

## DAFTAR PUSTAKA

- Abou-Zeid, S. M., El-Tawil, O. S., & Gab Allah, M. A. (2016). In vitro hepatoprotective effects of *Moringa oleifera* extract against acetaminophen-induced hepatotoxicity. *Journal of Pharmacy and Pharmaceutical Sciences*, 5(12). <https://doi.org/10.20959/wjpps201612-8155>
- Abou El-Naga, H. M. H., El-Hashash, S. A., Yasen, E. M., Leporatti, S., & Hanafy, N. A. N. (2022). Starch-based hydrogel nanoparticles loaded with polyphenolic compounds of *Moringa oleifera* leaf extract have hepatoprotective Activity in bisphenol a-induced animal models. *Polymers*, 14(14). <https://doi.org/10.3390/polym14142846>
- Adan, A., Kiraz, Y., & Baran, Y. (2016). Cell Proliferation and cytotoxicity assays. *Current Pharmaceutical Biotechnology*, 17(14), 1213–1221. <https://doi.org/10.2174/1389201017666160808160513>
- Aden, D. P., Fogel, A., Plotkin, S., Damjanov, I., & Knowles, B. B. (1979). Controlled synthesis of HBsAg in a differentiated human liver carcinoma-derived cell line. In *Nature* (Vol. 282, Issue 5739, pp. 615–616). <https://doi.org/10.1038/282615a0>
- Ahmed, F. F., El-hafeez, A. A. A., Abbas, S. H., Abdelhamid, D., Abdel-aziz, M., El-hafeez, A. A. A., Abbas, S. H., & Abdelhamid, D. (2018). New 1,2,4-triazole-chalcone hybrids induce caspase-3 dependent apoptosis in A549 human lung adenocarcinoma cells. *European Journal of Medicinal Chemistry*. <https://doi.org/10.1016/j.ejmech.2018.03.073>.This
- Al-Zharani, M., Mubarak, M., Rudayni, H. A., Al-Doaiss, A. A., Abd-Elwahab, M. M., & Al-Eissa, M. S. (2023). Quercetin as a dietary supplementary flavonoid alleviates the oxidative stress induced by lead toxicity in male wistar rats. *Nutrients*, 15(8). <https://doi.org/10.3390/nu15081888>
- Alegbeleye, O. O. (2018). How functional is *Moringa oleifera*? a review of its nutritive, medicinal, and socioeconomic potential. *Food and Nutrition Bulletin*, 39(1), 149–170. <https://doi.org/10.1177/0379572117749814>
- Amin, M. F., Ariwibowo, T., Putri, S. A., & Kurnia, D. (2024). *Moringa oleifera*: a review of the pharmacology, chemical constituents, and application for dental health. *Pharmaceuticals*, 17(1). <https://doi.org/10.3390/ph17010142>

- Arzumanian, V. A., Kiseleva, O. I., & Poverennaya, E. V. (2021). The curious case of the HepG2 cell line: 40 years of expertise. *International Journal of Molecular Sciences*, 22(23). <https://doi.org/10.3390/ijms222313135>
- Azim, S. A. A., Abdelrahem, M. T., Said, M. M., & Khattab, A. (2017). Protective effect of *Moringa Peregrina* leaves extract on acetaminophen-induced liver toxicity in albino rats. *African Journal of Traditional, Complementary, and Alternative Medicines : AJTCAM*, 14(2), 206–216. <https://doi.org/10.21010/ajtcam.v14i2.22>
- Badr, M., Elmongy, E. I., Elkhateeb, D., Moemen, Y. S., Khalil, A., Ali, H., Binsuwaitan, R., Awadallah, F., & El Sayed, I. E. T. (2024). In silico and in vitro investigation of cytotoxicity and apoptosis of acridine/sulfonamide hybrids targeting topoisomerases I and II. *Pharmaceuticals*, 17(11), 1–13. <https://doi.org/10.3390/ph17111487>
- Baig, S., Seevasant, I., Mohamad, J., Mukheem, A., Huri, H. Z., & Kamarul, T. (2016). Potential of apoptotic pathway-targeted cancer therapeutic research: Where do we stand. *Cell Death and Disease*, 7, e2058. <https://doi.org/10.1038/cddis.2015.275>
- Banfalvi, G. (2017). Methods to detect apoptotic cell death. *Apoptosis*, 22(2), 306–323. <https://doi.org/10.1007/s10495-016-1333-3>
- Bedoui, S., Herold, M. J., & Strasser, A. (2020). Emerging connectivity of programmed cell death pathways and its physiological implications. *Nature Reviews Molecular Cell Biology*, 21(11), 678–695. <https://doi.org/10.1038/s41580-020-0270-8>
- Berghe, T. Vanden, Linkermann, A., Jouan-Lanhuet, S., Walczak, H., & Vandenabeele, P. (2014). Regulated necrosis: the expanding network of non-apoptotic cell death pathways. *Nature Reviews Molecular Cell Biology*, 15(2), 135–147. <https://doi.org/10.1038/nrm3737>
- Bhatt, S., Sharma, A., Dogra, A., Sharma, P., Kumar, A., Kotwal, P., Bag, S., Misra, P., Singh, G., Kumar, A., Sangwan, P. L., & Nandi, U. (2022). Glabridin attenuates paracetamol-induced liver injury in mice via CYP2E1-mediated inhibition of oxidative stress. *Drug and Chemical Toxicology*, 45(5), 2352–2360. <https://doi.org/10.1080/01480545.2021.1945004>

- Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., & Jemal, A. (2018). Global cancer statistics 2018: globocan estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians*, 68(6), 394–424. <https://doi.org/10.3322/caac.21492>
- Brilhante, R. S. N., Sales, J. A., Pereira, V. S., Castelo-Branco, D. de S. C. M., Cordeiro, R. de A., de Souza Sampaio, C. M., de Araújo Neto Paiva, M., Santos, J. B. F. dos, Sidrim, J. J. C., & Rocha, M. F. G. (2017). Research advances on the multiple uses of *Moringa oleifera*: a sustainable alternative for socially neglected population. *Asian Pacific Journal of Tropical Medicine*, 10(7), 621–630. <https://doi.org/10.1016/j.apjtm.2017.07.002>
- Bryan, A., Pingali, P., Faber, A., Landry, J., Akakpo, J. Y., Jaeschke, H., Li, H., Lee, W. S., May, L., Patel, B., & Neuwelt, A. (2024). High-dose acetaminophen with concurrent CYP2E1 inhibition has profound anticancer activity without liver toxicity. *Journal of Pharmacology and Experimental Therapeutics*, 388(1), 209–217. <https://doi.org/10.1124/jpet.123.001772>
- Bunchorntavakul, C., & Reddy, K. R. (2018). Acetaminophen (APAP or n-acetyl-p-aminophenol) and acute liver failure. *Clinics in Liver Disease*, 22(2), 325–346. <https://doi.org/10.1016/j.cld.2018.01.007>
- Cai, X., Cai, H., Wang, J., Yang, Q., Guan, J., Deng, J., & Chen, Z. (2022). Molecular pathogenesis of acetaminophen-induced liver injury and its treatment options. *Journal of Zhejiang University: Science B*, 23(4), 265–285. <https://doi.org/10.1631/jzus.B2100977>
- Canayakin, D., Bayir, Y., Baygatalp, N. K., Sezen, E., Atmaca, H. T., Betul, F., Ozgeris, K., Sait, M., & Halici, Z. (2016). Paracetamol-induced nephrotoxicity and oxidative stress in rats: the protective role of *Nigella sativa*. *Pharmaceutical Biology*, 0209. <https://doi.org/10.3109/13880209.2016.1145701>
- Ceci, R., Maldini, M., La Rosa, P., Sireno, L., Antinozzi, C., Olson, M. E., Dimauro, I., & Duranti, G. (2024). The effect of *Moringa oleifera* leaf extract on C2C12 myoblast proliferation and redox status under oxidative insult. *Antioxidants*, 13(12). <https://doi.org/10.3390/antiox13121460>

- Chávez, E., Chávez, E., Sánchez, D., Velasco-loyden, G., Aparicio-cadena, A. R., & Aparicio-cadena, R. (2018). *Interaction of mitochondrial and epigenetic regulation in hepatocellular carcinoma*. <https://doi.org/10.5772/intechopen.79923>
- Chidiac, A. S., Buckley, N. A., Noghrehchi, F., & Cairns, R. (2023). Paracetamol (acetaminophen) overdose and hepatotoxicity: mechanism, treatment, prevention measures, and estimates of burden of disease. *Expert Opinion on Drug Metabolism and Toxicology*, 19(5), 297–317. <https://doi.org/10.1080/17425255.2023.2223959>
- Chu, Q., Gu, X., Zheng, Q., Wang, J., & Zhu, H. (2021). Mitochondrial mechanisms of apoptosis and necroptosis in liver diseases. *Analytical Cellular Pathology*, 2021. <https://doi.org/10.1155/2021/8900122>
- Conde de la Rosa, L., Goicoechea, L., Torres, S., Garcia-Ruiz, C., & Fernandez-Checa, J. C. (2022). Role of oxidative stress in liver disorders. *Livers*, 2(4), 283–314. <https://doi.org/10.3390/livers2040023>
- D'Arcy, M. S. (2019). Cell death: a review of the major forms of apoptosis, necrosis and autophagy. *Cell Biology International*, 43(6), 582–592. <https://doi.org/10.1002/cbin.11137>
- Espinosa, C., Hoyos-Palacio, L. M., López, L. L., Carlos-Cornelio, J. A., & Ortiz-Trujillo, I. C. (2020). Biocompatibility evaluation on HepG2 and HUAEC of pristine and N-doped carbon nanotubes. *Journal of Materials Research and Technology*, 9(3), 6059–6072. <https://doi.org/10.1016/j.jmrt.2020.04.009>
- Fakurazi, S., Sharifudin, S. A., & Arulselvan, P. (2012). *Moringa oleifera* hydroethanolic extracts effectively alleviate acetaminophen-induced hepatotoxicity in experimental rats through their antioxidant nature. *Molecules*, 17(7), 8334–8350. <https://doi.org/10.3390/molecules17078334>
- Fard, M., Arulselvan, P., Karthivashan, G., Adam, S., & Fakurazi, S. (2015). Bioactive extract from *Moringa oleifera* inhibits the pro-inflammatory mediators in lipopolysaccharide stimulated macrophages. *Pharmacognosy Magazine*, 11(44), 556. <https://doi.org/10.4103/0973-1296.172961>

- Farrell, S. E., & Miller, M. A. (2024). *Acetaminophen toxicity*. <https://emedicine.medscape.com/article/820200-overview#:~:text=The American Association of Poison Control Centers' National Poison Data,in combination with other drugs.>
- Florenly, F., Sugianto, L., Lister, I. N., Girsang, E., Ginting, C. N., Afifah, E., Kusuma, H., Rizal, R., & Widowati, W. (2021). Protective effect of eugenol against acetaminophen-induced hepatotoxicity in human hepatocellular carcinoma cells via antioxidant, anti-inflammatory, and anti-necrotic potency. *Open Access Macedonian Journal of Medical Sciences*, 9, 1109–1116. <https://doi.org/10.3889/oamjms.2021.7003>
- Fuchs, Y., & Steller, H. (2015). Live to die another way: modes of programmed cell death and the signals emanating from dying cells. *Nature Reviews Molecular Cell Biology*, 16(6), 329–344. <https://doi.org/10.1038/nrm3999>
- Fulda, S., Gorman, A. M., Hori, O., & Samali, A. (2010). Cellular stress responses: cell survival and cell death. *International Journal of Cell Biology*, 2010. <https://doi.org/10.1155/2010/214074>
- Galluzzi, L., Bravo-San Pedro, J. M., Kepp, O., & Kroemer, G. (2016). Regulated cell death and adaptive stress responses. *Cellular and Molecular Life Sciences*, 73(11–12), 2405–2410. <https://doi.org/10.1007/s00018-016-2209-y>
- Ginting, C. N., Lister, I. N. E., Girsang, E., Widowati, W., Yusepany, D. T., Azizah, A. M., & Kusuma, H. S. W. (2021). Hepatotoxicity prevention in acetaminophen-induced HepG2 cells by red betel (*Piper crocatum* Ruiz and Pav) extract from Indonesia via antioxidant, anti-inflammatory, and anti-necrotic. *Heliyon*, 7(1), e05620. <https://doi.org/10.1016/j.heliyon.2020.e05620>
- Gironi, B., Kahveci, Z., McGill, B., Lechner, B. D., Pagliara, S., Metz, J., Morresi, A., Palombo, F., Sassi, P., & Petrov, P. G. (2020). Effect of DMSO on the mechanical and structural properties of model and biological membranes. *Biophysical Journal*, 119(2), 274–286. <https://doi.org/10.1016/j.bpj.2020.05.037>
- Gómez-Lechón, M. J., Tolosa, L., & Donato, M. T. (2016). Metabolic activation and drug-induced liver injury: In vitro approaches for the safety risk assessment of new drugs. *Journal of Applied Toxicology*, 36(6), 752–768. <https://doi.org/10.1002/jat.3277>



- González-Burgos, E., Ureña-Vacas, I., Sánchez, M., & Gómez-Serranillos, M. P. (2021). Nutritional value of *Moringa oleifera* Lam. leaf powder extracts and their neuroprotective effects via antioxidative and mitochondrial regulation. *Nutrients*, 13(7). <https://doi.org/10.3390/nu13072203>
- Gopalakrishnan, L., Doriya, K., & Kumar, D. S. (2016). *Moringa oleifera*: A review on nutritive importance and its medicinal application. *Food Science and Human Wellness*, 5(2), 49–56. <https://doi.org/10.1016/j.fshw.2016.04.001>
- Hanson, S., Dharan, A., Jinsha, P. V., Pal, S., Nair, B. G., Kar, R., & Mishra, N. (2023). Paraptosis: a unique cell death mode for targeting cancer. *Frontiers in Pharmacology*, 14(June). <https://doi.org/10.3389/fphar.2023.1159409>
- Hwang, K. A., Hwang, Y. J., Hwang, H. J., & Park, N. Y. (2022). Hepatoprotective effects of radish (*Raphanus sativus* L.) on acetaminophen-induced liver damage via inhibiting oxidative stress and apoptosis. *Nutrients*, 14(23). <https://doi.org/10.3390/nu14235082>
- Hyży, A., Rozenek, H., Gondek, E., & Jaworski, M. (2025). Effect of antioxidants on the gut microbiome profile and brain functions: a review of randomized controlled trial studies. *Foods*, 14(2), 1–19. <https://doi.org/10.3390/foods14020176>
- Jaeschke, H., Ramachandran, A., Chao, X., & Ding, W. X. (2019). Emerging and established modes of cell death during acetaminophen-induced liver injury. *Archives of Toxicology*, 93(12), 3491–3502. <https://doi.org/10.1007/s00204-019-02597-1>
- Jomova, K., Alomar, S. Y., Alwasel, S. H., Nepovimova, E., Kuca, K., & Valko, M. (2024). Several lines of antioxidant defense against oxidative stress: antioxidant enzymes, nanomaterials with multiple enzyme-mimicking activities, and low-molecular-weight antioxidants. In *Archives of Toxicology* (Vol. 98, Issue 5). Springer Berlin Heidelberg. <https://doi.org/10.1007/s00204-024-03696-4>
- Kabakov, A. E., & Gabai, V. L. umen. (2018). *Cell death and survival assays*. <https://doi.org/10.1007/978-1-4939-7477-1>

- Kari, S., Subramanian, K., Altomonte, I. A., Murugesan, A., Yli-Harja, O., & Kandhavelu, M. (2022). Programmed cell death detection methods: a systematic review and a categorical comparison. *Apoptosis*, 27(7–8), 482–508. <https://doi.org/10.1007/s10495-022-01735-y>
- Kashyap, A. S., Manzar, N., Nebapure, S. M., Rajawat, M. V. S., Deo, M. M., Singh, J. P., Kesharwani, A. K., Singh, R. P., Dubey, S. C., & Singh, D. (2022). Recent advances in drumstick (*Moringa oleifera*) leaves bioactive compounds: composition, health benefits, bioaccessibility, and dietary applications. *Antioxidants*, 11(2), 1–37.
- Kaur, G., & Dufour, J. M. (2012). Cell lines. *Spermatogenesis*, 2(1), 1–5. <https://doi.org/10.4161/spmg.19885>
- Kaur, S., Panghal, A., Garg, M. K., Mann, S., Khatkar, S. K., Sharma, P., & Chhikara, N. (2020). Functional and nutraceutical properties of pumpkin – a review. *Nutrition and Food Science*, 50(2), 384–401. <https://doi.org/10.1108/NFS-05-2019-0143>
- Kilany, O. E., El-Beltagy, M. A., & El-Sherbeeney, N. A. (2020). *Tribulus terrestris* ameliorates carbon tetrachloride-induced hepatotoxicity in male rats through suppression of oxidative stress and inflammation. *Environmental Science and Pollution Research*, 27(20), 24967–24981. <https://doi.org/10.1007/s11356-020-08826-w>
- Kirindage, K. G. I., Fernando, I. P. S., Jayasinghe, A. M. K., Han, E. J., Madhawa Dias, M. K. H., Kang, K. P., Moon, S. I., Shin, T. S., Ma, A., & Ahn, G. (2022). *Moringa oleifera* hot water extract protects vero cells from hydrogen peroxide-induced oxidative stress by regulating mitochondria-mediated apoptotic pathway and Nrf2/HO-1 signaling. *Foods*, 11(3), 1–16. <https://doi.org/10.3390/foods11030420>
- Kozlov, A. V., Javadov, S., & Sommer, N. (2024). Cellular ROS and antioxidants: physiological and pathological role. *Antioxidants*, 13(5), 1–11. <https://doi.org/10.3390/antiox13050602>
- Krüger, M., & Richter, P. (2022). To die or not to die: cell death in biology and disease. *International Journal of Molecular Sciences*, 23(12). <https://doi.org/10.3390/ijms23126734>

- Kunst, C., Tümen, D., Ernst, M., Tews, H. C., Müller, M., & Gülow, K. (2024). Paraptosis—a distinct pathway to cell death. *International Journal of Molecular Sciences*, 25(21). <https://doi.org/10.3390/ijms252111478>
- Li, X., Chen, W., Jia, Z., Xiao, Y., & Shi, A. (2025). Mitochondrial dysfunction as a pathogenesis and therapeutic strategy for metabolic-dysfunction-associated steatotic liver disease. *International Journal of Molecular Sciences*, 1–29. <https://doi.org/10.3390/ijms26094256>
- Li, X., Lao, R., Lei, J., Chen, Y., Zhou, Q., Wang, T., & Tong, Y. (2023). Natural products for acetaminophen-induced acute liver injury: a Review. *Molecules*, 28(23), 1–48. <https://doi.org/10.3390/molecules28237901>
- Li, Y., Li, S., Li, D., Gao, Y., Kong, S., Liu, J., & Liu, S. (2024). In vivo tissue distribution and pharmacokinetics of FITC-labelled hizikia fusiforme polyphenol–polysaccharide complex in mice. *Foods*.
- Lister, I. N. E., Ginting, C. N., Girsang, E., Amansyah, A., Chiuman, L., Yanti, N. L. W. E., Rizal, R., & Widowati, W. (2019). Hepatoprotective effect of eugenol on acetaminophen-induced hepatotoxicity in HepG2 cells. *Journal of Physics: Conference Series*, 1374(1). <https://doi.org/10.1088/1742-6596/1374/1/012009>
- Liu, Y. L., Guo, Y. H., Song, X. Q., Hu, M. X., & Zhao, S. T. (2023). A method for analyzing programmed cell death in xylem development by flow cytometry. *Frontiers in Plant Science*, 14(June), 1–10. <https://doi.org/10.3389/fpls.2023.1196618>
- Luptakova, L., Dvorcakova, S., Demcisakova, Z., Belbahri, L., Holovska, K., & Petrovova, E. (2021). Dimethyl sulfoxide: morphological, histological, and molecular view on developing chicken liver. *Toxics*, 9(3), 1–16.
- Lv, L., Ren, S., Jiang, H., Yan, R., Chen, W., Yan, R., Dong, J., Shao, L., Yu, Y., Lv, L., Ren, S., Jiang, H., Yan, R., Chen, W., Yan, R., Dong, J., Shao, L., & Yu, Y. (2024). Alleviates acetaminophen-induced liver injury through in mice. *American Society For Microbiology*, 9(1).
- Ma, D., Lu, B., Feng, C., Wang, C., Wang, Y., Luo, T., Feng, J., Jia, H., Chi, G., Luo, Y., & Ge, P. (2016). Deoxypodophyllotoxin triggers parthanatos in glioma cells via induction of excessive ROS. *Cancer Letters*, 371(2), 194–204.



- Ma, Z. F., Ahmad, J., Zhang, H., Khan, I., & Muhammad, S. (2020). South African journal of botany evaluation of phytochemical and medicinal properties of *Moringa (Moringa oleifera)* as a potential functional food. *South African Journal of Botany*, 129, 40–46. <https://doi.org/10.1016/j.sajb.2018.12.002>
- Madorran, E., Ambrož, M., Knez, J., & Sobočan, M. (2025). An overview of the current state of cell viability assessment methods using OECD classification. *International Journal of Molecular Sciences*, 26(1), 1–18. <https://doi.org/10.3390/ijms26010220>
- Marzetti, E., Calvani, R., Landi, F., Coelho-Júnior, H. J., & Picca, A. (2024). Mitochondrial quality control processes at the crossroads of cell death and survival: mechanisms and signaling pathways. *International Journal of Molecular Sciences*, 25(13). <https://doi.org/10.3390/ijms25137305>
- McGill, M. R., & Jaeschke, H. (2013). Metabolism and disposition of acetaminophen: recent advances in relation to hepatotoxicity and diagnosis. *Pharmaceutical Research*, 30(9), 2174–2187. <https://doi.org/10.1007/s11095-013-1007-6>
- McKinnon, K. M. (2018). Flow cytometry: an overview. *Current Protocols in Immunology*, 2018(February), 5.1.1-5.1.11. <https://doi.org/10.1002/cpim.40>
- Mustafa, M., Ahmad, R., Tantry, I. Q., Ahmad, W., Siddiqui, S., Alam, M., Abbas, K., Moinuddin, Hassan, M. I., Habib, S., & Islam, S. (2024). Apoptosis: a comprehensive overview of signaling pathways, morphological changes, and physiological significance and therapeutic implications. *Cells*, 13(22), 1–29. <https://doi.org/10.3390/cells13221838>
- National Center for Biotechnology Information (NCBI). (2025a). *Acetaminophen*. <https://pubchem.ncbi.nlm.nih.gov/compound/1983>
- National Center for Biotechnology Information (NCBI). (2025b). *Dimethyl sulfoxide*. <https://pubchem.ncbi.nlm.nih.gov/compound/DMSO#section=Crystal-Structures>
- Obert, J., Cave, M., & Marsano, L. (2015). Liver diseases. *World Review of Nutrition and Dietetics*, 111, 146–150. <https://doi.org/10.1159/000362314>

- Oh, W. Y., Ambigaipalan, P., & Shahidi, F. (2019). Preparation of quercetin esters and their antioxidant activity. *Journal of Agricultural and Food Chemistry*, 67(38), 10653–10659. <https://doi.org/10.1021/acs.jafc.9b04154>
- Panche, A. N., Diwan, A. D., & Chandra, S. R. (2016). Flavonoids: an overview. *Journal of Nutritional Science*, 5. <https://doi.org/10.1017/jns.2016.41>
- Qaseem, A., Wilt, T. J., McLean, R. M., & Forciea, M. A. (2017). Noninvasive treatments for acute, subacute, and chronic low back pain: A clinical practice guideline from the American College of Physicians. *Annals of Internal Medicine*, 166(7), 514–530. <https://doi.org/10.7326/M16-2367>
- Ramirez, T., Strigun, A., Verlohner, A., Huener, H. A., Peter, E., Herold, M., Bordag, N., Mellert, W., Walk, T., Spitzer, M., Jiang, X., Sperber, S., Hofmann, T., Hartung, T., Kamp, H., & van Ravenzwaay, B. (2018). Prediction of liver toxicity and mode of action using metabolomics in vitro in HepG2 cells. *Archives of Toxicology*, 92(2), 893–906. <https://doi.org/10.1007/s00204-017-2079-6>
- Reinke, H., & Asher, G. (2016). Circadian clock control of liver metabolic functions. *Gastroenterology*, 150(3), 574–580. <https://doi.org/10.1053/j.gastro.2015.11.043>
- Riastiwi, I., Damayanto, I. P. G. P., Ridwan, Handayani, T., & Leksonowati, A. (2018). *Moringa oleifera* distribution in Java and lesser Sunda Islands attributed with annual rainfall. *Biosaintifika*, 10(3), 613–621. <https://doi.org/10.15294/biosaintifika.v10i3.16115>
- Robinson, J. P., Ostafe, R., Iyengar, S. N., Rajwa, B., & Fischer, R. (2023). Flow cytometry: the next revolution. *Cells*, 12(14). <https://doi.org/10.3390/cells12141875>
- Rosenberg, M., Azevedo, N. F., & Ivask, A. (2019). Propodium iodide staining underestimates viability of adherent bacterial cells. *Scientific Reports*, 9(1), 1–12. <https://doi.org/10.1038/s41598-019-42906-3>
- Settivari, R. S., Rowlands, J. C., Wilson, D. M., Arnold, S. M., & Spencer, P. J. (2017). Application of evolving computational and biological platforms for chemical safety assessment. In *A Comprehensive Guide to Toxicology in Nonclinical Drug Development* (Second Edi). Elsevier Inc.

- Shakeri, R., Kheirollahi, A., & Davoodi, J. (2017). APAF-1: regulation and function in cell death. *Biochimie*, 135, 111–125. <https://doi.org/10.1016/j.biochi.2017.02.001>
- Singh, D., Cho, W. C., & Upadhyay, G. (2016). Drug-induced liver toxicity and prevention by herbal antioxidants: an Overview. *Frontiers in Physiology*, 6(JAN), 1–18. <https://doi.org/10.3389/fphys.2015.00363>
- Skaperda, Z., Tekos, F., Vardakas, P., Nepka, C., & Kouretas, D. (2022). Reconceptualization of hormetic responses in the frame of redox toxicology. *International Journal of Molecular Sciences*, 23(1). <https://doi.org/10.3390/ijms23010049>
- Snopov, S. A., Teryukova, N. P., Sakhenberg, E. I., Teplyashina, V. V., & Nasyrova, R. F. (2017). Use of HepG2 cell line for evaluation of toxic and metabolic antipsychotic action. *Cell and Tissue Biology*, 11(5), 405–415. <https://doi.org/10.1134/S1990519X17050078>
- Starzy, A., Verardo, V., & Mar, A. (2022). Phenolic profile, antioxidant activity and amino acid composition of *Moringa* leaves fermented with edible fungal strains. <https://doi.org/10.3390/foods11233762>
- Stephens, G., Derry, S., & Moore, R. A. (2016). Paracetamol (acetaminophen) for acute treatment of episodic tension-type headache in adults. *Cochrane Database of Systematic Reviews*, 2016(6). <https://doi.org/10.1002/14651858.CD011889.pub2>
- Summer, K., Browne, J., Hollanders, M., & Benkendorff, K. (2022). Out of control: the need for standardised solvent approaches and data reporting in antibiofilm assays incorporating dimethyl-sulfoxide (DMSO). *Biofilm*, 4(August), 100081. <https://doi.org/10.1016/j.biofilm.2022.100081>
- Sun, D. K., Wang, L., & Zhang, P. (2017). Antitumor effects of chrysanthemin in Pc-3 human prostate cancer cells are mediated via apoptosis induction, caspase signalling pathway and loss of mitochondrial membrane potential. *African Journal of Traditional, Complementary, and Alternative Medicines: AJTCAM*, 14(4), 54–61. <https://doi.org/10.21010/ajtcam.v14i4.7>

- Tai, Y., Gao, J.-H., Zhao, C., Tong, H., Zheng, S.-P., Huang, Z.-Y., Liu, R., Tang, C.-W., & Li, J. (2018). SK-Hep1: not hepatocellular carcinoma cells but a cell model for liver sinusoidal endothelial cells. *International Journal of Clinical and Experimental Pathology*, 11(5), 2931–2938. <http://www.ncbi.nlm.nih.gov/pubmed/31938418><http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC6958242>
- Tieu, S., Charchoglyan, A., Paulsen, L., Wagter-Lesperance, L. C., Shandilya, U. K., Bridle, B. W., Mallard, B. A., & Karrow, N. A. (2023). N-Acetylcysteine and its immunomodulatory properties in humans and domesticated animals. *Antioxidants*, 12(10), 1–33. <https://doi.org/10.3390/antiox12101867>
- Toppo, R., Roy, B. K., Gora, R. H., Baxla, S. L., & Kumar, P. (2015). Hepatoprotective activity of *Moringa oleifera* against cadmium toxicity: In rats. *Veterinary World*, 8(4), 537–540. <https://doi.org/10.14202/vetworld.2015.537-540>
- Torres-Quesada, O., Doerrier, C., Strich, S., Gnaiger, E., & Stefan, E. (2022). Physiological cell culture media tune mitochondrial bioenergetics and drug sensitivity in cancer cell models. *Cancers*, 14(16). <https://doi.org/10.3390/cancers14163917>
- Tsai, C. F., Chen, G. W., Chen, Y. C., Shen, C. K., Lu, D. Y., Yang, L. Y., Chen, J. H., & Yeh, W. L. (2022). Regulatory effects of quercetin on M1/M2 macrophage polarization and oxidative/antioxidative balance. *Nutrients*, 14(1), 1–21. <https://doi.org/10.3390/nu14010067>
- Villegas-Vazquez, E. Y., Gómez-Cansino, R., Marcelino-Pérez, G., Jiménez-López, D., & Quintas-Granados, L. I. (2025). Unveiling the miracle tree: therapeutic potential of *Moringa oleifera* in chronic disease management and beyond. *Biomedicines*, 13(3), 1–46. <https://doi.org/10.3390/biomedicines13030634>
- Wang, M., Sun, J., Jiang, Z., Xie, W., & Zhang, X. (2015). Hepatoprotective effect of kaempferol against alcoholic liver injury in mice. *American Journal of Chinese Medicine*, 43(2), 241–254. <https://doi.org/10.1142/S0192415X15500160>
- Weidinger, A., & Kozlov, A. V. (2015). Biological activities of reactive oxygen and nitrogen species: oxidative stress versus signal transduction. *Biomolecules*, 5(2), 472–484. <https://doi.org/10.3390/biom5020472>

- Widowati, W., Darsono, L., Lucianus, J., Setiabudi, E., Susang Obeng, S., Stefani, S., Wahyudianingsih, R., Reynaldo Tandibua, K., Gunawan, R., Riski Wijayanti, C., Novianto, A., Sari Widya Kusuma, H., & Rizal, R. (2023). Butterfly pea flower (*Clitoria ternatea* L.) extract displayed antidiabetic effect through antioxidant, anti-inflammatory, lower hepatic GSK-3 $\beta$ , and pancreatic glycogen on Diabetes Mellitus and dyslipidemia rat. *Journal of King Saud University - Science*, 35(4), 102579. <https://doi.org/10.1016/j.jksus.2023.102579>
- Xu, Y.-B., Chen, G.-L., & Guo, M.-Q. (2019). Antioxidant and anti-inflammatory activities of the crude extracts of *Moringa oleifera* from kenya and their correlations with flavonoids. *Antioxidants*, 8(8). <https://doi.org/10.3390/antiox8080296>
- Yadav, A. B., Angadi, P. V., Kale, A. D., & Yadav, S. K. (2015). Histological assessment of cellular changes in postmortem gingival specimens for estimation of time since death. *Journal of Forensic Odonto-Stomatology*, 33(1), 19–26.
- Yu, S., Sun, J., Chen, H., Chen, W., Zhong, Q., Zhang, M., Pei, J., He, R., & Chen, W. (2024). Disruption of cell membranes and redox homeostasis as an antibacterial mechanism of dielectric barrier discharge plasma against *Fusarium oxysporum*. *International Journal of Molecular Sciences*, 25(14). <https://doi.org/10.3390/ijms25147875>
- Zapletal, E., Vasiljevic, T., Busson, P., & Matijevic Glavan, T. (2023). Dialog beyond the grave: necrosis in the Tumor microenvironment and Its contribution to tumor growth. *International Journal of Molecular Sciences*, 24(6). <https://doi.org/10.3390/ijms24065278>
- Zhu, J., Li, X., Gao, W., & Jing, J. (2023). Integrin targeting enhances the antimelanoma effect of annexin V in mice. *International Journal of Molecular Sciences*, 24(4). <https://doi.org/10.3390/ijms24043859>