

DAFTAR PUSTAKA

- Aamir, S., Din, Z. U., Khan, Z. S., Imtiaz, H., Ulhaq, F., Ishaq, H. 2020. Antioxidant Effect of Vitamin E on Carbon Tetrachloride Induces Tubulointerstitial and Glomerular Damage In The Kidneys of Albino Mice. *Journal of Ayub Medical College Abbottabad*. 32(3): 295-298.
- Abdullah, S., Chatterjee, P. 2025. A Review On the Molecular Mechanism and Pharmacology of Andrographolide from *Andrographis paniculata* (Burm.f.) Nees in the Management of the Interplay Between Type 2 Diabetes and Breast Cancer. *Journal of Phytomedicine Plus*. 5(2): 1-18.
- Ahmad, A. M., Mohammed, H. A., Faris, T. M., Hassan, A. S., Mohamed, H. B., El Dosoky, M. I., *et al.* 2021. Nano-Structured Lipid Carrier-Based Oral Glutathione Formulation Mediates Renoprotection against Cyclophosphamide-Induced Nephrotoxicity, and Improves Oral Bioavailability of Glutathione Confirmed through RP-HPLC Micellar Liquid Chromatography. *Journal of Molecules*. 26(1): 1-21.
- Akbar, D. R., Yonata, A., Ratna, M. G., Darwis, I. 2024. Literature Review: Galag Ginjal Akut Akibat Nefrotoksisitas Gentamisin. *Journal of Medula*. 14(9): 1721-1727.
- Al-Naimi, M. S., Rasheed, H. A., Hussien, N. R., Al-Kuraishy, H. M., Al-Gareeb, A. I. 2019. Nephrotoxicity: Role and Significance of Renal Biomarkers in the Early Detection of Acute Renal Injury. *Journal of Advanced Pharmaceutical Technology & Research*. 10(3): 95-99.
- Al-Tamimi, J., Ebaid, H., Hassan, I., Habila, M., Al Malahi, N. M., Alhazza, I. M. 2023. Effect of a Combination of Citric Acid and Selenium Nanoparticles on Male Rats Nephrotoxicity Caused by Carbon Tetrachloride. *Indian Journal of Animal Research*. 48(3): 1-8.
- Alloush, T., Delmiralp, B. 2025. A Review of Formulation Strategies for Cyclodextrin-Enhanced Solid Lipid Nanoparticles (SLNs) and Nanostructured Lipid Carriers (NLCs). *International Journal of Molecular Sciences*. 1(1): 1-26.
- Amani, P., Adriani, D., Putri, M. A., Imran, Y. 2022. Penyuluhan Risiko Penyakit Ginjal Kronis pada Pasien Hipertensi Prolanis Putewa Jakarta Timur. *Jurnal Kreativitas Pengabdian Kepada Masyarakat*. 5(10): 3287-3295.
- Aisyah, S., Harjanti, R., Nopiyanti, V. 2019. Pengaruh Panjang Rantai Karbon Lipid Padat terhadap Karakteristik Nanostructured Lipid Carrier Resveratrol. *Journal of Pharmaceutical Science and Clinical Research*. 2(1): 69-81.
- Aryani, R., Hidayat, A. F., Karimah, A. Z. 2021. Desain dan Optimasi NLC (*Nanostructured Lipid Carriers*) Ekstrak Etanol Daun The Hijau (*Camelliasinensis* L. Kuntze) dengan Variasi Lipid. *Jurnal Ilmiah Farmasi Farmasyifa*. 4(1): 41-48.

- Asiyah, R., Sa'ati, E. A., Choitrotussanijjah, Fajerin, S. L., Haq, A., Apriliana, C. 2025. Potensi Nefroprotektif Tablet Effervescent Rosa damascena Mill dalam Menurunkan Kadar Ureum dan Kreatinin pada Tikus yang Diinduksi CCL₄. *Journal of Sport Science and Health*. 7(4): 159-168.
- Azhar, S. N. A. S., Ashari, S. E., Zainuddin, N., Hassan, M. 2022. Nanostructured Lipid Carriers-Hydrogels System for Drug Delivery: Nanohybrid Technology Perspective. *Journal of Molecules*. 27(1): 1-22.
- Barnett, L. M. A., Cummings, B. S. 2018. Nephrotoxicity and Renal Pathophysiology: A Contemporary Perspective. *Journal of Toxicological Sciences Oxford*. 164(2): 379-390.
- Baruah, N., Das, M., Saikia, K. K., Kalita, J. C. 2024. Nephroprotective Effect of the Methanolic Fruit Extract of *Musa balbisiana* Colla against Carbon Tetrachloride-Induced Toxicity in Swiss Albino Mice. *International Journal of Pharmaceutical Sciences and Drug Research*. 16(1): 22-28.
- Basak, F., Dincel, G. C., Orhan, B., Yildirim, S. 2025. Resveratrol's Antiapoptotic and Antioxidant Role in Carbon Tetrachloride-Induced Nephrotoxicity of Rats. *Van Veterinary Journal*. 36(2): 126-131.
- Burgos, R. A., Alarcon, P., Quiroga, J., Manosalva, C., Hancke, J. 2021. Andrographolide, an Anti-Inflammatory Multitarget Drug: All Roads Lead to Cellular Metabolism. *Journal of Molecules*. 26(1): 1-17.
- Bosco, F., Ruga, S., Citraro, R., Leo, A., Guarnieri, L., Maiuolo, J., *et al.* 2023. The Effects of *Andrographis paniculata* (Burm.F.) Wall. Ex Nees and Andrographolide on Neuroinflammation in the Treatment of Neurodegenerative Diseases. *Journal of Nutrient*. 15(1): 1-14.
- Casamonti, M., Risaliti, L., Vanti, G., Piazzini, V., Bergonzi, M. C., Bilia, A. R. 2019. Andrographolide Loaded in Micro- and Nano-Formulations: Improved Bioavailability, Target-Tissue Distribution, and Efficacy of the "King of Bitters". *Journal of Engineering*. 5(1): 69-75.
- Cortinovis, M., Parico, N., Remuzzi, G. 2024. Tubulointerstitial Injury in Proteinuric Chronic Kidney Diseases. *Journal of Frontiers In Medicine*. 1(1): 1-11.
- Crisanto, E. Y., Djamaludin, D., Yulendasari, R., Sari, R. P., Triyono, Umsani. 2022. Penyuluhan Kesehatan tentang Perilaku Sehat Pasien Gagal Ginjal Kronik. *Journal of Public Health Concerns*. 2(2): 65-69.
- Cui, D., Naftel, J. P., Lynch, J. C., Yang, G., Daley, W. P., Haines, D. E., *et al.* 2011. *Atlas of Histology with Functional and Clinical Correlations 1th Edition*. China: Wolters Kluwer.
- Cutami, L. F., Tambunan, E. P. S., Febriani, H. 2024. Pengaruh Pemberian Ekstrak Etanol Daun Sambiloto *Andrographis paniculata* (Burm. Fil) Terhadap Histologi

- dan Faal Ginjal Tikus Putih (*Rattus norvegicus* L.) yang Diinduksi Timbal Asetat ($Pb(C_2H_3O_2)_2$). *Jurnal Pendidikan Biologi dan Sains*. 7(2): 458-475.
- Ebaid, H., Al-Tamimi, J., Habila, M., Hassan, I., Rady, A., Alhazza, I. M. 2021. Potential Therapeutic Effect of Synthesized AgNP using Curcumin Extract on CCl_4 Induced Nephrotoxicity in Male Mice. *Journal of King Saud University*. 33 (1): 1-7.
- Eroschenko, V. P. 2015. *Atlas of Histology with Functional Correlations 12th Edition*. China: Wolters Kluwer.
- Fatmasari, L. B., Hartoyo, M., Cuciati, Hartono, R., Budiyati. 2024. Hubungan Kompleksitas Regimen dengan Kepatuhan Minum Obat pada Pasien Gagal Ginjal Kronik di Ruang Hemodialisa RSUD Tidar Kota Magelang. *Journal of Borobudur Nursing Review*. 4(2): 101-114.
- Gai, Z., Gui, T., A, Ublick, G. A. K, Li., Y., Visentin, M. 2020. The Role of Mitochondria in Drug-Induced Kidney Injury. *Journal of Frontiers in Physiology*. 11(1): 1-13.
- Gartner, L. P. 2017. *Textbook of Histology 4th edition*. China: Elsevier.
- Gunasegaran, J. P. 2010. *Textbook of Histology and A Practical Guide 2th Edition*. India: Elsevier.
- Habashy, N. H., Serie, M. M. 2024. Attenuation of carbon tetrachloride-induced nephrotoxicity by gum Arabic extract via modulating cellular redox state, NF- κ B pathway, and KIM-1. *Journal of Biomedicine & Pharmacotherapy*. 173(1): 1-17.
- Hadiwati, R., Andrajati, R., Syafhan, N. F., Wahono, D. E. 2024. Pemakaian Obat Nefrotoksik Sebagai Determinan Drug-Induced Acute Kidney Injury (D-AKI). *Jurnal Penelitian Kesehatan Suara Forikes*. 15(1): 150-154/
- Hubbi, S., Hao, S., Epps, J., Ferreri, N. R. 2025. Tumour Necrosis Factor-Alpha at the Intersection of Renal Epithelial and Immune Cell Function. *The Journal of Physiology*. 603(10): 2915-2936.
- Idrus, L. S., Fristiohady, A., Arfan, Jannah, S. R. N., Anwar, I., Sida, N. A., Wahyuni, Sahidin, I., Yodha, A. W. M. *Jurnal Mandala Pharmacon Indonesia*. 9(2): 475-483.
- Irene, I., Yemina, L., Maria, S. 2022. Kualitas Hidup Pasien dengan Penyakit Ginjal Kronis dengan Terapi Hemodialisa di RS PGI Cikini. *Jurnal Keperawatan Cikini*. 3(1): 01-06.
- Iqbal, M., Vun-Sang, S., Koh, P. 2023. Effects of *Andrographis paniculata* on Carbon Tetrachloride (CCl_4)-Mediated Renal Oxidative Damage in Rats. *Journal of Tropical Biology and Conservation*. 20(1): 275-294.
- Jonny, Hasyim, M., Angelia, V., Jahya, A. N., Hilman, L. P., Kusumaningrum. V. F., et al. 2020. Incidence of Acute Kidney Injury and Use of Renal Replacement Therapy

- in Intensive Care Unit Patients in Indonesia. *Journal of BMC Nephrology*. 21(191): 1-8.
- Kahar, L. A. 2024. Development of Acute Kidney Injury Predictor Score in Intensive Care Unit Patients in Padang, Indonesia. *Acta Medica Academica Journal*. 53(2): 136-145
- Kairupan, J. D., Palar, S. 2020. Gangguan Ginjal Akut et Kausa Sepsis: Laporan Kasus. *Medical Scoper Journal*. 2(1): 36-47.
- KDIGO. 2012. Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. *Official Journal of the International Society of Nephrology*. 3(1): 1-163.
- Khairani, D., Ilyas, S., Yurnadi. 2024. *Prinsip dan Praktik Hewan Percobaan Mencit (Mus musculus)*. Medan: USU Press.
- Khalid, U., Chavez-Pino, G., Nesargikar, P., Jenkins, R. H., Bowen, T., Fraser, D, J. Chavez, R. 2016. Kidney Ischaemia Reperfusion Injury in the Rat: the EGTI Scoring System as a Valid and Reliable Tool for Histological Assessment. *Journal of Histology & Histopathology*. 3(1): 1-7.
- Khan, S., Sharma, A., Jain, V. 2023. An Overview of Nanostructured Lipid Carriers and its Application in Drug Delivery through Different Routes. *Advance Pharmaceutical Bulletin*. 13(3): 446-460.
- Kholifaturrokhmah, I., Purnawati, R. D. 2016. Pengaruh Pemberian Ekstrak Buah Karsen (*Muntingia calabura* L.) Dosis Bertingkat Terhadap Gambaran Histopatologi Ginjal Mencit Balb/c yang Hiperurisemia. *Jurnal Kedokteran Diponegoro*. 5(3): 199-209.
- Kristiana, R., Fathya, N. A., Abbas, E. H., Juliastuti, H., Linasari, D., Rachmawati, R. 2024. Gambaran Histopatologi Ginjal Mencit (*Mus musculus*) Galur DDY pada Uji Toksisitas Akut Ekstrak Etanol Daun Salam (*Syzgium polyanthum*). *Jurnal Kedokteran dan Kesehatan*. 7(1): 34-44.
- Kumar, G. N., Ali, M., Raghunathanaidu, B. D., Ahmed, S. S., Komalkumar, C., Gowda, K. M. D. H. A., *et al.* 2025. Green Approach for the Synthesis of Zinc Oxide Nanoparticles from Methanolic Stem Extract of *Andrographis Paniculata* and Evaluation of Antidiabetic Activity: In Silico GSK-3 β Analysis. *Green Processing and Synthesis Journal*. 14(1): 1-18.
- Kumar, V., Kabbas, A. K., Aster, J. C. 2018. *Robbins Basic Pathology 10th Edition*. Canada: Elsevier.
- Kurniawan, D. W., Lestari, N. D., Sulisty, H., Cacu. 2022. Pengaruh Pemberian Kombinasi Ekstrak Etanol Brotowali, Sambiloto, Meniran dan Kayu Manis Terhadap Histopatologi Glomerulus Tikus Model Hiperglikemia. *Journal of Pharmaceutical Science and Clinical Research*. 3(1): 294-306.

- Lopez, K. L., Ravasio, A., Aramundiz, J. V. G., Zacconi, F. C. 2023. Solid Lipid Nanoparticles (SLN) and Nanostructured Lipid Carriers (NLC) Prepared by Microwave and Ultrasound-Assisted Synthesis: Promising Green Strategies for the Nanoworld. *Journal of Pharmaceutics*. 15(1333): 1-26.
- Maskoen, T. T., Akbar, D. 2023. Injuri Ginjal Akut Akibat Sepsis pada Pasien di ICU. *Jurnal Anestesiologi Indonesia*. 15(1): 69-85.
- Mehta, S., Pharmacy, M., Sharma, A. K., Singh, K. 2021. Pharmacological Activities and Molecular Mechanism of Pure and Crude Extract of *Andrographis paniculata*: An Update. *Journal of Phytomedicine Plus*. 1(4): 1-19.
- Mescher, A. L. 2018. *Junqueira's Basic Histology Text & Atlas 15th Edition*. United States: McGraw-Hill Education.
- Mursal, I. L. P., Fajriyani, A., Nurfirzatullah, I., Insani, M., Shafira, R. A. 2023. Jenis-jenis dan Ukuran Nanopartikel dalam Sistem Penghantaran Obat yang Baik: Literature Review Article. *Jurnal Ilmiah Wahana Pendidikan*. 9(16): 457-462.
- Parthasarathy, M., Prince, S. E. 2023. *Andrographis paniculata* (Burm.f.) Nees Alleviates Methotrexate-Induced Hepatotoxicity in Wistar Albino Rats. *Journal of Life*. 13(1): 1-15
- Putri, D. S., Listyarini, A. D., Mulyani, T. D. 2024. Pengaruh Afirmasi Positif terhadap Kualitas Tidur Pasien Gagal Ginjal Kronik yang Menjalani Hemodialisa di RS Mardi Rahayu Kudus. *Jurnal Keperawatan dan Kesehatan Masyarakat*. 13(2): 150-164.
- Oktaria, R., Susianti, Sari, R. D. P. 2019. Efek Protektif *Thymoquinone* Terhadap Gambaran Histopatologi Ginjal Tikus Putih (*Rattus norvegicus*) Galur *Sprague dawley* yang Diinduksi Rifampisin. *Jurnal Kesehatan dan Agromedis*. 6(1): 78-82.
- Ovale, W. K., Nahirney, P. C. 2013. *Netter's Essential Histology 2th Edition*. Philadelphia: Elsevier.
- Rejeki, P. S., Putri, E. A. C., Prasetya, R. E. 2018. *Ovariectomi pada Tikus dan Mencit*. Surabaya: Airlangga University Press.
- Rohmah, M., Raharjo, S., Hidayat, C., Martien, R. 2019. Formulasi dan Stabilitas Nanostructured Lipid Carrier dari Campuran Fraksi Sterin dan Olein Minyak Kelapa Sawit. *Jurnal Aplikasi Teknologi Pangan*. 8(1): 23-30.
- Royani, J. I., Hardianto, D., Wahyuni, S. 2014. Analisa Kandungan Andrographolide pada Tanaman Sambiloto (*Andrographis paniculata*) dari 12 Lokasi di Pulau Jawa. *Jurnal Bioteknologi & Biosains Indonesia*. 1(1): 23-29.
- Safani, D., Rahayu, M. S., Surayya, R. 2025. Pengaruh Perlindungan Propolis terhadap Gambaran Histopatologi Ginjal Tikus Putih (*Rattus Novergicus*) Jantan Galur Wistar yang diinduksi Ibuprofen. *Jurnal Ilmiah Manusia dan Kesehatan*. 8(2): 356-365.

- Sari, L. M. 2018. Apoptosis: Mekanisme Molekuler Kematian Sel. *Cakradonya Dental Journal*. 10(2): 65-70.
- Schunke, M., Schulte. E., Schumacher, U. 2020. *Prometheus Atlas of Anatomy 4th Edition* New York: Thieme Medical Publisher.
- Sifa, N. A., Febriani, H., Widiarti, L. 2025. Pengaruh Pemberian Ekstrak Etanol Buah Aren (*Arenga pinnata* Merr.) terhadap Kadar Kreatinin, Ureum, dan Histologi Ginjal Tikus Putih (*Rattus novergicus* L.) yang Diinduksi Karbon Tetraklorida (CCL₄). *Jurnal Pendidikan Biologi*. 10(2): 1173-1181.
- Songvut, P., Suriyo, T., Panomvana, D., Rangkadilok, N., Satayavivad, J. 2022. A Comprehensive Review on Disposition Kinetics and Dosage of Oral Administration of *Andrographis paniculata*, An Alternative Herbal Medicine, in Co-Treatment of Coronavirus. *Journal of Frontiers in Pharmacology*. 1(1): 1-20.
- Standley, A., Xie, J., Lau, A. W. Y., Grote, L., Gifford, A. J. 2024. Working with Miraculous Mice: *Mus musculus* as a Model Organism. *Current Protocols*. 4(1): 1-50.
- Stefanac, T., Grgas, D., Dragicevic, T. L. 2021. Xenobiotics—Division and Methods of Detection: A Review. *Journal of Xenobiotics*. 11(1): 130-141.
- Tortora, G. J., Derrickson, B. *Principles of Anatomy & Physiology 14th edition*. United State of America: Wiley.
- Triyudha, G., Febriani, H., Hutasuhut, M. A. 2025. Pengaruh Pemberian Ekstrak Etanol Buah Aren (*Arenga pinnata* Merr.) terhadap Profil Darah Tikus Putih (*Rattus novergicus* L.) yang Diinduksi Karbon Tetraklorida (CCL₄). *Jurnal Pendidikan Biologi*. 10(2): 1182-1189.
- Unsal, V., Cicek, M., Sabancillar, I. 2021. Toxicity of Carbon Tetrachloride, Free Radicals, and Role of Antioxidants. *Journal of Reviews on Environmental Health*. 36(2): 279-295.
- Wathoni, N., Suhandi, C., Elamin, K. M., Lesmana, R., Hasan, N., Mohammed, A. F. A., *et al.* 2024. Advancements and Challenges of Nanostructured Lipid Carriers for Wound Healing Applications. *International Journal of Nanomedicine*. 2024(19): 8091-8113.
- Watuguly, T., Pattiasina, E. B., Maulota, P. 2022. Pengaruh Ekstrak Kayu (*Cinnamom burmanii*) dalam Memperbaiki Organ Ginjal Mencit yang Diinduksi Karbon Tetraklorida (CCl₄). *Journal of Biology*. 11(1): 78-88.
- Wiyanto, A., Nurhamidah. 2023. Analisis Pengaruh Nanopartikel terhadap Aktivitas Antiaging. *Jurnal Lentera*. 4(1): 25-29.
- Yunita, E. 2021. Mekanisme Kerja Andrografolida dari Sambiloto Sebagai Senyawa Antioksidan. *Herb Medicine Journal*. 4(1): 43-56.