

DAFTAR PUSTAKA

- Abrika, O.S.S., Yam, M.F., Asmawi, M.Z., Sadikun, A., Dieng, H., dan Hussain, E.A., 2013. Effects of extracts and fractions of *Gynura procumbens* on rat atrial contraction. *Journal of Acupuncture and Meridian Studies*, **6**: 199–207.
- Achmad, A.S., Hakim, H.E., Makmur, L., Juliawaty, D.L., dan Mujahidin, D., 2009. *Ilmu Kimia dan kegunaan : Tumbuh – Tumbuhan Obat Indonesia*, Jilid 1. Institut Teknologi Bandung, Bandung.
- Adeneye, A., Olagunju, J., Benebo, A., Elias, S., Adisa, A., Idowu, B., dkk., 2008. Nephroprotective effects of the aqueous root extract of *Harungana madagascariensis* (L.) In acute and repeated dose acetaminophen renal injured rats. *International Journal of Applied Research in Natural Products*, **1**: 6–14.
- Afandi, A., Zulkifli, H.M., Sadikun, A., dan Ismail, S., 2014. Antioxidant Properties of *Gynura Procumbens* Extracts and Their Inhibitory Effect on Two Major Human Recombinat Cytochrome P450S Using a High Throughput Luminescence Assay. *Asian Journal of Pharmaceutical & Clinical Research*, **7**: 6.
- Aggarwal, B.B., Kumar, A., Aggarwal, M.S., dan Shishodia, S., 2005. Curcumin derived from turmeric (*Curcuma longa*): a spice for all seasons. *Phytopharmaceuticals in Cancer Chemoprevention*, **23**: 351–387.
- Agustina, D., Wasito, W., Haryana, S.M., dan Supartinah, A., 2006. Anticarcinogenesis effect of *Gynura procumbens* (Lour) Merr on tongue carcinogenesis in 4NQO-induced rat. *Dental Journal (Majalah Kedokteran Gigi)*, **39**: 126.
- Akhi, T.M.N., Adib, M., Islam, Q.S., Sultana, I., Haider, R., dan Ibrahim, M., 2019. Preliminary Phytochemical Screening and Assessment of Pharmacological Activities of Leaves and Stems of *Gynura procumbens* (Lour.) Merr. *Bangladesh Pharmaceutical Journal*, **6**.
- Akowi, G.A., Ahmad, M., dan Fei, Y.M., 2012. 'Effects of *Gynura procumbens* Leaf Extracts on Plasma Lipid Peroxidation and Total Antioxidant Status in CCl₄-Treated Rats', *The Natural Products Journal*. URL: <https://www.eurekaselect.com/104180/article> (diakses tanggal 1/9/2020).
- Aldous, D., 2010. Eating Plan for High Cholesterol (Hyperlipidemia).

- Algariri, K., Atangwho, I.J., Meng, K.Y., Asmawi, M.Z., Sadikun, A., dan Murugaiyah, V., 2014. Antihyperglycaemic and Toxicological Evaluations of Extract and Fractions of *Gynura procumbens* Leaves. *Tropical life sciences research*, **25**: 75.
- Algariri, K., Meng, K.Y., Atangwho, I.J., Asmawi, M.Z., Sadikun, A., Murugaiyah, V., dkk., 2013. Hypoglycemic and anti-hyperglycemic study of *Gynura procumbens* leaf extracts. *Asian Pacific Journal of Tropical Biomedicine*, **3**: 358–366.
- Alma, M.H., Mavi, A., Yildirim, A., Digrak, M., dan Hirata, T., 2003. Screening chemical composition and in vitro antioxidant and antimicrobial activities of the essential oils from *Origanum syriacum* L. growing in Turkey. *Biological & Pharmaceutical Bulletin*, **26**: 1725–1729.
- Al-Mustafa, A.H. dan Al-Thunibat, O.Y., 2008. Antioxidant Activity of Some Jordanian Medicinal Plants Used Traditionally for Treatment of Diabetes. *Pakistan Journal of Biological Sciences*, **11**: 351–358.
- Amin, Z., Kadir, F., Abdulla, M., Hadi, A., Fanous, S., Sabri, S., dkk., 2011. Acute toxicity study and wound healing potential of *Gynura procumbens* leaf xtract in rats. *Journal of medicinal plants research*, **5**: 2551–2558.
- Anonim, 2010. *Trubus Info Kit Herbal Indonesia Berkhasiat : Bukti Ilmiah dan Cara Racik*, Kedua. ed. Trubus Swadaya, Jakarta.
- Anonim, 2013. Lipase Activity Colorimetric Assay Kit (Catalog K722-100).
- Anonim, 2015. HMG-CoA Reductase Activity/Inhibitor Screening Kit (Colorimetric) (Catalog K588-100).
- Apak, R., Güçlü, K., Demirata, B., Özyürek, M., Çelik, S., Bektaşoğlu, B., dkk., 2007. Comparative Evaluation of Various Total Antioxidant Capacity Assays Applied to Phenolic Compounds with the CUPRAC Assay. *Molecules*, **12**: 1496–1547.
- Apak, R., Güçlü, K., Ozyürek, M., Esin Karademir, S., dan Erçağ, E., 2006. The cupric ion reducing antioxidant capacity and polyphenolic content of some herbal teas. *International Journal of Food Sciences and Nutrition*, **57**: 292–304.
- Apak, R., Güçlü, K., Özyürek, M., Karademi'r, S.E., dan Altun, M., 2005. Total antioxidant capacity assay of human serum using copper(II)-neocuproine as

chromogenic oxidant: The CUPRAC method. *Free Radical Research*, **39**: 949–961.

Apak, R., Güçlü, K., Ozyürek, M., dan Karademir, S.E., 2004. Novel total antioxidant capacity index for dietary polyphenols and vitamins C and E, using their cupric ion reducing capability in the presence of neocuproine: CUPRAC method. *Journal of Agricultural and Food Chemistry*, **52**: 7970–7981.

Apriani, A.R., 2008. 'Pengaruh Kombinasi Ekstrak Etanolik Temulawak (*Curcuma xanthorrhiza* Roxb) Rendah Minyak Atsiri dan Ekstrak Etanolik Sambung Nyawa (*Gynura procumbens* (Lour) Merr) terhadap Kadar Kolesterol Total Serum Tikus Jantan Wistar serta Gambaran Histopatologi Hati dan Aortanya', *Skripsi*, . Universitas Gajah Mada, Fakultas Farmasi, Universitas Gadjah Mada.

Arifin, P., Setiawan, I.M., Purwantiningsih, Astuti, R., Azima, F., Susilowidodo, R., dkk., 2020. Acute Toxicity Evaluation of Temulawak (*Curcuma xanthorrhiza* Roxb) Hepatoprotective Supplement. *Research Journal of Pharmaceutical Biological and Chemical Sciences*, **11**: 13–18.

Arliani, L.R., Bodhi, W., dan Wullur, A.C., 2015. Uji Efek Diuretik Infusa Daun Sambung Nyawa (*Gynura procumbens* (Blume) Miq.) pada Tikus Putih Jantan Galur Wistar (*Rattus norvegicus*) **4**: 2302–2493.

Ashraf, K., 2019. An update phytochemical and pharmacological review on *Gynura procumbens*. *Asian Journal of Pharmaceutical and Clinical Research*, 9–14.

Aznam, N. dan Atun, S., 2017. The development of temulawak (*Curcuma xanthorrhiza*) herb production and pharmacological test as anti-hypercholesterolemia. *International Journal of Green Pharmacy*, **11**: 809–813.

Aznam, N., Atun, S., dan Arianingrum, R., 2012. Uji klinis terbatas sediaan jamu temulawak bentuk kapsul dan instan sebagai antihepatotoksik di Puskesmas Jetis. *Prosiding Insinas*, 5.

Baková, Z. dan Kolesárová, A., 2012. Bioflavonoid quercetin-food sources, bioavailability, absorption and effect on animal cells. *The Journal of Microbiology, Biotechnology and Food Sciences*, **2**: 426.

Barrios-González, J. dan Miranda, R.U., 2010. Biotechnological production and applications of statins. *Applied Microbiology and Biotechnology*, **85**: 869–883.

- Blois, M.S., 1958. Antioxidant Determinations by the Use of a Stable Free Radical. *Nature*, **181**: 1199–1200.
- Borra, S.K., Gurumurthy, P., dan Mahendra, J., 2013. Antioxidant and free radical scavenging activity of curcumin determined by using different in vitro and ex vivo models. *Journal of Medicinal Plants Research*, **7**: 2680–2690.
- Bouhdid, S., Skali, S.N., Idaomar, M., Zhiri, A., Baudoux, D., Amensour, M., dkk., 2008. Antibacterial and antioxidant activities of *Origanum compactum* essential oil. *African Journal of Biotechnology*, **7**: 1563–1570.
- Bouknight, P., Mackler, L., dan Heffington, M., 2007. Best Alternatives to Statins for Treating Hyperlipidemia. *American Family Physician*, **76**: 1027.
- BPOM, 2014a. Pedoman Uji Klinik Obat Herbal, Nomor 13 Tahun 2014, Peraturan Kepala BPOM RI, Jakarta.
- BPOM, 2014b. Tata Laksana Persetujuan Uji Klinik, Nomor 9 Tahun 2014, Peraturan Kepala BPOM RI, Jakarta.
- BPOM, 2008. Bab VII Sediaan Antikolesterol – Anti Hiperlipidemia, BPOM, Jakarta.
- Burg, J.S. dan Espenshade, P.J., 2011. Regulation of HMG-CoA reductase in mammals and yeast. *Progress in Lipid Research*, **50**: 403–410.
- Chang, C.-C., Yang, M.-H., Wen, H.-M., dan Chern, J.-C., 2002. Estimation of Total Flavonoid Content in Propolis by Two Complementary Colorimetric Methods. *Journal of Food and Drug Analysis*, **10**: 5.
- Chanmee, W., Chaicharoenpong, C., dan Petsom, A., 2013. Lipase Inhibitor from Fruits of *Solanum stramonifolium* Jacq. *Food and Nutrition Sciences*, **04**: 554–558.
- Cheng, A.L., Hsu, C.H., Lin, J.K., Hsu, M.M., Ho, Y.F., Shen, T.S., dkk., 2001. Phase I clinical trial of curcumin, a chemopreventive agent, in patients with high-risk or pre-malignant lesions. *Anticancer Research*, **21**: 2895–2900.
- Cho, M.J., Howard, L.R., Prior, R.L., dan Morelock, T., 2008. Flavonoid content and antioxidant capacity of spinach genotypes determined by high-performance liquid chromatography/mass spectrometry. *Journal of the Science of Food and Agriculture*, **88**: 1099–1106.

- Conforti, F., Statti, G.A., dan Menichini, F., 2007. Chemical and biological variability of hot pepper fruits (*Capsicum annuum* var. *acuminatum* L.) in relation to maturity stage. *Food Chemistry*, **102**: 1096–1104.
- Cruz, M.P., Küstner, E.C., Vicente, J.A.G., Ferrero, X.M., Thio, E.B., dan López, J.L., 2008. Adverse side effects of statins in the oral cavity. *Med Oral Patol Oral Cir Bucal.*, **4**.
- Dahlan, M.S., 2013. *Besar Sampel Dan Cara Pengambilan Sampel*, 3rd ed. Salemba Medika, Jakarta.
- Da'i, M., Ratnaningrum, A.D., Wahyuni, A.S., Melannisa, R., dan Trisharyanti, Ika D.K., 2012. Uji Aktivitas Antiradikal Ekstrak Etanol Daun *Elephantopus scaber* L., *Ocimum basilicum* L.forma *citratum* Back., *Graptophyllum pictum* Griff, dan *Gynura procumbens* Merr. dengan Metode DPPH (1,1-Difenil-2-Pikril Hidrazil) serta Penetapan Kadar Fenolik Totalnya. *Jurnal Farmasi Indonesia*, **13**: 41–46.
- Dapkevicius, A., Venskutonis, R., Beek, T.A. van, dan Linssen, J.P.H., 1998. Antioxidant activity of extracts obtained by different isolation procedures from some aromatic herbs grown in Lithuania. *Journal of the Science of Food and Agriculture*, **77**: 140–146.
- Dechakhamphu, A. dan Wongchum, N., 2015. Screening for anti-pancreatic lipase properties of 28 traditional Thai medicinal herbs. *Asian Pacific Journal of Tropical Biomedicine*, **5**: 1042–1045.
- Dehpour, A., Ebrahimzadeh, M., Fazel, N., dan Mohammad, N., 2009. Antioxidant activity of the methanol extract of *Ferula assafoetida* and its essential oil composition. *Grasas y Aceites*, **60**: 405–412.
- Depkes, D.K., 2000. *Parameter Standar Umum Ekstrak Tumbuhan Obat*, Cetakan Pertama. Departemen Kesehatan, Jakarta.
- Devaraj, S., Sabariah, I., Surash, R., Santhini, M., dan Yam, M.F., 2010. Evaluation of the hepatoprotective activity of standardized ethanolic extract of *Curcuma xanthorrhiza* Roxb. *Journal of Medicinal Plants Research*, **4**: 2512–2517.
- Dewoto, H.R., 2011. The Development of Indonesian Traditional Medicines into Phytopharmaca. *Journal of the Indonesian Medical Association*, **57**: .
- Dipiro, J.T., Talbert, R.L., Yee, G.C., Matzke, G.R., Wells, B.G., dan Posey, M.L., 2016. *Pharmacotherapy: A Pathophysiologic Approach 10th Edition Free Pdf Download / Education Books*, 10th ed. McGraw-Hill, New York.

- Dirsch, V.M., Stuppner, H., dan Vollmar, A.M., 1998. The Griess Assay: Suitable for a Bio-Guided Fractionation of Anti-Inflammatory Plant Extracts. *Planta Medica*, **64**: 423–426.
- Dugi, K.A., Feuerstein, I.M., Hill, S., Shih, J., Santamarina-Fojo, S., Brewer, H.B., dkk., 1997. Lipoprotein lipase correlates positively and hepatic lipase inversely with calcific atherosclerosis in homozygous familial hypercholesterolemia. *Arteriosclerosis, Thrombosis, and Vascular Biology*, **17**: 354–364.
- Dwijayanti, D.R. dan Rifa'i, M., 2014. Immunomodulator Testing on Ethanol Extract of *Gynura procumbens* Leaves to Mus musculus Adaptive Immune System: in Vitro Study **4**: 5.
- Dwijayanti, D.R. dan Rifa'i, M., 2015. *Gynura procumbens* Ethanolic Extract Promotes Lymphocyte Activation and Regulatory T Cell Generation In Vitro. *Journal of Tropical Life Science*, **5**: 14–19.
- Embleton, J.K. dan Pouton, C.W., 1997. Structure and function of gastro-intestinal lipases. *Advanced Drug Delivery Reviews*, The Potential of Oily Formulations for Drug Delivery to the Gastro-intestinal Tract **25**: 15–32.
- Esteki, M., Shahsavari, Z., dan Simal-Gandara, J., 2018. Use of spectroscopic methods in combination with linear discriminant analysis for authentication of food products. *Food Control*, **91**: 100–112.
- Esterbauer, H., 1993. Cytotoxicity and genotoxicity of lipid-oxidation products. *The American Journal of Clinical Nutrition*, **57**: 779S–785S; discussion 785S–786S.
- European Medicines Agency, 2014. Community herbal monograph on *Curcuma xanthorrhiza* Roxb. (*C. xanthorrhiza* D. Dietrich), rhizoma 1–22.
- Fan, C., Wo, X., Qian, Y., Yin, J., dan Gao, L., 2006. Effect of curcumin on the expression of LDL receptor in mouse macrophages. *Journal of Ethnopharmacology*, **105**: 251–254.
- Farida, V., Ikawati, Z., dan Pramono, S., 2014. Uji Toksisitas Subkronis Ekstrak Curcuma Bebas Minyak Atsiri (ECBA) Ditinjau dari Parameter Profil Leukosit Pada Tikus Putih Galur Wistar. *Pharmaciana*, **4**: .
- FDA, 2005. Guidance for Industry Estimating the Maximum Safe Starting Dose in Initial Clinical Trials for Therapeutics in Adult Healthy Volunteers.

FDA, 2014. FDA Consumer Health Information: Expands Advice on Statin Risks.

Filippatos, T., Derdemezis, C., Gazi, I., Nakou, E., Mikhailidis, D., dan Elisaf, M., 2008. Orlistat-Associated Adverse Effects and Drug Interactions. *Drug safety : an international journal of medical toxicology and drug experience*, **31**: 53–65.

Fitriyani, E.N. dan Murwanti, R., 2018. 'Pengaruh Pemberian Tablet Temulawak (*Curcuma xanthorrhiza* Roxb.) Secara Subkronis Pada Tikus Betina Galur Wistar : Kajian Terhadap Parameter Hematologi'. Universitas Gadjah Mada.

Fouqueray, P., Pirags, V., Inzucchi, S.E., Bailey, C.J., Schernthaner, G., Diamant, M., dkk., 2013. The Efficacy and Safety of Imeglimin as Add-on Therapy in Patients With Type 2 Diabetes Inadequately Controlled With Metformin Monotherapy. *Diabetes Care*, **36**: 565–568.

Fried, B. dan Sherma, J., 1994. 'Thin-Layer Chromatography, Revised And Expanded', *Routledge & CRC Press*. URL: <https://www.routledge.com/Thin-Layer-Chromatography-Revised-And-Expanded/Fried-Sherma/p/book/9780824702229> (diakses tanggal 4/12/2020).

Gandjar, I. dan Rohman, A., 2016. *Kimia Farmasi Analisis*, Cetakan XV. Pustaka Pelajar, Yogyakarta.

Gathercoal, E.N., Wirth, E.H., dan Claus, E.P., 1956. *Pharmacognosy*, 2nd ed. Lea & Febiger.

Ghasemzadeh, A. dan Ghasemzadeh, N., 2011. Flavonoids and phenolic acids: Role and biochemical activity in plants and human. *Journal of Medicinal Plants Research*, **5**:31.

Girod, A., Wobus, C.E., Zádori, Z., Ried, M., Leike, K., Tijssen, P., dkk., 2002. The VP1 capsid protein of adeno-associated virus type 2 is carrying a phospholipase A2 domain required for virus infectivity. *Journal of General Virology*, **83**: 973–978.

Gofur, A., 2015. Gene p53 Mutations after the Induction of 7,12-Dimethylbenz(a)anthracene (DMBA) and Administration of Anti-Carcinogenesis Properties of *Gynura procumbens* in Sprague Dawley Rats. *Biomedical Engineering*, **1**:5.

Goldberg, I. dan Merkel, M., 2001. Lipoprotein lipase: physiology, biochemistry, and molecular biology. *Frontiers in bioscience : a journal and virtual library*, **6**: D388-405.

- Golomb, B.A. dan Evans, M.A., 2008. Statin Adverse Effects: A Review of the Literature and Evidence for a Mitochondrial Mechanism. *American Journal of Cardiovascular Drugs*, **8**: 373–418.
- Gondoin, A., Grussu, D., Stewart, D., dan McDougall, G.J., 2010. White and green tea polyphenols inhibit pancreatic lipase in vitro. *Food Research International*, **43**: 1537–1544.
- Granados-Gámez, G., Roales-Nieto, J.G., Gil-Luciano, A., Moreno-San Pedro, E., dan Márquez-Hernández, V.V., 2015. A longitudinal study of symptoms beliefs in hypertension. *International Journal of Clinical and Health Psychology*, **15**: 200–207.
- Gülçin, İ., Küfrevioğlu, Ö.İ., Oktay, M., dan Büyükokuroğlu, M.E., 2004. Antioxidant, antimicrobial, antiulcer and analgesic activities of nettle (*Urtica dioica* L.). *Journal of Ethnopharmacology*, **90**: 205–215.
- Gunawan, D. dan Mulyani, S., 2010. *Ilmu Obat Alam (Farmakognosi) Jilid 1*, Jilid 1. Penebar Swadaya, Jakarta.
- Gürsoy, M., Haznedaroğlu, I.C., Celik, I., Sayinalp, N., Ozcebe, O.I., dan Dündar, S.V., 1996. Agranulocytosis, plasmacytosis, and thrombocytosis followed by a leukemoid reaction due to acute acetaminophen toxicity. *The Annals of Pharmacotherapy*, **30**: 762–765.
- Gutierrez, P.R.M., Flores Cotera, L.B., dan Gonzalez, A.M.N., 2012. Evaluation of the antioxidant and anti-glycation effects of the hexane extract from *Piper auritum* leaves in vitro and beneficial activity on oxidative stress and advanced glycation end-product-mediated renal injury in streptozotocin-treated diabetic rats. *Molecules (Basel, Switzerland)*, **17**: 11897–11919.
- Hadváry, P., Lengsfeld, H., dan Wolfer, H., 1988. Inhibition of pancreatic lipase in vitro by the covalent inhibitor tetrahydrolipstatin. *Biochemical Journal*, **256**: 357–361.
- Hakim, P., Sani, H.A., dan Noor, M.M., 2008. Effects of *Gynura procumbens* Extract and Glibenclamide on Sperm Quality and Specific Activity of Testicular Lactate Dehydrogenase in Streptozotocin-induced Diabetic Rats. *Malaysian Journal of Biochemistry and Molecular Biology*, **16**: 10–14.
- Halim, M.R., Tan, M. shah muhammad zabri, Ismail, S., dan Mahmud, R., 2012. Standardization and Phytochemical Studies of *Curcuma xanthorrhiza* Roxb. *International Journal of Pharmacy and Pharmaceutical Science*, **4**: 5.

- Hanani, E., Munim, A., dan Sekarini, R., 2005. Identifikasi Senyawa Antioksidan dalam Spons *Callyspongia* sp dari Kepulauan SeribuI. *Majalah Ilmu Kefarmasian*, **2**: 127–133.
- Handayani, D., Am, A., W. Soeadmadji, D., dan Aris Widodo, M., 2003. Enzim lipoprotein lipase suatu alternatif pemeriksaan gangguan metabolisme lemak pada penderita DM tipe 2 in vitro. *Jurnal Kedokteran Brawijaya*, **19**: 2–2003.
- Harikumar, K., Althaf, S.A., Kumar, B.K., Ramunaik, M., dan Suvarna, C., 2013. A Review on Hyperlipidemic. *International Journal of Novel Trends in Pharmaceutical Sciences*, **3**: 12.
- Hassan, Z., Kumar, G.S., dan Umachigi, S.P., 2008. Hypoglycaemic effect of aqueous extract of *Gynura procumbens*. *Pharmacologyonline*, **1**: 30–50.
- Hassan, Z., Yam, M.F., Ahmad, M., dan Yusof, A.P.M., 2010. Antidiabetic Properties and Mechanism of Action of *Gynura procumbens* Water Extract in Streptozotocin-Induced Diabetic Rats. *Molecules*, **15**: 9008–9023.
- Heinrich, M., Barnes, J., Gibbons, S., dan Williamson, E., 2010. *Farmakognosi Dan Fitoterapi*. EGC, Jakarta.
- Hew, C.-S., Khoo, B.-Y., dan Gam, L.-H., 2013. The Anti-Cancer Property of Proteins Extracted from *Gynura procumbens* (Lour.) Merr. *PLOS ONE*, **8**: 1–10.
- Hidayat, M., Soeng, S., dan Prahastuti, S., 2014. Pengujian Aktivitas Inhibitor Lipase Ekstrak Etanol dan Hasil Fraksionasi dari Kedelai Detam 1 dan Daun Jati Belanda. *Chimica et Natura Acta*, **2**: .
- Hoe, S.-Z., Kamaruddin, M.Y., dan Lam, S.-K., 2007. Inhibition of angiotensin-converting enzyme activity by a partially purified fraction of *Gynura procumbens* in spontaneously hypertensive rats. *Medical Principles and Practice: International Journal of the Kuwait University, Health Science Centre*, **16**: 203–208.
- Hoe, S.-Z., Lee, C.-N., Mok, S.-L., Kamaruddin, M.Y., dan Lam, S.-K., 2011. *Gynura procumbens* Merr. decreases blood pressure in rats by vasodilatation via inhibition of calcium channels. *Clinics*, **66**: 143–150.
- Hou, W.-C., Lin, R.-D., Cheng, K.-T., Hung, Y.-T., Cho, C.-H., Chen, C.-H., dkk., 2003. Free radical-scavenging activity of Taiwanese native plants. *Phytomedicine*, **10**: 170–175.

- Housecroft, C.E. dan Constable, E.C., 2006. *Chemistry: An Introduction to Organic, Inorganic and Physical Chemistry*. Pearson Prentice Hall.
- Hui-Wen Lee, 2012. Antidiabetic effect of *Gynura procumbens* leaves extracts involve modulation of hepatic carbohydrate metabolism in streptozotocin-induced diabetic rats. *Journal of Medicinal Plants Research*, **6**: .
- Huseini, H., Kianbakht, S., Hajiaghaee, R., dan Dabaghian, F., 2012. Anti-hyperglycemic and Anti-hypercholesterolemic Effects of *Aloe vera* Leaf Gel in Hyperlipidemic Type 2 Diabetic Patients: A Randomized Double-Blind Placebo-Controlled Clinical Trial. *Planta Medica*, **78**: 311–316.
- Hwang, J.-K., Shim, J.-S., Baek, N.-I., dan Pyun, Y.-R., 2000. Xanthorrhizol: A Potential Antibacterial Agent from *Curcuma xanthorrhiza* against *Streptococcus mutans*. *Planta Medica*, **66**: 196–197.
- Inna, G., 2013. *Gynura Procumbens : The Leaves of Life, Presentation*. Rusia.
- Iskandar, H.R., Pudjiadi, A., Mulyo, D., Pratiwi, A., dan Suryatin, Y., 2016. Sensitifitas dan Spesifisitas Pemeriksaan Procalcitonin, C-Reactive Protein (CRP), dan Hitung Leukosit untuk Memprediksi Infeksi Bakterial pada Sindrom Syok Dengue di Pediatric Intensive Care Unit. *Sari Pediatri*, **12**: 233.
- Izzati, F.N. dan Pramono, S., 2013. 'Pengaruh Pemberian Minyak Atsiri Temulawak (*Curcuma xanthorrhiza* Roxb.) Terhadap Nafsu Makan Tikus yang ditekan Nafsu makannya', . Fakultas Farmasi, Universitas Gadjah Mada.
- James, J.S., 1996. Curcumin: clinical trial finds no antiviral effect. *AIDS treatment news*, 1–2.
- Jantan, I., Saputri, F.C., Qaisar, M.N., dan Buang, F., 2012. Correlation between Chemical Composition of *Curcuma domestica* and *Curcuma xanthorrhiza* and Their Antioxidant Effect on Human Low-Density Lipoprotein Oxidation. *Evidence-Based Complementary and Alternative Medicine*, **2012**: 1–10.
- Jarikasem, S., Charuwichitratana, S., Siritantikorn, S., Chantratita, W., Iskander, M., Frahm, A.W., dkk., 2013. Antiherpetic Effects of *Gynura procumbens*. *Evidence-Based Complementary and Alternative Medicine*, **2013**: 1–10.
- Jemai, H., El Feki, A., dan Sayadi, S., 2009. Antidiabetic and antioxidant effects of hydroxytyrosol and oleuropein from olive leaves in alloxan-diabetic rats. *Journal of Agricultural and Food Chemistry*, **57**: 8798–8804.

- Jones, P.H., Davidson, M.H., Stein, E.A., Bays, H.E., McKenney, J.M., Miller, E., dkk., 2003. Comparison of the efficacy and safety of rosuvastatin versus atorvastatin, simvastatin, and pravastatin across doses (STELLAR**STELLAR = Statin Therapies for Elevated Lipid Levels compared Across doses to Rosuvastatin. Trial). *The American Journal of Cardiology*, **92**: 152–160.
- Jufri, M., Anwar, E., dan Djajadisastra, J., 2012. Pembuatan Niosom Berbasis Maltodekstrin De 5-10 dari Pati Singkong (*Manihot utilissima*). *Pharmaceutical Sciences and Research (PSR)*, **1**: 10–20.
- June, C.C., Wen, L.H., Sani, H.A., Latip, J., Gansau, J.A., Chin, L.P., dkk., 2012. Hypoglycemic Effects of *Gynura procumbens* Fractions on Streptozotocin-induced Diabetic Rats involved Phosphorylation of GSK3 β (Ser-9) in Liver. *Sains Malaysiana*, **41**: 969–975.
- JuŸwiak, S., Wójcicki, J., Mokrzycki, K., Marchlewicz, M., Bia, M., Gawrońska-Szklarz, B., dkk., 2005. Effect of quercetin on experimental hyperlipidemia and atherosclerosis in rabbits. *Pharmacological Reports*, **6**.
- Kaewseejan, N., Sutthikhum, V., dan Siriamornpun, S., 2015. Potential of *Gynura procumbens* leaves as source of flavonoid-enriched fractions with enhanced antioxidant capacity. *Journal of Functional Foods*, **12**: 120–128.
- Kähkönen, M.P., Heinämäki, J., Ollilainen, V., dan Heinonen, M., 2003. Berry anthocyanins: isolation, identification and antioxidant activities: Berry anthocyanins. *Journal of the Science of Food and Agriculture*, **83**: 1403–1411.
- Karima, N.A. dan Wahyuni, A.S., 2012. 'Pengaruh Ekstrak Etanol Rimpang Temulawak (*Curcuma xanthorrhiza* Roxb.) terhadap Kadar HDL (High Density Protein) Pada Tikus Putih Hiperlipidema'. Universitas Muhammadiyah Surakarta, Surakarta.
- Katrin, E., Susanto, dan Winarno, H., 2011. Toksisitas Akut Ekstrak Etanol Temulawak (*Curcuma xanthorrhiza* Roxb.) Iradiasi yang Mempunyai Aktivitas Antikanker. *Jurnal Ilmiah Aplikasi Isotop dan Radiasi*, **7**: 12.
- Kaur, N., Awadh, A.I., Ali, R.B., Sadikun, A., Sattar, M.Z.B.A., dan Asmawi, M.Z.B., 2012. Cardiovascular activity of *Gynura procumbens* Merr. leaf extracts. *International Journal of Pharmaceutical Sciences and Research*, **3**: 1393.

- Kedare, S.B. dan Singh, R.P., 2011. Genesis and development of DPPH method of antioxidant assay. *Journal of food science and technology*, **48**: 412–422.
- Kelley, G.A., Kelley, K.S., Roberts, S., dan Haskell, W., 2012. Comparison of aerobic exercise, diet or both on lipids and lipoproteins in adults: A meta-analysis of randomized controlled trials. *Clinical Nutrition*, **31**: 156–167.
- Kelly, R.B., 2010. Diet and Exercise in the Management of Hyperlipidemia. *American Family Physician*, **81**: 1097–1102.
- Kementerian Kesehatan, 2017^a. *Farmakope Herbal Indonesia*, Edisi II. Kementerian Kesehatan Republik Indonesia, Jakarta.
- Kementerian Kesehatan, 2017^b. *Diet Seimbang*, Kementerian Kesehatan Republik Indonesia, Jakarta.
- Kementerian Kesehatan, 2018. Hasil utama Riskesdas 2018 Kementerian Kesehatan Badan Penelitian dan Pengembangan Kesehatan.
- Kementerian Kesehatan, R.I., 2014. Info Datin Pusat data dan Informasi Kementerian kesehatan RI: Situasi Kesehatan Jantung. Mari Menuju Masa Muda Sehat, Hari Tua Nikmat tanpa PTM dengan Perilaku Cerdik.
- Kertia, N. dan Sudarsono, 2005. 'Prospek Manfaat Rimpang Temulawak Bagi Kesehatan', . *Majalah Obat Tradisional*, 5–8.
- Kim, D.J., Kang, Y.H., Kim, T.W., Kim, K.K., dan Choe, M., 2015. Effect of *Gynura procumbens* Water Extract on Enzymes Activities Related with Glucose Metabolism in HepG2 Cell. *The FASEB Journal*, **29**: 730.5.
- Kim, D.-S. dan Lim, S.-B., 2020. Semi-Continuous Subcritical Water Extraction of Flavonoids from *Citrus unshiu* Peel: Their Antioxidant and Enzyme Inhibitory Activities. *Antioxidants*, **9**: 360.
- Kim, J., Lee, C.-W., Kim, E.K., Lee, S.-J., Park, N.-H., Kim, H.-S., dkk., 2011. Inhibition effect of *Gynura procumbens* extract on UV-B-induced matrix-metalloproteinase expression in human dermal fibroblasts. *Journal of Ethnopharmacology*, **137**: 427–433.
- Kim, M.-B., Kim, C., Song, Y., dan Hwang, J.-K., 2014. Antihyperglycemic and Anti-Inflammatory Effects of Standardized *Curcuma xanthorrhiza* Roxb. Extract and Its Active Compound Xanthorrhizol in High-Fat Diet-Induced Obese Mice. *Evidence-Based Complementary and Alternative Medicine*, **2014**: 1–10.

- Kim, M.-J., Lee, H.J., Wiryowidagdo, S., dan Kim, H.K., 2006. Antihypertensive Effects of *Gynura procumbens* Extract in Spontaneously Hypertensive Rats. *Journal of Medicinal Food*, **9**: 587–590.
- Kim, T.H., Kim, J.K., Ito, H., dan Jo, C., 2011. Enhancement of pancreatic lipase inhibitory activity of curcumin by radiolytic transformation. *Bioorganic & Medicinal Chemistry Letters*, **21**: 1512–1514.
- Kohli, K., Ali, J., Ansari, M., dan Raheman, Z., 2005. Curcumin: A natural antiinflammatory agent. *Indian Journal of Pharmacology*, **37**: 141.
- Kucharska-Ambrożej, K. dan Karpinska, J., 2019. The application of spectroscopic techniques in combination with chemometrics for detection adulteration of some herbs and spices. *Microchemical Journal*, **153**: 104278.
- Kumar, J., Dhar, P., Tayade, A.B., Gupta, D., Chaurasia, O.P., Upreti, D.K., dkk., 2014. Antioxidant Capacities, Phenolic Profile and Cytotoxic Effects of Saxicolous Lichens from Trans-Himalayan Cold Desert of Ladakh. *PLoS ONE*, **9**: .
- Kumar, S. dan Pandey, A.K., 2013. Chemistry and Biological Activities of Flavonoids: An Overview. *The Scientific World Journal*, **2013**: 1–16.
- Lachenmeier, D.W., Monakhova, Y.B., Kuballa, T., Löbell-Behrends, S., Maixner, S., Kohl-Himmelseher, M., dkk., 2012. NMR evaluation of total statin content and HMG-CoA reductase inhibition in red yeast rice (*Monascus* spp.) food supplements. *Chinese Medicine*, **7**: 8.
- Lai, H. dan Lim, Y., 2011. Evaluation of Antioxidant Activities of the Methanolic Extracts of Selected Ferns in Malaysia. *International Journal of Environmental Science and Development*, 442–447.
- Last, A.R., Ference, J.D., dan Falleroni, J., 2011. Pharmacologic treatment of hyperlipidemia. *American family physician*, **84**: 551.
- Lavine, B.K. dan Workman, J., 2012. Chemometric. *American Chemical Society*, 85, 705–714.
- Lee, H.-Y., Lee, B.-C., Chung, J.-H., Wiryowidagdo, S., Chun, W., Kim, S., dkk., 2007. Inhibitory effects of an aqueous extract of *Gynura procumbens* on human mesangial cell proliferation. *Korean Journal of Physiology and Pharmacology*, **11**: 145–148.

- Lewis, D.R. dan Liu, D.J., 2012. Direct Measurement of Lipase Inhibition by Orlistat Using a Dissolution Linked In Vitro Assay. *Clinical Pharmacology & Biopharmaceutics*, **01**: 1–11.
- Li, S., Pan, J., Hu, X., Zhang, Y., Gong, D., dan Zhang, G., 2020. Kaempferol inhibits the activity of pancreatic lipase and its synergistic effect with orlistat. *Journal of Functional Foods*, **72**: 104041.
- Li, X.-J., Mu, Y.-M., Li, T.-T., Yang, Y.-L., Zhang, M.-T., Li, Y.-S., dkk., 2015. *Gynura procumbens* Reverses Acute and Chronic Ethanol-Induced Liver Steatosis through MAPK/SREBP-1c-Dependent and -Independent Pathways. *Journal of Agricultural and Food Chemistry*, **63**: 8460–8471.
- Lin, S.F., Chiou, C.M., Yeh, C.M., dan Tsai, Y.C., 1996. Purification and partial characterization of an alkaline lipase from *Pseudomonas pseudoalcaligenes* F-111. *Applied and environmental microbiology*, **62**: 1093–1095.
- Lowe, M.E., 2002. The triglyceride lipases of the pancreas. *Journal of Lipid Research*, **43**: 2007–2016.
- Lunagariya, N.A., Patel, N.K., Jagtap, S.C., dan Bhutani, K.K., 2014. Inhibitors of pancreatic lipase: state of the art and clinical perspectives. *EXCLI Journal*, **13**: 897–921.
- Luthfia, E. dan Ikawati, Z., 2015. 'Pengaruh Kombinasi Ekstrak Temulawak (*Curcuma xanthorrhiza* Roxb.) dan Ekstrak Sambung Nyawa (*Gynura procumbens* (Lour.)Merr) Terhadap Kadar Kolesterol Total Tikus Wistar Jantan Yang Diinduksi Diet Lemak Tinggi'. Fakultas Farmasi, Universitas Gadjah Mada.
- Luthria, D.L., Mukhopadhyay, S., dan Krizek, D.T., 2006. Content of total phenolics and phenolic acids in tomato (*Lycopersicon esculentum* Mill.) fruits as influenced by cultivar and solar UV radiation. *Journal of Food Composition and Analysis*, **19**: 771–777.
- Lyons, K. dan Harbinson, M., 2009. 'Statins: in the beginning | Royal College of Physicians of Edinburgh'. URL: <https://www.rcpe.ac.uk/college/journal/statins-beginning> (diakses tanggal 4/12/2020).
- Mahfouz, M.M., Zhou, S.Q., dan Kummerow, F.A., 2009. Curcumin prevents the oxidation and lipid modification of LDL and its inhibition of prostacyclin generation by endothelial cells in culture. *Prostaglandins & Other Lipid Mediators*, **90**: 13–20.

- Mahmood, A.A., Mariod, A.A., Al-Bayaty, F., dan Abdel-Wahab, S.I., 2010. Anti-ulcerogenic activity of *Gynura procumbens* leaf extract against experimentally-induced gastric lesions in rats. *Journal of Medicinal Plants Research*, **4**: 685–691.
- Majithiya, J., Parmar, A.N., dan Balaraman, R., 2004. Effect of curcumin on triton WR 1339 induced hypercholesterolemia in mice. *Indian Journal of Pharmacology*, **36**: 382.
- Martin, K., Mani, M., dan Mani, A., 2015. New targets to treat obesity and the metabolic syndrome. *European journal of pharmacology*, **763**: 64–74.
- Martinot, M., Sordet, C., Soubrier, M., Puéchal, X., Saraux, A., Lioté, F., dkk., 2005. Diagnostic value of serum and synovial procalcitonin in acute arthritis: A prospective study of 42 patients. *Clinical and experimental rheumatology*, **23**: 303–10.
- Mary, H.P., Susheela, G.K., Jayasree, S., Nizzy, A., Rajagopal, B., dan Jeeva, S., 2012. Phytochemical characterization and antimicrobial activity of *Curcuma xanthorrhiza* Roxb. *Asian Pacific Journal of Tropical Biomedicine*, **2** (2): 637–640.
- Matsubayashi, K., Goto, T., Togaya, K., Kokubo, K., dan Oshima, T., 2008. Effects of Pin-up Oxygen on Fullerene for Enhanced Antioxidant Activity. *Nanoscale Research Letters*, **3**: 237–241.
- Matsuzawa, N.N., Takamura, T., Ando, H., Nakamura, S., Kurita, S., Misu, H., dkk., 2008. Increased oxidative stress precedes the onset of high-fat diet–induced insulin resistance and obesity. *Metabolism*, **57**: 1071–1077.
- Maw, S.S., Mon, M.M., dan Z .K .Oo, 2011. Study on Antioxidant and Antitumor Activities of Some Herbal Extracts. *International Journal of Pharmacological and Pharmaceutical Sciences*, **5**: 86–91.
- McDougall, G.J., Kulkarni, N.N., dan Stewart, D., 2009. Berry polyphenols inhibit pancreatic lipase activity in vitro. *Food Chemistry*, **115**: 193–199.
- Mensor, L.L., Menezes, F.S., Leitão, G.G., Reis, A.S., dos Santos, T.C., Coube, C.S., dkk., 2001. Screening of Brazilian plant extracts for antioxidant activity by the use of DPPH free radical method. *Phytotherapy research*, **15**: 127–130.

- Merken, 2001. Kinetics Method for the Quantitation of Anthocyanidins, Flavonols, and Flavones in Foods. *Journal of Agricultural and Food Chemistry*. URL: <https://pubs.acs.org/doi/10.1021/jf001266s> (diakses tanggal 4/12/2020).
- Metwally, M.A.A., El-Gellal, A.M., El-Sawaisi, S.M., dan others, 2009. Effects of silymarin on lipid metabolism in rats. *World Applied Sciences Journal*, **6**: 1634–1637.
- Meyer, D., Laventhal, H., dan Gutman, M., 2020. (PDF) Common-Sense Models of Illness: The Example of Hypertension. *Health Psychology*, **4**: 115–135.
- Mihardja, L., 1999. Pengaruh beberapa Diet terhadap Hiperlipidemia. *Media Penelitian dan Pengembangan Kesehatan*, **9**: .
- Miyakawa, K., Kulkarni, N.N., Sullivan, B.P., Albee, R., Brandenberger, C., Jaeschke, H., dkk., 2015. Platelets and protease-activated receptor-4 contribute to acetaminophen-induced liver injury in mice. *Blood*, **126**: 1835–1843.
- Moreno, D.A., Ilić, N., Poulev, A., Brasaemle, D., Fried, S., dan Raskin, I., 2003. Inhibitory effects of grape seed extract on lipases. *Nutrition (Burbank, Los Angeles County, Calif.)*, **19**: 876–9.
- Morisky, D.E., Ang, A., Krousel-Wood, M., dan Ward, H.J., 2008. Predictive validity of a medication adherence measure in an outpatient setting. *Journal of Clinical Hypertension (Greenwich, Conn.)*, **10**: 348–354.
- Mou, K.M. dan Dash, P.R., 2016. A comprehensive review on *Gynura procumbens* leaves. *International Journal of Pharmacognosy*, **3**: 167–174.
- Muchtadi, D., 2013. *Antioksidan Dan Kiat Sehat Di Usia Produktif*. Alfabeta, Bandung.
- Mukhriani, 2014. Ekstraksi, Pemisahan Senyawa, dan Identifikasi Senyawa Aktif. *Jurnal Kesehatan*, **VII** (2): 361–367.
- Musfiroh, I., Geganaputra, A., Diantini, A., Susilawati, Y., dan Muchtaridi, M., 2020. Antiproliferation Assay of Essential Oil of *Curcuma Rhizoma* (*Curcuma xanthorrhiza* Roxb.) Against P388 Leukemia Cell. *Indonesian Journal of Pharmaceutical Science and Technology*, **7**: 100–106.
- Mustarichie, R., Musfiroh, I., dan Levita, J., 2011. *Metode Penelitian Tanaman Obat: Teori Dan Implementasi Penelitian Tanaman Untuk Pengobatan*., Widya Pandjajaran, Bandung.

- Mythili, T. dan Ravindhran, R., 2013. Determination of Quercetin by HPTLC Method in *Sesbania sesban* (L.) Merr. Stem Extract **2**: 7.
- Nakiboğlu, M., Ozturk Urek, R., Kayali, H., dan Tarhan, L., 2007. Antioxidant capacities of endemic *Sideritis sipylea* and *Origanum sipyleum* from Turkey. *Food Chemistry*, **104**: 630–635.
- Narayanaswamy, N., Duraisamy, A., dan Balakrishnan, K.P., 2011. Screening of some Medicinal Plants for their Antityrosinase and Antioxidant activities. *International Journal of PharmTech Research*, **3**: 1107–1112.
- Nareswari, T.L. dan Hertiani, T., 2016. Optimization of Ethanol-Water Composition as Extraction Solvent in Producing Sambung Nyawa (*Gynura procumbens* (Lour.) Merr.) Leaves Dry Extract. *Majalah Obat Tradisional*, **21**: 24–29.
- National Toxicology Program, 1993. NTP Toxicology and Carcinogenesis Studies of Turmeric Oleoresin (CAS No. 8024-37-1) (Major Component 79%-85% Curcumin, CAS No. 458-37-7) in F344/N Rats and B6C3F1 Mice (Feed Studies). *National Toxicology Program Technical Report Series*, **427**: 1–275.
- NCEP, (national cholesterol education program), 2002. Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III), Final report, National Institute of Health, National Heart, Lung, and Blood Institute, Bethesda, Maryland, United States.
- Nisa, F., Hermawan, A., Murwanti, R., dan Meiyanto, E., 2012. Antiproliferative effect of *Gynura procumbens* (Lour.) Merr. Leaves etanolic extract on 7,12-dimethylbenz(a)anthracene induced male rat liver. *Advanced Pharmaceutical Bulletin*, **2**: 99–106.
- Nobre, C.P., Raffin, F., dan Moura, T.F.A.L., 2005. Standardization of extracts from *Momordica charantia* L. (Cucurbitaceae) by total flavonoids content determination. *Acta Farmaceutica Bonaerense*, **24**: 562–566.
- Nouh, F., Omar, M., dan Younis, M., 2019. Risk Factors and Management of Hyperlipidemia (Review). *Asian Journal of Cardiology Research*, **2**: 1–10.
- Novianto, A., 2019. Pengaruh Kombinasi Ekstrak Etanolik Temulawak (*Curcuma canthorrhiza* Roxb) Rendah Minyak Atsiri dan Ekstrak Etanolik Sambung Nyawa (*Gynura procumbens* (Lour.) Merr) Terhadap Kadar Trigliserida Tikus Putih Jantan Galur Wistar Serta Gambaran Histopatologinya. *Jurnal Farmasi (Journal of Pharmacy)*, **1**: 30.

- Nugroho, A., 2017. *Teknologi Bahan Alam*. Lambung mangkurat university Press, Banjarmasin.
- Nugroho, A.F. dan Ikawati, Z., 2015. 'Uji Toksisitas Akut Per Oral Kombinasi Ekstrak Temulawak (*Curcuma xanthorrhiza* Roxb.) dan Sambung Nyawa (*Gynura procumbens* (Lour.) Merr Pada Tikus Betina Galur Wistar', . Fakultas Farmasi, Universitas Gadjah Mada.
- Obeagu, E., 2018. A Review on Free Radicals and Antioxidants. *International Journal of Current Research in Medical Sciences*, **4**: 123–133.
- Oktaviani, E., Harpeni, E., dan Wardiyanto, 2019. Fitofarmaka Daun Sambung Nyawa (*Gynura procumbens*) Untuk Meningkatkan Imunitas Ikan Kerapu Macan (*Epinephelus fuscoguttatus* Forsskal 1775) Terhadap Serangan Bakteri *Vibrio alginolyticu*. *Indonesian Journal of Marine Science and Technology*, **12**: .
- Olsson, A.G., McTaggart, F., dan Raza, A., 2006. Rosuvastatin: A Highly Effective New HMG-CoA Reductase Inhibitor. *Cardiovascular Drug Reviews*, **20**: 303–328.
- Onakpoya, I.J., O’Sullivan, J., dan Heneghan, C.J., 2015. The effect of cactus pear (*Opuntia ficus-indica*) on body weight and cardiovascular risk factors: A systematic review and meta-analysis of randomized clinical trials. *Nutrition*, **31**: 640–646.
- Ong, S.-L., Paneerchelvan, S., Lai, H.-Y., dan Rao, N.K., 2014. *In Vitro* Lipase Inhibitory Effect of Thirty Two Selected Plants in Malaysia. *Asian Journal of Pharmaceutical & Clinical Research*, **7**: 19–24.
- Ozaki, Y. dan Liang, O.B., 1988. Cholagogic Action of the Essential Oil Obtained from *Curcuma xanthorrhiza* Roxb. *The Japanese journal of pharmacognosy*, **42**: p257-263.
- Padilla-Camberos, E., Flores-Fernandez, J.M., Fernandez-Flores, O., Gutierrez-Mercado, Y., Carmona-de la Luz, J., Sandoval-Salas, F., dkk., 2015. Hypocholesterolemic Effect and In Vitro Pancreatic Lipase Inhibitory Activity of an *Opuntia ficus-indica* Extract. *BioMed Research International*, 1–4.
- Paoletti, R., Fahmy, M., Mahla, G., Mizan, J., dan Southworth, H., 2002. Rosuvastatin Demonstrates Greater Reduction of Low-Density Lipoprotein Cholesterol Compared with Pravastatin and Simvastatin in

Hypercholesterolaemic Patients: A Randomized, Double-Blind Study.
Journal of cardiovascular risk, **8**: 383–90.

Pavlov, A., Kovatcheva, P., Georgiev, V., Koleva, I., dan Ilieva, M., 2002.
Biosynthesis and Radical Scavenging Activity of Betalains during the
Cultivation of Red Beet (*Beta vulgaris*) Hairy Root Cultures. *Zeitschrift für
Naturforschung C*, **57**: 640–644.

Pebrianty, Y., Subandi, dan Mutholib, 2013. Aktivitas Sari Mesokarp Pepino
(*Solanum muricatum*) dan Terong lalap Ungu (*Solanum melongena*) Sebagai
Inhibitor lipase Pankreas dan Potensinya Sebagai Minumam Kesehatan
Penurun Kadar Lemak darah. *Jurnal-online.um.ac.id*, .

Peschel, D., Koerting, R., dan Nass, N., 2007. Curcumin induces changes in
expression of genes involved in cholesterol homeostasis. *The Journal of
Nutritional Biochemistry*, **18**: 113–119.

Phogat, P., Deep, A., Sharma, P.C., Mittal, S.K., Kakkar, S., Goyal, R., dkk., 2010.
Introduction to Hyperlipidemia and Its Management: A Review.
Pharmacologyonline, **2**: 251–266.

Poh, T.-F., Ng, H.-K., Hoe, S.-Z., dan Lam, S.-K., 2013. *Gynura procumbens*
causes vasodilation by inhibiting angiotensin II and enhancing bradykinin
actions. *Journal of Cardiovascular Pharmacology*, **61**: 378–384.

Pradono, D.I., Darusman, L.K., dan Susanti, A., 2012. Inhibisi Lipase Pankreas
secara *In Vitro* oleh Ekstrak Air dan Etanol Daun Asam Jawa (*Tamarindus
indica*) dan Rimpang Kunci Pepet (*Kaempferia rotunda*). *Jurnal Natur
Indonesia*, **13**: 146.

Pramono, S., Arifah, F.H., Pribadi, F.H., dan Nugroho, A.E., 2018.
Hepatoprotective activity of *Curcuma xanthorrhiza* Roxb. on paracetamol-
induced liver damage in rats and correlation with their chemical compounds
9.

Prasetya, D.Y. dan Yuliani, S., 2014. Ekstrak Rimpang Temulawak (*Curcuma
xanthorrhiza* Roxb.) pada Radial Arm Maze dan Pasive Avoidance Test
Tikus model Demensia. *Pharmaciana*, **4**: 157–164.

Puangpronpitag, D., Chaichanadee, S., Naowaratwattana, W., Sittiwet, C.,
Thammasarn, K., Luerang, A., dkk., 2010. Evaluation of Nutritional Value
and antioxidative Properties of the Medicinal Plant *Gynura Procumbens*
Extract. *Asian Journal of Plant Sciences*, **9**: 146–151.

- Purwantiningsih, P., Murwanti, R., dan Hakim, L., 2019. Antioxidant Activities of n-Hexane Soluble and Insoluble Fraction, Ethyl Acetate Soluble and Insoluble Fraction from Ethanol Extract of Sambung Nyawa Leaf (*Gynura procumbens* (Lour.) Merr.). *Majalah Obat Tradisional*, **24**: 91.
- Puteri, A.I.S., Sandhika, W., dan Hasanatuludhhiyah, N., 2020. Effect of Javanese Turmeric (*Curcuma xanthorrhiza*) Extract on Hepatitis Model of Alcohol-Induced Mice. *Jurnal Kedokteran Brawijaya*, **31**: 39.
- Putri, N.S.E. dan Tjitraesmi, A., 2017. Aktivitas *Gynura procumbens* untuk Terapi Farmakologi : Sebuah Review, *jurnal.unpad.ac.id*, **15**: 9.
- Qader, S.W., Abdulla, M.A., Chua, L.S., Najim, N., Zain, M.M., dan Hamdan, S., 2011. Antioxidant, Total Phenolic Content and Cytotoxicity Evaluation of Selected Malaysian Plants. *Molecules*, **16**: 3433–3443.
- Quezada, N., Asencio, M., Valle, J.M.D., Aguilera, J.M., dan Gómez, B., 2004. Antioxidant Activity of Crude Extract, Alkaloid Fraction, and Flavonoid Fraction from Boldo (*Peumus boldus* Molina) Leaves. *Journal of Food Science*, **69**: C371–C376.
- Rafi, M., Widyastuti, N., Suradikusumah, E., dan Darusman, L.K., 2012. Aktivitas antioksidan, kadar fenol, flavonoid total dari enam tumbuhan obat indonesia. *Jurnal Bahan Alam Indonesia*, **8**: 159–165.
- Rahardjo, M., 2015. Penerapan SOP Budidaya Untuk Mendukung Temulawak Sebagai Bahan Baku Obat Potensial. *Perspektif*, **9**: 78–93.
- Rahman, A.F.M.M. dan Asad, M.S.A., 2013. Chemical and biological investigations of the leaves of *Gynura procumbens*. *International Journal of Biosciences (IJB)*, **3**: 36–43.
- Rahman, A.H., Saari, N., Abas, F., Ismail, A., Mumtaz, M.W., dan Abdul Hamid, A., 2017. Anti-obesity and antioxidant activities of selected medicinal plants and phytochemical profiling of bioactive compounds. *International Journal of Food Properties*, **20**: 2616–2629.
- Rahman, S., 2009. Whether crop diversification is a desired strategy for agricultural growth in Bangladesh? *Food Policy*, **34**: 340–349.
- Rahmatini, R., 2015. Evaluasi Khasiat dan Keamanan Obat (Uji Klinis). *Majalah Kedokteran Andalas*, **34**: 31–38.

- Rahmayunita, G., Jacob, T.N.A., Novianto, E., Indriatmi, W., Rihatmadja, R., dan Puspongoro, E.H.D., 2018. A double-blind randomized controlled trial of topical *Curcuma xanthorrhiza* Roxb. on mild psoriasis: clinical manifestations, histopathological features, and K6 expressions. *Medical Journal of Indonesia*, **27**: 178–84.
- Rakesh, S.U., Patil, P.R., Salunkhe, V.R., Dhabale, P.N., dan Burade, K.B., 2009. HTPLC Method for Quantitative Determination of Quercetin in Hydroalcoholic Extract of Dried flower of *Nymphaea stellata* Willd. *International Journal of ChemTech Research*, **1**: 931–936.
- Rani, B.S. dan Hari, V.B.N., 2011. Niosomal Formulation Of Orlistat: Formulation and In-Vitro Evaluation. *International Journal of Drug Development & Research*, **3**: 300–311.
- Rasyid, A., Rahman, A.R.A., Jaalam, K., dan Lelo, A., 2002. Effect of different curcumin dosages on human gall bladder. *Asia Pacific Journal of Clinical Nutrition*, **11**: 314–318.
- Rohman, A., 2014. *Statistika Dan Kemometrika Dasar Dalam Analisis Farmasi*,. Pustaka Pelajar, Yogyakarta.
- Rohman, A., 2019. *Spektroskopi Vibrasional. Teori Dan Aplikasinya Untuk Analisis Farmasi*, 2nd ed. Gadjah Mada University Press, Yogyakarta.
- Rohman, A., Sudjadi, Devi, Ramadhani, D., dan Nugroho, A., 2015. Analysis of curcumin in *Curcuma longa* and *Curcuma xanthorrhiza* using FTIR spectroscopy and chemometrics. *Research Journal of Medicinal Plant*, **9**: 179–186.
- Ros, E., 2000. Intestinal absorption of triglyceride and cholesterol. Dietary and pharmacological inhibition to reduce cardiovascular risk. *Atherosclerosis*, **151**: 357–379.
- Rosidah, Yam, M.F., Sadikun, A., Ahmad, M., Akowuah, G.A., dan Asmawi, Mohd.Z., 2009. Toxicology evaluation of standardized methanol extract of *Gynura procumbens*. *Journal of Ethnopharmacology*, **123**: 244–249.
- Ruslay, S., Abas, F., Shaari, K., Zainal, Z., Maulidiani, Sirat, H., dkk., 2007. Characterization of the components present in the active fractions of health gingers (*Curcuma xanthorrhiza* and *Zingiber zerumbet*) by HPLC–DAD–ESIMS. *Food Chemistry*, **104**: 1183–1191.

- Saeed, M.A.A., Meng, K.Y., Sadikun, A., Murugaiyah, V., Asmawi, M.Z.B., dan Ismail, Z., 2014. Stability study of *Gynura procumbens* extracts using High Performance Liquid Chromatography. *Journal of Pharmacy Research*, **8**: 822–827.
- Sana, N.K., Hossin, I., dan Shaha, R.K., 2004. Identification, Purification and Characterization of Lipase from Germinating Oil Seeds (*Brassica napus* L.). *Pakistan Journal of Biological Science*, **7**: 246–252.
- Sani, H., Darus, N., mat noor, M., dan Ismail, I., 2008. *Gynura procumbens* Leaves Aqueous Extract Decreased Blood Glucose Level and Increased Sperm Quality in Diabetic-Induced Rats. *Sains Malaysiana*, **37**: 435–441.
- Santana, A.L. dan Meireles, M.A.A., 2016. Turmeric, Partial Hydrolysis, Thin-Layer Chromatography, NP, DPPH, Vanillin, Alpha-Naphthol. *Food and Public Health*, **6** (1): 15-25.
- Sari, K.R.P., Sudarsono, dan Nugroho, A.E., 2015. Effect of herbal combination of *Andrographis paniculata* (Burm.f) Ness and *Gynura procumbens* (Lour.) Merr ethanolic extracts in alloxan-induced hyperglycemic rats. *International Food Research Journal*, **22**: 1332–1337.
- Sari, I. puspita, Nurrochmad, A., dan Setiawan, I.M., 2013. Indonesian Herbals Reduce Cholesterol Levels in Diet-Induced Hypercholesterolemia through Lipase Inhibition. *Malaysian Journal of Pharmaceutical Sciences*, **11**: 13–20.
- Sarker, S. dan Nahar, L., 2012. In “Natural Products Isolation” (editors: S. D. Sarker and L. Nahar), 3rd edition, An introduction to natural products isolation, Humana Press/Springer-Verlag, New Jersey, pp. 1-26., dalam: *Natural Product Isolation*, **3**.
- Sastrohamidjodjo, H., 2002. *Spektroskopi*. Penerbit Liberty, Yogyakarta.
- Septiana, A.T., Muchtadi, H., dan Zakaria, F., 2006. Penghambatan Oksidasi LDL dan Akumulasi Kolesterol pada Makrofag oleh Ekstrak Temulawak (*Curcuma xanthorrhiza* Roxb). *Jurnal Teknologi dan Industri Pangan*, **17**: 221–226.
- Septiani, F. dan Ikawati, Z., 2015. 'Aktivitas Kombinasi Ekstrak Temulawak (*Curcuma xanthorrhiza* Roxb.) dan Sambung Nyawa (*Gynura procumbens* (Lour) Merr.) Terkuantifikasi dalam Kadar LDL dan Trigliserida pada Tikus Wistar Jantan'. Fakultas Farmasi, Universitas Gadjah Mada.

- Setiawan, I.M., 2008. 'Pengaruh Kombinasi Ekstrak Etanolik Temulawak (*Curcuma xanthorrhiza* Roxb) Rendah Minyak Atsiri dan Sambung Nyawa (*Gynura procumbens* (Lour) Merr) terhadap Kadar Kolesterol HDL dan LDL Tikus Jantan Galur Wistar Serta Gambaran Histopatologinya'. Universitas Gajah Mada, Fakultas Farmasi, Universitas Gadjah Mada.
- Setiawan, I.M. dan Sari, I. puspita, 2012. 'Uji Aktivitas Antidislipidemia Fraksi Air Ekstrak Etanolik Daun *Gynura procumbens* (*G. procumbens* (Lour) Merr) pada Tikus Jantan yang Diinduksi Diet Lemak Tinggi'. Universitas Gadjah Mada.
- Setiawati, M.C., Ikawati, Z., dan Kertia, I.N., 2017. Antiinflammatory and antidepressive activities of Extract *Curcuma xanthorrhiza* Roxb in Systemic Lupus Erythematosus. *Indonesian Journal of Pharmacy*, **28**: 185.
- Setyowati, E., Ikawati, Z., Hertiani, T., dan Pramantara, I.D.P., 2020a. Clinical Trial of Herbal Products Combination of Extract *Gynura procumbens* Leaves and *Curcuma xanthorrhiza* Rhizome as Anti-dyslipidemia **9**: 11.
- Setyowati, E., Ikawati, Z., Hertiani, T., dan Pramantara, I.D.P., 2020b. Antioxidant Activity and Lipase Enzyme Inhibition of *Gynura procumbens* (Lour.) Merr and *Curcuma xanthorrhiza* Roxb and their Correlation with Chemometric Methods. *International Journal of Pharmaceutical Research*, **12**: .
- Sharma, O.P. dan Bhat, T.K., 2009. DPPH antioxidant assay revisited. *Food Chemistry*, **113**: 1202–1205.
- Shattat, G.F., 2015. A Review Article on Hyperlipidemia: Types, Treatments and New Drug Targets. *Biomedical and Pharmacology Journal*, **7**: 399–409.
- Shepherd, J., Carbarns, I., Harris, S., Caplan, R., dan Pears, J., 2002. Safety of rosuvastatin in patients developing LDL-C<80 mgdL and <50 mgdL in clinical trials. *Atherosclerosis Suppl*, **3**: 205.
- Shoba, G., Joy, D., Joseph, T., Majeed, M., Rajendran, R., dan Srinivas, P.S., 1998. Influence of piperine on the pharmacokinetics of curcumin in animals and human volunteers. *Planta Medica*, **64**: 353–356.
- Sholihah, I., 2013. 'Pengaruh Ekstrak Etanolik Daun Sambung Nyawa (*Gynura procumbens* (Lour.) Merr.) terhadap Kadar Glukosa Serum Darah Tikus yang Diinduksi Lemak-Fruktosa'. Universitas Gadjah Mada.

- Siagian, S., 2008. 'Pengaruh Penambahan Maltodextrin Terhadap Kelarutan Pentagamavunon-0 (PGV-0)',. Fakultas Farmasi, Universitas Gadjah Mada, Yogyakarta.
- Sirait, R.R.U., Windarti, I., dan Fiana, D.N., 2014. Effect of Oral route rhizome temulawak (*Curcuma xanthorrhiza* Roxb.) on liver damage of white male rats (*Rattus norvegicus*) sprague dawley strain induced by aspirin. *Jurnal Majority*, **3**: .
- Soetarno, S., Suganda, A.G., Sugihartina, G., dan Sukrasno, S., 2000. Flavonoid dan Asam-asam Fenolat dari Daun Dewa (*Gynura procumbens* (Lour.) Merr). *Warta Tumbuhan Obat Indonesia*, **6**: .
- Soni, K.B. dan Kuttan, R., 1992. Effect of oral curcumin administration on serum peroxides and cholesterol levels in human volunteers. *Indian journal of physiology and pharmacology*, **36**: 273–273.
- Sreerama, Y.N., Takahashi, Y., dan Yamaki, K., 2012. Phenolic Antioxidants in Some Vigna Species of Legumes and their Distinct Inhibitory Effects on α -Glucosidase and Pancreatic Lipase Activities. *Journal of Food Science*, **77**: C927–C933.
- Srivastava, M. (Editor), 2011. *High-Performance Thin-Layer Chromatography (HPTLC)*. Springer-Verlag, Berlin Heidelberg.
- Suarsa, I. wayan, 2015. *Spektroskopi*. Fakultas FMIPA Udayana, Bali.
- Sudarsono, 2004. Kamfora, salah satu komponen minyak atsiri rimpang Temulawak (*Curcuma xanthorrhiza* Roxb.) dari Kebun Tanaman Obat PT. Nyonya Meneer, Karangjati. *Majalah Farmasi Indonesia*, **15**: 194–200.
- Sudarsono, Gunawan, D., Wahyuono, S., dan Donatus, I.A., 2002. *Tumbuhan Obat*, II. ed. Universitas Gadjah Mada, Yogyakarta.
- Sukandar, E.Y., Nurdewi, dan Elfahmi, 2012. Antyhypercholesterolemic Effect of Combination of *Guazuma ulmifolia* Lamk. Leaves and *Curcuma xanthorrhiza* Roxb. Rhizomes Extract in Wistar Rats. *International Journal of Pharmacology*, **8**: 277–282.
- Sun, L., Li, E., Wang, F., Wang, T., Qin, Z., Niu, S., dkk., 2015. Quercetin increases macrophage cholesterol efflux to inhibit foam cell formation through activating PPAR γ -ABCA1 pathway. *International journal of clinical and experimental pathology*, **8**: 10854.

- Sunarwidhi, A.L., Sudarsono, S., dan Nugroho, A.E., 2014. Hypoglycemic Effect of Combination of *Azadirachta indica* A. Juss. and *Gynura procumbens* (Lour.) Merr. Ethanolic Extracts Standardized by Rutin and Quercetin in Alloxan-induced Hyperglycemic Rats. *Advanced Pharmaceutical Bulletin; eISSN 2251-7308*, .
- Svendsen, A., 2000. Lipase protein engineering. *Biochimica et Biophysica Acta (BBA) - Protein Structure and Molecular Enzymology*, , Protein engineering of enzymes **1543**: 223–238.
- Syamsudin, R., Perdana, F., Mutiaz, F.S., Galuh, V., Rina, A., Cahyani, N., dkk., 2019. Temulawak Plant (*Curcuma xanthorrhiza* Roxb) as a Traditional Medicine. *Jurnal Ilmiah Farmako Bahari*, **10**: 51–65.
- Tan, H.-L., Chan, K.-G., Pusparajah, P., Lee, L.-H., dan Goh, B.-H., 2016. *Gynura procumbens*: An Overview of the Biological Activities. *Frontiers in Pharmacology*, **7**: .
- Tapas, A.R., Sakarkar, D.M., dan Kakde, R.B., 2008. Flavonoids as Nutraceuticals: A Review. *Tropical Journal of Pharmaceutical Research*, **7**: 1089–1099.
- Taufik, I., 2017. 'Profil Metabolit Kulit Batang *Artocarpus champeden* Spreng secara HTPLC Densitometri serta Hubungannya dengan Antimalaria dan Toksisitas *in vitro* (suatu kajian autentikasi, efikasi, dan keamanan bahan baku herbal)', *Thesis*, . Universitas Airlangga.
- Teoh, W.Y., Wahab, N.A., Richardson, J.S.M., dan Sim, K.S., 2016. Evaluation of Antioxidant Properties, Cytotoxicity and Acute Oral Toxicity of *Gynura procumbens* (Compositae). *Sains Malaysiana*, **45**: 229–235.
- Tiss, A., Verger, R., Gargouri, Y., dan Abousalham, A., 2004. 'Digestive Lipases Inhibition: an In vitro Study - Lipases and Phospholipases in Drug Development - Wiley Online Library'. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1002/3527601910.ch9> (diakses tanggal 24/8/2020).
- Tsalissavrina, I., Wahono, D., dan Handayani, D., 2006. Pengaruh pemberian diet tinggi karbohidrat dibandingkan diet tinggi lemak terhadap kadar trigliserida dan HDL darah pada *Rattus norvegicus* galur wistar. *Jurnal Kedokteran Brawijaya*, **22**: 80–89.
- Ueno, H., Yamakura, S., Arastoo, R.S., Oshima, T., dan Kokubo, K., 2014. Systematic Evaluation and Mechanistic Investigation of Antioxidant Activity

of Fullerenols Using β -Carotene Bleaching Assay. *Journal of Nanomaterials*, 1–7.

Uthia, R., Kardela, W., dan Transida, K.B., 2018. Uji efek antinflamasi ekstrak etanol daun sambung nyawa **10**: 8.

Varras, J., 2008. Managing Hyperlipidemia: An Evidence-Based Approach. *Journal of Managed Care Medicine*, **11**: .

Vejanan, V., Latip, J., Lee, P.-C., Embi, N., dan Sidek, H., 2012. *In vitro* and *in vivo* Anti-plasmodial Activities of *Gynura procumbens*. *Sains Malaysiana*, **41**: 1535–1542.

Verdiana, M., Widarta, I.W.R., dan Permana, I.D.G.M., 2018. Pengaruh Jenis Pelarut pada Ekstraksi menggunakan Gelombang Ultrasonik terhadap Aktivitas Antioksidan Ekstrak Kulit Buah Lemon (*Citrus limon* (Linn.) Burm F.). *Jurnal Ilmu dan Teknologi Pangan (ITEPA)*, **7**: 213.

Wahdaningsih, S., Setyowati, E.P., dan Wahyuono, S., 2011. Free Radika Scavenging Activity of *Alsophila glauca* J. Sm. *Majalah Obat Tradisional*, **5**.

Wang, H., Zhou, J.W., Fu, D.H., Zhou, Y., Cheng, W.Z., dan Liu, Z.-L., 2013. *Gynura procumbens* ethanolic extract suppresses osteosarcoma cell proliferation and metastasis *in vitro*. *Oncology Letters*, **6**: 113–117.

Werdhasari, A., 2014. Peran Antioksidan Bagi Kesehatan. *Jurnal Biotek Medisina Indonesia*, **3**: 59–68.

Widodo, H., Sisindari, S., Asmara, W., dan Rohman, A., 2019. Antioxidant activity, total phenolic and flavonoid contents of selected medicinal plants used for liver diseases and its classification with chemometrics. *Journal of Applied Pharmaceutical Science*, **9**: 99–105.

Widyawati, P.S., C Hanny Wijaya, W., Peni Suprapti Harjosworo, S.H., dan Dondin Sajuthi4), S., 2010. 'Pengaruh Ekstraksi dan Fraksinasi terhadap Kemampuan menangkal Radikal bebas DPPH (1,1-difenil-2-pikrilhidrazil) Ekstrak dan Fraksi Daun Beluntas (*Pluchea indica* less)'. Dipresentasikan pada Seminar Rekayasa Kimia dan Proses 2010, Teknik Kimia UNDIP Semarang, hal. 1–7.

Wientarsih, I., Chakeredza, S., dan Meulen, U., 2002. Influence of curcuma (*Curcuma xanthorrhiza* Roxb) on lipid metabolism in rabbits. *Journal of the Science of Food and Agriculture*, **82**: 1875–1880.

- Wientzek, A., Vigl, M., Steindorf, K., Brühmann, B., Bergmann, M., Harttig, U., dkk., 2014. The Improved Physical Activity Index for Measuring Physical Activity in EPIC Germany. *PloS one*, **9**: e92005.
- Wong, H. dan Schotz, M.C., 2002. The lipase gene family. *Journal of Lipid Research*, **43**: 993–999.
- Yan, R., Lin, G., Ko, N.L., dan Tam, Y.K., 2007. Low oral bioavailability and pharmacokinetics of senkyunolide a, a major bioactive component in *Rhizoma Chuanxiong*, in the rat. *Therapeutic Drug Monitoring*, **29**: 49–56.
- Yasni, S., Imaizumi, K., Nakamura, M., Aimoto, J., dan Sugano, M., 1993. Effects of *Curcuma xanthorrhiza* Roxb. and curcuminoids on the level of serum and liver lipids, serum apolipoprotein A-I and lipogenic enzymes in rats. *Food and Chemical Toxicology*, **31**: 213–218.
- Yla-Herttuala, S., Bentzon, J.F., Daemen, M., Falk, E., Garcia-Garcia, H.M., Herrmann, J., dkk., 2013. Stabilization of atherosclerotic plaques: an update. *European Heart Journal*, **4**: 3251–3258.
- Yoshikawa, M., Shimoda, H., Nishida, N., Takada, M., dan Matsuda, H., 2002. *Salacia reticulata* and its polyphenolic constituents with lipase inhibitory and lipolytic activities have mild antiobesity effects in rats. *The Journal of nutrition*, **132**: 1819–1824.
- Zhang, D. dan Hamazu, Y., 2004. Phenolic compounds and their antioxidant properties in different tissues of carrots (*Daucus carota* L.). *Journal of Food Agricultural and Environment*, 95–101.
- Zhang, X.F. dan Tan, B.K., 2000. Effects of an ethanolic extract of *Gynura procumbens* on serum glucose, cholesterol and triglyceride levels in normal and streptozotocin-induced diabetic rats. *Singapore Medical Journal*, **41**: 9–13.