

DAFTAR PUSTAKA

- Agthong, S., Kaewsema, A., and Charoensub, T. (2015). Curcumin Ameliorates Functional and Structural Abnormalities in Cisplatin-induced Neuropathy, *Exp Neurobiol.*, 24(2), pp. 139–145. Doi:10.5607/2n.2015.24.2.139.
- Ali, B. H. (2009). Mini Review Amelioration of Oxaliplatin Neurotoxicity by Drugs in Humans and Experimental Animals: A MiniReview of Recent Literature, *Nordic Pharmacological Society. Basic*, 106, pp. 272–279. doi: 10.1111/j.1742-7843.2009.00512.x.
- Al Moundhri, M. S. *et al.*, (2013). The Effect of Curcumin on Oxaliplatin and CisplatinNeurotoxicity in Rats: Some Behavioral, Biochemical, and Histopathological Studies. *Journal of Medical Toxicology*, 9(1), pp. 25–33. doi: 10.1007/s13181012-0239-x.
- Babu, A. *et al.* (2015). Effect of curcumin in mice model of vincristine-induced neuropathy. *Pharmaceutical Biology*, 53(6), pp. 838–848. doi: 10.3109/13880209.2014.943247.
- Bishnoi *et al.*, (2011). Protective effect of curcumin and its combination with piperine (bioavailability enhancer) against haloperidol-associated neurotoxicity: cellular and neurochemical evidence. *Neurotox Res.*, 20, pp. 215–225. doi:10.1007/s12640-010-9229-4.
- Boyette-davis, J. A. *et al.*, 2018. An updated understanding of the mechanisms involved in chemotherapy-induced neuropathy. *Pain Management*. doi:10.2217/pmt-2018-0020.
- Brewer, J. R., Morrison, G., Dolan, M. E., and Fleming, G. F. (2016). Chemotherapy-induced peripheral neuropathy: current status and progress. *Gynecol. Oncol.*, 140, pp. 176–183.
- Burguillos *et al.*, (2011). Caspase signalling controls microglia activation and neurotoxicity. *Nature*, 472(7343), pp. 319–324. doi:10.1038/nature09788.
- Canta, A., Pozzi, E. and Carozzi, V. (2015). Mitochondrial Dysfunction in Chemotherapy-Induced Peripheral Neuropathy (CIPN), *Toxics*, 3(2), pp. 198-223. doi: 10.3390/toxics3020198.

- Cashman CR, Höke A. (2018). *Mechanisms of distal axonal degeneration in peripheral neuropathies*, **Neuroscience Letters**, 596, pp. 33-50.
- Chen, G. *et al.* (2018). Review Microglia in Pain: Detrimental and Protective Roles in Pathogenesis and Resolution of Pain, **Neuron**, 100(6), pp. 1292–1311. doi: 10.1016/j.neuron.2018.11.009.
- ChemDraw Professional ver. 16.0.
- Conklin, K. A. (2004). Chemotherapy-associated oxidative stress: Impact on Chemotherapy effectiveness, **Integrative Cancer Therapies**, 3(4), pp. 294-300. doi: 10.1177/1534735404270335.
- Dahlquist, C. (2014). Somatosensory system; touch: Physiology and Neuronal Correlates of Discriminative and Affective Touch.
- DosSantos, M. F., Moura, B. de S. and DaSilva, A. F. (2017). Reward circuitry plasticity in pain perception and modulation, **Frontiers in Pharmacology**, 8, pp. 1–13. doi: 10.3389/fphar.2017.00790.
- D’Amelio, M., Cavallucci, V., and Cecconi, F. (2009). Neuronal caspase-3 signaling: not only cell death, **Cell Death & Differentiation**, 17(7), pp. 1104–1114. doi:10.1038/cdd.2009.180.
- Eisenberg, E., dan Levanon, E. Y. (2013). Human housekeeping genes, revisited. *Trends in Genetics*, 29(10), pp. 569–574. Doi: 10.1016/j.tig.2013.05.010.
- Elmore, S. (2007). Apoptosis: A Review of Programmed Cell Death, **Toxicologic Pathology**, 35(4), pp. 495–516. doi: 10.1080/01926230701320337.
- Federer, W. T. (1977). *Experimental Design Theory and Application*, Third Edition. New Delhi: Oxford and IBH Publishing Co.
- Finnerup, NB, *et al.*, (2016). Neuropathic pain: An updated grading system for research and clinical practice. **Pain journal**, 157(8), 1599-1606. doi: 10.1097/j.pain.0000000000000492.
- Garafutdinov, R.R., Galimova, A.A., dan Sakhabutdinova, A.R., (2016). Polymerase chain reaction with nearby primers. **Analytical Biochemistry**, doi: 10.1016/j.ab.2016.11.017.

- Garland, E. L. (2012). Pain processing in the human nervous system: a selective review of nociceptive and biobehavioral pathways. *Prim Care*, 39(3), pp. 561-571. doi:10.1016/j.pop.2012.06.013.
- Ghayur *et al.*, (1997). Caspase-1 processes IFN-gamma-inducing factor and regulates LPS-induced IFN-gamma production. *Nature*, 386, pp. 619–623.
- Giordano, C. *et al.* (2011). TRPV1-Dependent and -Independent Alterations in the Limbic Cortex of Neuropathic Mice : Impact on Glial Caspases and Pain Perception, *Cerebral Cortex*, 22(11), pp. 2495-2518. doi: 10.1093/cercor/bhr328.
- Graham, M. A. *et al.* (2000). Clinical Pharmacokinetics of Oxaliplatin: A Critical Review, *Clinical Cancer Research*, 6, pp. 1205–1218.
- Groh *et al.* (2018). Acute and Chronic Pain Processing in the Thalamocortical System of Humans and Animal Models. *Neuroscience*, 387, pp. 58–71.
- Guenin *et al.*, (2009). Normalization of qRT-PCR data: the necessity of adopting a systematic, experimental conditions-specific. *Journal of Experimental Botany*, 60(2), pp. 487–493. doi: 10.1093/jxb/ern305.
- Gupta, R., & Bhaskar, A. (2016), Chemotherapy-induced peripheral neuropathic pain, *BJA Education*, 16(4), pp. 115–119. doi:10.1093/bjaed/mkv044.
- Han, Y., Smith, M. T. and Bergdahl, A. (2013). Pathobiology of cancer chemotherapy induced peripheral neuropathy (CIPN), *Frontiers in Pharmacology*, 4, pp. 1–16. doi:10.3389/fphar.2013.00156.
- Hill, M. M., Adrain, C., Duriez, P. J., Creagh, E. M., and Martin, S. J. (2004). Analysis of the composition, assembly kinetics and activity of native Apaf-1 apoptosomes, *EMBO Journal*, 23(10), pp. 2134-2145. doi:10.1038/sj.emboj.7600210.
- Hsieh, J.C., Belfrage, M., Stone-Elander, S., Hansson, P., Ingvar, M. (1995). Central representation of chronic ongoing neuropathic pain studied by positron emission tomography. *Pain*, 63, pp. 225–236.

- Igney, F. H., and Krammer, P. H. (2002). Death and anti-death: tumour resistance to Apoptosis, *Nature Reviews Cancer*, 2(4), pp.277-288.doi:10.1038/nrc776.
- Jamieson, S. M. F. *et al.* (2007)., Nucleolar enlargement, nuclear eccentricity and altered cell body immunostaining characteristics of large-sized sensory neurons following treatment of rats with paclitaxel, *NeuroToxicology*, 28(4), pp.1092-1098, doi: 10.1016/j.neuro.2007.04.009.
- Joshi, M. dan Deshpande, J.D., 2010. Polymerase Chain Reaction: Methods, Principles and Application. *International Journal of Biomedical Research*, 1 (5), pp. 81-97.
- Kalofonos, H. P *et al.* (2014). Chemotherapy-induced peripheral neuropathy in adults: a comprehensive update of the literature, *Cancer Management and Research*, pp. 135–147.doi:10.2147/cmar.s44261.
- Kaushal, V., Herzog, C., Haun, R. S., & Kaushal, G. P. (2014). Caspase protocols in mice. *Methods in molecular biology* (Clifton, N.J.), 1133, pp. 141-54.
- KIM, K.-T. *et al.* (2014). The Neuroprotective Effect of Treatment with Curcumin in Acute Spinal Cord Injury: Laboratory Investigation, *Neurologia Medico-Chirurgica*, 54(5), pp. 387–394. doi:10.2176/nmc.oa.2013-0251.
- Kischkel, F. C., Hellbardt, S., Behrmann, I., Germer, M., Pawlita, M., Krammer, P. H., and Peter, M. E. (1995). Cytotoxicity-dependent APO-1 (Fas/CD95)-associated proteins form a death-inducing signaling complex (DISC) with the receptor, *Embo J*, 14(2), 5579-5588.
- Kucyi, A. and Davis, K. D. (2015). The dynamic pain connectome, *Trends in Neurosciences*,38(2), pp. 86–95. doi:10.1016/j.tins.2014.11.006.
- Kurosaka, K., Takahashi, M., Watanabe, N., and Kobayashi, Y. (2003). Silent Cleanup of Very Early Apoptotic Cells by Macrophages. *The Journal of Immunology*, 171(9), pp. 4672-4679.doi:10.4049/jimmunol.171.9.4672.
- Lee, E. S. and Xue, D. (2014). Caspase Protocols in *Caenorhabditis elegans*. In: V.Bozhkov, P., & Salvesen, G., ed.,*Caspases*,

Paracaspases, and Metacaspases Methods and Protocol, London: Humana Press., pp. 101–108.

- Lees, Justin G. *et al.* (2017). Immune-mediated processes implicated in chemotherapy induced peripheral neuropathy, *European Journal of Cancer*, 73, pp. 22–29. doi:10.1016/j.ejca.2016.12.006.
- Levi, F. *et al.* (2000). Pharmacokinetics and Chronopharmacological Aspects. *Clin. Pharmacokinet.*, 38 (1), pp. 1-21.
- Levin, S., Bucci, T. J., Cohen, S. M., Fix, A. S., Hardisty, J. F., Legrand, E. K., Maronpot, R. R., and Trump, B. F. (1999). The Nomenclature of Cell Death: Recommendations of an ad hoc Committee of the Society of Toxicologic Pathologists. *Toxicol Pathol*, 27, pp. 484-490.
- Liu *et al.*, (2001). Molecular consequences of activated microglia in the brain: overactivation induces apoptosis. *Journal of Neurochemistry*, 77(1), pp. 182–189. doi:10.1046/j.1471-4159.2001.t01-1-00216.x.
- Liu, S. *et al.* (2016). Curcumin ameliorates neuropathic pain by down-regulating spinal IL-1 β via suppressing astroglial NALP1 inflammasome and JAK2 STAT3 signalling, *Scientific Reports*, 6(1), pp. 1–14. doi:10.1038/srep28956.
- Liu, Z. *et al.*, (2018). Preventive Effect of Curcumin Against Chemotherapy-Induced, 9, pp. 1–9. doi: 10.3389/fphar.2018.01374.
- Makker *et al.*, (2017). Characterisation of Immune and Neuroinflammatory Changes Associated with Chemotherapy-Induced Peripheral Neuropathy. *PLoS ONE* 12(1): e0170814. Doi: 1-.1371/journal.pone.0170814.
- Mattson, M. P., and Chan, S. L. (2003). Calcium orchestrates apoptosis. *Nature Cell Biology*, 5(12), pp. 1041-1043. doi:10.1038/ncb1203-1041.
- Mendonça, L. M., da Silva Machado, C., Teixeira, C. C., de Freitas, L. A., Bianchi Mde, L., and Antunes, L. M. (2013). Curcumin reduces cisplatin-induced neurotoxicity in NGF-differentiated PC12 cells. *Neurotoxicology*, 9 (1374), pp. 205–211. doi:10.1016/j.neuro.2012.09.011.

- Merskey, H. and Bogduk, N. (1994). *Classification of Chronic Pain. 2nd Edition, IASP Task Force on Taxonomy*. IASP Press, Seattle. <http://www.iasp-pain.org/Education/content.aspx?ItemNumber=1698> (diakses pada 10 Juli 2019).
- Martinvalet, D., Zhu, P., and Lieberman, J. (2005). Granzyme A Induces Caspase- Independent Mitochondrial Damage, a Required First Step for Apoptosis, *Immunity*, 22(3), pp. 355-370. doi:10.1016/j.immuni.2005.02.004.
- Nair dan Jacob. (2016). A simple practice guide for dose conversion between animals and human, *Journal of Basic and Clinical Pharmacy*, 7, pp. 27–31. doi: 10.4103/0976-0105.177703.
- National Institute for Health and Care Excellence. 2017. Neuropathic painpharmacological management. National Institute for Health and Care Excellence.
- Nelson, K. M. *et al.* (2017). The Essential Medicinal Chemistry of Curcumin. *J. Med. Chem.*, 60, pp. 1620–1637. doi: 10.1021/acs.jmedchem.6b00975.
- NextGen RT-PCR, Reverse Transcription & RT-PCR. Diakses dari <https://www.abmgood.com/PCR/pdfs/NextGen%20RT-PCRBrochure-OneScript.pdf>, pada tanggal 28 Januari 2019.
- Pace, A. *et al.* (2007). Peripheral Neurotoxicity of Weekly Paclitaxel Chemotherapy: A Schedule or a Dose Issue?, *Breast Cancer*, 7(7), pp. 550–554. doi: 10.3816/CBC.2007.n.010.
- Pachman, D. R. *et al.* (2016). Comparison of oxaliplatin and paclitaxel-induced neuropathy (Alliance A151505), *Supportive Care in Cancer*, 24(12), pp. 5059-5068. doi: 10.1007/s00520-016-3373-1.
- Park, H.J. (2014). Chemotherapy induced peripheral neuropathic pain. Korean *Journal Anesthesiol*, 67(1), pp. 4-7.
- Pérez-Garijo, A. (2017). When dying is not the end: Apoptotic caspases as drivers of proliferation. *Seminars in Cell & Developmental Biology*. doi: 10.1016/j.semcdb.2017.11.036.
- Peters, C. M. *et al.* (2007). An evolving cellular pathology occurs in dorsal root ganglia, peripheral nerve and spinal cord following

intravenous administration of paclitaxel in the rat, *Brain Research*, pp. 46–59. doi: 10.1016/j.brainres.2007.06.066.

Peyron R, Laurent B, Garcia-Larrea L. (2000). Functional imaging of brain responses to pain. A review and meta-analysis, *Neurophysiologie Clinique/Clinical Neurophysiology*, 30(5), pp. 263-288. Doi: 10.1016/s0987-7053(00)00227-6.

pkCSM

(http://biosig.unimelb.edu.au/pkcsm/prediction_single/adme_1563728720.2), diakses pada 26 Juli 2019.

Pubchem

(<https://pubchem.ncbi.nlm.nih.gov/compound/curcumin#section=Solubility>), diakses pada 12 Januari 2019.

Rajeswari A. (2006). Curcumin protects mouse brain from oxidative stress caused by 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine. *Eur Rev Med Pharmacol Sci*, 10, pp. 157–161.

Rivera, E. and Cianfrocca, M. (2015). Overview of neuropathy associated with taxanes for the treatment of metastatic breast cancer. *Cancer Chemotherapy Pharmacology*, 75(4), pp. 659-70. doi: 10.1007/s00280-014-2607-5.

Robinson CR, Zhang H, Dougherty PM. (2014). Astrocytes, but not microglia, are activated in oxaliplatin and bortezomib-induced peripheral neuropathy. *Neuroscience*, 274(1), pp. 308–317.

Salvioli S, Sikora E, Cooper EL, Franceschi C. (2007). Curcumin in cell death processes: a challenge for CAM of age-related pathologies. Evid Based Complement, *Alternat Med*, 4, pp. 181–190.

Starobova, H. and Vetter, I. (2017). Pathophysiology of Chemotherapy-Induced Peripheral Neuropathy, *Frontiers in Molecular Neuroscience*, 10, pp. 1–21. doi:10.3389/fnmol.2017.00174.

Seretny, M. *et al.*, (2014). Incidence, prevalence, and predictors of chemotherapy induced peripheral neuropathy: A systematic review and meta-analysis, *Pain*, 155(12), pp. 2461–2470. doi:10.1016/j.pain.2014.09.020.

Ta, Lauren E., Philip A. Low, and Anthony J. Windebank. (2009). Mice with cisplatin and oxaliplatin-induced painful neuropathy

- develop distinct early responses to thermal stimuli. *Molecular pain* 5(1), pp. 9.
- The Toxin and Toxin Target Database (T3DB) (<http://www.t3db.ca/toxins/T3D2674>), diakses pada 25 Juli 2019.
- Tracey, I. and Mantyh, P. W. (2007). The Cerebral Signature for Pain Perception and Its Modulation, *Neuron*, 55(3), pp. 377–391. doi: 10.1016/j.neuron.2007.07.012.
- Toma, *et al.*, (2017). Effects of paclitaxel on the development of neuropathy and affective behaviors in the mouse. *Neuropharmacology*, 117, pp. 305–315. doi:10.1016/j.neuropharm.2017.02.020.
- Trump, B. E., Berezesky, I. K., Chang, S. H., and Phelps, P. C. (1997). The Pathways of Cell Death: Oncosis, Apoptosis, and Necrosis. *Toxicologic Pathology*, 25(1), pp. 82–88. doi:10.1177/01926233970250016.
- Tseng MT, Chiang MC, Chao CC, Tseng WY, Hsieh ST. (2013). fMRI evidence of degeneration-induced neuropathic pain in diabetes: enhanced limbic and striatal activations. *Human Brain Mapping*, 34(10), pp. 2733–2746. doi:10.1002/hbm.22105.
- USFDA. (2005). *Guidance for Industry: Estimating the Maximum Safe Starting Dose in Adult Healthy Volunteer*. Rockville, MD: US Food and Drug Administration.
- Varbiro, G. (2001). *Direct effect of Taxol on free radical formation and mitochondrial permeability transition*. *Free Radical Biology and Medicine*, 31(4), pp. 548–558. doi:10.1016/s0891-5849(01)00616-5.
- Venero, J. L., Burguillos, M. A., & Joseph, B. (2013). *Caspases Playing in the Field of Neuroinflammation: Old and New Players*. *Developmental Neuroscience*, 35(2-3), 88–101. doi:10.1159/000346155.
- Villar, V. M. and Soria, J. M. (2010). 3. Neuroprotective actions of curcumin, *Research Signpost*, pp. 1-15.

- Wajant, H. (2002). The Fas Signaling Pathway: More Than a Paradigm. *Science*, 296 (5573), pp. 1635-1636. Doi: 10.1126/science.1071553.
- Waseem, M. and Suhel Parvez. (2015). Neuroprotective activities of curcumin and quercetin with potential relevance to mitochondrial dysfunction induced by oxaliplatin. 2015, *Protoplasma*, 253(2), pp. 417-430.doi:10.1007/s00709-015-0821-6.
- Waseem, M. *et al.* (2018). Role of Mitochondrial Mechanism in Chemotherapy Induced Peripheral Neuropathy, *Current Drug Metabolism*, 19(1), pp. 47–54. doi:10.2174/1389200219666171207121313.
- Wrigley *et al.* (2009). Neuropathic pain and primary somatosensory cortex reorganization following spinal cord injury. *Pain*, 141(1), pp. 52-59. doi: 10.1016/j.pain.2008.10.007.
- Xiong, W. *et al.* (2017). Enhancing excitatory activity of somatosensory cortex alleviates neuropathic pain through regulating homeostatic plasticity, *Scientific Reports*, 7(12743), pp. 1–17. doi: 10.1038/s41598-017-12972-6.
- Xu H, Wu LJ, Wang H, Zhang X, Vadakkan KI, Kim SS, Steenland HW, Zhuo M. (2008). Presynaptic and postsynaptic amplifications of neuropathic pain in the anterior cingulate cortex. *Journal of Neuroscience*, 28(29), pp. 7445-7453. doi:10.1523/jneurosci.1812-08.2008.
- Yang, F. *et al.* (2005). Curcumin Inhibits Formation of Amyloid β Oligomers and Fibrils, Binds Plaques, and Reduces Amyloid in Vivo, *The Journal of Biological Chemistry*, 280 (7), pp. 5892–5901. doi: 10.1074/jbc.M404751200.
- Yamashita A, *et al.* (2014). Astrocytic activation in the anterior cingulate cortex is critical for sleep disorder under neuropathic pain. *Synapse*, 68(6), pp. 235-247. doi:10.1002/syn.21733.
- Yazawa K, Kihara T, Shen H, Shimmyo Y, Niidome T, Sugimoto H. (2006). Distinct mechanisms underlie distinct polyphenol-induced neuroprotection. *FEBS Lett*, 580:6623–8.
- Yusuf, Z.K., 2010. Polymerase Chain Reaction (PCR). *Saintek*, 5 (6), pp. 16.

- Zeiss, C. J. (2003). The Apoptosis-Necrosis Continuum: Insights from Genetically Altered Mice. *Veterinary Pathology Online*, 40(5), pp. 481-495. doi:10.1354/vp.40-5-481.
- Zhang H, Yoon S-Y, Zhang H, Dougherty PM. (2012). Evidence that spinal astrocytes but not microglia contribute to the pathogenesis of paclitaxel-induced painful neuropathy, *J. Pain.*, 13(3), pp. 293–303.
- Zhang X, Chen WW, Huang WJ. (2017). Chemotherapy-induced peripheral neuropathy, *Biomed Reports*, 6(3), pp. 267-271. doi:10.3892/br.2017.851.
- Zhang, C. *et al.*, (2017). Reduced GABAergic transmission in the ventrobasal thalamus contributes to thermal hyperalgesia in chronic inflammatory pain, *ScientificReports*, 7, pp. 1–13. doi: 10.1038/srep41439.