



## DAFTAR PUSTAKA

- Ahlina, F.N., Nugraheni, N., Salsabila, I.A., Haryanti, S., Da'i, M. dan Meiyanto, E., 2020, Revealing the reversal effect of galangal (*Alpinia galanga* L.) extract against oxidative stress in metastatic breast cancer cells and normal fibroblast cells intended as a co-chemotherapeutic and anti-ageing agent. *Asian Pacific Journal of Cancer Prevention* 21(1): 107-117.
- Ahmed Hamdi, O.A., Syed Abdul Rahman, S.N., Awang, K., Abdul Wahab, N., Looi, C.Y., Thomas, N.F., dan Abd Malek, S.N., 2014, Cytotoxic constituents from the rhizomes of *Curcuma zedoaria*, *The Scientific World Journal* 2014.
- Amalraj, A., Pius, A., Gopi, S., dan Gopi, S., 2017, Biological activities of curcuminoids, other biomolecules from turmeric and their derivatives—A review, *Journal of traditional and complementary medicine* 7(2): 205-233.
- American Society of Clinical Oncology (ASCO), 2019, Chemoprevention, <https://www.cancer.net/navigating-cancer-care/prevention-and-healthy-living/chemoprevention>, 27 Mei 2023.
- Aspollah Sukari, M., Wah, T.S., Saad, S.M., Rashid, N.Y., Rahmani, M., Lajis, N.H. dan Hin, T.Y.Y., 2010, Bioactive sesquiterpenes from *Curcuma ochrorhiza* and *Curcuma heyneana*, *Natural Product Research* 24(9): 838-845.
- Bachmeier, B.E., Killian, P.H., dan Melchart, D., 2018, The role of curcumin in prevention and management of metastatic disease, *International journal of molecular sciences* 19(6): 1716.
- Bae, M.K., Kim, S.H., Jeong, J.W., Lee, Y.M., Kim, H.S., Kim, S.R., Yun, I., Bae, S.K., dan Kim, K.W., 2006, Curcumin inhibits hypoxia-induced angiogenesis via down-regulation of HIF-1, *Oncology reports* 15(6): 1557-1562.
- Bibi Sadeer, N., Montesano, D., Albrizio, S., Zengin, G., dan Mahomoodally, M.F., 2020, The versatility of antioxidant assays in food science and safety—Chemistry, applications, strengths, and limitations, *Antioxidants* 9(8): 709.
- Blanchet, B., Billemont, B., Barete, S., Garrigue, H., Cabanes, L., Coriat, R., Francès, C., Knebelmann, B., dan Goldwasser, F., 2010, Toxicity of sorafenib: clinical and molecular aspects, *Expert opinion on drug safety* 9(2): 275-287.
- Bos, R., Windono, T., Woerdenbag, H.J., Boersma, Y.L., Koulman, A., dan Kayser, O., 2007, HPLC-photodiode array detection analysis of curcuminoids in *Curcuma* species indigenous to Indonesia. *Phytochemical Analysis: An International Journal of Plant Chemical and Biochemical Techniques* 18(2): 118-122
- Chao, J., Zhao, S., dan Sun, H., 2020, Dedifferentiation of hepatocellular



- carcinoma: molecular mechanisms and therapeutic implications, *American Journal of Translational Research* 12(5): 2099.
- Chatterjee, R. dan Mitra, A., 2015, An overview of effective therapies and recent advances in biomarkers for chronic liver diseases and associated liver cancer, *International immunopharmacology* 24(2): 335-345.
- Chen, C.C., Sureshbabul, M., Chen, H.W., Lin, Y.S., Lee, J.Y., Hong, Q.S., Yang, Y.C., dan Yu, S.L., 2013, Curcumin suppresses metastasis via Sp-1, FAK inhibition, and E-cadherin upregulation in colorectal cancer. *Evidence-Based Complementary and Alternative Medicine* 2013: 1-7.
- Chen, L., Zhan, C.Z., Wang, T., You, H. dan Yao, R., 2020, Curcumin inhibits the proliferation, migration, invasion, and apoptosis of diffuse large B-cell lymphoma cell line by regulating MiR-21/VHL axis, *Yonsei Medical Journal* 61(1): 20-29.
- Choi, M.A., Kim, S.H., Chung, W.Y., Hwang, J.K., dan Park, K.K., 2004, Xanthorrhizol, a natural sesquiterpenoid from Curcuma xanthorrhiza, has an anti-metastatic potential in experimental mouse lung metastasis model, *Biochemical and Biophysical Research Communications* 326(1): 210-217.
- Deng, Y.I., Verron, E., dan Rohanizadeh, R., 2016, Molecular mechanisms of anti-metastatic activity of curcumin, *Anticancer Research* 36(11): 5639-5647.
- Diastuti, H., Syah, Y.M., Juliawaty, L.D., dan Singgih, M., 2014, Antibacterial activity of germacrane type sesquiterpenes from Curcuma heyneana rhizomes, *Indonesian Journal of Chemistry* 14(1): 32-36.
- Doan, C.C., Le, T.L., Ho, N.Q.C., La, T.H.L., Nguyen, V.C., Nguyen, T.P.T., dan Hoang, N.S., 2022, Bioactive chemical constituents, in vitro anti-proliferative activity and in vivo toxicity of the extract of Curcuma singularis Gagnep rhizomes, *Journal of Ethnopharmacology* 284: 114803.
- Doi, I., Namba, M., dan Sato, J., 1975, Establishment and some biological characteristics of human hepatoma cell lines, *GANN Japanese Journal of Cancer Research* 66(4): 385-392.
- Dutta, R. dan Mahato, R.I., 2017, Recent advances in hepatocellular carcinoma therapy, *Pharmacology & therapeutics* 173: 106-117.
- Eguchi S, Kanematsu T, Arii S, Omata M, Kudo M, Sakamoto M, Takayasu K, Makuchi M, Matsuyama Y, dan Monden M (Liver Cancer Study Group of Japan), 2011, Recurrence-free survival more than 10 years after liver resection for hepatocellular carcinoma, *Journal of British Surgery* 98(4): 552-557
- Farzaei, M.H., Zobeiri, M., Parvizi, F., El-Senduny, F.F., Marmouzi, I., Coy-Barrera, E., Naseri, R., Nabavi, S.M., Rahimi, R., dan Abdollahi, M., 2018,



- Curcumin in liver diseases: a systematic review of the cellular mechanisms of oxidative stress and clinical perspective, *Nutrients* 10(7): 855.
- Ferrante, N.D., Pillai, A., dan Singal, A.G., 2020, Update on the diagnosis and treatment of hepatocellular carcinoma, *Gastroenterology & Hepatology* 16(10): 506.
- Global Cancer Observatory (GCO), 2020, *Cancer today: Estimated number of deaths in 2020, World, both sexes, all ages (excl. NMSC)*, [https://gco.iarc.fr/today/online-analysis-table?v=2020&mode=cancer&mode\\_population=continents&population=900&populations=900&key=asr&sex=0&cancer=39&type=1&statistic=5&prevalence=0&population\\_group=0&ages\\_group%5B%5D=0&ages\\_group%5B%5D=17&group\\_cancer=1&include\\_nmsc=0&include\\_nmsc\\_other=1](https://gco.iarc.fr/today/online-analysis-table?v=2020&mode=cancer&mode_population=continents&population=900&populations=900&key=asr&sex=0&cancer=39&type=1&statistic=5&prevalence=0&population_group=0&ages_group%5B%5D=0&ages_group%5B%5D=17&group_cancer=1&include_nmsc=0&include_nmsc_other=1), 20 Maret 2023.
- Grover, M., Behl, T., Sehgal, A., Singh, S., Sharma, N., Virmani, T., Rachamalla, M., Farasani, A., Chigurupati, S., Alsubayiel, A.M. and Felemban, S.G., 2021. In vitro phytochemical screening, cytotoxicity studies of curcuma longa extracts with isolation and characterisation of their isolated compounds. *Molecules* 26(24): 7509.
- Guerrini, G.P., Pinelli, D., Di Benedetto, F., Marini, E., Corno, V., Guizzetti, M., Aluffi, A., Zambelli, M., Fagioli, S., Lucà, M.G., dan Lucianetti, A., 2016, Predictive value of nodule size and differentiation in HCC recurrence after liver transplantation, *Surgical Oncology* 25(4): 419-428.
- Handayani, S., Susidarti, R.A., Utomo, R.Y., Meiyanto, E. dan Jenie, R.I.I., 2022, Synergistic Cytotoxic and Antimigratory Effect of Brazilein and Doxorubicin on HER2-Overexpressing Cells, *Asian Pacific Journal of Cancer Prevention* 23(8): 2623-2632.
- Hidayati, Devi Nisa, Riris Istighfari Jenie, dan Edy Meiyanto, 2018, "Combination of curcuma (*Curcuma xanthorrhiza* Roxb) rhizome ethanolic extract and awar-awar (*Ficus septica* Burm. F) leaves ethanolic extract increases cisplatin cytotoxicity on T47D breast cancer cells through cell cycle modulation." *Indonesian Journal of Cancer Chemoprevention* 8 (3) 120-125..
- Japanese Collection of Research Bioresources (JCRB), 2015, [https://cellbank.nibiohn.go.jp/~cellbank/en/search\\_res\\_det.cgi?ID=387](https://cellbank.nibiohn.go.jp/~cellbank/en/search_res_det.cgi?ID=387), 23 Februari 2023.
- Jenie, R.I., Santoso, R.A., Salsabila, I.A., Nugraheni, N., dan Meiyanto, E., 2021, Alpinia galanga extract induces senescence in human epidermal growth factor receptor 2-overexpressing breast cancer cells, *Thai Journal of Pharmaceutical Sciences* 45(1).



- Kim, B.S., 2010, Brazilin inhibits of TPA-induced MMP-9 expression via the suppression of NF- $\kappa$ B activation in MCF-7 human breast carcinoma cells, *Journal of Food Hygiene and Safety* 25(3): 209-214.
- Kim, S.B., Kang, O.H., Lee, Y.S., Han, S.H., Ahn, Y.S., Cha, S.W., Seo, Y.S., Kong, R., dan Kwon, D.Y., 2016, Hepatoprotective effect and synergism of bisdemethoxycurcumin against MCD diet-induced nonalcoholic fatty liver disease in mice, *PLoS One* 11(2): 0147745.
- Ko, Y.C., Lien, J.C., Liu, H.C., Hsu, S.C., Ji, B.C., Yang, M.D., Hsu, W.H., dan Chung, J.G., 2015, Demethoxycurcumin induces the apoptosis of human lung cancer NCI-H460 cells through the mitochondrial-dependent pathway, *Oncology reports* 33(5): 2429-2437.
- Lakshmi, S., Padmaja, G., dan Remani, P., 2011, Antitumour effects of isocurcumenol isolated from Curcuma zedoaria rhizomes on human and murine cancer cells. *International Journal of Medicinal Chemistry*, 2011.
- Lechtenberg, M., Quandt, B., dan Nahrstedt, A., 2004, Quantitative determination of curcuminoids in Curcuma rhizomes and rapid differentiation of Curcuma domestica Val. and Curcuma xanthorrhiza Roxb. by capillary electrophoresis. *Phytochemical Analysis: An International Journal of Plant Chemical and Biochemical Techniques* 15(3): 152-158.
- Lee, J.H. dan Chung, I.K., 2010, Curcumin inhibits nuclear localization of telomerase by dissociating the Hsp90 co-chaperone p23 from hTERT, *Cancer letters* 290(1): 76-86.
- Lee, J.S., Kim, Y.G., dan Kim, J.H., 2001, Studies on anticancer effects of extracts Caesalpinia sappan on oral carcinoma and osteosarcoma cells, *Journal of the Korean Association of Oral and Maxillofacial Surgeons* 281-288.
- Li, B., Xu, T., Liu, C., Meng, G., Sun, Y., Qian, L., Wang, S., Wei, J., Yu, D. dan Ding, Y., 2018, Liver-enriched genes are associated with the prognosis of patients with hepatocellular carcinoma, *Scientific Reports*, 8(1): 11197.
- Li, R., Xiang, C., Ye, M., Li, H.F., Zhang, X. and Guo, D.A., 2011, Qualitative and quantitative analysis of curcuminoids in herbal medicines derived from Curcuma species, *Food Chemistry*, 126(4): 1890-1895.
- Lin, H.Y., Lin, J.N., Ma, J.W., Yang, N.S., Ho, C.T., Kuo, S.C., dan Way, T.D., 2015, Demethoxycurcumin induces autophagic and apoptotic responses on breast cancer cells in photodynamic therapy, *Journal of Functional Foods* 12: 439-449.
- Llovet, J.M., Robin Kate Kelley, Augusto Villanueva, Amit G. Singal, Eli Pikarsky, Sasan Roayaie, Riccardo Lencioni, Kazuhiko Koike, Jessica Zucman-Rossi,



- dan Richard S. Finn, 2021, Hepatocellular carcinoma, *Nat Rev Dis Primers* 7: 6.
- Marianne, M., Harahap, U., Hasibuan, P.A.Z., Thampati, C.M. dan Harefa, H.S., 2020, Hepatoprotective activity of the ethanol extract of *Curcuma heyneana* rhizome on isoniazid and rifampin-induced liver injury rats, *Journal of Herbmed Pharmacology* 9(4): 333-338.
- Meiyanto, E. dan Larasati, Y.A., 2019, The chemopreventive activity of Indonesia medicinal plants targeting on hallmarks of cancer, *Advanced Pharmaceutical Bulletin* 9(2): 219.
- More, G.K. dan Makola, R.T., 2020, In-vitro analysis of free radical scavenging activities and suppression of LPS-induced ROS production in macrophage cells by *Solanum sisymbriifolium* extracts, *Scientific reports* 10(1): 6493.
- Nishidono, Y., Chiyomatsu, T., Saifudin, A., Deevanhxay, P., dan Tanaka, K., 2020, Comparative study on the chemical constituents of *Curcuma* drugs. *Journal of the Asia-Japan research institute of ritsumeikan university* 2: 15-33.
- Nishikawa, H. dan Osaki, Y., 2013. Non-B, non-C hepatocellular carcinoma. *International Journal of Oncology*, 43(5), pp.1333-1342.
- Pugazhendhi, A., Edison, T.N.J.I., Velmurugan, B.K., Jacob, J.A., dan Karuppusamy, I., 2018, Toxicity of Doxorubicin (Dox) to different experimental organ systems, *Life sciences* 200: 26-30.
- Rachmawati, H., Larasati, A., Adi, A.C., dan Shegokar, R., 2020, Role of nanocarriers and their surface modification in targeting delivery of bioactive compounds. *In Nanopharmaceuticals* 17-43.
- Reyes-Gordillo, K., Segovia, J., Shibayama, M., Vergara, P., Moreno, M.G., dan Muriel, P., 2007, Curcumin protects against acute liver damage in the rat by inhibiting NF-κB, proinflammatory cytokines production and oxidative stress, *Biochimica et Biophysica Acta (BBA)-General Subjects* 1770(6): 989-996.
- Sarveazad, A., Agah, S., Babahajian, A., Amini, N. dan Bahardoust, M., 2019, Predictors of 5 year survival rate in hepatocellular carcinoma patients. *Journal of Research in Medical Sciences: The Official Journal of Isfahan University of Medical Sciences*, 24.
- Sasaki, K., Matsuda, M., Ohkura, Y., Kawamura, Y., Inoue, M., Hashimoto, M., Ikeda, K., Kumada, H., dan Watanabe, G., 2015, The influence of histological differentiation grade on the outcome of liver resection for hepatocellular carcinomas 2 cm or smaller in size. *World Journal of Surgery* 39: 1134-1141.
- Shanmugam, M.K., Hsu, A., Hui, K.M., Tan, B.K., dan Sethi, G., 2016, Abstract



- 4123: Thymoquinone inhibits bone metastasis in a breast cancer mouse model by modulating CXCR4/CXCL12 signaling axis, *Tumor Biology* 76: 4123.
- Shao, J., Shi, C.J., Li, Y., Zhang, F.W., Pan, F.F., Fu, W.M. dan Zhang, J.F., 2020, LincROR mediates the suppressive effects of curcumin on hepatocellular carcinoma through inactivating Wnt/β-catenin signaling, *Frontiers in Pharmacology* 11: 847.
- Shieh, J.M., Chen, Y.C., Lin, Y.C., Lin, J.N., Chen, W.C., Chen, Y.Y., Ho, C.T., dan Way, T.D., 2013, Demethoxycurcumin inhibits energy metabolic and oncogenic signaling pathways through AMPK activation in triple-negative breast cancer cells, *Journal of agricultural and food chemistry* 61(26): 6366-6375.
- Shields, H.J., Traa, A., dan Van Raamsdonk, J.M., 2021, Beneficial and detrimental effects of reactive oxygen species on lifespan: a comprehensive review of comparative and experimental studies. *Frontiers in Cell and Developmental Biology* 9: 181.
- Sia, D., Villanueva, A., Friedman, S.L., dan Llovet, J.M., 2017, Liver cancer cell of origin, molecular class, and effects on patient prognosis, *Gastroenterology* 152(4): 745-761.
- Sun, W., Wang, S., Zhao, W., Wu, C., Guo, S., Gao, H., Tao, H., Lu, J., Wang, Y., dan Chen, X., 2017, Chemical constituents and biological research on plants in the genus Curcuma, *Critical reviews in food science and nutrition*, 57(7): 1451-1523.
- Sundram, T.C., Zakaria, M.H.B. and Nasir, M.H.B.M., 2019. Antioxidant and cytotoxic effects of Curcuma Mangga and Bosenbergia Rotunda Ethanolic extracts on Mcf-7 cancer cell lines, *Science* 3(2): 10-14.
- Syarifah, A.L., Rurini, R., dan Hermin, S., 2019, Characterization of the curcuminoids fingerprints profile in curcuma and zingiber genera by TLC-digital image analysis, *J. Pure App. Chem. Res* 8(2): 147-161.
- Takahashi, H., Nasu, K., Minami, M., Kojima, T., Nishiyama, H., Ishiguro, T., dan Konishi, T., 2016, Organ atrophy Induced by sorafenib and sunitinib—quantitative computed tomography (CT) evaluation of the pancreas, thyroid gland and spleen, *Polish Journal of Radiology* 81: 557.
- Tam, K., 2013, The roles of doxorubicin in hepatocellular carcinoma, *ADMET and DMPK* 1(3): 29-44.
- Thomas, M., 2009, Molecular targeted therapy for hepatocellular carcinoma, *Journal of gastroenterology* 44: 136-141.
- Valko, M., Leibfritz, D., Moncol, J., Cronin, M.T., Mazur, M., dan Telser, J., 2007.



Free radicals and antioxidants in normal physiological functions and human disease. *The international journal of biochemistry & cell biology* 39(1): 44-84.

- Vogel, V.G., Costantino, J.P., Wickerham, D.L., Cronin, W.M., Cecchini, R.S., Atkins, J.N., Bevers, T.B., Fehrenbacher, L., Pajon, E.R., Wade III, J.L., dan Robidoux, A., 2010, Update of the national surgical adjuvant breast and bowel project study of tamoxifen and raloxifene (STAR) P-2 trial: preventing breast cancer. *Cancer prevention research* 3(6): 696-706.
- Wahyuni, D.S.C., Artanti, A.N., dan Rinanto, Y., 2018, April. Quantitative analysis of Curcuminoid collected from different location in Indonesia by TLC-Densitometry and its antioxidant capacity. In *IOP Conference Series: Materials Science and Engineering* 349(1): 012015. IOP Publishing.
- Yodkeeree, S., Ampasavate, C., Sung, B., Aggarwal, B.B., dan Limtrakul, P., 2010, Demethoxycurcumin suppresses migration and invasion of MDA-MB-231 human breast cancer cell line, *European journal of pharmacology* 627(1-3): 8-15.
- Yousef, M.I., Omar, S.A., El-Guendi, M.I., dan Abdelmegid, L.A., 2010, Potential protective effects of quercetin and curcumin on paracetamol-induced histological changes, oxidative stress, impaired liver and kidney functions and haematotoxicity in rat, *Food and chemical toxicology* 48(11):3246-3261.
- Zhang, X., Hu, Y., Pan, Y., Xiong, Y., Zhang, Y., Han, M., Dong, K., Song, J., Liang, H., Ding, Z. dan Zhang, X., 2022, DDR1 promotes hepatocellular carcinoma metastasis through recruiting PSD4 to ARF6, *Oncogene* 41(12): 1821-1834.
- Zhou, D., Shao, L., dan Spitz, D.R., 2014. Reactive Oxygen Species in Normal and Tumor Stem Cells. *Advances in cancer research*, 122: 1–67.
- Zhou, Y., Li, Y., Zhou, T., Zheng, J., Li, S. dan Li, H.B., 2016, Dietary natural products for prevention and treatment of liver cancer, *Nutrients*, 8(3): 156.