



## DAFTAR PUSTAKA

- Abubakar, A.R. and Haque, M., 2020. Preparation of medicinal plants: Basic extraction and fractionation procedures for experimental purposes. *Journal of pharmacy & bioallied sciences*, 12(1), p.1.
- Adan, A., Alizada, G., Kiraz, Y., Baran, Y. and Nalbant, A., 2017. Flow cytometry: basic principles and applications. *Critical reviews in biotechnology*, 37(2), pp.163-176.
- Alarifi, S., Ali, D., Ahamed, M., Siddiqui, M.A. and Al-Khedhairy, A.A., 2013. Oxidative stress contributes to cobalt oxide nanoparticles-induced cytotoxicity and DNA damage in human hepatocarcinoma cells. *International journal of nanomedicine*, pp.189-199.
- Apriani, R., Gaffar, S. and Herlina, T., 2019. Cytotoxic Activity of Ethyl Acetate Fraction *Moringa oleifera* Leaves and Its Effect on Apoptosis Induction Against T47D Breast Cancer Cell Line. *Jurnal Farmakobahari*, 10(1), pp.9-16.
- Arzumanian, V.A., Kiseleva, O.I. and Poverennaya, E.V., 2021. The curious case of the HepG2 cell line: 40 years of expertise. *International journal of molecular sciences*, 22(23), p.13135.
- Aykul, S. and Martinez-Hackert, E., 2016. Determination of half-maximal inhibitory concentration using biosensor-based protein interaction analysis. *Analytical biochemistry*, 508, pp.97-103.
- Brauchle, E., Thude, S., Brucker, S.Y. and Schenke-Layland, K., 2014. Cell death stages in single apoptotic and necrotic cells monitored by Raman microspectroscopy. *Scientific reports*, 4(1), pp.1-9.
- Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R.L., Torre, L.A. and 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), pp.394-424.
- Carneiro, B.A. and El-Deiry, W.S., 2020. Targeting apoptosis in cancer therapy. *Nature reviews Clinical oncology*, 17(7), pp.395-417.
- Chandramouli, B & K. Malliakrjuna. 2018. Studies on Phytochemistry and Biological Activities af Methanolic Extracts of Black Rice (*Oryza Sativa L.*) Reported in An Ancient Telugu Palm-Leaf Manuscript. *World Journal of Pharmaceutical Research*, 7(8): 1137-1172.
- Chen, P.N., Kuo, W.H., Chiang, C.L., Chiou, H.L., Hsieh, Y.S. and Chu, S.C., 2006. Black rice anthocyanins inhibit cancer cells invasion via repressions of MMPs and u-PA expression. *Chemico-biological interactions*, 163(3), pp.218-229.
- Choi, M.J., Kim, H.Y., and Cho, E.J. 2012. Anti-aging Effect of Black Rice Agains H<sub>2</sub>O<sub>2</sub>-induced Premature Senescence. *Journal of Medicinal Plant Research*, 8(20): 3672-3680.



- Christanto, D.R., Mose, J.C., Yuniarti, T., Bestari, M.B., Fauziah, P.N., Purwestri, Y.A. and Munthe, J.N., 2021. Anti-angiogenic Effect of Black Rice Bran (*Oryza Sativa L.* 'Sembada Hitam') on Soluble Fms-Like Tyrosine Kinase and Placental Growth Factor in Preeclampsia. *Measurement*, 14, p.16.
- Christidi, E. and Brunham, L.R., 2021. Regulated cell death pathways in doxorubicin-induced cardiotoxicity. *Cell death & disease*, 12(4), p.339.
- Conara, F.C., 2022. Aktivitas Sitotoksik dan Induksi Apoptosis Ekstrak Etanolik Bekatul Beras Hitam (*Oryza sativa L.* 'Sembada Hitam') terhadap Sel Kanker Payudara T47D. *Skripsi*. Fakultas Biologi Universitas Gadjah Mada. Yogyakarta.
- Damasuri, A.R. and Sholikhah, E.N., 2020. Cytotoxicity of ((E)-1-(4-aminophenyl)-3-phenylprop-2-en-1-one)) on hela cell line. *Indonesian Journal of Pharmacology and Therapy*, 1(2).
- Deng, G.F., Xu, X.R., Zhang, Y., Li, D., Gan, R.Y. and Li, H.B., 2013. Phenolic compounds and bioactivities of pigmented rice. *Critical reviews in food science and nutrition*, 53(3), pp.296-306.
- Dewatisari, W.F., 2020, September. Perbandingan pelarut kloroform dan etanol terhadap rendemen ekstrak daun lidah mertua (*Sansevieria trifasciata*. Prain) menggunakan metode maserasi. In *Prosiding Seminar Nasional Biologi* (Vol. 6, No. 1, pp. 127-132).
- Djati, M.S. and Rifa'i, M., 2013. Analisa Flow Cytometry pada Subpopulasi Sel T-Limfosit Bursa Fabricius Ayam Pedaging Pasca Infeksi *Salmonella typhimurium* dan Pemberian Pakan Tambahan *Polyscias obtusa*. *Biotropika: Journal of Tropical Biology*, 1(5), pp.206-210.
- Donato, M.T., Tolosa, L. and Gómez-Lechón, M.J., 2015. Culture and functional characterization of human hepatoma HepG2 cells. In *Protocols in In Vitro Hepatocyte Research* (pp. 77-93). Humana Press, New York, NY.
- Dubbelboer, I.R., Pavlovic, N., Heindryckx, F., Sjögren, E. and Lennernäs, H., 2019. Liver cancer cell lines treated with doxorubicin under normoxia and hypoxia: cell viability and oncologic protein profile. *Cancers*, 11(7), p.1024.
- Emam, M.A., Khattab, H.I. and Hegazy, M.G., 2019. Assessment of anticancer activity of *Pulicaria undulata* on hepatocellular carcinoma HepG2 cell line. *Tumor Biology*, 41(10), p.1010428319880080.
- Enaru, B., Drețcanu, G., Pop, T.D., Stănilă, A. and Diaconeasa, Z., 2021. Anthocyanins: Factors affecting their stability and degradation. *Antioxidants*, 10(12), p.1967.
- Fitzmaurice, C., Allen, C., Barber, R.M., Barregard, L., Bhutta, Z.A., Brenner, H., Dicker, D.J., Chimed-Orchir, O., Dandona, R., Dandona, L. and Fleming, T., 2017. Global, regional, and national cancer incidence, mortality, years of life lost, years lived with disability, and disability-adjusted life-years for 32 cancer groups, 1990 to 2015: a systematic analysis for the global burden of disease study. *JAMA oncology*, 3(4), pp.524-548.



- Fong, D., Duceppe, N. and Hoemann, C.D., 2017. Mesenchymal stem cell detachment with trace trypsin is superior to EDTA for in vitro chemotaxis and adhesion assays. *Biochemical and biophysical research communications*, 484(3), pp.656-661.
- Forster, G.M., Raina, K., Kumar, A., Kumar, S., Agarwal, R., Chen, M.H., Bauer, J.E., McClung, A.M. and Ryan, E.P., 2013. Rice varietal differences in bioactive bran components for inhibition of colorectal cancer cell growth. *Food chemistry*, 141(2), pp.1545-1552.
- Ghasemi, M., Turnbull, T., Sebastian, S. and Kempson, I., 2021. The MTT assay: utility, limitations, pitfalls, and interpretation in bulk and single-cell analysis. *International journal of molecular sciences*, 22(23), p.12827.
- Gong, E.S., Luo, S.J., Li, T., Liu, C.M., Zhang, G.W., Chen, J., Zeng, Z.C. and Liu, R.H., 2017. Phytochemical profiles and antioxidant activity of brown rice varieties. *Food chemistry*, 227, pp.432-443.
- Górnska-Warsewicz, H., Laskowski, W., Kulykovets, O., Kudlińska-Chylak, A., Czeczołko, M. and Rejman, K., 2018. Food products as sources of protein and amino acids—The case of Poland. *Nutrients*, 10(12), p.1977.
- Green, D.R. and Llambi, F., 2015. Cell death signaling. *Cold Spring Harbor perspectives in biology*, 7(12), p.a006080.
- Hidayat, R. and Adnindya, M.R., 2021. The Potential of CO<sub>2</sub> Incubator " Sriwijaya CO<sub>2</sub> Incubator" Against Cell Culture Proliferation In Invitro Study As Smart Controlling-Based CO<sub>2</sub> Incubator For Cell Culture. *Bioscientia Medicina: Journal of Biomedicine and Translational Research*, 5(3), pp.268-271.
- Hoang, V.T., Stępniewski, G., Czarnecka, K.H., Kasztelanic, R., Long, V.C., Xuan, K.D., Shao, L., Śmietańska, M. and Buczyński, R., 2019. Optical properties of buffers and cell culture media for optofluidic and sensing applications. *Applied Sciences*, 9(6), p.1145.
- Jablonská, E., Kubásek, J., Vojtěch, D., Rumí, T. and Lipov, J., 2021. Test conditions can significantly affect the results of in vitro cytotoxicity testing of degradable metallic biomaterials. *Scientific Reports*, 11(1), p.6628.
- Jenie, R.I., Handayani, S., Susidarti, R.A., and Meiyanto, E. 2020. The Effect of Brazilin from Caesalpinia sappan on Cell Cycle Modulation and Cell Senescence of T47D Cells. *Indonesian Journal of Pharmacy*, 31(2): 84- 91.
- Jun, H.I., Shin, J.W., Song, G.S. and Kim, Y.S., 2015. Isolation and identification of phenolic antioxidants in black rice bran. *Journal of food science*, 80(2), pp.C262-C268.
- Kaur, G. and Dufour, J.M., 2012. Cell lines: Valuable tools or useless artifacts. *Spermatogenesis*, 2(1), pp.1-5.
- Kntayya, S.B., Ibrahim, M.D., Ain, N.M., Iori, R., Ioannides, C., and Razis, A.F.A. 2018. Induction of Apoptosis and Cytotoxicity by Isothiocyanate Sulforaphene in Human Hepatocarcinoma HepG2 Cells. *Nutrients*, 10(718): 1-15.



- Kristamtini., Taryono., Basunanda, P., dan Murti, R.H. 2017. Korelasi Kandungan Antosianin Total dengan Perubahan Warna (L\*, a\*, dan b\*) dan Penanda Mikrosatelit pada Beras Hitam. *Penelitian Pertanian Tanaman Pangan*, 1(2): 115-124.
- Kullenberg, F., Degerstedt, O., Calitz, C., Pavlović, N., Balgoma, D., Gråsjö, J., Sjögren, E., Hedeland, M., Heindryckx, F. and Lennernäs, H., 2021. In vitro cell toxicity and intracellular uptake of doxorubicin exposed as a solution or liposomes: Implications for treatment of hepatocellular carcinoma. *Cells*, 10(7), p.1717.
- Kumar, N. and Murali, R.D., 2020. Black Rice: A Novel Ingredient in Food Processing. *J Nutr Food Sci*, 10(2), p.771.
- Kumar, V., Abbas, A.K., Fausto, N. and Aster, J.C., 2014. *Robbins and Cotran pathologic basis of disease*, professional edition e-book. Elsevier health sciences.
- Kumar, V., Abbas, A.K., and Aster, J.C. 2015. *Robbins and Cotran Pathologic Basis of Disease*, 9th Ed. Philadelphia, PA: Elsevier Saunders. p 31-68.
- Kurashina, Y., Imashiro, C., Hirano, M., Kuribara, T., Totani, K., Ohnuma, K., Friend, J. and Takemura, K., 2019. Enzyme-free release of adhered cells from standard culture dishes using intermittent ultrasonic traveling waves. *Communications biology*, 2(1), p.393.
- Larsson, P., Engqvist, H., Biermann, J., Werner Rönnerman, E., Forssell-Aronsson, E., Kovács, A., Karlsson, P., Helou, K. and Parris, T.Z., 2020. Optimization of cell viability assays to improve replicability and reproducibility of cancer drug sensitivity screens. *Scientific reports*, 10(1), pp.1-12.
- Laube, R., Sabih, A.H., Strasser, S.I., Lim, L., Cigolini, M. and Liu, K., 2021. Palliative care in hepatocellular carcinoma. *Journal of Gastroenterology and Hepatology*, 36(3), pp.618-628.
- Le, X.T., Huynh, M.T., Pham, T.N., Than, V.T., Toan, T.Q., Bach, L.G. and Trung, N.Q., 2019. Optimization of total anthocyanin content, stability and antioxidant evaluation of the anthocyanin extract from Vietnamese Carissa carandas L. fruits. *Processes*, 7(7), p.468.
- Li, W., Zhou, J. and Xu, Y., 2015. Study of the in vitro cytotoxicity testing of medical devices. *Biomedical reports*, 3(5), pp.617-620.
- Liu, K., Liu, P.C., Liu, R. and Wu, X., 2015. Dual AO/EB staining to detect apoptosis in osteosarcoma cells compared with flow cytometry. *Medical science monitor basic research*, 21, p.15.
- Llovet, J.M., Kelley, R.K., Villanueva, A., Singal, A.G., Pikarsky, E., Roayaie, S., Lencioni, R., Koike, K., Zucman-Rossi, J. and Finn, R.S., 2021. Hepatocellular carcinoma. *Nat Rev Dis Primers*, pp.6-6.



- Lu, B., Chen, H.D. and Hong-Guang, H.G., 2012. The relationship between apoptosis and aging. *Advances in Bioscience and Biotechnology*, 3(06), pp.705-711.
- Lu, X., Zhou, Y., Wu, T., and Hao, L. 2014. Ameliorative Effect of Black Rice Anthocyanin on Senescent Mice Induced by D-galactose. *Food & Function*: 1-25.
- McKinnon, K.M., 2018. Flow cytometry: an overview. *Current protocols in immunology*, 120(1), 5.1.1-5.1.11. doi: 10.1002/cpim.40.
- Moko, E.M., Purnomo, H., Kusnadi, J. and Ijong, F.G., 2014. Phytochemical content and antioxidant properties of colored and non colored varieties of rice bran from Minahasa, North Sulawesi, Indonesia. *International Food Research Journal*, 21(3), p.1017.
- Nair, S.V., Hettihewa, M. and Rupasinghe, H.P., 2014. Apoptotic and inhibitory effects on cell proliferation of hepatocellular carcinoma HepG2 cells by methanol leaf extract of Costus speciosus. *BioMed research international*, 2014.
- Nguyen, N.T.L., Nguyen, B.D.T., Dai, T.T.X., Co, S.H., Do, T.T., Tong Thi, A.N., Oladapo, I.J. and Nguyen Cong, H., 2021. Influence of germinated brown rice-based flour modified by MAse on type 2 diabetic mice and HepG2 cell cytotoxic capacity. *Food Science & Nutrition*, 9(2), pp.781-793.
- Oktavya, G., Purwestri, Y.A., Saragih, H.T. and Nuriliani, A., 2023. Ethanolic Extract of Black Rice 'Sembada Hitam' Bran Protects the Cytotoxic Effect of H<sub>2</sub>O<sub>2</sub> on NIH3T3 Cells. *Current Research in Nutrition and Food Science Journal*, 11(1), pp.389-400.
- Pal, I., 2018. Black Rice-An Extensive Review. *Paragon International Publishers*, p.126.
- Phetpornpaisan, P., Tippayawat, P., Jay, M. and Sutthanut, K., 2014. A local Thai cultivar glutinous black rice bran: A source of functional compounds in immunomodulation, cell viability and collagen synthesis, and matrix metalloproteinase-2 and-9 inhibition. *Journal of functional foods*, 7, pp.650-661.
- Pojer, E., Mattivi, F., Johnson, D. and Stockley, C.S., 2013. The case for anthocyanin consumption to promote human health: a review. *Comprehensive reviews in food science and food safety*, 12(5), pp.483-508.
- Prasad, B.J., Sharavanan, P.S., and Sivaraj, R. 2019. Health Benefits of Black RiceA Review. *Grain & Oil Science and Technology*, 2: 109-113.
- Pratiwi, R., Amalia, A.R. and Tunjung, W.A.S., 2019. Active Fractions of Black Rice Bran cv Cempo Ireng Inducing Apoptosis and S-phase Cell Cycle Arrest in T47D Breast Cancer Cells. *Journal of Mathematical & Fundamental Sciences*, 50(1).
- Pratiwi, R. and Purwestri, Y.A., 2017. Black rice as a functional food in Indonesia. *Functional Foods in Health and Disease*, 7(3), pp.182-194.



- Putra, B., Wahyuningsih, M.S.H., and Solikhah, E.N. 2017. Cytotoxic Activity of Simvastatin in T47D Breast Cancer Cell Lines and Its Effect on Cyclin D1 Expression and Apoptosis. *Journal Medical Science*, 49(2): 47-55.
- Rahim, M.A., Umar, M., Habib, A., Imran, M., Khalid, W., Lima, C.M.G., Shoukat, A., Itrat, N., Nazir, A., Ejaz, A. and Zafar, A., 2022. Photochemistry, Functional Properties, Food Applications, and Health Prospective of Black Rice. *Journal of Chemistry*, 2022.
- Rukmana, R.M., Soesilo, N.P. and Pratiwi, R., 2017. Chemopreventive activities of 'Woja Laka'black rice bran fractions on liver carcinoma HepG2 cells. *Biomedical and Pharmacology Journal*, 10(4), pp.1677-1684.
- Rukmana, R.M., Soesilo, N.P. and Rumiyati, P.R., 2016. The effect of ethanolic extract of black and white rice bran (*Oryza sativa L.*) on cancer cells. *Indones J Biotechnol*, 21(1), pp.63-69.
- Savitri, I., Suhendra, L., dan Wartini, N.M. 2017. Pengaruh Jenis Pelarut Pada Metode Maserasi Terhadap Karakteristik Ekstrak *Sargassum polycystum*. *Jurnal REKAYASA DAN MANAJEMEN AGROINDUSTRI*, 5(3): 93-101.
- Segeritz, C.P. and Vallier, L., 2017. Cell culture: Growing cells as model systems in vitro. In *Basic science methods for clinical researchers* (pp. 151-172). Academic Press.
- Sharma, P., Shri, R. and Kumar, S., 2022. Phytochemical and In Vitro Cytotoxic Screening of Chloroform Extract of *Ehretia microphylla* Lamk. *Stresses*, 2(4), pp.384-394.
- Siregar, F. and Hadijono, B.S., 2000. Uji Sitoktoksisitas Dengan Esei MTT. *Journal of Dentistry Indonesia*, 7(1), pp.28-32.
- Sjafaraenan, S., Johannes, E. and Wulandari, S.N., 2019. Pengaruh Interval Dosis 2, 44-19, 53 µG/ml Ekstrak N-heksana Dari Hydroid Aglaopheniacupressinalamoureoux Terhadap Aktivitas Pertumbuhan Selhela. *BIOMA: JURNAL BIOLOGI MAKASSAR*, 4(1), pp.11-19.
- Sladowski, D., Steer, S.J., Clothier, R.H. and Balls, M., 1993. An improved MIT assay. *Journal of immunological methods*, 157(1-2), pp.203-207.
- Srinivasan, R., Aruna, A., Lee, J.S., Kim, M., Shivakumar, M.S. and Natarajan, D., 2020. Antioxidant and antiproliferative potential of bioactive molecules ursolic acid and thujone isolated from Memecylon edule and Elaeagnus indica and their inhibitory effect on topoisomerase II by molecular docking approach. *BioMed research international*, 2020.
- Sugesh, S., Mayavu, P. and Sharma, S., 2014. Cytotoxic effects of two edible bivalves *Meretrix meretrix* and *Meretrix casta*. *African Journal of Pharmacy and Pharmacology*, 8(34), pp.832-840.
- Sumida, K., Igarashi, Y., Toritsuka, N., Matsushita, T., Abe-Tomizawa, K., Aoki, M., Urushidani, T., Yamada, H. and Ohno, Y., 2011. Effects of DMSO on gene



expression in human and rat hepatocytes. *Human & experimental toxicology*, 30(10), pp.1701-1709.

Susanty, S. and Bachmid, F., 2016. Perbandingan metode ekstraksi maserasi dan refluks terhadap kadar fenolik dari ekstrak tongkol jagung (*Zea mays L.*). *Jurnal Konversi*, 5(2), pp.87-92.

Taghavi, T., Patel, H. and Rafie, R., 2023. Extraction Solvents Affect Anthocyanin Yield, Color, and Profile of Strawberries. *Plants*, 12(9), p.1833.

Tang, W.H., Wang, C.F. and Liao, Y.D., 2021. Fetal bovine serum albumin inhibits antimicrobial peptide activity and binds drug only in complex with  $\alpha$ 1-antitrypsin. *Scientific Reports*, 11(1), pp.1-13.

Thanuja, B., and Parimalavalli, R. 2018. Role of Black Rice in Health and Diseases. *International Journal of Health Sciences and Research*, 8(2): 241-248.

Thephthanee, C., Liu, C.C., Yu, H.S., Huang, H.S., Yen, C.H., Li, Y.H., Lee, M.R. and Liaw, E.T., 2022. Antioxidant Activity and Inhibitory Effects of Black Rice Leaf on the Proliferation of Human Carcinoma Cells. *BioMed Research International*, 2022.

Thoppil, R.J. and Bishayee, A., 2011. Terpenoids as potential chemopreventive and therapeutic agents in liver cancer. *World journal of hepatology*, 3(9), p.228.

Tsania, L., 2022. Aktivitas Sitotoksik dan Induksi Apoptosis Ekstrak Etanolik Bekatul Beras Hitam (*Oryza sativa L.* 'Sembada Hitam') terhadap Sel Kanker Serviks HeLa. *Skripsi*. Fakultas Biologi Universitas Gadjah Mada. Yogyakarta.

Tunjung, W.A., and Sayekti, P.R. 2019. Apoptosis Induction of Human Breast Cancer T47D Cell Line by Extracts of Ancorina sp. *F1000Research*, 8(168): 1-16.

Verheijen, M., Lienhard, M., Schrooders, Y., Clayton, O., Nudischer, R., Boerno, S., Timmermann, B., Selevsek, N., Schlapbach, R., Gmuender, H. and Gotta, S., 2019. DMSO induces drastic changes in human cellular processes and epigenetic landscape in vitro. *Scientific reports*, 9(1), pp.1-12.

Vichit, W. and Saewan, N., 2015. Antioxidant activities and cytotoxicity of Thai pigmented rice. *International Journal of Pharmacy and Pharmaceutical Sciences*, 7(7), pp.329-334.

Wangen, R., Aasebø, E., Trentani, A., Døskeland, S.O., Bruserud, Ø., Selheim, F. and Hernandez-Valladares, M., 2018. Preservation method and phosphate buffered saline washing affect the acute myeloid leukemia proteome. *International Journal of Molecular Sciences*, 19(1), p.296.

Wei, Z., Liu, X., Cheng, C., Yu, W. and Yi, P., 2021. Metabolism of amino acids in cancer. *Frontiers in cell and developmental biology*, 8, p.603837.

Whika, F.D., Leni, R. and Ismi, R., 2017. Rendemen dan Skrining Fitokimia pada Ekstrak Daun Sansevieria sp. *Jurnal Penelitian Pertanian Terapan*, 17(3), pp.197-202.



- Widiyastuti, Y., Pratiwi, R., Riyanto, S. and Wahyuono, S., 2018. Cytotoxic activity and apoptosis induction of avocado *Persea americana* Mill. seed extract on MCF-7 cancer cell line. *Indonesian Journal of Biotechnology*, 23(2), pp.61-67.
- Widyaningtias, L.A.M., Yudono, P., dan Supriyanta. 2020. Identifikasi Karakter Morfologi dan Agronomi Penentu Kehampaan Malai Padi (*Oryza sativa L.*). *Vegetalika*, 9(2): 399-413.
- Xue, Y., Wang, J., Huang, Y., Gao, X., Kong, L., Zhang, T. and Tang, M., 2018. Comparative cytotoxicity and apoptotic pathways induced by nanosilver in human liver HepG2 and L02 cells. *Human & Experimental Toxicology*, 37(12), pp.1293-1309.
- Yang, J.D., Hainaut, P., Gores, G.J., Amadou, A., Plymoth, A. and Roberts, L.R., 2019. A global view of hepatocellular carcinoma: trends, risk, prevention and management. *Nature reviews Gastroenterology & hepatology*, 16(10), pp.589-604.
- Yoon, J., Ham, H., Sung, J., Kim, Y., Choi, Y., Lee, J.S., Jeong, H.S., Lee, J. and Kim, D., 2014. Black rice extract protected HepG2 cells from oxidative stress-induced cell death via ERK1/2 and Akt activation. *Nutrition research and practice*, 8(2), pp.125-131.
- Yulianingtyas, A., dan Kusmartono, B. 2016. Optimisasi Volume Pelarut dan Waktu Maserasi Pengambilan Flavonoid Daun Belimbing Wuluh (*Averrhoa bilimbi* L.). *Jurnal Teknik Kimia*, 10(2): 58-64.
- Zerbinati, N., Lotti, T., Monticelli, D., Rauso, R., González-Isaza, P., D'Este, E., Calligaro, A., Sommatis, S., Maccario, C., Mocchi, R. and Lotti, J., 2018. In vitro evaluation of the biosafety of hyaluronic acid PEG cross-linked with micromolecules of calcium hydroxyapatite in low concentration. *Open access Macedonian journal of medical sciences*, 6(1), p.15.
- Zhang, H., Kai, G., Xia, Y., Wang, G. and Ai, L., 2020. Antioxidant and in vitro digestion property of black rice (*Oryza sativa L.*): a comparison study between whole grain and rice bran. *International Journal of Food Engineering*, 16(9).
- Zhang, Q.W., Lin, L.G., and Ye, W.C. 2018. Techniques for Extraction and Isolation of Natural Products:a Comprehensive Review. *Chinese Medicine*, 13(20): 1-26.
- Zhang, Q., Bao, J. and Yang, J., 2019. Genistein-triggered anticancer activity against liver cancer cell line HepG2 involves ROS generation, mitochondrial apoptosis, G2/M cell cycle arrest and inhibition of cell migrationand inhibition of cell migration. *Archives of Medical Science*, 15(4), pp.1001-1009.
- Zhang, S., Liu, X., Bawa-Khalfe, T., Lu, L.S., Lyu, Y.L., Liu, L.F. and Yeh, E.T., 2012. Identification of the molecular basis of doxorubicin-induced cardiotoxicity. *Nature medicine*, 18(11), pp.1639-1642.
- Zulfafamy, K.E. and Budijanto, S., 2018. Antioxidative properties and cytotoxic activity against colon cancer cell WiDr of *Rhizopus oryzae* and *Rhizopus*



UNIVERSITAS  
GADJAH MADA

Aktivitas Sitotoksik dan Induksi Apoptosis Ekstrak Kloroform Bekatul Beras Hitam (*Oryza sativa L.* 'Sembada Hitam') terhadap Sel HepG2 (Hepatoma Cell Line)

Bima Mahendra, Dr. Ardaning Nuriliani, S.Si., M.Kes.

Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

oligosporus-fermented black rice bran extract. *Current Research in Nutrition and Food Science Journal*, 6(1), pp.23-34.