

## DAFTAR PUSTAKA

- Ab Aziz, C.B., and Ahmad, A.H., 2006. The role of the thalamus in modulating pain. *Malaysian Journal of Medical Sciences*, 13(2), 11–18.
- Argyriou, A.A., 2015. Updates on oxaliplatin-induced peripheral neurotoxicity (OXAI PN). *Toxics*, 3(2), 187–197.
- Alberti, P., 2019. Platinum-drugs induced peripheral neurotoxicity: clinical course and preclinical evidence. *Expert Opinion on Drug Metabolism and Toxicology*, 15(6), 487–497.
- Al Moundhri, M.S., Al-Salam, S., Al Mahrouqee, A., Beegam, S., and Ali, B.H., 2013. The Effect of Curcumin on Oxaliplatin and Cisplatin Neurotoxicity in Rats: Some Behavioral, Biochemical, and Histopathological Studies. *Journal of Medical Toxicology*, 9(1), 25–33.
- Andres, S., Pevny, S., Ziegenhagen, R., Bakhiya, N., Schäfer, B., Hirsch-Ernst, K.I., and Lampen, A., 2018. Safety Aspects of the Use of Quercetin as a Dietary Supplement. *Molecular Nutrition and Food Research*, 62(1), 1–15.
- Azevedo, M.I., Pereira, A.F., Nogueira, R.B., Rolim, F.E., Brito, G.A.C., Wong, D.V.T., and Vale, M.L., 2013. The antioxidant effects of the flavonoids rutin and quercetin inhibit oxaliplatin-induced chronic painful peripheral neuropathy. *Molecular Pain*, 9(1), 1–14.
- Babu, A., Prasanth, K. G., & Balaji, B. 2015. Effect of curcumin in mice model of vincristine-induced neuropathy. *Pharmaceutical Biology*, 53(6), 838–848.
- Badan Penelitian dan Pengembangan Kesehatan., 2008. Laporan Nasional Riskesdas 2007 [National Report on Basic Health Research 2007]. *Kementerian Kesehatan Republik Indonesia*, 1–384.

- Balayssac, D., Ferrier, J., Descoeur, J., Ling, B., Pezet, D., Eschalier, A., and Authier, N., 2011. Chemotherapy-induced peripheral neuropathies: From clinical relevance to preclinical evidence. *Expert Opinion on Drug Safety*, 10(3), 407–417.
- Baloh, R.W., 2018. Sciatica and chronic pain: Past, present and future. *Sciatica and Chronic Pain: Past, Present and Future*, 1–129.
- Barzegar, A., and Moosavi-Movahedi, A.A., 2011. Intracellular ROS protection efficiency and free radical-scavenging activity of curcumin. *PLoS ONE*, 6(10), 1–7.
- Beltramo, M., Campanella, M., Tarozzo, G., Fredduzzi, S., Corradini, L., Forlani, A., Bertorelli, R., and Reggiani, A., 2003. Gene expression profiling of melanocortin system in neuropathic rats supports a role in nociception. *Molecular Brain Research*, 118(1–2), 111–118.
- Bernard, J.F., 2007. Hypothalamus and Nociceptive Pathways. *Encyclopedia of Pain*, 944–948.
- Boadas-Vaello, P., Castany, S., Homs, J., Álvarez-Pérez, B., Deulofeu, M., and Verdú, E., 2016. Neuroplasticity of ascending and descending pathways after somatosensory system injury: Reviewing knowledge to identify neuropathic pain therapeutic targets. *Spinal Cord*, 54(5), 330–340.
- Borghi, S.M., Pinho-Ribeiro, F.A., Fattori, V., Bussmann, A.J.C., Vignoli, J.A., Camilios-Neto, D., and Verri, W.A., 2016. Quercetin inhibits peripheral and spinal cord nociceptive mechanisms to reduce intense acute swimming-induced muscle pain in mice. *PLoS ONE*, 11(9), 1–23.
- Carullo, G., Cappello, A.R., Frattaruolo, L., Badolato, M., Armentano, B., and Aiello, F., 2017. Quercetin and derivatives: Useful tools in inflammation and pain management. *Future Medicinal Chemistry*, 9(1), 79–93.

- Catania, A., 2008. Neuroprotective actions of melanocortins: a therapeutic opportunity. *Trends in Neurosciences*, 31(7), 353–360.
- Cavaletti, G., Alberti, P., Argyriou, A.A., Lustberg, M., Staff, N.P., and Tamburin, S., 2019. Chemotherapy-induced peripheral neurotoxicity: A multifaceted, still unsolved issue. *Journal of the Peripheral Nervous System*, 24(S2), S6–S12.
- Cavaletti, G., Tredici, G., Petruccioli, M.G., Donde', E., Tredici, P., Marmioli, P., Minoia, C., Ronchi, A., Bayssas, M., and Etienne, G.G., 2001. Effects of different schedules of oxaliplatin treatment on the peripheral nervous system of the rat. *European Journal of Cancer*, 37, 2457–2463.
- Chai, B., Li, J.Y., Zhang, W., Newman, E., Ammori, J., and Mulholland, M.W., 2006. Melanocortin-4 receptor-mediated inhibition of apoptosis in immortalized hypothalamic neurons via mitogen-activated protein kinase. *Peptides*, 27(11), 2846–2857.
- Chen, S., Zhao, L., Sherchan, P., Ding, Y., Yu, J., Nowrangi, D., Tang, J., Xia, Y., and Zhang, J.H., 2018. Activation of melanocortin receptor 4 with RO27-3225 attenuates neuroinflammation through AMPK/JNK/p38 MAPK pathway after intracerebral hemorrhage in mice. *Journal of Neuroinflammation*, 15(1), 1–13.
- Cheng, X.L., Liu, H.Q., Wang, Q., Huo, J.G., Wang, X.N., and Cao, P., 2015. Chemotherapy-induced peripheral neurotoxicity and complementary and alternative medicines : progress and perspective. *Frontiers in Pharmacology*, 6(OCT), 1-9.
- Chine, V.B., Au, N.P.B., Kumar, G., and Ma, C.H.E., 2019. Targeting Axon Integrity to Prevent Chemotherapy-Induced Peripheral Neuropathy. *Molecular Neurobiology*, 56(5), 3244–3259.

- Chu, H., Xia, J., Xu, H., Yang, Z., Gao, J., and Liu, S., 2012. Melanocortin 4 receptor mediates neuropathic pain through p38mapk in spinal cord. *Canadian Journal of Neurological Sciences*, 39(4), 458–464.
- Coskun, O., Kanter, M., Korkmaz, A., and Oter, S., 2005. Quercetin, a flavonoid antioxidant, prevents and protects streptozotocin-induced oxidative stress and  $\beta$ -cell damage in rat pancreas. *Pharmacological Research*, 51(2), 117–123.
- Dewi, M., 2017. Sebaran Kanker di Indonesia, Riset Kesehatan Dasar 2007. *Indonesian Journal of Cancer*, 11(1), 1–8.
- Gantz, I., and Fong, T.M., 2003. The melanocortin system. *Am J Physiol Endocrinol Metab*, 284, E468–E474.
- Garafutdinov, R.R., Galimova, A.A., and Sakhabutdinova, A.R., 2017. Polymerase chain reaction with nearby primers. *Analytical Biochemistry*, 518, 126–133.
- Gaudet, A.D., Mandrekar-Colucci, S., Hall, J.C.E., Sweet, D.R., Schmitt, P.J., Xu, X., and Popovich, P.G., 2016. Mir-155 deletion in mice overcomes neuron-intrinsic and neuron-extrinsic barriers to spinal cord repair. *Journal of Neuroscience*, 36(32), 8516–8532.
- Giuliani, D., Ottani, A., Neri, L., Zaffe, D., Grieco, P., Jochem, J., and Guarini, S., 2017. Multiple beneficial effects of melanocortin MC4 receptor agonists in experimental neurodegenerative disorders: Therapeutic perspectives. *Progress in Neurobiology*, 148, 40–56.
- Gregg, R.W., Molepo, J.M., Monpetit, V.J.A., Mikael, N.Z., Redmond, D., Gadia, M., and Stewart, D.J., 1992. Cisplatin neurotoxicity: The relationship between dosage, time, and platinum concentration in neurologic tissues, and morphologic evidence of toxicity. *Journal of Clinical Oncology*, 10(5), 795–803.

- Hopkins, H.L., Duggett, N.A., and Flatters, S.J.L., 2016. Chemotherapy-induced painful neuropathy: Pain-like behaviours in rodent models and their response to commonly used analgesics. *Current Opinion in Supportive and Palliative Care*, 10(2), 119–128.
- Hsieh, Y.L., Chen, H.Y., Yang, C.H., and Yang, C.C., 2017. Analgesic Effects of Transcutaneous Ultrasound Nerve Stimulation in a Rat Model of Oxaliplatin-Induced Mechanical Hyperalgesia and Cold Allodynia. *Ultrasound in Medicine and Biology*, 43(7), 1466–1475.
- Lee, H.L., Kim, Y.D., Jung, H.C., and Cheong, Y.K., 2014. The effect of intrathecal curcumin on mechanical allodynia in rats after L5 spinal nerve ligation. *Korean Journal of Anesthesiology*, 67(1), S122–S123.
- Liu, S., Li, Q., Zhang, M.T., Mao-Ying, Q.L., Hu, L.Y., Wu, G.C., Mi, W.L., and Wang, Y.Q., 2016. Curcumin ameliorates neuropathic pain by down-regulating spinal IL-1 $\beta$  via suppressing astroglial NALP1 inflammasome and JAK2-STAT3 signalling. *Scientific Reports*, 6(June), 1–14.
- Luger, T.A., and Brzoska, T., 2007.  $\alpha$ -MSH related peptides: A new class of anti-inflammatory and immunomodulating drugs. *Annals of the Rheumatic Diseases*, 66(SUPPL. 3), 52–56.
- Jalali, M., Zaborowska, J., and Jalali, M., 2017. The Polymerase Chain Reaction: PCR, qPCR, and RT-PCR. *Basic Science Methods for Clinical Researchers*.
- Joseph, E.K., Chen, X., Bogen, O., and Levine, J.D., 2008. Oxaliplatin Acts on IB4-Positive Nociceptors to Induce an Oxidative Stress-Dependent Acute Painful Peripheral Neuropathy. *The Journal of Pain*, 9(5), 463–472.
- Joshi, M., and Deshpande, J.D., 2011. Polymerase Chain Reaction: Methods, Principles and Application. *International Journal of Biomedical Research*, 2(1).

- Kim, S.H., Kim, W., Kim, J.H., Woo, M.K., Baek, J.Y., Kim, S.Y., Chung, S.H., and Kim, H.J., 2018. A prospective study of chronic oxaliplatin-induced neuropathy in patients with colon cancer: Long-term outcomes and predictors of severe oxaliplatin-induced neuropathy. *Journal of Clinical Neurology (Korea)*, 14(1), 81–89.
- Kumar, P., Choonara, Y.E., Modi, G., Naidoo, D., and Pillay, V. 2014., Cur(Que) min: A neuroactive permutation of Curcumin and Quercetin for treating spinal cord injury. *Medical Hypotheses*, 82(4), 437–441.
- Lasaga, M., Debeljuk, L., Durand, D., Scimonelli, T.N., and Caruso, C. 2008. Role of  $\alpha$ -melanocyte stimulating hormone and melanocortin 4 receptor in brain inflammation. *Peptides*, 29(10), 1825–1835.
- Magnoni, S., Stocchetti, N., Colombo, G., Carlin, A., Colombo, A., Lipton, J.M., and Catania, A., 2003.  $\alpha$ -Melanocyte stimulating hormone is decreased in plasma of patients with acute brain injury. *J. Neurotrauma* 20, 251–260.
- Maulida, R., 2020. Efek Curcumin pada Respon Allodynia Mencit dengan Neuropati yang Diinduksi Oxaliplatin. Skripsi. Universitas Airlangga.
- McDowell, T.S., 2019. Spinal and Medullary Dorsal Horn Mechanisms. *Pain a Review Guide*. Editor Alaa Abd-Elseyed, Springer Nature Switzerland AG.
- McKeage, M.J., 2000. Platinum-Based Drugs in Cancer Therapy. In L. R. Kelland & N. P. Farrell (Eds.), *Cancer Drug Discovery and Development* (1st ed.).
- McWhinney, S.R., Goldberg, R.M., and McLeod, H.L., 2009. Platinum neurotoxicity pharmacogenetics. *Molecular Cancer Therapeutics*, 8(1), 10–16.

- Meesarapee, B., Thampithak, A., Jaisin, Y., Sanvarinda, P., Suksamrarn, A., Tuchinda, P., Morales, N.P., and Sanvarinda, Y., 2014. Curcumin I Mediates Neuroprotective Effect Through Attenuation of Quinoprotein Formation, p-p38 MAPK Expression, and Caspase-3 Activation in 6-Hydroxydopamine Treated SH-SY5Y Cells Benjawan. *Phytotherapy Research*, 28(4), 611–616.
- Mendonça, L.M., da Silva Machado, C., Correia Teixeira, C.C., Pedro de Freitas, L.A., Pires Bianchi, M. de L., and Greggi Antunes, L. M. 2013., Curcumin reduces cisplatin-induced neurotoxicity in NGF-differentiated PC12 cells. *NeuroToxicology*, 34(1), 205–211.
- Miao, F., Wang, R., Cui, G., Li, X., Wang, T., and Li, X., 2019. Engagement of MicroRNA-155 in Exaggerated Oxidative Stress Signal and TRPA1 in the Dorsal Horn of the Spinal Cord and Neuropathic Pain During Chemotherapeutic Oxaliplatin. *Neurotoxicity Research*.
- Mills, E.P., Di Pietro, F., Alshelh, Z., Peck, C.C., Murray, G.M., Vickers, E.R., and Henderson, L.A., 2018. Brainstem pain-control circuitry connectivity in chronic neuropathic pain. *Journal of Neuroscience*, 38(2), 465–473.
- Miura, E., Fukaya, M., Sato, T., Sugihara, K., Asano, M., Yoshioka, K., and Watanabe, M., 2006. Expression and distribution of JNK/SAPK-associated scaffold protein JSAP1 in developing and adult mouse brain. *Journal of Neurochemistry*, 1431–1446.
- Mollazadeh, H., Cicero, A.F.G., Blesso, C.N., Pirro, M., Majeed, M., and Sahebkar, A., 2019. Immune modulation by curcumin: The role of interleukin-10. *Critical Reviews in Food Science and Nutrition*, 59(1), 89-101.

- Mountjoy, K.G., Mortrud, M.T., Low, M.J., Simerly, R.B., and Cone, R.D., 1994. Localization of the melanocortin-4 receptor (MC4-R) in neuroendocrine and autonomic control circuits in the brain. *Molecular Endocrinology*, 8(10), 1298–1308.
- NextGen RT-PCR, Reverse Transcription & RT-PCR. Diakses dari <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKewis7sG9rt3lAhVK6nMBHfC5Ci8QFjAAegQIABAB&url=https%3A%2F%2Fwww.abmgood.com%2FDocuments%2Ffiles%2FNextGen%2520RT-PCR-Brochure-OneScript-2.pdf&usg=AOvVaw1TyGn4VM8xiqYUpoAzUCZe>, pada tanggal 10 November 2019.
- Rehatta, N.M., Hanindito, E., Tantri, A.R., Redjeki, I.S., Soenarto, R.F., Bisri, D.Y., Musba, A.M.T., and Lestari, M.L., 2019. *Anestesiologi dan Terapi Intensif*. Edisi Pertama, Jakarta: PT Gramedia Pustaka Utama, hal. 1116.
- Pachman, D.R., Barton, D.L., Watson, J.C., and Loprinzi, C.L., 2011. Chemotherapy-induced peripheral neuropathy: Prevention and treatment. *Clinical Pharmacology and Therapeutics*, 90(3), 377–387.
- Plantinga, L.C., Verhaagen, J., Edwards, P.M., Schrama, L.H., Burbach, J.P.H., and Gispen, W.H., 1992. Expression of the pro-opiomelanocortin gene in dorsal root ganglia, spinal cord and sciatic nerve after sciatic nerve crush in the rat. *Molecular Brain Research*, 16(1–2), 135–142.
- Sahbaie, P., Sun, Y., Liang, D., Shi, X., and Clark, J. D., 2014. Curcumin Treatment Attenuates Pain and Enhances Functional Recovery after Incision. *Anesthesia and Analgesia*, 118(6), 1336–1344.
- Sanivarapu, R., Vallabhaneni, V., and Verma, V., 2016. The Potential of Curcumin in Treatment of Spinal Cord Injury. *Neurology Research International*.



- Shanely, R.A., Knab, A.M., Nieman, D.C., Jin, F., McAnulty, S.R., and Landram, M.J., 2010. Quercetin supplementation does not alter antioxidant status in humans. *Free Radical Research*, 44(2), 224–231.
- Sharma, R.A., Gescher, A.J., and Steward, W.P., 2005. Curcumin: The story so far. *European Journal of Cancer*, 41(13), 1955–1968.
- Starobova, H., and Vetter, I., 2017. Pathophysiology of chemotherapy-induced peripheral neuropathy. *Frontiers in Molecular Neuroscience*, 10(May), 1–21.
- Sun, B., Ross, S.M., Joseph Trask, O., Carmichael, P.L., Dent, M., White, A., Andersen, W.E., and Clewell, R.A., 2013. Assessing dose-dependent differences in DNA-damage, p53 response and genotoxicity for quercetin and curcumin. *Toxicology in Vitro*, 27(6), 1877–1887.
- Sun, J., Chen, F., Braun, C., Zhou, Y.Q., Rittner, H., Tian, Y.K., Cai, X.Y., and Ye, D.W., 2018. Role of curcumin in the management of pathological pain. *Phytomedicine*, Vol. 48.
- Tan, Y., Yang, J., Xiang, K., Tan, Q., and Guo, Q., 2015. Suppression of MicroRNA-155 Attenuates Neuropathic Pain by Regulating SOCS1 Signalling Pathway. *Neurochemical Research*, 40(3), 550–560.
- Van Der Kraan, M., Tatro, J.B., Entwistle, M.L., Brakkee, J.H., Burbach, J.P.H., Adan, R.A.H., and Gispen, W.H., 1999. Expression of melanocortin receptors and pro-opiomelanocortin in the rat spinal cord in relation to neurotrophic effects of melanocortins. *Molecular Brain Research*, 63(2), 276–286.
- Villar, V.M., and Soria, J.M., 2010. Neuroprotective actions of curcumin. *Research Signpost*, 37/661(2), 1-15.
- Waseem, M., and Parvez, S., 2015. Neuroprotective activities of curcumin and quercetin with potential relevance to mitochondrial dysfunction induced by oxaliplatin. *Protoplasma*.

- Wolf, S., Barton, D., Kottschade, L., Grothey, A., and Loprinzi, C., 2008. Chemotherapy-induced peripheral neuropathy: Prevention and treatment strategies. *European Journal of Cancer*, 44(11), 1507–1515.
- Wongso, L., 2020. Efek Kuersetin terhadap Respon Nyeri Neuropati Perifer yang Diinduksi oleh Oxaliplatin. Skripsi. Universitas Airlangga.
- World Health Organization., 2018. Cancer. Diakses dari <http://www.who.int/mediacentre/factsheets/fs297/en/index.html>, pada tanggal 10 November 2019.
- Xiao, W.H., Zheng, H., and Bennett, G.J., 2012. Characterization of oxaliplatin-induced chronic painful peripheral neuropathy in the rat and comparison with the neuropathy induced by paclitaxel. *Neuroscience*, 203, 194–206.
- Yam, M.F., Loh, Y.C., Tan, C.S., Adam, S.K., Manan, N.A., and Basir, R., 2018. General pathways of pain sensation and the major neurotransmitters involved in pain regulation. *International Journal of Molecular Sciences*, 19(8).
- Yang, R., Li, L., Yuan, H., Liu, H., Gong, Y., Zou, L., Li, S., Wang, Z., Shi, L., Jia, T., Zhao, S., Wu, B., Yi, Z., Gao, Y., Li, G., Xu, Hong., Liu, S., Zhang, C., Li, G., and Liang, S., 2019. Quercetin relieved diabetic neuropathic pain by inhibiting upregulated P2X 4 receptor in dorsal root ganglia. *Journal of Cellular Physiology*, 234(3), 2756–2764.
- Yin, J., Wang, L., Wang, Y., Shen, H., Wang, X., and Wu, L., 2019. Curcumin reverses oxaliplatin resistance in human colorectal cancer via regulation of TGF- $\beta$ /Smad2/3 signaling pathway. *OncoTargets and Therapy*, 12, 3893–3903.

- Zaky, S., Zaky, C.S., and Abd-Elsayed, A., 2019. Anatomy of the nervous system. *Pain a Review Guide*. Editor Alaa Abd-Elsayed, Springer Nature Switzerland AG.
- Zangui, M., Atkin, S.L., Majeed, M., and Sahebkar, A., 2019. Current evidence and future perspectives for curcumin and its analogues as promising adjuncts to oxaliplatin: state-of-the-art. *Pharmacological Research*.
- Zhang, X., Chen, W.W., and Huang, W.J., 2016. Chemotherapy-induced peripheral neuropathy (Review). *Biomedical Reports*, 6, 267-271.
- Zhao, Y., Xin, Y., and Chu, H., 2019. MC4R Is Involved in Neuropathic Pain by Regulating JNK Signaling Pathway After Chronic Constriction Injury. *Frontiers in Neuroscience*, 13:919, 1–11.