

## Daftar Pustaka

- Acuña-Castroviejo, D., Escames, G., Venegas, C., Díaz-Casado, M.E., Lima-Cabello, E., López, L.C., Rosales-Corral, S., Tan, D.X., Reiter, R.J., 2014. Extrapineal melatonin: Sources, regulation, and potential functions. *Cellular and Molecular Life Sciences* 71, 2997–3025. <https://doi.org/10.1007/s00018-014-1579-2>
- Adeya Adella, C., Siregar, M.F.G., Putra, I.B., Hasibuan, P.A., Andrijono, A., Bachtiar, A., Lumbanraja, S.N., Nasution, I.P., 2023. Promising effect of cisplatin and melatonin combination on the inhibition of cisplatin resistance in ovarian cancer. *F1000Res* 12, 313. <https://doi.org/10.12688/f1000research.130172.1>
- Ahmad, S.B., Ali, A., Bilal, M., Rashid, S.M., Wani, A.B., Bhat, R.R., Rehman, M.U., 2023. Melatonin and Health: Insights of Melatonin Action, Biological Functions, and Associated Disorders. *Cell Mol Neurobiol.* <https://doi.org/10.1007/s10571-023-01324-w>
- Ahmed, A.R., Farris, F.F., Ray, S.D., 2023. Lipid peroxidation, in: Reference Module in Biomedical Sciences. Elsevier. <https://doi.org/10.1016/B978-0-12-824315-2.00624-2>
- Ali Eghbal, M., Eftekhari, A., Azarmi, Y., Parvizpur, A., 2016. A Review of Biological and Pharmacological Actions of Melatonin: Oxidant and Prooxidant Properties 4, 69–081.
- Ayala, A., Muñoz, M.F., Argüelles, S., 2014. Lipid peroxidation: Production, metabolism, and signaling mechanisms of malondialdehyde and 4-hydroxy-2-nonenal. *Oxid Med Cell Longev.* <https://doi.org/10.1155/2014/360438>
- Ben-Shlomo, R., 2014. Chronodisruption, cell cycle checkpoints and DNA repair. *Indian J Exp Biol* 52, 399–403.
- Bonmati-Carrion, M.-A., Tomas-Loba, A., 2021. Melatonin and Cancer: A Polyhedral Network Where the Source Matters. *antioxidants* 10.
- Boutin, J.A., Witt-Enderby, P.A., Sotriffer, C., Zlotos, D.P., 2020. Melatonin receptor ligands: A pharmaco-chemical perspective. *J Pineal Res* 69, 1–18. <https://doi.org/10.1111/jpi.12672>

- Calvo, J.R., Gonzalez-Yanes, C., Maldonado, M.D., 2013. The role of melatonin in the cells of the innate immunity: A review. *J Pineal Res.* <https://doi.org/10.1111/jpi.12075>
- Chaudhary, P., Janmeda, P., Docea, A.O., Yeskaliyeva, B., Abdull Razis, A.F., Modu, B., Calina, D., Sharifi-Rad, J., 2023. Oxidative stress, free radicals and antioxidants: potential crosstalk in the pathophysiology of human diseases. *Front Chem* 11. <https://doi.org/10.3389/fchem.2023.1158198>
- Chen, Y.E., Mao, J.J., Sun, L.Q., Huang, B., Ding, C.B., Gu, Y., Liao, J.Q., Hu, C., Zhang, Z.W., Yuan, S., Yuan, M., 2018. Exogenous melatonin enhances salt stress tolerance in maize seedlings by improving antioxidant and photosynthetic capacity. *Physiol Plant* 164, 349–363. <https://doi.org/10.1111/ppl.12737>
- Clastrat, B., Leston, J., 2015. Melatonin: Physiological effects in humans. *Neurochirurgie*.
- Dall, G.V., Britt, K.L., 2017. Estrogen Effects on the Mammary Gland in Early and Late Life and Breast Cancer Risk. *Front Oncol* 7.
- de Arruda Veiga, E.C., Simões, R., Valenti, V.E., Cipolla-Neto, J., Abreu, L.C., Barros, E.P.M., Sorpreso, I.C.E., Baracat, M.C.P., Baracat, E.C., Soares, J.M., 2019. Repercussions of melatonin on the risk of breast cancer: A systematic review and meta-analysis. *Rev Assoc Med Bras.* <https://doi.org/10.1590/1806-9282.65.5.699>
- Devore, E.E., Warner, E.T., Heather Eliassen, A., Brown, S.B., Beck, A.H., Hankinson, S.E., Schernhammer, E.S., 2017. Urinary melatonin in relation to postmenopausal breast cancer risk according to melatonin 1 receptor status. *Cancer Epidemiology Biomarkers and Prevention* 26, 413–419. <https://doi.org/10.1158/1055-9965.EPI-16-0630>
- Didier, A.J., Stiene, J., Fang, L., Watkins, D., Dworkin, L.D., Creeden, J.F., 2023. Antioxidant and Anti-Tumor Effects of Dietary Vitamins A, C, and E. *Antioxidants* 12, 632. <https://doi.org/10.3390/antiox12030632>
- Dizdaroglu, M., Coskun, E., Jaruga, P., 2015. Measurement of oxidatively induced DNA damage and its repair, by mass spectrometric techniques. *Free Radic Res.* <https://doi.org/10.3109/10715762.2015.1014814>
- Dizdaroglu, M., Jaruga, P., 2012. Mechanisms of free radical-induced damage to DNA. *Free Radic Res.* <https://doi.org/10.3109/10715762.2011.653969>
- Echeverria, G. V., Ge, Z., Seth, S., Zhang, X., Jeter-Jones, S., Zhou, X., Cai, S., Tu, Y., McCoy, A., Peoples, M., Sun, Y., Qiu, H., Chang, Q., Bristow, C., Carugo,

- A., Shao, J., Ma, X., Harris, A., Mundi, P., Lau, R., Ramamoorthy, V., Wu, Y., Alvarez, M.J., Califano, A., Moulder, S.L., Symmans, W.F., Marszalek, J.R., Heffernan, T.P., Chang, J.T., Piwnica-Worms, H., 2019. Resistance to neoadjuvant chemotherapy in triple-negative breast cancer mediated by a reversible drug-tolerant state. *Sci Transl Med* 11. <https://doi.org/10.1126/scitranslmed.aav0936>
- El-Sokkary, G.H., Ismail, I.A., Saber, S.H., 2019. Melatonin inhibits breast cancer cell invasion through modulating DJ-1/KLF17/ID-1 signaling pathway. *J Cell Biochem* 120, 3945–3957. <https://doi.org/10.1002/jcb.27678>
- Endale, H.T., Tesfaye, W., Mengstie, T.A., 2023. ROS induced lipid peroxidation and their role in ferroptosis. *Front Cell Dev Biol* 11. <https://doi.org/10.3389/fcell.2023.1226044>
- Fauziyah, A., Dwijananti, P., 2013. Pengaruh Radiasi Sinar X Terhadap Motilitas Sperma. *Jurnal Pendidikan Fisika Indonesia* 9, 93–98.
- Flieger, J., Flieger, W., Baj, J., Maciejewski, R., 2021. Antioxidants: Classification, Natural Sources, Activity/Capacity Measurements, and Usefulness for the Synthesis of Nanoparticles. *Materials* 14, 4135. <https://doi.org/10.3390/ma14154135>
- Florida, J., Rodriguez-Santana, C., Martinez-Ruiz, L., López-Rodríguez, A., Acuña-Castroviejo, D., Rusanova, I., Escames, G., 2022. Understanding the Mechanism of Action of Melatonin, Which Induces ROS Production in Cancer Cells. *Antioxidants* 11, 1621. <https://doi.org/10.3390/antiox11081621>
- Galano, A., Tan, D.-X., Reiter, R., 2018. Melatonin: A Versatile Protector against Oxidative DNA Damage. *Molecules* 23, 530. <https://doi.org/10.3390/molecules23030530>
- Gaschler, M.M., Stockwell, B.R., 2017. Lipid peroxidation in cell death. *Biochem Biophys Res Commun* 482, 419–425. <https://doi.org/10.1016/j.bbrc.2016.10.086>
- Gelfand, R., Vernet, D., Bruhn, K.W., Sarkissyan, S., Heber, D., Vadgama, J. v., Gonzalez-Cadavid, N.F., 2017. Long-term exposure of MCF-7 breast cancer cells to ethanol stimulates oncogenic features. *Int J Oncol* 50, 49–65. <https://doi.org/10.3892/ijo.2016.3800>
- González-González, A., Mediavilla, M.D., Sánchez-Barceló, E.J., 2018. Melatonin: A molecule for reducing breast cancer risk. *Molecules*. <https://doi.org/10.3390/molecules23020336>

- Gorini, A., Mazzocco, K., Kondylakis, H., McVie, G., Pravettoni, G., 2016. A web-based interactive tool to improve breast cancer patient centredness. Ecancermedicalscience 10. <https://doi.org/10.3332/ecancer.2016.659>
- Gorrini, C., Harris, I.S., Mak, T.W., 2013. Modulation of oxidative stress as an anticancer strategy. Nat Rev Drug Discov. <https://doi.org/10.1038/nrd4002>
- Gradascević-Gubaljević, J., Srabović, N., Jevrić-Čaušević, A., Softić, A., Rifatbegović, A., Mujanović-Mustedanagić, J., Dautović, E., Smajlović, A., Mujagić, Z., 2018. Serum levels of oxidative stress marker malondialdehyde in breast cancer patients in relation to pathohistological factors, estrogen receptors, menopausal status, and age. Journal of Health Sciences. <https://doi.org/10.17532/jhsci.2018.263>
- Griñan-Lison, C., Blaya-Cánovas, J.L., López-Tejada, A., Ávalos-Moreno, M., Navarro-Ocón, A., Cara, F.E., González-González, A., Lorente, J.A., Marchal, J.A., Granados-Principal, S., 2021. Antioxidants for the treatment of breast cancer: Are we there yet? Antioxidants. <https://doi.org/10.3390/antiox10020205>
- Gurer-Orhan, H., Ince, E., Konyar, D., Sasö, L., Suzen, S., 2017. The Role of Oxidative Stress Modulators in Breast Cancer. Curr Med Chem 25, 4084–4101. <https://doi.org/10.2174/0929867324666170711114336>
- Gusti, A.M.T., Qusti, S.Y., Alshammari, E.M., Toraih, E.A., Fawzy, M.S., 2021. Antioxidants-Related Superoxide Dismutase (SOD), Catalase (CAT), Glutathione Peroxidase (GPX), Glutathione-S-Transferase (GST), and Nitric Oxide Synthase (NOS) Gene Variants Analysis in an Obese Population: A Preliminary Case-Control Study. Antioxidants 10, 595. <https://doi.org/10.3390/antiox10040595>
- Hacışevki, A., Baba, B., 2018. An Overview of Melatonin as an Antioxidant Molecule: A Biochemical Approach, in: Melatonin - Molecular Biology, Clinical and Pharmaceutical Approaches. pp. 1–26.
- Han, R., Gu, S., Zhang, Y., Luo, A., Jing, X., Zhao, L., Zhao, X., Zhang, L., 2018. Estrogen promotes progression of hormone-dependent breast cancer through CCL2-CCR2 axis by upregulation of Twist via PI3K/AKT/NF-κB signaling. Sci Rep 8, 1–13. <https://doi.org/10.1038/s41598-018-27810-6>
- Hardeland, R., 2021. Divergent Importance of Chronobiological Considerations in High- and Low-dose Melatonin Therapies. Diseases 9, 18. <https://doi.org/10.3390/diseases9010018>
- Harris, I.S., DeNicola, G.M., 2020. The Complex Interplay between Antioxidants and ROS in Cancer. Trends Cell Biol. <https://doi.org/10.1016/j.tcb.2020.03.002>

- Hasan, M., Marzouk, M.A., Adhikari, S., W., T. D., Miller, B.P., Matossian, M.D., Elliott, S., Wright, M., Alzoubi, M., Collins-Burow, B. M., Burow, M. E., Holzgrabe, U., Zlotos, D. P., Stratford, R. E., & Witt-Enderby, P.A., 2019. Pharmacological, Mechanistic, and Pharmacokinetic Assessment of Novel Melatonin-Tamoxifen Drug Conjugates as Breast Cancer Drugs. *Mol Pharmacol* 96, 272.
- Hashizume, T., Ozawa, Y., Ying, B.W., 2023. Employing active learning in the optimization of culture medium for mammalian cells. *NPJ Syst Biol Appl* 9. <https://doi.org/10.1038/s41540-023-00284-7>
- He, L., He, T., Farrar, S., Ji, L., Liu, T., Ma, X., 2017. Antioxidants Maintain Cellular Redox Homeostasis by Elimination of Reactive Oxygen Species. *Cellular Physiology and Biochemistry*. <https://doi.org/10.1159/000485089>
- Hecht, F., Pessoa, C.F., Gentile, L.B., Rosenthal, D., Carvalho, D.P., Fortunato, R.S., 2016. The role of oxidative stress on breast cancer development and therapy. *Tumor Biology*. <https://doi.org/10.1007/s13277-016-4873-9>.
- Huang, B., Chen, Y.E., Zhao, Y.Q., Ding, C.B., Liao, J.Q., Hu, C., Zhou, L.J., Zhang, Z.W., Yuan, S., Yuan, M., 2019. Exogenous melatonin alleviates oxidative damages and protects photosystem ii in maize seedlings under drought stress. *Front Plant Sci* 10. <https://doi.org/10.3389/fpls.2019.00677>
- Ighodaro, O.M., Akinloye, O.A., 2018. First line defence antioxidants-superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPX): Their fundamental role in the entire antioxidant defence grid. *Alexandria Journal of Medicine* 54, 287–293. <https://doi.org/10.1016/j.ajme.2017.09.001>
- Innominato, P.F., Lim, A.S., O, P., Clemons, M., Trudeau, M., Eisen, A., Wang, C., Kiss, A., Pritchard, K. I., & Bjarnason, G.A., 2016. The effect of melatonin on sleep and quality of life in patients with advanced breast cancer. *Support Care Cancer* 24, 1097–1105.
- Ito, F., Sono, Y., Ito, T., 2019. Measurement and clinical significance of lipid peroxidation as a biomarker of oxidative stress: Oxidative stress in diabetes, atherosclerosis, and chronic inflammation. *Antioxidants* 8. <https://doi.org/10.3390/antiox8030072>
- Jiang, W.G., Sanders, A.J., Katoh, M., Ungefroren, H., Gieseler, F., Prince, M., Thompson, S.K., Zollo, M., Spano, D., Dhawan, P., Sliva, D., Subbarayan, P.R., Sarkar, M., Honoki, K., Fujii, H., Georgakilas, A.G., Amedei, A., Niccolai, E., Amin, A., Ashraf, S.S., Ye, L., Helferich, W.G., Yang, X., Boosani, C.S., Guha,

- G., Ciriolo, M.R., Aquilano, K., Chen, S., Azmi, A.S., Keith, W.N., Bilsland, A., Bhakta, D., Halicka, D., Nowsheen, S., Pantano, F., Santini, D., 2015. Tissue invasion and metastasis: Molecular, biological and clinical perspectives. *Semin Cancer Biol.* <https://doi.org/10.1016/j.semcan.2015.03.008>
- Jin, Y., Choi, Y.J., Heo, K., Park, S.J., 2021. Melatonin as an Oncostatic Molecule Based on Its Anti-Aromatase Role in Breast Cancer. *Int J Mol Sci* 22, 438.
- Calvo, J.R., González-Yanes, C., Maldonado, M. D. 2013. The role of melatonin in the cells of the innate immunity: a review. *J Pineal Res* 55, 103–120.
- Kaleta, D., Szkiela, M., Kusideł, E., Makowiec-d, T., 2020. Night Shift Work — A Risk Factor for Breast Cancer. *Int J Environ Res Public Health.* 17, 659.
- Karmakar, A., Das, A.K., Ghosh, N., Sil, P.C., 2022. Superoxide dismutase, in: Antioxidants Effects in Health. Elsevier, pp. 139–166. <https://doi.org/10.1016/B978-0-12-819096-8.00027-6>
- Katerji, M., Filippova, M., Duerksen-Hughes, P., 2019. Approaches and methods to measure oxidative stress in clinical samples: Research applications in the cancer field. *Oxid Med Cell Longev.* <https://doi.org/10.1155/2019/1279250>
- Kementrian Kesehatan Republik Indonesia, 2020. Profil-Kesehatan-Indonesia-2019. Tersedia pada <https://www.kemkes.go.id>. Diakses pada 30 Agustus 2023
- Kementrian Kesehatan Republik Indonesia, 2018. Profil Kesehatan Indonesia 2017. Tersedia pada pada <https://www.kemkes.go.id>. Diakses pada 9 Februari 2023
- Kettner, N.M., Katchy, C.A., Fu, L., 2014. Circadian gene variants in cancer. *Ann Med* 46, 208–220. <https://doi.org/10.3109/07853890.2014.914808>
- Kole, E., Ozkan, S., Eraldemir, C., Akar, F., Ozbek, S., Kole, M., Kum, T., Filiz, P., 2020. Effects of melatonin on ovarian reserve in cigarette smoking: an experimental study. *Archives of Medical Science* 16, 1376–1386. <https://doi.org/10.5114/aoms.2019.89409>
- Lampa, M., Arlt, H., He, T., Ospina, B., Reeves, J., Zhang, B., Murtie, J., Deng, G., Barberis, C., Hoffmann, D., Cheng, H., Pollard, J., Winter, C., Richon, V., Garcia-Escheverria, C., Adrian, F., Wiederschain, D., Srinivasan, L., 2017. Glutaminase is essential for the growth of triple-negative breast cancer cells with a deregulated glutamine metabolism pathway and its suppression synergizes with mTOR inhibition. *PLoS One* 12, e0185092. <https://doi.org/10.1371/journal.pone.0185092>

- Lee, J.D., Cai, Q., Shu, X.O., Nechuta, S.J., 2017. The Role of Biomarkers of Oxidative Stress in Breast Cancer Risk and Prognosis: A Systematic Review of the Epidemiologic Literature. *J Womens Health.* <https://doi.org/10.1089/jwh.2016.5973>
- Lee, J.H., Yoon, Y.M., Han, Y.S., Yun, C.W., Lee, S.H., 2018. Melatonin promotes apoptosis of oxaliplatin-resistant colorectal cancer cells through inhibition of cellular prion protein. *Anticancer Res* 38, 1993–2000. <https://doi.org/10.21873/anticanres.12437>
- Liu, L., Labani, N., Cecon, E., Jockers, R., 2019. Melatonin Target Proteins: Too Many or Not Enough? *Front Endocrinol (Lausanne).* <https://doi.org/10.3389/fendo.2019.00791>
- Liu, Y., Shi, Y., Han, R., Liu, C., Qin, X., Li, P., Gu, R., 2023. Signaling pathways of oxidative stress response: the potential therapeutic targets in gastric cancer. *Front Immunol* 14. <https://doi.org/10.3389/fimmu.2023.1139589>
- Ma C, Li L.X, Zhang Y, Xiang C, Ma T, Ma ZQ, Zang ZP., 2015. Protective and sensitive effects of melatonin combined with adriamycin on ER+ (estrogen receptor) breast cancer. *Eur J Gynaecol Oncol* 36, 197–202.
- Manchester, L.C., Coto-Montes, A., Boga, J.A., Andersen, L.P.H., Zhou, Z., Galano, A., Vriend, J., Tan, D.X., Reiter, R.J., 2015. Melatonin: An ancient molecule that makes oxygen metabolically tolerable. *J Pineal Res* 59, 403–419. <https://doi.org/10.1111/jpi.12267>
- Markhulia, J., Kekutia, S., Mikelashvili, V., Saneblidze, L., Tservadze, T., Maisuradze, N., Leladze, N., Czigány, Z., Almásy, L., 2023. Synthesis, Characterization, and In Vitro Cytotoxicity Evaluation of Doxorubicin-Loaded Magnetite Nanoparticles on Triple-Negative Breast Cancer Cell Lines. *Pharmaceutics* 15, 1758. <https://doi.org/10.3390/pharmaceutics15061758>
- Marrocco, I., Altieri, F., Peluso, I., 2017. Measurement and Clinical Significance of Biomarkers of Oxidative Stress in Humans. *Oxid Med Cell Longev.* <https://doi.org/10.1155/2017/6501046>
- Mulianto, N., 2020. Malondialdehid sebagai Penanda Stres Oksidatif pada Berbagai Penyakit Kulit. *Cermin Dunia Kedokteran* 47, 42.
- National Cancer Institute, 2020. Breast Cancer Prevention (PDQ®).
- Nooshinfar, E., Bashash, D., Safaroghli-Azar, A., Bayati, S., Rezaei-Tavirani, M., Ghaffari, S.H., Akbari, M.E., 2016. Melatonin promotes ATO-induced apoptosis

- in MCF-7 cells: Proposing novel therapeutic potential for breast cancer. *Biomedicine and Pharmacotherapy* 83, 456–465. <https://doi.org/10.1016/j.biopha.2016.07.004>
- Orendáš, P., Kubatka, P., Bojková, B., Kassayová, M., Kajo, K., Výbohová, D., Kružliak, P., Péč, M., Adamkov, M., Kapinová, A., Adamicová, K., Sadloňová, V., Chmelová, M., Stollárová, N. 2014. Melatonin potentiates the anti-tumour effect of pravastatin in rat mammary gland carcinoma model. *Int J Exp Pathol* 95, 401–410.
- Papagiannakopoulos, T., Bauer, M., Davidson, S., Heimann, M., Subbaraj, L., Bhutkar, A., Bartlebaugh, J., Heiden, M., Vander, Jacks, T., 2016. Circadian Rhythm Disruption Promotes Lung Tumorigenesis. *Cell Metab* 24, 324–331.
- Park, J.Y., Jeong, A.L., Joo, H.J., Han, S., Kim, S.-H., Kim, H.-Y., Lim, J.-S., Lee, M.-S., Choi, H.-K., Yang, Y., 2018. Development of suspension cell culture model to mimic circulating tumor cells, *Oncotarget*.
- Pei, J., Pan, X., Wei, G., Hua, Y., 2023. Research progress of glutathione peroxidase family (GPX) in redoxidation. *Front Pharmacol* 14. <https://doi.org/10.3389/fphar.2023.1147414>
- Perdomo, J., Quintana, C., González, I., Hernández, I., Rubio, S., Loro, J.F., Reiter, R.J., Estévez, F., Quintana, J., 2020. Melatonin induces melanogenesis in human SK-MEL-1 melanoma cells involving glycogen synthase kinase-3 and reactive oxygen species. *Int J Mol Sci* 21, 1–16. <https://doi.org/10.3390/ijms21144970>
- Rastegar Moghaddam Mansouri, M., Abbasian, S., Khazaie, M., 2018. Melatonin and Exercise: Their Effects on Malondialdehyde and Lipid Peroxidation, in: *Melatonin - Molecular Biology, Clinical and Pharmaceutical Approaches*. IntechOpen. <https://doi.org/10.5772/intechopen.79561>
- Reis, L.M. dos, Adamoski, D., Ornitz Oliveira Souza, R., Rodrigues Ascenção, C.F., Sousa de Oliveira, K.R., Corrêa-da-Silva, F., Malta de Sá Patroni, F., Meira Dias, M., Consonni, S.R., Mendes de Moraes-Vieira, P.M., Silber, A.M., Dias, S.M.G., 2019. Dual inhibition of glutaminase and carnitine palmitoyltransferase decreases growth and migration of glutaminase inhibition-resistant triple-negative breast cancer cells. *Journal of Biological Chemistry* 294, 9342–9357. <https://doi.org/10.1074/jbc.RA119.008180>
- Reiter, Russel J., Mayo, J.C., Rosa, D.T., Qin, M.A.L., 2016. Melatonin as an antioxidant: under promises but over delivers. *J Pineal Res* 61, 253–278. <https://doi.org/10.1111/jpi.12360>

- Reiter, Russel J., Mayo, J.C., Tan, D.X., Sainz, R.M., Alatorre-Jimenez, M., Qin, L., 2016. Melatonin as an antioxidant: under promises but over delivers. *J Pineal Res.* <https://doi.org/10.1111/jpi.12360>
- Rothenberger, N.J., Somasundaram, A., Stabile, L.P., 2018. The role of the estrogen pathway in the tumor microenvironment. *Int J Mol Sci* 19. <https://doi.org/10.3390/ijms19020611>
- Sánchez-Barceló, E.J., Mediavilla, M., Alonso-Gonzalez, C., Reiter, R., 2012. Melatonin uses in oncology: Breast cancer prevention and reduction of the side effects of chemotherapy and radiation. *Expert Opin Investig Drugs* 21, 819.
- Sarlak, G., Jenwitheesuk, A., Chetsawang, B., Govitrapong, P., 2013. Effects of Melatonin on Nervous System Aging: Neurogenesis and Neurodegeneration. *J Pharmacol Sci* 123, 9–24. <https://doi.org/10.1254/jphs.13R01SR>
- Sedighi Pashaki, A., Sheida, F., Moaddab Shoar, L., Hashem, T., Fazilat-Panah, D., Nemati Motehaver, A., Ghanbari Motlagh, A., Nikzad, S., Bakhtiari, M., Tapak, L., Keshtpour Amlashi, Zahir, Javadinia, S.A., Keshtpour Amlashi, Zahra, 2023. A Randomized, Controlled, Parallel-Group, Trial on the Long-term Effects of Melatonin on Fatigue Associated With Breast Cancer and Its Adjuvant Treatments. *Integr Cancer Ther* 22, 153473542311686. <https://doi.org/10.1177/15347354231168624>
- Sharifi-Rad, M., Anil Kumar, N. V., Zucca, P., Varoni, E.M., Dini, L., Panzarini, E., Rajkovic, J., Tsouh Fokou, P.V., Azzini, E., Peluso, I., Prakash Mishra, A., Nigam, M., El Rayess, Y., Beyrouty, M. El, Polito, L., Iriti, M., Martins, N., Martorell, M., Docea, A.O., Setzer, W.N., Calina, D., Cho, W.C., Sharifi-Rad, J., 2020. Lifestyle, Oxidative Stress, and Antioxidants: Back and Forth in the Pathophysiology of Chronic Diseases. *Front Physiol* 11. <https://doi.org/10.3389/fphys.2020.00694>
- Sharma, A., Gupta, P., Prabhakar, P.K., 2019. Endogenous Repair System of Oxidative Damage of DNA. *Curr Chem Biol* 13, 110–119. <https://doi.org/10.2174/2212796813666190221152908>
- Shi, H., Qian, Y., Tan, D., Reiter, R.J., He, C., 2015. Melatonin induces the transcripts of *CBF/DREB1s* and their involvement in both abiotic and biotic stresses in *Arabidopsis*. *J Pineal Res* 59, 334–342. <https://doi.org/10.1111/jpi.12262>
- Siddiqui, I.A., Sanna, V., Ahmad, N., Sechi, M., Mukhtar, H., 2015. Resveratrol nanoformulation for cancer prevention and therapy. *Ann N Y Acad Sci* 1348, 20–31. <https://doi.org/10.1111/nyas.12811>

- Singh, K., Bhori, M., Kasu, Y.A., Bhat, G., Marar, T., 2018. Antioxidants as precision weapons in war against cancer chemotherapy induced toxicity – Exploring the armoury of obscurity. *Saudi Pharmaceutical Journal* 26, 177–190. <https://doi.org/10.1016/j.jps.2017.12.013>
- Spirlandeli, A.L., Deminice, R., Jordao, A.A., 2014. Plasma malondialdehyde as biomarker of lipid peroxidation: Effects of acute exercise. *Int J Sports Med* 35, 14–18. <https://doi.org/10.1055/s-0033-1345132>
- Subramanian, P., Prasanna, V., Jayapalan, J.J., Abdul Rahman, P.S., Hashim, O.H., 2014. Role of Bacopa monnieri in the temporal regulation of oxidative stress in clock mutant (cryb) of Drosophila melanogaster. *J Insect Physiol* 65, 37–44. <https://doi.org/10.1016/j.jinsphys.2014.04.005>
- Sung, H., Ferlay, J., Siegel, R.L., Laversanne, M., Soerjomataram, I., Jemal, A., Bray, F., 2021. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin* 0, 1–41. <https://doi.org/10.3322/caac.21660>
- Suwannakot, K., Sritawan, N., Prajit, R., Aranarochana, A., Sirichoat, A., Pannangrong, W., Wigmore, P., Welbat, J.U., 2021. Melatonin protects against the side-effects of 5-fluorouracil on hippocampal neurogenesis and ameliorates antioxidant activity in an adult rat hippocampus and prefrontal cortex. *Antioxidants* 10. <https://doi.org/10.3390/antiox10040615>
- Suzen, S., Gurer-Orhan, H., Sas, L., 2017. Detection of reactive oxygen and nitrogen species by electron paramagnetic resonance (EPR) technique. *Molecules*. <https://doi.org/10.3390/molecules22010181>
- Talib, W.H., Alsayed, A.R., Abuawad, A., Daoud, S., Mahmod, A.I., 2021. Melatonin in Cancer Treatment: Current Knowledge and Future Opportunities. *Molecules* 26, 2506. <https://doi.org/10.3390/molecules26092506>
- Touitou, Y., Reinberg, A., Touitou, D., 2017. Association between light at night, melatonin secretion, sleep deprivation, and the internal clock: Health impacts and mechanisms of circadian disruption. *Life Sci* march, 94–106.
- Tran, Q.H., Hoang, D.H., Song, M., Choe, W., Kang, I., Kim, S.S., Ha, J., 2021. Melatonin and doxorubicin synergistically enhance apoptosis via autophagy-dependent reduction of AMPK $\alpha$ 1 transcription in human breast cancer cells. *Exp Mol Med* 53, 1413–1422. <https://doi.org/10.1038/s12276-021-00675-y>

- Tutkun, E., 2013. Melatonin administration in rats with acute swimming exercise prevents lipid peroxidation in muscle tissue. International Journal of Academic Research 5, 1–5.
- Verigos, K.E., Sagredou, S., Orfanakos, K., Dalezis, P., Trafalis, D.T., 2020. 8-Hydroxy-2'-Deoxyguanosine and 8-Nitroguanine Production and Detection in Blood Serum of Breast Cancer Patients in Response to Postoperative Complementary External Ionizing Irradiation of Normal Tissues. Dose-Response 18, 155932582098217. <https://doi.org/10.1177/1559325820982172>
- Weir, H.J.M., Lane, J.D., Balthasar, N., 2013. SIRT3: A Central Regulator of Mitochondrial Adaptation in Health and Disease. Genes Cancer 4, 118–124. <https://doi.org/10.1177/1947601913476949>
- Werdhasari, A., 2014. Peran Antioksidan Bagi Kesehatan. Jurnal Biotek Medisiana Indonesia 3, 59–68.
- World health organization, 2019. Cancer in Indonesia. Tersedia secara online pada <https://www.who.int>. Diakses pada 10 Februari 2023.
- Xiang, S., Dauchy, R.T., Hauch, A., Mao, L., Yuan, L., Wren, M.A., Belancio, V.P., Mondal, D., Frasch, T., Blask, D.E. and Hill, S.M., 2015. Doxorubicin resistance in breast cancer is driven by light at night-induced disruption of the circadian melatonin signal. J. Pineal Res. 59, 60–69.
- Xiang, Shulin, Dauchy, R.T., Hauch, A., Mao, L., Yuan, L., Wren, M.A., Belancio, V.P., Mondal, D., Frasch, T., Blask, D.E., Hill, S.M., 2015. Doxorubicin resistance in breast cancer is driven by light at night-induced disruption of the circadian melatonin signal. J. Pineal Res. 59, 60–69. <https://doi.org/10.1111/jpi.12239>
- Yang, W.-S., Deng, Q., Fan, W.-Y., Wang, W.-Y., Wang, X., 2014. Light exposure at night, sleep duration, melatonin, and breast cancer. European Journal of Cancer Prevention 23, 269–276.
- Yaşar, P., Ayaz, G., User, S.D., Güpür, G., Muyan, M., 2017. Molecular mechanism of estrogen-estrogen receptor signaling. Reprod Med Biol 16, 4–20. <https://doi.org/10.1002/rmb2.12006>
- Zhang, Y., Xie, L., Ding, X., Wang, Yuanyuan, Xu, Y., Li, D., Liang, S., Wang, Yongxia, Zhang, L., Fu, A., Zhan, X., 2022. Mechanisms Underlying the Protective Effect of Maternal Zinc (ZnSO<sub>4</sub> or Zn-Gly) against Heat Stress-Induced Oxidative Stress in Chicken Embryo. Antioxidants 11, 1699. <https://doi.org/10.3390/antiox11091699>

- Zhao, H., Yin, J.Y., Yang, W.S., Qin, Q., Li, T.T., Shi, Y., Deng, Q., Wei, S., Liu, L., Wang, X., Nie, S.F., 2013. Sleep duration and cancer risk: A systematic review and meta-analysis of prospective studies. *Asian Pacific Journal of Cancer Prevention* 14, 7509–7515. <https://doi.org/10.7314/APJCP.2013.14.12.7509>
- Zhao, L., Zong, W., Zhang, H., Liu, R., 2019. Kidney Toxicity and Response of Selenium Containing Protein-glutathione Peroxidase (Gpx3) to CdTe QDs on Different Levels. *Toxicological Sciences* 168, 201–208. <https://doi.org/10.1093/toxsci/kfy297>
- Ziaadini, F., Aminae, M., Mahsa Rastegar, M.M., Abbasian, S., Memari, A.H., 2017. Melatonin Supplementation Decreases Aerobic Exercise Training Induced-Lipid Peroxidation and Malondialdehyde in Sedentary Young Women. *Pol J Food Nutr Sci* 67, 225–232. <https://doi.org/10.1515/pjfn-2017-0001>
- Ziperstein, M.J., Guzman, A., Kaufman, L.J., 2015. Breast cancer cell line aggregate morphology does not predict invasive capacity. *PLoS One* 10. <https://doi.org/10.1371/journal.pone.0139523>
- Zulaikhah, S.T., 2017. The Role of Antioxidant to Prevent Free Radicals in The Body, Sains Medika.