

## DAFTAR PUSTAKA

- Abbas, B.F., Al-Jubori, W.M.K., Abdullah, A.M., Sha'aban, H.K. & Mohammed, M.T. 2018. Environmental Pollution with the Heavy Metal Compound. *Research Journal of Pharmacy and Technology*, 11(9), pp.4035-4041.
- Adaskaveg, J.E. & Gilbertson, R.L. 1988. Basidiospores, Pilocystidia, and other Basidiocarp Characters in Several Species of the *Ganoderma lucidum* Complex. *Mycologia*, 80(4), pp.493-507.
- Aguwa, U., Eze, C.E., Obinwa, B.N., Okeke, S.N., Onwuelingo, S.F., Okonkwo, D.I., Ogbuokiri, D.K., Agulanna, A.E., Obiesie, I.J. & Umezulike, A.J. 2020. Comparing the Effect of Methods of Rat Euthanasia on the Brain of Wistar Rats: Cervical Dislocation, Chloroform Inhalation, Diethyl Ether Inhalation and Formalin Inhalation. *Journal of Advances in Medicine and Medical Research*, 32(17), pp.8-16.
- Alfanie, I., Muhyi, R. & Suhartono, E. 2015. Effect of Heavy Metal on Malondialdehyde and Advanced Oxidation Protein Products Concentration: A Focus on Arsenic, Cadmium, and Mercury. *Journal of Medical and Bioengineering*, 4(4), pp.332-337.
- Al-Fawaeir, Akgul, E.O., Cayci, T., Demirin, H., Kurt, Y.G., Aydin, I., Agili, M., Ozkan, E., Yaman, H., Cakir, E. & Erbil, M.K. 2011. Comparison of Two Methods for Malondialdehyde Measurement. *Journal of Clinical and Analytical Medicine*, 2(2), pp.11-14.
- Alfita, D., Anjar, M. & Zainur, R. 2017. Aktivitas Immunodulator Ekstrak Etanol Umbi Bawang Merah (*Allium cepa* L.) Terhadap Respon Imun Non Spesifik pada Mencit Jantan Galur Balb/C dengan Metode Carbon Clearance. *Biosfera*, 34(2), pp.75-79.
- Almeer, R., AlBasher, G.I., Alarifi, S., Alkahtani, S., Ali, D. & Moneim, A.E.A. 2019. Royal Jelly Attenuates Cadmium-Induced Nephrotoxicity in Male Mice. *Scientific Reports*, 9(1), pp.1-12.
- Altinoz, E., Oner, Z., Elbe, H., Uremis, N. & Uremis, M. 2021. Linalool Exhibits Therapeutic and Protective Effects in Rat Model of Doxorubicin-Induced Kidney Injury by Modulating Oxidative Stress. *Drug and Chemical Toxicology*, pp.1-7.
- Ardhya, H.G.A.P., Wardah, A.C. & Rachmawati, P. 2017. Analysis of Cadmium Metal in Facial Moisturizing Cream with Atomic Absorption Spectrophotometry Method. *Indonesian Journal of Chemistry and Environment*, 1(1), pp.1-6.
- Argyropoulos, C.P., Chen, S.S., Ng, Y.H., Roumelioti, M.E., Shaffi, K., Singh, P.P. & Tzamaloukas, A.H. 2017. Rediscovering Beta-2 Microglobulin as a Biomarker Across the Spectrum of Kidney Disease. *Frontiers in Medicine*, 4(73), pp.1-25.

- Ayala, A., Munoz, M.F. & Arguelles, S. 2014. Lipid Peroxidation: Production, Metabolism, and Signaling Mechanisms of Malondialdehyde and 4-Hydroxy-2-Nonenal. *Oxidative Medicine and Cellular Longevity*, pp.1-31.
- Ayuningati, L.K., Murtiastutik, D. & Hoetomo, M. 2018. Perbedaan Kadar Malondialdehid (MDA) pada Pasien Dermatitis Atopik dan Nondermatitis Atopik. *Berkala Ilmu Kesehatan Kulit dan Kelamin*, 30(1), pp.58-65.
- Baba, H., Tsuneyama, K., Yazaki, M., Nagata, K., Minamisaka, T., Tsuda, T., Nomoto, K., Hayashi, S., Miwa, S., Nakajima, T., Nakanishi, Y., Aoshima, K. & Imura, J. 2013. The Liver in Itai-itai Disease (Chronic Cadmium Poisoning): Pathological Features and Metallothionein Expression. *Modern Pathology*, 26, pp.1228-1234.
- Babu, P.D. & Subhasree, R.S. 2008. The Sacred Mushroom "Reishi" - a Review. *American Eurasian Journal of Botany*, 1(3), pp.107-110.
- Bain, L.E., 2017. Ethics Approval: Responsibilities of Journal Editors, Authors, and Research Ethics Committees. *Pan African Medical Journal*, 28(200), pp.1-3.
- Bioassay Technology Laboratory. 2012. *Rat  $\beta$ 2-microglobulin ELISA Kit: In User Instruction*. Shanghai: Bioassay Technology Laboratory.
- Begic, A., Djuric, A., Ninkovic, M., Stevanovic, I., Djurdjevic, D., Pavlovic, M., Jelic, K., Pantelic, A., Zebic, G., Dejanovic, B., Stanojevic, I., Vojvodic, D., Milosavljevic, P., Djukic, M. & Saso, L. 2017. Disulfiram Moderately Restores Impaired Hepatic Redox Status of Rats Subchronically Exposed to Cadmium. *Journal of Enzyme Inhibition and Medicinal Chemistry*, 32(1), pp. 478-489.
- Benkeblia, N. 2015. Ganoderma lucidum Polysaccharides and Terpenoids: Profil and Health Benefits. *Journal of Food and Nutrition and Diatetics*, 1(1), pp. 1-6.
- Budiawan. 2008. Peran Toksikologi Forensik dalam Mengungkap Kasus Keracunan dan Pencemaran Lingkungan. *Indonesian Journal of Legal and Forensic Sciences*, 1(1), pp.35-39.
- Buser, M.C., Ingber, S.Z., Raines, N., Fowler, D.A. & Scinicariello, F. 2016. Urinary and Blood Cadmium and Lead and Kidney Function: NHANES 2007-2012. *International Journal of Hygiene and Environmental Health*, 219(3), pp.261-267.
- Chater, S., Douki, T., Garrel, C., Favier, A., Sakly, M. & Abdelmelek, H. 2008. Cadmium-Induced Oxidative Stress and DNA Damage in Kidney of Pregnant Female Rats. *Comptes Rendus Biologies*, 331(6), pp.426-432.
- Chen, X., Wang, Z., Zhu, G., Ding, X. & Jin, T. 2018. The References Level of Cadmium Intake for Renal Dysfunction in a Chinese Population. *Scientific Report*, 8(1), pp.1-7.
- Cherrak, S.A., Soulimane, N.M., Berroukeche, F., Bensenane, B., Cherbonnel, A., Merzouk, H. & Elhabiri, M. 2016. In Vitro Antioxidant versus Metal Ion

- Chelating Properties of Flavonoids: A Structure-Activity Investigation. *PLoS ONE*, 11(10), pp.1-21.
- Cho, M.R., Kang, H.G., Jeong, S.H. & Cho, M.H. 2010. Time-Dependent Changes of Cadmium and Metallothionein after Short-Term Exposure to Cadmium in Rats. *Toxicology Research*, 26(2), pp.131-136.
- Cilerdzic, J., Galic, M., Vukojevic, J., Brceski, I. & Stajic, M. 2017. Potential of Selected Fungal Species to Degrade Wheat Straw, the Most Abundant Plant Raw Material in Europe. *BMC Plant Biology*, 17(249), pp.75-81.
- Cor, D., Knez, Z. & Hrnčić, M. 2018. Antitumour, Antimicrobial, Antioxidant and Antiacetylcholinesterase Effect of *Ganoderma lucidum* Terpenoids and Polysaccharides: A Review. *Molecules*, 23(3), pp.1-21.
- Dardouri, K., Haouem, S., Gharbi, I., Sriha, B., Haouas, Z., El Hani, A. & Hammami, M. 2016. Combined Effects of Cd and Hg on Liver and Kidney Histology and Function in Wistar Rats. *Journal of Agricultural Chemistry and Environment*, 5, pp.159-169.
- de Castilho, T.S., Matias, T.B. & Nicolini, K.P. 2018. Study of Interaction Between Metal Ions and Quercetin. *Food Science and Human Wellness*, 7, pp.215-219.
- Dewi, N.K., Purwanto & Sunoko, H.R. 2014. Metallothionein pada Hati Ikan Sebagai Biomarker Pencemaran Kadmium (Cd) di Perairan Kaligarang Semarang. *Jurnal Manusia dan Lingkungan*, 21(3), pp.304-309.
- Dianti, R.R., Rusdi & Evriyani, D. 2016. Kadar Malondialdehid dan Aktivitas Enzim Superoksida Dismutase pada Hipertensi dan Normotensi. *Bioma*, 12(1), pp.50-53.
- El-Boshy, M., Risha, E.F., Abdelhamid, F.M., Mubarak, M.S. & Hadda, T.B. 2015. Protective Effects of Selenium Against Cadmium Induced Hematological Disturbances, Immunosuppressive, Oxidative Stress and Hepatorenal Damage in Rats. *Journal of Trace Elements in Medicine and Biology*, 29, pp. 104-110.
- Farjad, E. & Momeni, H. 2018. Silymarin Ameliorates Oxidative Stress and Enhances Antioxidant Defense System Capacity in Cadmium-Treated Mice. *Cell Journal*, 20(3), pp.422-426.
- Fauziah, P.N., Maskoen, A.M., Yuliati, T. & Widiarsih, E. 2018. Optimized Steps in Determination of Malondialdehyde (MDA) Standards to Diagnostic of Lipid Peroxidation. *Padjadjaran Journal of Dentistry*, 30(2), pp.136-139.
- Federer, W.T. 1967. *Experimental Design Theory and Application*. Kolkata: Oxford & IBH Publishing.
- Fels, J., Scharner, B., Zarbock, R., Guevara, I.P.Z., Lee, W.K., Barbier, O.C. & Thevenod, F. 2019. Cadmium Complexed with  $\beta$ 2-microglobulin, Albumin and Lipocalin-2 rather than Metallothionein Cause Megalin: Cubilin Dependent Toxicity of the Renal Proximal Tubule. *International Journal of Molecular Sciences*, 20(2379), pp.1-15.

- Ferdhiani, A., Hernayanti & Budianto, B. 2018. Faktor Resiko Gangguan Fungsi Ginjal pada Pekerja Bengkel Las di Kota Purwokerto. *Scripta Biologica*, 5(2).
- Fitria, L., Suranto, R. & Utami, I. 2019. Uji Toksisitas Oral Akut Single Dose Filtrat Buah Luwangan (*Ficus hispida* L.f.) pada Tikus (*Rattus norvegicus* Berkenhout, 1769) Galur Wistar. *Jurnal Mangifera Edu*, 4(1), pp.1-18.
- Flora, S.J.S. & Pachauri, V. 2010. Chelation in Metal Intoxication. *International Journal of Environmental Research and Public Health*, 7, pp.2745-2788.
- Gabr, S.A., Alghadir, A.H. & Ghoniem, G.A. 2019. Biological Activities of Ginger Against Cadmium-Induced Renal Toxicity. *Saudi Journal of Biological Sciences*, 26, pp.382-389.
- Gaschler, M.M. & Stockwell, B.R. 2017. Lipid Peroxidation in Cell Death. *Biochemical and Biophysical Research Communications*, 482(3), pp.419-25.
- Gasecka, M., Mleczek, M., Siwulski, M., Niedzielski, P. & Kozak, L. 2016. Phenolic and Flavonoid Content *Hericium erinaceus*, *Ganoderma lucidum*, and *Agrocybe aegerita* under Selenium Addition. *Acta Alimentaria*, 45(2), pp.300-308.
- Genchi, G., Sinicropi, M.S., Lauria, G., Carocci, A. & Catalano, A. 2020. The Effects of Cadmium Toxicity. *International Journal of Environmental Research and Public Health*, 17(3782), pp.1-24.
- Gobe, G. & Crane, D. 2010. Mitochondria, Reactive Oxygen Species and Cadmium Toxicity in the Kidney. *Toxicology Letters*, 198(1), pp.49-55.
- Godt, J., Scheidig, F., Siestrup, C.G., Esche, V., Brandenburg, P., Reich, A. & Groneberg, D.A. 2006. The Toxicity of Cadmium and Resulting Hazards for Human Health. *Journal of Occupational Medicine and Toxicology*, 1(22), pp.1-6.
- Goncalves, S., Mansinhos, I. & Romano, A. 2020. Aromatic Plants: A Source of Compounds with Antioxidant and Neuroprotective Effects. In: *Oxidative Stress and Dietary Antioxidants in Neurological Disease*. 1 ed. Massachusetts: Academic Press, pp. 155-173.
- Gonick, H.C. 2008. Nephrotoxicity of Cadmium and Lead. *Indian Journal of Medical Research*, 128, pp.335-352.
- Groff, K., Bachli, E., Lansdowne, M. & Capaldo, T. 2014. Review of Evidence of Environmental Impacts of Animal Research and Testing. *Environments*, 1, pp. 14-30.
- Habibi, Y. 2020. Validasi Metode Destruksi Basah dan Destruksi Kering pada Penentuan Logam Timbal (Pb) dan Kadmium (Cd) dalam Tanaman Rumput. *Integrated Lab Journal*, 1(1), pp.25-31.
- Handrianto, P. & Wardani, R. 2019. Pengaruh Lama Maserasi Ekstrak Etanol Jamur Lingzhi (*Ganoderma lucidum*) Terhadap Kadar Flavonoid Total. E-Prosiding Seminar Nasional Teknologi dan Sains, 1(1), pp. 409-413.



- Hapuarachchi, K.K., Karunarathna, S.C., Phengsintham, P., Yang, H.D., Kakumyan, P., Hyde, K.D. & Wen, T.C. 2019. Ganodermataceae (Polyporales): Diversity in Greater Mekong Subregion Countries (China, Laos, Myanmar, Thailand, and Vietnam). *Mycosphere*, 10(1), pp.221-309.
- Hapuarachchi, K.K., Karunarathna, S.C., Raspe, O., De Silva, K.H.W.L., Thawthong, A., Wu, X.L., Kakumyan, P., Hyde, K.D. & Wen, T.C. 2018. High Diversity of Ganoderma and Amauroderma (Ganodermataceae, Polyporales) in Hainan Island, China. *Mycosphere*, 9(5), pp.931-982.
- Hardiany, N.S. & Paramita, R. 2019. Profile of Malondialdehyde (MDA) and Catalase Specific Activity in Plasma of Elderly Woman. *Health and Science Journal of Indonesia*, 10(2), pp.132-136.
- Harvey, D. & Vouros, P. 2019. Mass Spectrometric Fragmentation of Trimethylsilyl and Related Alkylsilyl Derivates. *Mass Spectrometric Reviews*, 39(1), pp. 1-107.
- Henkler, F., Brinkmann, J. & Luch, A. 2010. The Role of Oxidative Stress in Carcinogenesis Induced by Metals and Xenobiotics. *Cancers*, 2(2), pp.376-396.
- Hernayanti & Lestari, S. 2020. Penurunan Toksisitas Kadmium dengan Kelator Alami Pegagan (*Centella asiatica*) Ditinjau dari Kadar Malondialdehid (MDA) dan Superoksida Dismutase (SOD). *Jurnal of Bionursing*, 2(1), pp.47-52.
- Hernayanti, Lestari, S. & Taufiq, H.D.K. 2019. Detoxification of Cadmium on The Levels of Urea and Creatinine on *Rattus norvegicus* with Tea Mistletoe (*Scurrula atropurpurea*). *AIP Conference Proceedings*, 2094, pp.1-5.
- Hernayanti, Santoso, S., Lestari, S., Prayoga, L., Kamsinah & Rochmatino. 2019. Efek Paparan Kadmium (Cd) Terhadap Fungsi Ginjal Pekerja Bengkel Las. *Jurnal Kesmas Indonesia*, 11(1), pp.1-8.
- Hernayanti, Santoso, S., Lestari, S., Prayoga, L., Kamsinah & Rochmatino. 2020. Renoprotective Effects of Lycopene in Tomato Extracts on Rat Exposed to Cadmium. *IOP Publishing Series: Earth and Environmental Science*, 593, pp.1-4.
- Hikam, A.R., Ekowati, N. & Hernayanti. 2019. The Cytotoxic and Apoptosis Effects of Chloroform Extracts of *Auricularia auricula* on Cervical Cancer Cells. *Biosaintifika*, 11(1), pp.32-38.
- Hong, J. & Lim, I. 2012. Correlation between Glomerular Filtration Rate and Urinary N Acetyl-beta-D Glucosaminidase in Children with Persistent Proteinuria in Chronic Glomerular Disease. *Korean Journal of Pediatrics*, 55(4), pp. 136-142.
- Hormozi, M., Mirzaei, R., Nakhaee, A., Izadi, S. & Haghighi, J.D. 2018. The Biochemical Effects of Occupational Exposure to Lead and Cadmium on Markers of Oxidative Stress and Antioxidant Enzymes Activity in the Blood

- of Glazers in Tile Industry. *Toxicology and Industrial Health*, 34(7), pp. 459-467.
- Hwangbo, Y., Weaver, V.M., Tellez-Plaza, M., Guallar, E., Lee, B.K. & Navas-Acien, A. 2011. Blood Cadmium and Estimated Glomerular Filtration Rate in Korean Adults. *Environmental Health Perspectives*, 119(12), pp.1800-1805.
- Jin, H., Jin, F., Jin, J.X., Xu, J., Tao, T.T., Liu, J. & Huang, H.J. 2013. Protective Effects of *Ganoderma lucidum* Spore on Cadmium Hepatotoxicity in Mice. *Food and Chemical Toxicology*, 52, pp.171-175.
- Jurczuk, M., Brzoska, M.M., Moniuszko-Jakoniuk, J., Galazyn-Sidorczuk, M. & Kulikowska-Karpinzska, E. 2004. Antioxidant Enzymes Activity and Lipid Peroxidation in Liver and Kidney of Rats Exposed to Cadmium and Ethanol. *Food and Chemical Toxicology*, 42, pp.429-438.
- Kara, H., Karatas, F. & Canatan, H. 2005. Effect of Single Dose Cadmium Chloride Administration on Oxidative Stress in Male and Female Rats. *Turkish Journal of Veterinary and Animal Science*, 29, pp. 37-42.
- Karsten, P.A. 1881. Enumeralio Boletinearum et Polypore arum fennicarum, Systemate Novo Dispositarum. *Revue de Mycologie*, 3, pp.16-19.
- Kawasaki, T. Kono, K., Dote, T., Usuda, K., Shimizu, H. & Dote, E. 2004. Markers of Cadmium Exposure in Workers in a Cadmium Pigment Factory after Changes in the Exposure Conditions. *Toxicology and Industrial Health*, 20, pp. 51-56.
- Kelishadi, R. 2012. Environmental Pollution: Health Effects and Operational Implications for Pollutants Removal. *Journal of Environmental and Public Health*, 1(1), pp.1-2.
- Kharrat, D.K., Kaddour, H., Hamdi, Y., Mokni, M., Amri, M. & Mezghani, S. 2018. Response of Antioxidant Enzymes to Cadmium-Induced Cytotoxicity in Rat Cerebellar Granule Neurons. *Open Life Sciences*, 12, pp.113-119.
- Kim, M.Y., Seguin, P., Ahn, J.K., Kim, J.J., Chun, S.C., Kim, E.H., Seo, S.H., Kang, E.Y., Kim, S.L., Park, Y.J., Ro, H.M. & Chung, I.M. 2008. Phenolic Compound Concentration and Antioxidant Activities of Edible and Medicinal Mushrooms from Korea. *Journal of Agricultural and Food Chemistry*, 56(16), pp.7265-7270.
- Klaassen, C.D., Liu, J. & Diwan, B.A. 2009. Metallothionein Protection of Cadmium Toxicity. *Toxicology and Applied Pharmacology*, 238(3), pp.215-220.
- Kumar, S. & Pandey, A.K. 2013. Chemistry and Biological Activities of Flavonoids: An Overview. *The Scientific World Journal*, pp.1-16.
- Kurniasari, S., Yanti, A.H. & Setyawati, T.R. 2017. Kadar Malondialdehyde Induk dan Struktur Morfologis Fetus Mencit (*Mus musculus*) yang Diperdengarkan Murottal dan Musik Rock pada Periode Gestasi. *Protobiont*, 6(3), pp.89-97.

- Lee, J.S. & Jung, H.S. 2006. Taxonomic Study on Korean Aphyllophorales (5) on Some Unrecorded Genera and Species. *Mycobiology*, 34(4), pp.166-175.
- Lewis, R. 2004. *Sax's Dangerous Properties of Industrial Materials*. 11th ed. Hoboken: John Wiley & Sons, Inc.
- Li, L., Dong, M. & Wang, X.G. 2016. The Implication and Significance of Beta 2 Microglobulin: A Conservative Multifunctional Regulator. *Chinese Medical Journal*, 129(4), pp.448-455.
- Lin, M.S., Yu, Z.R., Wang, B.J., Wang, C.C., Weng, Y.M. & Koo, M. 2015. Bioactive Constituent Characterization and Antioxidant Activity of *Ganoderma lucidum* Extract Fractionated by Supercritical Carbon Dioxide. *Sains Malaysiana*, 44(12), pp. 1685-1691.
- Makarov, V., Love, A.J., Sinitsyna, O.V., Makarova, S.S., Yaminsky, I.V., Taliansky, M.E. & Kalinina, N.O. 2014. "Green" Nanotechnologies: Synthesis of Metal Nanoparticles Using Plants. *Acta Naturae*, 6(1), pp. 35-44.
- Malesev, D. & Kuntic, V. 2007. Investigation of Metal-Flavonoid Chelates and the Determination of Flavonoids via Metal-Flavonoid Complexing Reactions. *Journal of the Serbian Chemical Society*, 72(10), pp.921-939.
- Mar, S., Okazaki, M. & Motobayashi, T. 2012. The Influence of Phosphate Fertilizer Application Levels and Cultivars on Cadmium Uptake by Komatsuna (*Brassica rapa* L. var. perviridis). *Soil Science and Plant Nutrition*, 58, pp. 492-502.
- Mastovska, K. & Lehotay, S.J. 2003. Practical Approches to Fast Gas Chromatography - Mass Spectrometry. *Journal of Chromatography A*, 1000(1), pp.153-180.
- Mellor, D.J. 2016. Moving Beyond the "Five Freedoms" by Updating the "Five Provision" and Introducing Aligned "Animal Welfare Aims". *Animals*, 6(59), pp.1-7.
- Mentari, D., Naima, M., Wulansari, R., Widada, J., Nuringtyas, T.R., Wibawa, T. & Wijayanti, N. 2019. Pengaruh Perbedaan Metode Ekstraksi Metabolit Sekunder *Streptomyces* sp. GMR22 terhadap Toksisitas pada Sel BHK-21. *Pharmakon*, 16(1), pp.1-10.
- Mishra, J., Joshi, A., Rajput, R., Singh, K., Bansal, A. & Misra, K. 2018. Phenolic Rich Fractions from Mycelium and Fruiting Body of *Ganoderma lucidum* Inhibit Bacterial Pathogens Mediated by Generation of Reactive Oxygen Species and Protein Leakage and Modulate Hypoxic Stress in HEK 293 Cell Line. *Advance in Pharmacological Sciences*, 17, pp.1-10.
- Mitra, P. & Rahim, M.A. 2017. Cadmium: An Environmental Heavy Metal with Nephrotoxic Potency, Especially in Diabetic Population. *Journal of Enam Medical College*, 7(3), pp.156-161.

- Nam, T.G. 2011. Lipid Peroxidation and Its Toxicological Implications. *Toxicological Research*, 27(1), pp.1-6.
- Nasiadek, M., Danilewicz, M., Klimczak, M., Stragierowicz, J. & Kilanowicz, A. 2019. Subchronic Exposure to Cadmium Causes Persistent Changes in the Reproductive System in. *Oxidative Medicine and Cellular Longevity*, pp. 1-17.
- Nedecky, R.B., Nejdil, L., Gumulec, J., Zitka, O., Masarik, M., Ecksclager, T., Stiborova, M., Adam, V. & Kizek, R. 2013. The Role of Metallothionein in Oxidative Stress. *International Journal of Molecular Science*, 14(3), pp.6044-6066.
- Nordberg, G., Jin, T., Wu, X., Lu, J., Chen, L., Liang, Y., Lei, L., Hong, F., Bergdahl, I.A. & Nordberg, M. 2012. Kidney Dysfunction and Cadmium Exposure - Factors Influencing Dose-Response Relationship. *Journal of Trace Elements in Medicine and Biology*, 26, pp.197-200.
- Nugraha, A. & Ghozali, M.T. 2017. Penetapan Kadar Flavonoid Kuersetin Ekstrak Kulit Buah Apel Hijau (*Pyrus malus* L.) dengan Menggunakan Metode Kromatografi Cair Kinerja Tinggi. *Thesis*. Yogyakarta: Fakultas Ilmu Kesehatan Universitas Muhammadiyah Yogyakarta.
- Nuraeni, F. & Sembiring, S.B.Br. 2019. Aktivitas Antioksidan dan Identifikasi Senyawa Ekstrak Jamur Lingzhi (*Ganoderma lucidum*) dengan *Liquid Chromatography-Mass Spectrometry* (LC-MS). *Ekologia*, 19(2), pp.65-72.
- Ogbomida, E., Omofonmwan, K., Aganmwonyi, I., Fasipe, I.P., Enuneku, A. & Ezemonye, L.I.N. 2018. Bioactive Profiling and Therapeutic Potential of Mushradjabdaoom (*Pleurotus tuberregium*) Extract on Wistar Albino Rats (*Rattus norvegicus*) Epoxposed to Arsenic and Chromium Toxicity. *Toxicology Reports*, 5, pp. 401-410.
- Oluba, O., Akpor, O.B., Adebisi, F.D., Josiah, S.J., Alabi, O.O., Shoyombo, A.O. & Olusola, A.O. 2020. Effect of Co-Administration of *Ganoderma* Terpenoid Extract with Chloroquine on Inflammatory Markers and Antioxidant Status in *Plasmodium berghei* - Infected Mice. *Journal of Integrative Medicine*, 18(6), pp. 522-529.
- Onwuka, F.C., Erhabor, O., Eteng, M.U. & Umoh, I.B. 2011. Protective Effects of Ginger Toward Cadmium-Induced Testes and Kidney Lipid Peroxidation and Hematological Impairment in Albino Rats. *Journal of Medical Food*, 14(7), pp.817-821.
- Orole, O. 2016. GC-MS Evaluation, Phytochemical and Antinutritional Screening of *Ganoderma lucidum*. *Journal of Advances in Biology and Biotechnology*, 5(4), pp. 1-10.
- Patra, R.C., Rautray, A.K. & Swarup, D. 2011. Oxidative Stress in Lead and Cadmium Toxicity and Its Amelioration. *Veterinary Medicine International*, pp.1-9.



- Pk, M.U., Talukder, R.I., Sarkar, M.K.I., Rahman, T., Pervin, R., Rahman, M., Zenat, E.A. & Akther, L. 2019. Effect of Solvent on Phytochemicals Content and Antioxidant Activity of *Ganoderma lucidum*. *The Open Microbiology Journal*, 13, pp. 10-15.
- Pramesti, R. & Widyastuti, N. 2014. Pengaruh Pemberian Jus Daun Ubi Jalar (*Ipomoea batatas* (L.) Lam) Terhadap Kadar Kolesterol LDL Tikus Wistar Jantan (*Rattus norvegicus*) yang Diberi Pakan Tinggi Lemak. *Journal Nutrition College*, 3(4), pp.706-714.
- Prozialeck, W.C. & Edwards, J.R. 2012. Mechanisms of Cadmium-Induced Proximal Tubule Injury: New Insights with Implications for Biomonitoring and Therapeutic Interventions. *The Journal of Pharmacology and Experimental Therapeutics*, 343, pp.2-12.
- PubChem. 2021. *PubChem website* <<https://pubchem.ncbi.nlm.nih.gov/compound/9-Hydroxylinalool>> [Diakses pada 12 Juni 2021].
- Purnamasari, I. & Amalia, L. 2016. Minuman Jelly Cincau Dapat Menurunkan Kadar Malondialdehid Plasma pada Pria Dewasa Perokok. *Jurnal Gizi Pangan*, 11(1), pp.59-66.
- Rahimzadeh, M.R., Rahimzadeh, M.R., Kazemi, S. & Moghadamnia, A.A. 2017. Cadmium Toxicity and Treatment: An Update. *Caspian Journal of Internal Medicine*, 8(3), pp.135-145.
- Rana, M.N., Tangpong, J. & Rahman, M.M. 2018. Toxicodynamics of Lead, Cadmium, Mercury and Arsenic - Induced Kidney Toxicity and Treatment Strategy: A Mini Review. *Toxicology Reports*, 5, pp.704-713.
- Randox Laboratories. 2009. *Manual Procedure RanSOD*. Antrim: Randox Laboratories Ltd.
- Ratnaningsih, A. 2004. Pengaruh Kadmium Terhadap Gangguan Patologik pada Ginjal Tikus Percobaan. *Jurnal Matematika, Sains, dan Teknologi*, 5(1), pp.53-63.
- Ratnaningtyas, N.I. 2007. Biologi *Ganoderma* sp. Isolat Lokal Terseleksi. *Disertasi*. Yogyakarta: Sekolah Pascasarjana Universitas Gadjah Mada.
- Ratnaningtyas, N.I., Hernayanti, Andarwanti, S., Ekowati, N., Purwanti, E.S. & Sukmawati, D. 2018a. Effects of *Ganoderma lucidum* Extract on Diabetic Rats. *Biosaintifika*, 10(3), pp.642-647.
- Ratnaningtyas, N.I., Purnomowati, Purwati, E.S., Septiana, A.T., Ekowati, N. & Supriyadi, A. 2018b. Antioxidant Potential of Ethanol and Ethyl Acetat Extract of *Ganoderma* sp. Mycelium. *Biosaintifika*, 10(1), pp.87-94.
- Rosita, B. & Andriyati, F. 2019. Perbandingan Kadar Logam Kadmium (Cd) dalam Darah Perokok Aktif dan Pasif di Terminal Bus. *Journal of Saintek*, 11(2), pp. 70-77.

- Roy, S., Jahan, M.A.A., Das, K.K., Munshi, S.K. & Noor, R. 2015. Artificial Cultivation of *Ganoderma lucidum* (Reishi Medicinal Mushroom) Using Different Sawdusts as Substrates. *American Journal of BioScience*, 3(5), pp.178-182.
- Samarghandian, S., Azimi-Nezhad, M., Shabestari, M.M., Azad, F.J., Farkhondeh, T. & Bafandeh, F. 2015. Effect of Chronic Exposure to Cadmium on Serum Lipid, Lipoprotein and Oxidative Stress Indices in Male Rats. *Interdisciplinary Toxicology*, 8(3), pp. 151-154.
- Sanchez, C. 2017. Reactive Oxygen Species and Antioxidant Properties from Mushrooms. *Synthetic and Systems Biotechnology*, 2, pp.13-22.
- Santosa, S. 2003. Peran Metallothionein pada Autisme. *Jurnal Kesehatan Masyarakat*, 2(2), pp.23-30.
- Satarug, S. 2018. Dietary Cadmium Intake and Its Effects on Kidneys. *Toxics*, 6(15), pp. 1-23.
- Satarug, S., Boonprasert, K., Gobe, G.C., Ruenweerayut, R., Johnson, D.W., Bangchang, K.N. & Vesey, D.A. 2019. Chronic Exposure to Cadmium is Associated with a Marked Reduction in Glomerular Filtration Rate. *Clinical Kidney Journal*, 12(4), pp.468-475.
- Satarug, S., Haswell-Elkins, M. & Moore, M. 2000. Safe Levels of Cadmium Intake of Prevent Renal Toxicity in Human Subjects. *British Journal of Nutrition*, 84, pp. 791-802.
- Septiana, A. & Asnani, A. 2012. Kajian Sifat Fisikokimia Ekstrak Rumput Laut Coklat *Sargassum duplicatum* Menggunakan Berbagai Pelarut dan Metode Ekstraksi. *Agrointek*, 6(1), pp. 22-28.
- Sharma, A., Fish, B.L., Moulder, J.E., Medhora, M., Baker, J.E., Mader, M. & Cohen, E.P. 2014. Safety and Blood Sample Volume and Quality of a Refined Retro-Orbital Bleeding Technique in Rats Using a Lateral Approach. *Lab Animal*, 43(2), pp. 63-66.
- Sharma, H., Rawal, N. & Mathew, B.B. 2015. The Characteristics, Toxicity, and Effects of Cadmium. *International Journal of Nanotechnology and Nanoscience*, 3, pp.1-9.
- Smina, T., Mathew, J., Janardhanan, K. & Devasagayam, T. 2011. Antioxidant Activity and Toxicity Profile of Total Triterpenes Isolated from *Ganoderma lucidum* (Fr.) P. Karst Occuring in South India. *Environmental Toxicology and Pharmacology*, 32, pp. 438-446.
- Sugiharto, S.B., Suwarso & Prawirohardjono, W. 2016. Level Kadmiun Darah dan Fungsi Ginjal Ditinjau dari Kadar Ureum dan Kreatinin Pekerja Las Bengkel Knalpot di Purbalingga. *Berita Kedokteran Masyarakat*, 32(4), pp.119-124.
- Suhartono, E., Triwanti, Leksono, A.S. & Djati, M.S. 2015. Effects of Cadmium Exposure on Lipid Peroxidation and Chlorinative Stress of Rat Kidney. *Journal of Experimental Life Science*, 5(1), pp.1-5.

- Susanto, A. 1998. Sifat-Sifat Biokimia dan Fabrikasi Ganoderma, Jamur Patogen Pohonan. *Jurnal Perlindungan Tanaman Indonesia*, 4(2), pp.83-91.
- Susanto, A., Ratnaningtyas, N. & Ekowati, N. 2018. Aktivitas Antioksidan Ekstrak Tubuh Buah Jamur Paha Ayam (*Coprinus comatus*) dengan Pelarut Berbeda. *Majalah Ilmiah Biologi Biosfera*, 35(2), pp. 63-68.
- Tamafo, A., Ghogomu, J.N., Nkungli, N.K., Mama, D.B. & Younang, E. 2017. Quantum Chemical Investigation on the Antioxidant Activity of Neutral and Anionic Forms of Juglone: Metal Chelation and Its Effect on Radical Scavenging Activity. *Journal of Chemistry*, pp. 1-14.
- Taofiq, O., Heleno, S.A., Calhelha, R.C., Alves, M.J., Barros, L., Gonzales-Paramas, A.M., Barreiro, M.F. & Ferreira, C.F.R. 2017. The Potential of *Ganoderma lucidum* Extracts as Bioactive Ingredients in Topical Formulations, Beyond Its Nutritional Benefits. *Food and Chemical Toxicology*, 108, pp. 139-147.
- Tarasub, N., Tarasub, C. & Ayutthaya, W. 2011. Protective Role of Curcumin on Cadmium-Induced Nephrotoxicity in Rats. *Journal of Environmental Chemistry and Ecotoxicology*, 3(2), pp. 17-24.
- Urban, P.L. 2016. Quantitative Mass Spectrometry: an Overview. *Philosophical Transactions A*, 374, pp.1-5.
- Vasak, M. & Meloni, G. 2017. Mammalian Metallothionein-3: New Functional and Structural Insights. *International Journal of Molecular Sciences*, 18(1117), pp.1-15.
- Verdiansah. 2016. Pemeriksaan Fungsi Ginjal. *Cermin Dunia Kedokteran*, 43(2), pp.148-154.
- Wan, C.K. 2001. An Integrated Approach to Examine Pathogenic *Ganoderma lucidum*. Thesis. Hong Kong: The Chinese University of Hong Kong.
- Wang, R., Hu, H., Hu, S., He, H. & Shui, H. 2020.  $\beta$ 2-microglobulin is an Independent Indicator of Acute Kidney Injury and Outcomes in Patients with Intracerebral Hemorrhage. *Medicine*, 99(8), pp. 1-10.
- Widyawati, P., Budianta, T., Kusuma, F. & Wijaya, E. 2014. Difference of Solvent Polarity to Phytochemical Content and Antioxidant Activity of *Pluchea indica* Less Leaves Extract. *International Journal of Pharmacognosy and Phytochemical Research*, 6(4), pp. 850-855.
- Wihardjaka, A. & Harsanti, E.S. 2018. Konsentrasi Kadmium (Cd) dalam Gabah Padi dan Tanah Sawah Tadah Hujan Akibat Pemberian Pupuk Secara Rutin. *Ecolab*, 12(1), pp.1-52.
- World Health Organization. 2007. *Health Risk of Heavy Metals from Long Range Trans-Boundary Air Pollution*. Copenhagen: World Health Organization Regional Office for Europe.

- Xing, J.H., Song, J., Decock, C. & Cui, B.K. 2016. Morphological Characters and Phylogenetic Analysis Reveal a New Species within the *Ganoderma lucidum* Complex from South Africa. *Phytotaxa*, 266(2), pp.115-124.
- Xu, P., Wang, K., Lu, C., Dong, L., Gao, L., Yan, M., Aibai, S., Yang, Y & Li, X. 2017. The Protectif Effect of Lavender Essential Oil and Its Main omponent Linalool Against the Cognitif Deficits Induced by D-Galactose and Aluminum Trichloride in Mice. *Evidence-Based Complementary and Alternative Medicine*, pp. 1-11.
- Yahia, E., Gutierrez-Orozco, F. & Moreno-Perez, M. 2017. Identification of Phenolic Compounds by Liquid Chromatography Mass-Spectrometry in Seventeen Species of Wild Mushrooms in Central Mexico and Determination of Their Antioxidant Activity and Bioactive Compounds. *Food Chemistry*, 226, pp. 14-22.
- Yang, F., Xiyin, H., Cheng, Y., Tengeng, F., Bingbing, S. & Houjin, H. 2016. Protective Effects of *Ganoderma lucidum* Spore on Subacute Cadmium Nephrotoxicity in Male Rat. *Journal of Zunyi Medical University*, 39(6), pp.573-576.
- Yildiz, O., Can, Z., Laghari, A.Q., Sahin, H. & Malkoc, M. 2014. Wild Edible Mushrooms as a Natural Source Phenolics and Antioxidants. *Journal of Food Biochemistry*, 39(2), pp.1-7.
- Zeng, X., Hossain, D., Bostwick, D.G., Herrera, G.A. & Zhang, P.L. 2014. Urinary  $\beta$ 2-Microglobulin is a Good Indicator of Proximal Tubule Injury: A Correlative Study with Renal Biopses. *Journal of Biomarkers*, pp.1-7.
- Zhai, Q., Narbad, A. & Chen, W. 2015. Dietary Strategies for the Treatment of Cadmium and Lead Toxicity. *Nutrients*, 7, pp.552-571.
- Zhang, N., Chen, H., Zhang, Y., Xing, L., Li, S., Wang, X. & Sun, Z. 2015. Chemical Composition and Antioxidant Properties of Five Edible Hymenomyces Mushrooms. *International Journal of Food Science and Technology*, 50, pp.465-471.
- Zhang, Q.W., Lin, L.G. & Ye, W.C. 2018. Techniques for Extraction and Isolation of Natural Products: a Comprehensive Review. *Chinese Medicine*, 13(20), pp.1-26.
- Zhao, J.D. & Zhang, X.Q. 2000. *Flora Fungorum Sinicorum*. Beijing: Science Press.
- Zhou, Q., Yang, W., Lin, J.F. & Guo, L.Q. 2015. Optimization of Medium pH, Growth Media Compositions and Analysis of Nutritional Components of *Ganoderma lucidum* in Submerged Culture Fermentation. *European Journal of Medicinal Plants*, 6(1), pp.17-25.
- Zjawiony, J.K. 2004. Biologically Active Compunds from Aphylophorales (Polypore) Fungi. *Journal of Natural Products*, 67(2), pp.300-310.