

## REFERENCES

- Abirami, A., Nagarani, G., and Siddhuraju, P., 2014. In vitro antioxidant, anti-diabetic, cholinesterase and tyrosinase inhibitory potential of fresh juice from *Citrus hystrix* and *C. maxima* fruits. *Food Science and Human Wellness*, **3**: 16–25.
- Ansel, H., Allen, L.V., and Popovich, N., 2005. *Pharmaceutical Dosage Forms and Drug Delivery System*. Lippincott Williams and Wilkins, Philadelphia.
- Anonim, 1995, *Farmakope Indonesia*, Edisi IV, Direktorat Jenderal Pengawasan Obat dan Makanan Republik Indonesia, Departemen Kesehatan RI, Jakarta.
- Anonim, 2003, Peraturan Kepala Badan Pengawas Obat dan Makanan RI No. HK.00.05.4.1745 Tentang Kosmetik, Badan POM RI, Jakarta.
- Anonim, 2015, Guideline on Bioanalytical Method Validation, European Medicine Agency, United Kingdom.
- Anonim, 2016, Surat Edaran Kepala Badan Pengawas Obat dan Makanan RI No. HK.04.4.42.421.10.16.1888 Tentang Pengawet Propil Para-Hidroksibenzoat Dalam Obat Tradisional, Badan POM RI, Jakarta.
- Aqualon, 1999. NATROSOL hydroxyethylcellulose, a nonionic water-soluble polymer. *Phys. Chem. Prop.*
- Arias, B.A. and L. Ramon-Laca, 2005. Pharmacological properties of citrus and their ancient and medieval uses in the Mediterranean region. *Journal of Ethnopharmacology*, **97**: 89 – 95.
- Ashara, K.C., Paun, J.S., Soniwala, M.M., Chavada, J.R. and Mon, N.M., 2014. Micro-Emulsion Based Emulgel: A Novel Topical Drug Delivery System. *Asian Pacific Journal of Tropical Disease*, 4(Suppl 1): S27-S32.
- Azeem, A., Rizwan, M., Ahmad, F.J., Iqbal, Z., Khar, R.K., Aqil, M., *et al.*, 2009. Nanoemulsion Components Screening and Selection : a Technical Note. *AAPS PharmSciTech*, **10**:69-76
- Baumann, L. and Allemann, I., 2009. Antioxidants, in: Baumann, L., Saghari, S., dan Weisberg (Editor), *Cosmetic Dermatology Principles and Practice*. McGraw -Hill, New York, page. 292–311.
- Baumann, L. and Saghari, S., 2009. Photoaging, in : Baumann, L., Saghari, S., Weisberg, E. (Eds.), *Cosmetic Dermatology: Principles and Practice*, 2nd Ed. McGraw-Hill Professional, New York, page. 34–41.

- Budiman and Saraswati, 2007. *Berkebun Stroberi Secara Komersial*. Niaga Swadaya.
- Cunningham, W., 2004. Aging and Photoaging, in: Barran, R., Maibachh, H.I. (Eds), *Textbook of Cosmetic Dermatology*. Martin Dunitz Ltd, London, pp. 455–467.
- Choi SY, Ko HC, Ko SY, Hwang JH, Park JG, Kang SH, Han SH, Yun SH, Kim SJ. 2007. Correlation between flavonoid content and the NO production inhibitory activity of peel extracts from various citrus fruits. *Biol. Pharm. Bul* 30:772-778.
- da Silva, F.L., Escribano-Bailon, M.T., Perez Alonso, J.J., Rivas-Gonzalo, J.C., and Santos-Buelga, C., 2007. Anthocyanin pigments in strawberry. *LWT- Food Science and Technology*, 40: 374-382.
- Ernawati, D. E., 2015, Optimasi Komposisi Span 80-Croduret 50-Propilen Glikol Formula Sediaan Emulgel Jus Buah Stroberi (*Fragaria vesca* L.) Kering dan Uji Transpor Melewati Membran *Shed Snake Skin*, Tesis, S2 Ilmu Farmasi Universitas Gadjah Mada, Yogyakarta.
- Fanun, M., 2009, *Microemulsion : Properties and Aplication*. CRC Press, New York.
- Fisher, G., Wang, Z., Datta, S., Varani, J., Kang, S., and Voorhees, J., 1997. Pathophysiology of premature skin aging induced by ultraviolet light. *N Engl J Med*, **337**: 1419–28.
- Flanagan, J. and Singh, H., 2006. Micoemulsion : a Potensial Delivery System for Bioactives in Food, *Crit. Rev. Food Sci. Nut.*, **46** : 221-237
- Fowler, B., 2003. Functional and Biological Markers of Aging, in: Klatz, R. (Ed.), *Anti Aging Medical Therapeutic*. The A4M Publication, Chicago, hal.43.
- Frei, B., 1994, *Natural Antioxidant in Human Health and Disease*, Academic, Press, San Diego California.
- Froelich, A., Osmalek, T., Snela, A., *et al.* 2017. Novel Microemulsion-Based Gels for Topical Delivery of Indomethacin : Formulation, Physicochemical Properties and In Vitro Drug Release Studies. *Journal o Colloid and Interface Sciences*, (2017) 323-336
- Garg, A., Deepika, A., Sanjay, G., and Anil, K.S., 2002, *Spreading of Semisolid Formulations: An Update*, 178-180, Pharmaceutical Technology, USA.

- Garti, N., Spornath, A., Aserin, A. and Lutz, R., 2005. Nano-Sized Self Assemblies of Nonionic Surfactants as Solubilization Reservoirs and Microreactors for Food Systems, *Soft Matter*, 1:206-218
- Gossinger, M, Moritz, S., Hermes, M., Wendelin, S., Scherbichler, H., Halbwirth, H., *et al.*, 2009. Effect of processing parameters on colour stability of strawberry nectar from puree. *Journal of Food Engineering*, 90: 171-178.
- Hanum, L., Kasiandari, R.S., others, 2013. The Phylogenetic Relationship Among Varieties of *Lansium domesticum* Correa Based on Its rDNA Sequences. *Indones. J. Biotechnol.* 18, 123–132.
- Heyne, K., 1987. Tumbuhan berguna Indonesia. Badan Litbang Kehutanan Jakarta.
- Hertiani, T., 2000, Isolasi dan identifikasi senyawa flavonoid antioksidan dari daun *Plantago major*, L., *Tesis*, Program Pasca Sarjana UGM, Yogyakarta.
- Hudson, BJF, 1990, *Food Antioxidants*, Elsevier Applied Science, New York.
- Iwai, I., Han, H., Hollander, L. Den, svensson, s., ofverstedt, L.-G., Anwar, J., *et al.*, 2012. Human Skin Barrier Is Organized as Stacked Bilayers of Fully Extended Ceramides with Cholesterol Molecules Associated with the Ceramide Sphingoid Moiety. *Journal of Investigative Dermatology*, 132 : 2215-2225
- Karim, A.A., Azlan, A., Ismail, A., Hashim, P., Gani, S. salwa abd, Zainudin, B.H., *et al.*, 2014. Phenolic composition, antioxidant, anti wrinkles and tyrosinase inhibitory activities of *Cocoa pod* extract. *BMC Complementary and Alternative Medicine*, **14**: 381.
- Kim, Y.H., Chung, C.B., Kim, J.G., Ko, K.I., Park, S.H., Kim, J.-H., Eom, S.Y., Kim, Y.S., Hwang, Y.-I., Kim, K.H., 2008. Anti-wrinkle activity of ziyuglycoside I isolated from a *Sanguisorba officinalis* root extract and its application as a cosmeceutical ingredient. *Biosci. Biotechnol. Biochem.* 72, 303–311.
- Kogan, A. dan Garti, N., 2006. Microemulsions as transdermal drug delivery vehicles. *Advances in Colloid and Interface Science* , Special Issue in Honor of Dr. K. L. Mittal 123-126 : 369-385.
- Kubo, H., Fujii, K., Kawabe, T, Matsumoto, S., Kishida, H., and Hosoe, K., 2008. Food content of ubiquinol Anti-wrinkle activity of ziyuglycoside I isolated from a *Sanguisorba officinalis* root extract and its application as a cosmeceutical ingredient. *Biosci. Biotechnol. Biochem.* 72, 303–311.

- Kuncari, E. S., Iskandarsyah., Praptiwi, 2014, Evaluasi, Uji Stabilitas Fisik Dan Sineresis Sediaan Gel yang Mengandung Minoksidil, Apigenin dan Perasan Herba Seledri (*Apium Graveolens* L.), Buletin Penelitian Kesehatan, 42(4): 213-222
- Klungsupya, P., Suthepakul, N., Muangman, T., Rerk-Am, U., Thongdon-A, J., 2015. Determination of Free Radical Scavenging, Antioxidative DNA Damage Activities and Phytochemical Components of Active Fractions from *Lansium domesticum* Corr. Fruit. *Nutrients* 7, 6852–6873. doi:10.3390/nu7085312
- Leijden, J., 1990. Clinical Features of Aging Skin. *BrJ Dermatol*, **122**:1–3.
- Medical Economics Company, Inc. 2000. *PDR for Herbal Medicines*. hal.735-736.
- Liu, J. Chen G. Xu, Ye, X., Y. Ma, dan J. Shi, 2008. Juice components and antioxidant capacity of Citrus varieties cultivated in China. *Food Chemistry*, **106**: 545–551.
- Madhan, B., Krishnamoorthy, G., Rao, J.R., dan Nair, B.U., 2007. Role of green tea polyphenols in the inhibition of collagenolytic activity by collagenase. *International Journal of Biological Macromolecules*, **41**: 16–22.
- Manosroi, A., Kumguan, K., Chankhampan, C., Manosroi, W., Manosroi, J., 2012b. Nanoscale Gelatinase A (MMP-2) Inhibition on Human Skin Fibroblasts of Longkong (*Lansium domesticum* Correa) Leaf Extracts for Anti-Aging. *J. Nanosci. Nanotechnol.* 12, 7187–7197. doi:10.1166/jnn.2012.6500
- Marfori, E.C., Kajiyama, S.I., Fukusaki, E.-I., Kobayashi, A., 2015. Lansioside D, a new triterpenoid glycoside antibiotic from the fruit peel of *Lansium domesticum* Correa. *J. Pharmacogn. Phytochem.* 3, 140–143.
- Marinda, W. S., 2012, Formulasi dan Uji Stabilitas Fisik Gel Liposom yang Mengandung Fraksinasi Ekstrak Metanol Kulit Manggis (*Garcinia mangostana* L.) sebagai antioksidan, *Skripsi*, Universitas Indonesia.
- Mayanti, T., 2009. Kandungan Kimia dan Bioaktivitas Tanaman Duku. UNPAD Press.
- Menon, G.K., Cleary, G.W., dan Lane, M.E., 2012. The structure and function of the stratum corneum. *International Journal of Pharmaceutics, Advances in Tropical Drug Delivery* 435 : 3-9
- Mohamed, S., Hassan, Z., Abd Hamid, N., 1994. Antimicrobial activity of some tropical fruit istes (guava, starfruit, banana, papaya, passionfruit,

langsar, duku, rambutan and rambai). *Pertanika J. Trop. Agric. Sci.* 17, 219–227.

Muzaffar, F., Singh, U.K., Chauhan, L., 2013. Review on Microemulsion as Futuristic Drug Delivery. *International Journal of Pharmacy and Pharmaceutical Sciences*, Vol 5, Issue 3.

Neubert, R.H.H., 2011. Potentials of New Nanocarriers for Dermal and Transdermal Drug Delivery. *Eur J Pharm Biopharm.*, 77:1-2

Niki, E., Noguchi, N., Iwatsuki, M., and Kato, Y., 1995, Dynamics of Antioxidation by Phenolic Antioxidants: Physicochemical Issues, in Packer, L., Traber, M.G., and Xin, W. (Eds.), *Proceedings of The International Symposium on Natural Antioxidants, Molecular Mechanisms and Health Effects*, AOCS Press, Illinois, 1-2.

Nur, S., 2017, Pemanfaatan Ekstrak Etanolik dan Etil Asetat Daging Buah dan kulit Buah Langsat (*Lansium domesticum* (corr)) Sebagai Bahan Aktif Kosmetik: Uji Aktivitas *Antiaging* dan Anti Jerawat secara *in vitro.*), *Tesis*, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.

Ortiz, Alexandra Amaro., Betty Yan and John A. D’Orazio., 2014. Ultraviolet Radiation, Aging and the Skin: Prevention of Damage by Topical cAMP Manipulation. *Molecules Journal*, 19, 6202-6219.

Perona, J., Cabello-Moruno, R., dan Ruiz-Gutierrez, V., 2006. The role of virgin olive oil components in the modulation of endothelial function. *J Nutr Biochem*, 17: 429–445.

Prakash, A., 2001, “*Antioxidant Activity*” Medallion Laboratories: Analytical Progress Vol 19 No: 2. 1-4.

Qonitah, F., 2017., Pemanfaatan Ekstrak Buah Strawberry (*Fragaria X Ananassa* (Duchesne Ex Weston)) Sebagai Bahan Kosmetik: Uji Aktivitas *Antiaging* dan Antibakteri Secara *In Vitro.*), *Tesis*, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.

Rivanti E, Amalia F, Dianingati RS. 2011. *Aplikasi Limbah Kulit Jeruk Bali (Citrus maxima) sebagai Sumber Fito estrogen serta Kajian Molecular Docking Terhadap ERα dan ERβ*. Program Kreativitas Mahasiswa. Yogyakarta: Universitas Gadjah Mada

Robinson, T., 1963, *Kandungan Organik Tumbuhan Tinggi*, diterjemahkan oleh Padmawinata, K., 1995, Penerbit ITB, Bandung.

Rozman, B., Gasperlin, M., Tinois-Tessineaud, E., Pirot, F., and Falson, F., 2009. Simultaneous absorption of vitamin C and E from topical microemulsions using reconstructed human epidermis as a skin model. *European Journal of Pharmaceutics and Biopharmaceutics*, 72: 69-75

- Rowe, R. C., Sheskey, P. J., and Weller, P. J., 2006. *Handbook of pharmaceutical excipients fifth edition*. London, Pharmaceutical Press.
- Saewan, N., Sutherland, J.D., Chantrapromma, K., 2006. Antimalarial tetranortriterpenoids from the seeds of *Lansium domesticum* Corr. *Phytochemistry* 67, 2288–2293. doi:10.1016/j.phytochem.2006.07.005
- Salager, J.L., Anton, R., Forgiarini, A., and Marquez, L., 2009. Formulation of Microemulsion in Microemulsion : *Background, New Concept, Application, Perspective*, 1<sup>st</sup> ed., Vol. 3. John Wiley & Sons, Inc., Hoboken, New Jersey.
- Saravi, M., 2010. The chemistry, pharmacology and clinical properties of *sambucus ebulus*: a review. *J Med Plant Res*, **4**: 96–103.
- Sepdahlia, F., 2013. Uji aktivitas antibakteri ekstrak etanol kulit buah langsung (*Lansium domesticum* Cor.) terhadap *Shigella flexneri*. J. Mhs. PSPD FK Univ. Tanjungpura 3.
- Siswanto, F. M. dan Pangkahila, A., 2014. Pelatihan Fisik Seimbang Meningkatkan Aktivitas Stem Cell Endogen untuk Anti Penuaan. *Sport and Fitness Journal*, **2**:1–9.
- Stamatas, G.N., Zvulunov, A., Horowitz, P., and Grove, G.L., 2012. Skin Barrier Protection. *Dermatology Research and Practice*, 2012.
- Supriono, 2007. Pengujian Lethal Dosis (LD50) Ekstrak Etanol Biji Buah Duku (*Lansium domesticum* Corr) pada Mencit (*Mus musculus*).
- Swarbrick J, Boylan J. C. 1990. *Encyclopedia of Pharmaceutical Technology*. Vol 2. Marcel Dekker, inc. New York and Basel. Hlm 334-335.
- Talegaonkar, S., Tariq, M., and Alabood, R.M., 2011. Design and Development of O/W Nanoemulsion for Transdermal Delivery of Ondansetron. *Bulletin of Pharmaceutical Research*, **1(3)**:18-30
- Tara E. Gottschalck and John E. Bailey. 2009. *International Cosmetic Ingredient Dictionary and Handbook*. Thirteenth Edition. Personal Care Products Council, IshingtonD.C.
- Thring, T.S., Hili, P., dan Naughton, D.P., 2009. Anti-collagenase, anti-elastase and anti-oxidant activities of extracts from 21 plants. *BMC Complementary and Alternative Medicine*, **9**: .
- Tilaar, M., Wih, W.L., Ranti, A.S., Isitaatmadja, S.M., Junardy, F.D., others, 2008. Review of *Lansium domesticum* Corrêa and its use in cosmetics. *Bol Latinoam Caribe Plant Med Aromat*. 7, 183–189.



- Verheij, E., Coronel, R., 1992. Plant Resources of South-East Asia No.2. Edible Fruits and Nuts. Prosea Foundation. Bogor. Indonesia, pp. 186–190.
- Wang, S.Y and Jiao, H., 2000. Scavenging capacity of berry crops on superoxide radicals, hydrogen peroxide, hydroxyl radicals, and singlet oxygen. *Journal of Agricultural and Food Chemistry*, **48**:5677-5684
- Wiedow, O., Schröder, J.M., Gregory, H., Young, J.A., Christophers, E., 1990. Elafin: an elastase-specific inhibitor of human skin. Purification, characterization, and complete amino acid sequence. *J. Biol. Chem.* **265**, 14791–14795.
- Wlascheck, M., Tantcheva, P.I., dan Naderi, L., 2001. Solar UV Irradiation and Dermis Photoaging. *Jphotoderm Photobiol*, **63**: 41–51.
- Xu, G., Liu, D., Chen, J., Ye, X., Ma, Y., and Shi, J., 2008. Juice components and antioxidant capacity of Citrus varieties cultivated in China. *Food Chemistry*, **106**: 545–551.
- Xiao, P. Dan Imhof, R.E., 2012. Two dimensional finite element modelling for dynamic water diffusion through stratum corneum. *International Journal of Pharmaceutics*, **435**: 88-92.
- Yenti, R., Afrianti, R., dan Qomariah, S., 2014, Formulasi Emulgel Ekstrak Etanol Daun Dewa (*Gynura pseudochina* (L.) DC) untuk Pengobatan Nyeri Sendi Terhadap Tikus Putih Jantan, Prosiding Seminar Nasional dan Workshop “Perkembangan Terkini Sains Farmasi dan Klinik IV”, 56-63.
- Zats, J.I. and Gregory P.K., 1996, Gel, in Lieberman, H.A., Rieger, M.M., banker, G.S., *Pharmaceutical Dosage Form: Disperse Systems*, 2, 401-403, 413-414, Marcel Dekker Inc, New York.
- Zulbayu, L.O.M.A, 2017, Uji Aktivitas Antiaging dan Antibakteri Ekstrak Etanol dan Etil Asetat Kulit Buah Jeruk Bali (*Citrus maxima* L.) Secara *In Vitro*., *Tesis*, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.
- Zhu, Q., Nakagawa, T., Kishikawa, A., Ohnuki, K., and Shimizu, K., 2015. In Vitro bioactivities and phytochemical profile of various parts of the strawberry (*Fragaria x ananassa* var. Amaou) . *Journal of Functional Foods*, **13**: 38–49.