

DAFTAR PUSTAKA

- Adam, L., Vadlamudi, R., Kondapaka, S.B., Chernoff, J., Mendelsohn, J., dan Kumar, R., 1998. Heregulin regulates cytoskeletal reorganization and cell migration through the p21-activated kinase-1 via phosphatidylinositol-3 kinase. *Journal of Biological Chemistry*, **273**: 28238–28246.
- Bandyopadhyay, A., Wang, L., Agyin, J., Tang, Y., Lin, S., Yeh, I.-T., dkk., 2010. Doxorubicin in Combination with a Small TGF β Inhibitor: A Potential Novel Therapy for Metastatic Breast Cancer in Mouse Models. *PLoS ONE*, **5**: e10365.
- Bandyopadhyay, D., 2014. Farmer to pharmacist: curcumin as an anti-invasive and antimetastatic agent for the treatment of cancer1. *Frontiers in Chemistry*, **2**:
- Barth, R.F., Vicente, Mg.H., Harling, O.K., Kiger, W.S., Riley, K.J., Binns, P.J., dkk., 2012. Current status of boron neutron capture therapy of high grade gliomas and recurrent head and neck cancer. *Radiation Oncology*, **7**: 146.
- Benz, C.C., Scott, G.K., Sarup, J.C., Johnson, R.M., Tripathy, D., Coronado, E., dkk., 1992. Estrogen-dependent, tamoxifen-resistant tumorigenic growth of MCF-7 cells transfected with HER2/neu. *Breast cancer research and treatment*, **24**: 85–95.
- Cairrão, F. dan Domingos, P.M., 2010. Apoptosis: Molecular Mechanisms, dalam: John Wiley & Sons, Ltd (Editor), *Encyclopedia of Life Sciences*. John Wiley & Sons, Ltd, Chichester, UK.
- Camilleri-Broet, S., Hardy-Bessard, A.C., Le Tourneau, A., Paraiso, D., Levrel, O., Leduc, B., dkk., 2004. HER-2 overexpression is an independent marker of poor prognosis of advanced primary ovarian carcinoma: a multicenter study of the GINECO group. *Annals of Oncology*, **15**: 104–112.
- Cancer Genome Atlas Network, 2012. Comprehensive molecular portraits of human breast tumours. *Nature*, **490**: 61.
- Chen, W.-C., Lai, Y.-A., Lin, Y.-C., Ma, J.-W., Huang, L.-F., Yang, N.-S., dkk., 2013. Curcumin suppresses doxorubicin-induced epithelial–mesenchymal transition via the inhibition of TGF- β and PI3K/AKT signaling pathways in triple-negative breast cancer cells. *Journal of agricultural and food chemistry*, **61**: 11817–11824.
- Choudhuri, T., Pal, S., Agwarwal, M.L., Das, T., dan Sa, G., 2002. Curcumin induces apoptosis in human breast cancer cells through p53-dependent Bax induction. *FEBS letters*, **512**: 334–340.
- Chung, C. dan Lam, M.S.H., 2013. Pertuzumab for the treatment of human epidermal growth factor receptor type 2-positive metastatic breast cancer. *American Journal of Health-System Pharmacy*, **70**: 1579–1587.

- Chung, I., Reichelt, M., Shao, L., Akita, R.W., Koeppen, H., Rangell, L., dkk., 2016. High cell-surface density of HER2 deforms cell membranes. *Nature communications*, **7**: 12742.
- Comşa, Ş., Cimpean, A.M., dan Raica, M., 2015. The story of MCF-7 breast cancer cell line: 40 years of experience in research. *Anticancer research*, **35**: 3147–3154.
- Da’i, M., Jenie, U.A., Supardjan, A.M., Kawaichi, M., dan Meiyanto, E., 2007. T47D cells arrested at G2M and hyperploidy formation induced by a curcumin’s analogue PGV-1. *Indonesian Journal of Biotechnology*, **12**: .
- Dayem, A.A., Hossain, M., Lee, S., Kim, K., Saha, S., Yang, G.-M., dkk., 2017. The Role of Reactive Oxygen Species (ROS) in the Biological Activities of Metallic Nanoparticles. *International Journal of Molecular Sciences*, **18**: 120.
- De Mattos-Arruda, L. dan Cortes, J., 2013. Use of Pertuzumab for the Treatment of HER2-Positive Metastatic Breast Cancer. *Advances in Therapy*, **30**: 645–658.
- Deng, Y.I., Verron, E., dan Rohanizadeh, R., 2016. Molecular mechanisms of anti-metastatic activity of curcumin. *Anticancer research*, **36**: 5639–5647.
- Deryugina, E.I. dan Quigley, J.P., 2006. Matrix metalloproteinases and tumor metastasis. *Cancer and Metastasis Reviews*, **25**: 9–34.
- Dowlut, M. dan Hall, D.G., 2006. An improved class of sugar-binding boronic acids, soluble and capable of complexing glycosides in neutral water. *Journal of the American Chemical Society*, **128**: 4226–4227.
- Elmore, S., 2007. Apoptosis: a review of programmed cell death. *Toxicologic pathology*, **35**: 495–516.
- Foster, I., 2008. Cancer: A cell cycle defect. *Radiography*, **14**: 144–149.
- Gill, M.K., Manjari, M., Jain, K., dan Kaur, T., 2011. Expression of Her-2/neu in colon carcinoma and its correlation with the histological grades and the lymph nodes status. *JCDR*, **5**: 1564–8.
- Guo, X., Goessl, E., JIN, G., COLLIE-DUGUID, E.S., CASSIDY, J., WANG, W., dkk., 2008. Cell cycle perturbation and acquired 5-fluorouracil chemoresistance. *Anticancer research*, **28**: 9–14.
- Harbeck, N., Beckmann, M.W., Rody, A., Schneeweiss, A., Müller, V., Fehm, T., dkk., 2013. HER2 Dimerization Inhibitor Pertuzumab - Mode of Action and Clinical Data in Breast Cancer. *Breast Care*, **8**: 49–55.
- Hattori, Y., Kusaka, S., Mukumoto, M., Ishimura, M., Ohta, Y., Takenaka, H., dkk., 2014. Synthesis and in vitro evaluation of thiododecaborated α , α -cycloalkylamino acids for the treatment of malignant brain tumors by boron neutron capture therapy. *Amino acids*, **46**: 2715–2720.

- Holliday, D.L. dan Speirs, V., 2011. Choosing the right cell line for breast cancer research. *Breast cancer research*, **13**: 215.
- Holmström, K.M. dan Finkel, T., 2014. Cellular mechanisms and physiological consequences of redox-dependent signalling. *Nature Reviews Molecular Cell Biology*, **15**: 411–421.
- Hudis, C.A., 2007. Trastuzumab—mechanism of action and use in clinical practice. *New England Journal of Medicine*, **357**: 39–51.
- Incorvati, J.A., Shah, S., Mu, Y., dan Lu, J., 2013. Targeted therapy for HER2 positive breast cancer. *Journal of hematology & oncology*, **6**: 38.
- Javvadi, P., Segan, A.T., Tuttle, S.W., dan Koumenis, C., 2008. The Chemopreventive Agent Curcumin Is a Potent Radiosensitizer of Human Cervical Tumor Cells via Increased Reactive Oxygen Species Production and Overactivation of the Mitogen-Activated Protein Kinase Pathway. *Molecular Pharmacology*, **73**: 1491–1501.
- Jin, X. dan Mu, P., 2015. Targeting breast cancer metastasis. *Breast cancer: basic and clinical research*, **9**: BCBCR–S25460.
- Junttila, T.T., Akita, R.W., Parsons, K., Fields, C., Phillips, G.D.L., Friedman, L.S., dkk., 2009. Ligand-independent HER2/HER3/PI3K complex is disrupted by trastuzumab and is effectively inhibited by the PI3K inhibitor GDC-0941. *Cancer cell*, **15**: 429–440.
- Kaldis, P. dan Richardson, H.E., 2012. When cell cycle meets development. *Development*, **139**: 225–230.
- Kao, J., Salari, K., Bocanegra, M., Choi, Y.-L., Girard, L., Gandhi, J., dkk., 2009. Molecular Profiling of Breast Cancer Cell Lines Defines Relevant Tumor Models and Provides a Resource for Cancer Gene Discovery. *PLoS ONE*, **4**: e6146.
- Kim, J.-M., Noh, E.-M., Kwon, K.-B., Kim, J.-S., You, Y.-O., Hwang, J.-K., dkk., 2012. Curcumin suppresses the TPA-induced invasion through inhibition of PKC α -dependent MMP-expression in MCF-7 human breast cancer cells. *Phytomedicine*, **19**: 1085–1092.
- Kumar, R., Mandal, M., Lipton, A., Harvey, H., dan Thompson, C.B., 1996. Overexpression of HER2 modulates bcl-2, bcl-XL, and tamoxifen-induced apoptosis in human MCF-7 breast cancer cells. *Clinical Cancer Research*, **2**: 1215–1219.
- Kusumastuti, R., Meiyanto, E., dan Jenie, R.I., 2016. 'Potensi Kokemoterapi Dibenzilidine Boronic Acid Cyclopentanone (DBBAC) dengan Doxorubicin terhadap Apoptosis, Modulasi Siklus Sel, dan Metastasis pada Sel 4T1', *Master Thesis*, . Universitas Gadjah Mada.
- Larasati, Y.A., Yoneda-Kato, N., Nakamae, I., Yokoyama, T., Meiyanto, E., dan Kato, J., 2018. Curcumin targets multiple enzymes involved in the ROS metabolic pathway to suppress tumor cell growth. *Scientific Reports*, **8**: .

- Lee, D.S., Lee, M.K., dan Kim, J.H., 2009. Curcumin induces cell cycle arrest and apoptosis in human osteosarcoma (HOS) cells. *Anticancer research*, **29**: 5039–5044.
- Lee, S., Chon, H., Lee, M., Choo, J., Shin, S.Y., Lee, Y.H., dkk., 2009. Surface-enhanced Raman scattering imaging of HER2 cancer markers overexpressed in single MCF7 cells using antibody conjugated hollow gold nanospheres. *Biosensors and Bioelectronics*, **24**: 2260–2263.
- Li, Q., Wang, D., Li, J., dan Chen, P., 2011. Clinicopathological and prognostic significance of HER-2/neu and VEGF expression in colon carcinomas. *BMC cancer*, **11**: 277.
- Lin, S.-S., Lai, K.-C., Hsu, S.-C., Yang, J.-S., Kuo, C.-L., Lin, J.-P., dkk., 2009. Curcumin inhibits the migration and invasion of human A549 lung cancer cells through the inhibition of matrix metalloproteinase-2 and -9 and Vascular Endothelial Growth Factor (VEGF). *Cancer Letters*, **285**: 127–133.
- Liu, D., Yang, Z., Wang, T., Chen, H., Hu, Y., Hu, C., dkk., 2016. β 2-AR signaling controls trastuzumab resistance-dependent pathway. *Oncogene*, **35**: 47.
- Liu, T.-Y., Tan, Z.-J., Jiang, L., Gu, J.-F., Wu, X.-S., Cao, Y., dkk., 2013. Curcumin induces apoptosis in gallbladder carcinoma cell line GBC-SD cells. *Cancer cell international*, **13**: 64.
- Luque-Cabal, M., García-Tejido, P., Fernández-Pérez, Y., Sánchez-Lorenzo, L., dan Palacio-Vázquez, I., 2016. Mechanisms behind the Resistance to Trastuzumab in HER2-Amplified Breast Cancer and Strategies to Overcome It. *Clinical Medicine Insights: Oncology*, **10s1**: CMO.S34537.
- Massagué, J., Batlle, E., dan Gomis, R.R., 2017. Understanding the molecular mechanisms driving metastasis. *Molecular oncology*, **11**: 3–4.
- Meiyanto, E., 2011. Pgv-0 and Pgv-1 Increased Apoptosis Induction of Doxorubicin on MCF-7 Breast Cancer Cells. *Pharmacon: Jurnal Farmasi Indonesia*, **12**: 55–59.
- Meiyanto, E., Putri, D.D., Susidarti, R.A., Murwanti, R., Sardjiman, F.A., Husnaa, U., dkk., 2014. Curcumin and its analogues (PGV-0 and PGV-1) enhance sensitivity of resistant MCF-7 cells to doxorubicin through inhibition of HER2 and NF- κ B activation. *Asian Pac J Cancer Prev*, **15**: 179–184.
- Mendes, D., Alves, C., Afonso, N., Cardoso, F., Passos-Coelho, J.L., Costa, L., dkk., 2015. The benefit of HER2-targeted therapies on overall survival of patients with metastatic HER2-positive breast cancer – a systematic review. *Breast Cancer Research*, **17**: .
- Merkhofer, E.C., Cogswell, P., dan Baldwin, A.S., 2010. Her2 activates NF- κ B and induces invasion through the canonical pathway involving IKK α . *Oncogene*, **29**: 1238.

- Mizutani, T., Onda, M., Tokunaga, A., Yamanaka, N., dan Sugisaki, Y., 1993. Relationship of C-erbB-2 protein expression and gene amplification to invasion and metastasis in human gastric cancer. *Cancer*, **72**: 2083–2088.
- Mota, A. de L., Evangelista, A.F., Macedo, T., Oliveira, R., Scapulatempo-Neto, C., Vieira, R.A. da C., dkk., 2017. Molecular characterization of breast cancer cell lines by clinical immunohistochemical markers. *Oncology letters*, **13**: 4708–4712.
- Nelson, K.M., Dahlin, J.L., Bisson, J., Graham, J., Pauli, G.F., dan Walters, M.A., 2017. The essential medicinal chemistry of curcumin: miniperspective. *Journal of medicinal chemistry*, **60**: 1620–1637.
- Nguyen, K.C.T., Muthiah, M., Islam, M.A., Kalash, R.S., Cho, C.-S., Park, H., dkk., 2014. Selective transfection with osmotically active sorbitol modified PEI nanoparticles for enhanced anti-cancer gene therapy. *Colloids and Surfaces B: Biointerfaces*, **119**: 126–136.
- Nilsson, U.W., Garvin, S., dan Dabrosin, C., 2007. MMP-2 and MMP-9 activity is regulated by estradiol and tamoxifen in cultured human breast cancer cells. *Breast Cancer Research and Treatment*, **102**: 253–261.
- Pachmayr, E., Treese, C., dan Stein, U., 2017. Underlying mechanisms for distant metastasis-molecular biology. *Visceral medicine*, **33**: 11–20.
- Panieri, E. dan Santoro, M.M., 2016. ROS homeostasis and metabolism: a dangerous liason in cancer cells. *Cell Death & Disease*, **7**: e2253–e2253.
- Park, G.B., Choi, Y., Kim, Y.S., Lee, H.-K., Kim, D., dan Hur, D.Y., 2014. ROS-mediated JNK/p38-MAPK activation regulates Bax translocation in Sorafenib-induced apoptosis of EBV-transformed B cells. *International Journal of Oncology*, **44**: 977–985.
- Patlolla, J.M., Swamy, M.V., Raju, J., dan Rao, C.V., 2004. Overexpression of caveolin-1 in experimental colon adenocarcinomas and human colon cancer cell lines. *Oncology reports*, **11**: 957–963.
- Perou, C.M., Sørlie, T., Eisen, M.B., Van De Rijn, M., Jeffrey, S.S., Rees, C.A., dkk., 2000. Molecular portraits of human breast tumours. *Nature*, **406**: 747.
- Putri, H., Jenie, R.I., Handayani, S., Kastian, R.F., dan Meiyanto, E., 2016. Combination of Potassium Pentagamavunon-0 and Doxorubicin Induces Apoptosis and Cell Cycle Arrest and Inhibits Metastasis in Breast Cancer Cells. *Asian Pac. J. Cancer Prev*, **17**: 2683–2688.
- Ramachandran, C., Nair, P.R., Escalon, E., Melnick, S.J., dan Khatib, Z., 2006. *Synergistic Anticancer Effects between Curcumin and Doxorubicin in Drug Sensitive and Resistant Human Pediatric Leukemic Cell Lines*. Am Soc Hematology.
- Rashidian, J., Iyirhiaro, G.O., dan Park, D.S., 2007. Cell cycle machinery and stroke. *Biochimica et Biophysica Acta (BBA)-Molecular Basis of Disease*, **1772**: 484–493.

- Reynolds, C.P. dan Maurer, B.J., 2005. Evaluating response to antineoplastic drug combinations in tissue culture models, dalam: *Chemosensitivity*. Springer, hal. 173–183.
- Ross, J.S., Slodkowska, E.A., Symmans, W.F., Pusztai, L., Ravdin, P.M., dan Hortobagyi, G.N., 2009. The HER-2 Receptor and Breast Cancer: Ten Years of Targeted Anti-HER-2 Therapy and Personalized Medicine. *The Oncologist*, **14**: 320–368.
- Sak, M.M., Szymanska, M., Bertelsen, V., Hasmann, M., Madshus, I.H., dan Stang, E., 2013. Pertuzumab counteracts the inhibitory effect of ErbB2 on degradation of ErbB3. *Carcinogenesis*, **34**: 2031–2038.
- Sánchez, Y., Simón, G.P., Calviño, E., de Blas, E., dan Aller, P., 2010. Curcumin stimulates reactive oxygen species production and potentiates apoptosis induction by the antitumor drugs arsenic trioxide and lonidamine in human myeloid leukemia cell lines. *Journal of Pharmacology and Experimental Therapeutics*, **335**: 114–123.
- Sardjiman, S.S., Reksohadiprodjo, M.S., Hakim, L., Van der Goot, H., dan Timmerman, H., 1997. 1, 5-Diphenyl-1, 4-pentadiene-3-ones and cyclic analogues as antioxidative agents. Synthesis and structure-activity relationship. *European journal of medicinal chemistry*, **32**: 625–630.
- Savitskaya, M.A. dan Onishchenko, G.E., 2015. Mechanisms of apoptosis. *Biochemistry (Moscow)*, **80**: 1393–1405.
- Schulz, W., 2005. *Molecular Biology of Human Cancers: An Advanced Student's Textbook*. Springer Science & Business Media.
- Septisetyani, E.P., Ikawati, M., Widaryanti, B., dan Meiyanto, E., 2008. 'Apoptosis Mediated Cytotoxicity of Curcumin Analogues PGV-0 and PGV-1 in WiDr Cell Line', , dalam: *Proceeding Molecular Targeted Therapy Symposium. Faculty of Pharmacy, Gadjah Mada University, Yogyakarta*. hal. 48–56.
- Shangguan, L., Chen, Q., Shi, B., dan Huang, F., 2017. Enhancing the solubility and bioactivity of anticancer drug tamoxifen by water-soluble pillar[6]arene-based host–guest complexation. *Chemical Communications*, **53**: 9749–9752.
- Sharma, G.N., Dave, R., Sanadya, J., Sharma, P., dan Sharma, K.K., 2010. Various types and management of breast cancer: an overview. *Journal of advanced pharmaceutical technology & research*, **1**: 109.
- Shou, J., Massarweh, S., Osborne, C.K., Wakeling, A.E., Ali, S., Weiss, H., dkk., 2004. Mechanisms of Tamoxifen Resistance: Increased Estrogen Receptor-HER2/neu Cross-Talk in ER/HER2-Positive Breast Cancer. *JNCI Journal of the National Cancer Institute*, **96**: 926–935.
- Simeone, A.-M., Broemeling, L.D., Rosenblum, J., dan Tari, A.M., 2003. HER2/neu reduces the apoptotic effects of N-(4-hydroxyphenyl)retinamide

- (4-HPR) in breast cancer cells by decreasing nitric oxide production. *Oncogene*, **22**: 6739–6747.
- Slamon, D.J., Clark, G.M., Wong, S.G., Levin, W.J., Ullrich, A., dan McGuire, W.L., 1987. Human breast cancer: correlation of relapse and survival with amplification of the HER-2/neu oncogene. *Science*, **235**: 177–182.
- Su, C.-C., Lin, J.-G., Li, T.-M., Chung, J.-G., Yang, J.-S., Ip, S.-W., dkk., 2006. Curcumin-induced apoptosis of human colon cancer colo 205 cells through the production of ROS, Ca²⁺ and the activation of caspase-3. *Anticancer research*, **26**: 4379–4389.
- Subik, K., Lee, J.-F., Baxter, L., Strzepak, T., Costello, D., Crowley, P., dkk., 2010. The expression patterns of ER, PR, HER2, CK5/6, EGFR, Ki-67 and AR by immunohistochemical analysis in breast cancer cell lines. *Breast cancer: basic and clinical research*, **4**: 117822341000400000.
- Tari, A.M., Lim, S.-J., Hung, M.-C., Esteva, F.J., dan Lopez-Berestein, G., 2002. Her2/neu induces all-transretinoic acid (ATRA) resistance in breast cancer cells. *Oncogene*, **21**: 5224.
- Trachootham, D., Alexandre, J., dan Huang, P., 2009. Targeting cancer cells by ROS-mediated mechanisms: a radical therapeutic approach? *Nature reviews Drug discovery*, **8**: 579.
- Utomo, R.Y., Putri, H., Pudjono, P., Susidarti, R.A., Jenie, R.I., dan Meiyanto, E., 2017. SYNTHESIS AND CYTOTOXIC ACTIVITY OF 2,5-BIS(4-BORONIC ACID)BENZYLIDINE CYCLOPENTANONE ON HER2 OVEREXPRESSED-CANCER CELLS. *INDONESIAN JOURNAL OF PHARMACY*, **28**: 74.
- Vermeulen, K., Van Bockstaele, D.R., dan Berneman, Z.N., 2003. The cell cycle: a review of regulation, deregulation and therapeutic targets in cancer. *Cell proliferation*, **36**: 131–149.
- Verri, E., Guglielmini, P., Puntoni, M., Perdelli, L., Papadia, A., Lorenzi, P., dkk., 2005. HER2/neu oncoprotein overexpression in epithelial ovarian cancer: evaluation of its prevalence and prognostic significance. *Oncology*, **68**: 154–161.
- Waalkes, S., Eggers, H., Blasig, H., Atschekzei, F., Kramer, M.W., Hennenlotter, J., dkk., 2011. Caveolin 1 mRNA is overexpressed in malignant renal tissue and might serve as a novel diagnostic marker for renal cancer. *Biomarkers in medicine*, **5**: 219–225.
- Wong, D.J. dan Hurvitz, S.A., 2014. Recent advances in the development of anti-HER2 antibodies and antibody-drug conjugates. *Annals of translational medicine*, **2**: .
- Wong, R.S., 2011. Apoptosis in cancer: from pathogenesis to treatment. *Journal of Experimental & Clinical Cancer Research*, **30**: 87.

- Yang, S.-T., Huang, A.-C., Tang, N.-Y., Liu, H.-C., Liao, C.-L., Ji, B.-C., dkk., 2016. Bisdemethoxycurcumin-induced S phase arrest through the inhibition of cyclin A and E and induction of apoptosis via endoplasmic reticulum stress and mitochondria-dependent pathways in human lung cancer NCI H460 cells: BISDEMETHOXYCURCUMIN-INDUCED APOPTOSIS IN NCI-H460 CELLS. *Environmental Toxicology*, **31**: 1899–1908.
- Yano, T., Ochiai, A., Doi, T., Hashizume, K., Nakanishi, M., Ouchi, K., dkk., 2004. Expression of HER2 in gastric cancer: comparison between protein expression and gene amplification using a new commercial kit. *Journal of Clinical Oncology*, **22**: 4053–4053.
- Yao, D., Dai, C., dan Peng, S., 2011. Mechanism of the mesenchymal–epithelial transition and its relationship with metastatic tumor formation. *Molecular cancer research*, **9**: 1608–1620.
- Yokoyama, H., Ikehara, Y., Koder, Y., Ikehara, S., Yatabe, Y., Mochizuki, Y., dkk., 2006. Molecular basis for sensitivity and acquired resistance to gefitinib in HER2-overexpressing human gastric cancer cell lines derived from liver metastasis. *British journal of cancer*, **95**: 1504.
- Zhao, S., Ohara, S., Kanno, Y., Midorikawa, Y., Nakayama, M., Makimura, M., dkk., 2013. HER2 overexpression-mediated inflammatory signaling enhances mammosphere formation through up-regulation of aryl hydrocarbon receptor transcription. *Cancer Letters*, **330**: 41–48.
- Zhu, Y. dan Bu, S., 2017. Curcumin Induces Autophagy, Apoptosis, and Cell Cycle Arrest in Human Pancreatic Cancer Cells. *Evidence-Based Complementary and Alternative Medicine*, **2017**: 1–13.
- Zong, H., Wang, F., Fan, Q., dan Wang, L., 2012. Curcumin inhibits metastatic progression of breast cancer cell through suppression of urokinase-type plasminogen activator by NF-kappa B signaling pathways. *Molecular Biology Reports*, **39**: 4803–4808.