinez, E.J.L. (2018). Determination of the Phenolic Profile and Antioxidant Activity of Leaves and Fruits of Spanish *Quercus coccifera*. 2018(2573270), 1-9.
- Garg, C., Khurana, P., and Garg, M. (2017). Molecular Mechanisms Of Skin Photoaging And Plant Inhibitors. *International Journal of Green Pharmacy*, 11(2), 217–232.

- Geoffrey, K., Mwangi, A. N., & Maru, S. M. (2019). Sunscreen products: Rationale For Use, Formulation Development And Regulatory Considerations. *Saudi Pharmaceutical Journal*, 27, 1009–1018.
- Ghozali I., (2016). *Aplikasi Analisis Multivariat Dengan Program IBM SPSS 23*, Edisi 8, Semarang : Badan Penerbit Universitas Diponegoro.
- Giannandrea, M., and Parks, W. C. (2014). Diverse Functions Of Matrix Metalloproteinases During Fibrosis. *DMM Disease Models and Mechanisms*, 7(2), 193–203.
- Girsang, E., Lister, I.N.E., Ginting, C.N., Sholihah, I.A., Raif M.A. and Kunardi S. (2020). Antioxidant And Anti-aging Activity Of Rutin And Caffeic Acid, *Pharmaciana*, 10 (2), 147 – 156.
- Gogoi, P., Saikia, M. D., Dutta, N. N., Rao, P. G. (2010). Adsorption Affinity Of Tea Catechins Onto Polymeric Resins: Interpretation From Molecular Orbital Theory. *Biochemical Engineering Journal*, 52(2–3), 144–150.
- Gugleva V, Ivanova N, Sotirova Y, Andonova V. (2021), Dermal Drug Delivery of Phytochemicals with Phenolic Structure via Lipid-Based Nanotechnologies. *Pharmaceuticals*, 14(9),837-845
- Hano, C. (2020). Antioxidant and Anti-aging Action of Plant Polyphenols. *MDPI Special issue*.
- Hasegawa, K., Furuya, R., Mizuno, H., Umishio, K., Suetsugu, M., Sato, K. (2010). Inhibitory Effect Of *Elephantopus mollis* H.B. And K. Extract On Melanogenesis In B16 Murine Melanoma Cells By Downregulating Microphthalmia-Associated Transcription Factor Expression. *Bioscience, Biotechnology and Biochemistry*, 74 (9), 1908–1912.
- He, Y. Zh., Moqbel, S. A. A., Xu, L., Ran, J., Ma, C., Xu, Wu, L. (2019). Costunolide Inhibits Matrix Metalloproteinases Expression And Osteoarthritis Via the NF- κ B and Wnt/ β -catenin signaling pathways. *Molecular Medicine Reports*, 20(1), 312–322.
- Isadiartuti, D., Rosita N., Hendradi E., Putri FFD., Magdalena F. (2021). Solubility and Partition Coefficient of Salicylamide in Various pH Buffer Solutions, *Indones. J. Chem.*, 21 (5), 1263 – 1270.
- Jeon, J., Sung, J., Lee, H., Kim, Y., Jeong, H. S., Lee, J. (2018). Protective Activity Of Caffeic Acid And Sinapic Acid Against UVB-Induced Photoaging In Human Fibroblasts. *Journal of Food Biochemistry*, e12701.
- Kabiru, A. (2013). *Elephantopus Species : Traditional Uses , Pharmacological Actions and Chemical Composition . Advances in Life Science and Technology* 15, 6–14.

- Kaur, A., Thatai, P., Sapra, B. (2014). Need of UV Protection And Evaluation Of Efficacy Of Sunscreens. *J Cosmet Sci.*;65(5), 315–45.
- Khan, F.A., Maalik A., Murtaza G., (2016), Inhibitory Mechanism Against Oxidative Stress of Caffeic Acid, *Journal of Food and Drug Analysis*, 24 (4), 695-702.
- Kim, S. B., Kang, O. H., Joung, D. K., Mun, S. H., Seo, Y. S., Cha, M. R., Kwon, D. Y. (2013). Anti-inflammatory Effects Of Tectroside On UVB-induced HaCaT cells. *International Journal of Molecular Medicine*, 31(6), 1471–1476.
- Kim, S. Y., Kim, S. J., Lee, J. Y., Kim, W. G., Park, W. S., Sim, Y. C., Lee, S. J. (2004). Protective Effects of Dietary Soy Isoflavones against UV-Induced Skin-Aging in Hairless Mouse Model. *Journal of the American College of Nutrition*, 23(2), 157–162.
- Kolarsick, P. A. J., Kolarsick, M. A., Goodwin, C. (2011). Anatomy and Physiology of The Skin. *Oncology Nursing Society*, 3(4), 203–213.
- Komala, N. (2018). Use of OMI-AURA Satellite Data To Analyse The Characteristic of Ozone and UV Index in Indonesia. *The 9th Asia/Oceania Meteorological Satellite User's Conference*, 13-14.
- Korinth, G., Wellner, T., Schaller, K. H., & Drexler, H. (2012). Potential Of The Octanol–Water Partition Coefficient (logP) To Predict The Dermal Penetration Behaviour Of Amphiphilic Compounds In Aqueous Solutions. *Toxicology Letters*, 215(1), 49–53.
- Kostyuk, V., Potapovich, A., Albuhaydar, A. R., Mayer, W., De Luca, C., Korkina, L. (2018). Natural Substances for Prevention of Skin Photoaging: Screening Systems in the Development of Sunscreen and Rejuvenation Cosmetics. *Rejuvenation Research*, 21(2), 91–101.
- Kuete, V., Fokou, F. W., Karaosmanoğlu, O., Beng, V. P., Sivas, H. (2017). Cytotoxicity of The Metanol Extracts of *Elephantopus mollis*, *Kalanchoe crenata* and 4 other Cameroonian Medicinal Plants Towards Human Carcinoma cells. *BMC Complementary and Alternative Medicine*, 17(1), 1–9.
- Kusindarta, D. L., and Wihadmadyatami, H. (2018). The Role of Extracellular Matrix in Tissue Regeneration. *Intechopen*, Chapter 5(Issue regeneration), 65–73.
- Labuda, I., and Burns, F. (2014). Methods of Blocking Ultraviolet Radiation and Promoting Skin Growth Using Terpenes and Terpenoids. *Patent US2014/0348764 A1*.
- Lattouf R, Younes R, Lutomski D, Naaman N, Godeau G, Senni K, Changotade S.(2014). Picrosirius Red Staining: A Useful Tool To Appraise Collagen Networks In Normal And Pathological Tissues. *J Histochem Cytochem.*, 62(10),751-758.

- Li, H., Li, M., Wang, G., Shao, F., Chen, W., Xia, C., Liu, Z. (2016). EM23, A Natural Sesquiterpene Lactone From *Elephantopus mollis*, Induces Apoptosis In Human Myeloid Leukemia Cells Through Thioredoxin- And Reactive Oxygen Species-Mediated Signaling Pathways. *Frontiers in Pharmacology*, 7(3), 1–15.
- Li, R., Tao, M., Wu, T., Zhuo, Z., Pan, S., Xu, X. (2021). A Promising Strategy For Investigating The Anti-Aging Effect Of Natural Compounds: A Case Study Of Caffeoylquinic Acids, *Food Funct.*, 12(18), 8583-8593
- Liebel, F., Kaur, S., Ruvolo, E., Kollias, N., Southall, M. D. (2012). Irradiation Of Skin With Visible Light Induces Reactive Oxygen Species And Matrix-Degrading Enzymes. *Journal of Investigative Dermatology*, 132(7), 1901–1907.
- Luiz, J., Bispo V., Filho, ADC, Pinto, I., (2013). Evaluation of Chemical Constituents and Antioxidant Activity of Coconut Water (*Cocos nucifera* L.) and Caffeic Acid in Cell Culture. *Anais da Academia Brasileira de Ciencias*, 85 (4), 1235-1246.
- Magnani, C., Isaac, V. L. B., Correa, M. A., Salgado, H. R. N. (2014). Caffeic acid: A Review Of Its Potential Use In Medications And Cosmetics. *Analytical Methods*, 6(10), 3203–3210.
- Malinowska, M., Miroslaw, B., Sikora, E., Ogonowski, J., Wojtkiewicz, A. M., Szaleniec, M., Eris, I. (2019). New Lupeol Esters As Active Substances In The Treatment Of Skin Damage. *PLoS ONE*, 14(3), 1–15.
- Mauch, C., Krieg, T., Bauer, E. A. (1994). Role Of The Extracellular Matrix In The Degradation Of Connective Tissue. *Archives of Dermatological Research*, 287(1), 107–114.
- McKleroy, W., Lee, T. H., & Atabai, K. (2013). Always Cleave Up Your Mess: Targeting Collagen Degradation To Treat Tissue Fibrosis. *American Journal Of Physiology - Lung Cellular And Molecular Physiology*, 304(11), 709–721.
- Mirzaei S, Gholami MH, Zabolian A, Saleki H, Farahani MV, Hamzehlou S. (2021), Caffeic Acid and its Derivatives as Potential Modulators of Oncogenic Molecular Pathways: New Hope in the Fight Against Cancer. *Pharmacol Res.*, 171:105759.
- Mohiuddin, A. K. (2019). Skin Aging and Modern Age Anti-aging Strategies. *Global Journal of Medical Research*, 19(2), 15–60.
- Molyneux, P. (2004). The Use Of The Stable Free Radical diphenylpicryl- hydrazyl (DPPH) For Estimating Antioxidant Activity. *Songklanakarinn J. Sci. Technol.*, 26(2), 211–219.
- Mortazavi, S.A., and Aboofazeli, R. (2003). An Investigation into the Effect of Various Penetration Enhancers on Percutaneous Absorption of Piroxicam. *IJPR*, 2 (3), 135 -140.

- Muntiha, M. (2001). Teknik Pembuatan Preparat Dengan Pewarnaan Hematoksilin Dan Eosin (H & E). *Balai Penelitian Veteriner*, 156–163.
- Musyarifah, Z., & Agus, S. (2018). Proses Fiksasi pada Pemeriksaan Histopatologik. *Jurnal Kesehatan Andalas*, 7(3), 443-453.
- Nakyai, W., Saraphanchotiwtthaya, A., Viennet, C., Humbert, P., Viyoch, J. (2017). An In Vitro Model for Fibroblast Photoaging Comparing Single and Repeated UVA Irradiations. *Photochem Photobiol*, 93(6), 1462–1471.
- Obeagu, E. I. (2018). A Review on Free Radicals and Antioxidants. *Int. J. Curr. Res. Med. Sci.*, 4(2), 124–133.
- Okumura Y., Yamauchi H., Takayama S., Kato H., Kokubu M. 2005. Phototoxicity Study Of A Ketoprofen Poultice In Guinea Pigs. *J Toxicol Sci.*,30(1),19–28.
- Ooi, K. L., Muhammad, T. S. T., Tan, M. L., Sulaiman, S. F. (2011). Cytotoxic, Apoptotic And Anti- α -glucosidase Activities of 3,4-di-O-caffeoyl quinic acid, An Antioxidant Isolated From The Polyphenolic-Rich Extract Of *Elephantopus mollis* Kunth. *Journal of Ethnopharmacology*, 135(3), 685–695.
- Pakki, E., Rewa, M., Irma, N. (2019). Efektivitas Bahan Peningkat Penetrasi , Isopropil Miristat Dalam Krim Antioksidan Ekstrak Biji Kasumba Turate (*Carthamus tinctorius* L.). *Journal of Pharmaceutical and Medicinal Sciences*, 50 4(2), 44–50.
- Panich, U., Sittithumcharee, G., Rathviboon, N., Jirawatnotai, S. (2016). Ultraviolet Radiation-Induced Skin Aging: The Role of DNA Damage and Oxidative Stress in Epidermal Stem Cell Damage Mediated Skin Aging. *Stem Cells International*, 2016 (7370642) , 1–14.
- Park, C. H., Ahn, M. J., Hwang, G. S., An, S. E., Whang, W. K. (2016). Cosmeceutical Bioactivities Of Isolated Compounds From *Ligularia fischeri* Turcz leaves. *Applied Biological Chemistry*, 59(3), 485–494.
- Petruk, G., Giudice, R. Del, Rigano, M. M., Monti, D. M. (2018). Antioxidants From Plants Protect Against Skin Photoaging. *Oxidative Medicine and Cellular Longevity*, 2018 (1454936), 1-13.
- Philips, N., Auler, S., Hugo, R., Gonzalez, S. (2011). Beneficial regulation of matrix metalloproteinases for skin health. *Enzyme Research*, 2011(1), 1-10.
- Plants, U. (2000). *Elephantopus mollis* Taxonomy. National Plant Data Center, NRCS, USDA.
- Pluemsamran, T., Onkoksoong, T., Panich, U. (2012) Caffeic Acid And Ferulic Acid Inhibit UVA-induced Matrix metalloproteinase-1 Through Regulation of Antioxidant Defense System In Keratinocyte HaCaT cells. *Photochem. Photobiol.* 88, 961–968.

- Prasad, N. R., Jeyanthimala, K., Ramachandran, S. (2009). Caffeic Acid Modulates Ultraviolet Radiation-B Induced Oxidative Damage In Human Blood Lymphocytes. *Journal of Photochemistry and Photobiology*, 95(3), 196–203.
- Prasedya, E.S., Syafitri, S.M., Geraldine, B.A.F.D., Hamdin, C.D., Frediansyah, A., Miyake, M., Kobayashi, D., Hazama, A., Sunarpi, H. (2019). UVA Photoprotective Activity of Brown Macroalgae *Sargassum cristafolium*. *Biomedicines*. 7 (4), ID 77.
- Putra, D.P., (2016), Proses Produksi Fraksi Polar *Elephantopus mollis* Untuk Whitening Agent, P00201608529, LPPM Universitas Andalas. 2016.
- Quan, T., Qin, Z., Xia, W., Shao, Y., Voorhees, J. J., Fisher, G. J. (2009). Matrix-Degrading Metalloproteinases In Photoaging. *Journal of Investigative Dermatology Symposium Proceedings*, 14(1), 20–24.
- Ragasa, C. Y., Alimboyoguen, A. B., Shen, C.C. (2009). Antimicrobial Terpenoids from *Elephantopus mollis*. *NRCP Research Journal*, 10(1), 33–38.
- Ramos-Vara, J. A. (2005). Technical Aspects Of Immunohistochemistry. *Veterinary Pathology*, 42(4), 405–426.
- Raks, V., Al-Suod, H., Buszewski, B. (2018). Isolation, Separation, and Preconcentration of Biologically Active Compounds from Plant Matrices by Extraction Techniques. *Chromatographia*, 81 (2), 189–202.
- Rittié, L., and Fisher, G. J. (2002). UV-Light-Induced Signal Cascades And Skin Aging. *Ageing Research Reviews*, 1(4), 705–720.
- Sari, A., Lovadi, I., dan Linda, R. (2015). Pemanfaatan Tumbuhan Obat Pada Masyarakat Suku Dayak Jangkang Tanjung Di Desa Ribau Kecamatan Kapuas Kabupaten Sanggau. *Protobiont*, 4(2), 1–8.
- Sellors, J. and Smith P. (2011). *FT-IR Identification: the Expertise Required To Ensure Compliance*, *Pharmaceutical Technology Europe*, 23(9), 1-42.
- Serafini, M.R., Detoni, C.S., Menezes, P.S., Filho, R.N.P., Fortes, V.S., Vieira, M.J.F., Guterres, S.S., Araujo, A.A.S. (2014). UVA-UVB Photoprotective Activity of Tropical Formulations Containing *Morinda citrifolia* Extract. *BioMed Research International*, 2014 (ID 587819), 1-10.
- Sherma, J. (2010). Planar Chromatography. *Analytical Chemistry*, 82(12), 4895–4910.
- Shoab, M., Shah, I., Ali, N., Adhikari, A., Tahir, M. N., Shah, S. W. A., Umer, M. N. (2017). Sesquiterpene Lactone! A Promising Antioxidant, Anticancer And Moderate Antinociceptive Agent From *Artemisia macrocephala* jacquem. *BMC Complementary and Alternative Medicine*, 17(1), 1–11.
- Siddique, H. R., and Saleem, M. (2011). Beneficial Health Effects Of Lupeol

- Triterpene: A Review Of Preclinical Studies. *Life Sciences*, 88(7–8), 285–293.
- Syah, A. S., Sulaeman, S. M., and Pitopang, R. (2014). Jenis-Jenis Tumbuhan Suku Asteraceae Di Desa Mataue, Kawasan Taman Nasional Lore Lindu. *Online Journal of Natural Science*, 3(12), 297–312.
- Tabopda, T. K., Ngoupayo, J., Liu, J., Shaiq Ali, M., Khan, S. N., Ngadjui, B. T., Luu, B. (2008). Further Cytotoxic Sesquiterpene Lactones From *Elephantopus mollis* Kunth. *Chemical and Pharmaceutical Bulletin*, 56(2), 231–233.
- Tanaka, Y. T., Tanaka, K., Kojima, H., Hamada, T., Masutani, T., Tsuboi, M., Akao, Y. (2013). Cynaropicrin from *Cynara scolymus* L. Suppresses Photoaging Of Skin By Inhibiting The Transcription Activity Of Nuclear Factor-Kappa B. *Bioorganic and Medicinal Chemistry Letters*, 23(2), 518–523.
- Taofiq, O., Paramás, G.A., Barreiro, M. F. and Ferreir, I. (2017). Hydroxycinnamic Acids and Their Derivatives: Cosmeceutical Significance, Challenges and Future Perspectives, a Review , *Molecules*, 22(2), 281-290.
- Tošović, J., (2017), Spectroscopic Features Of Caffeic Acid: Theoretical study, *Kragujevac Journal of Science*, 39, 99-108
- Tsai, C. C., and Lin, C. C. (1998). Anti-inflammatory effects of Taiwan folk medicine “Teng-Khia-U” on Carrageenan- And Adjuvant-Induced Paw Edema In Rats. *Journal of Ethnopharmacology*, 64(1), 85–89.
- Tungmunnithum, D., Thongboonyou, A., Pholboon, A., and Yangsabai, A. (2018). Flavonoids and Other Phenolic Compounds from Medicinal Plants for Pharmaceutical and Medical Aspects: An Overview. *Medicines*, 5(3), 93-101.
- Wang, Y. H., and Lin, S. H. (2003). A Comparison Of The Adsorption Of Phenolic Compounds From Water In Column Systems Containing XAD Resins And Modified Clay. *Adsorption Science and Technology*, 21(9), 849–861.
- Wlaschek, M., Tantcheva-Poór, I., Naderi, L., Ma, W., Schneider, L. A., Razi-Wolf, Z., Scharffetter-Kochanek, K. (2001). Solar UV Irradiation And Dermal Photoaging. *Journal of Photochemistry and Photobiology B: Biology*, 63(1-3), 41–51.
- Won, Y. K., Ong, C. N., Shi, X., & Shen, H. M. (2004). Chemopreventive Activity Of Parthenolide Against UVB-induced Skin Cancer And Its Mechanisms. *Carcinogenesis*, 25(8), 1449–1458.
- Wu, Z.N., Zhang, Y.B., Chen, N.H., Li, M.J., Li, M.M., Tang, W., Wang, G.C. (2017). Sesquiterpene Lactones From *Elephantopus mollis* and Their Anti-inflammatory Activities. *Phytochemistry*, 137, 81–86.

- Xuan, S. H., Lee, N. H., & Park, S. N. (2019). Atractyligenin, A Terpenoid Isolated From Coffee Silverskin, Inhibits Cutaneous Photoaging. *Journal of Photochemistry and Photobiology*, 194(3), 166–173.
- Yaar, M., & Gilchrest, B. A. (2007). Photoageing: Mechanism, Prevention And Therapy. *British Journal of Dermatology*, 157(5), 874–887.
- Yenny, S. W., & Suryani, Y. E. (2020). Polyphenols as Natural Antioxidants in Skin Aging. *Sumatera Medical Journal*, 3(3), 1–8.
- Young, A.R., Claveau, J., Rossi, A.B. (2017). Ultraviolet Radiation and The Skin: Photobiology And Sunscreen Photoprotection. *Journal of the American Academy of Dermatology*, 76(3), 100–109.
- Yue, B. (2015). Biology of The Extracellular Matrix : An Overview. *J. Glaucoma*, 10(1), 1–7.
- Zhang, Q. W., Lin, L. G., & Ye, W. C. (2018). Techniques For Extraction And Isolation Of Natural Products: A Comprehensive Review. *Chinese Medicine (United Kingdom)*, 13(1), 1–26.

