

## DAFTAR PUSTAKA

- Abbas, A. K., Lichtman, A. H., & Pillai, S. (2022). *Cellular and Molecular Immunology* (10th ed.). Elsevier.
- Ahammed, M. T., sultan, M. Z., Hossain, M. S., Al Mahtab, M., & Bachar, S. C. (2025). Degradation of Andrographolide in *Andrographis paniculata* Over 1 Year Storage. *Phytochemical Analysis*, 36(1), 289–295. <https://doi.org/https://doi.org/10.1002/pca.3441>
- Akira, S., & Maeda, K. (2021). Control of RNA Stability in Immunity. *Annu Rev Immunol*, 39, 481–509. <https://doi.org/10.1146/annurev-immunol-101819-075147>
- Al-Qahtani, A. A., Alhamlan, F. S., & Al-Qahtani, A. A. (2024). Pro-Inflammatory and Anti-Inflammatory Interleukins in Infectious Diseases: A Comprehensive Review. *Trop Med Infect Dis*, 9(1). <https://doi.org/10.3390/tropicalmed9010013>
- Alfaifi, M. (2018). *Cell Therapy for Acute Liver Injury- In Vivo Efficacy of Mesenchymal Stromal Cells in Toxic and Immune-Mediated Murine Hepatitis* [University of Birmingham].
- Alkhamach, D., Khan, S. A., Greish, K., Hassan, H., & Haider, M. (2025). Nanostructured lipid carriers in cancer therapy: Advances in passive and active targeting strategies. *Int J Pharm*, 678, 125736. <https://doi.org/10.1016/j.ijpharm.2025.125736>
- Allameh, A., Niayesh-Mehr, R., Aliarab, A., Sebastiani, G., & Pantopoulos, K. (2023). Oxidative Stress in Liver Pathophysiology and Disease. *Antioxidants (Basel)*, 12(9). <https://doi.org/10.3390/antiox12091653>
- Amiri, F., Ziaei Chamgordani, S., & Ghourchian, H. (2024). An in vitro study for reducing the cytotoxicity and dose dumping risk of remdesivir via entrapment in nanostructured lipid carriers. *Sci Rep*, 14(1), 19360. <https://doi.org/10.1038/s41598-024-70003-7>
- Archuleta, S. R., Goodrich, J. A., & Kugel, J. F. (2024). Mechanisms and Functions of the RNA Polymerase II General Transcription Machinery During the

Transcription Cycle. *Biomolecules*, 14(2).  
<https://doi.org/10.3390/biom14020176>

- Azza, A. W. (2024). *Formulasi dan Karakterisasi Nanostructured Lipid Carrier (NLC) Ekstrak Etanol Herba Sambiloto (Andrographis paniculata) Sebagai Kandidat Terapi Penyakit Liver*. Universitas Jenderal Soedirman.
- Barral, A., & DeJardin, J. (2023). The Chromatin Signatures of Enhancers and Their Dynamic Regulation. *Nucleus*, 14(1), 2160551.  
<https://doi.org/10.1080/19491034.2022.2160551>
- Biassoni, R. R., A. (2020). Quantitative Real-Time PCR. In J. M. Walker (Ed.), (Second ed.). Humana Press.
- Björnsson, E. S., Vucic, V., Stirnimann, G., & Robles-Díaz, M. (2022). Role of Corticosteroids in Drug-Induced Liver Injury. A Systematic Review. *Frontiers in Pharmacology*, 13. <https://doi.org/10.3389/fphar.2022.820724>
- Cai, Q., Zhang, W., Sun, Y., Xu, L., Wang, M., Wang, X., Wang, S., & Ni, Z. (2022). Study on The Mechanism of Andrographolide Activation. *Front Neurosci*, 16, 977376. <https://doi.org/10.3389/fnins.2022.977376>
- Castro, S. R., Ribeiro, L. N. M., Breikreitz, M. C., Guilherme, V. A., Rodrigues da Silva, G. H., Mitsutake, H., Alcantara, A. C. S., Yokaichiya, F., Franco, M., Clemens, D., Kent, B., Lancellotti, M., de Araujo, D. R., & de Paula, E. (2021). A Pre-Formulation Study of Tetracaine Loaded in Optimized Nanostructured Lipid Carriers. *Sci Rep*, 11(1), 21463.  
<https://doi.org/10.1038/s41598-021-99743-6>
- Chaaban, H., Ioannou, I., Paris, C., Charbonnel, C., & Ghoul, M. (2017). The Photostability of Flavanones, Flavonols and Flavones and Evolution of Their Antioxidant Activity. *Journal of Photochemistry and Photobiology A: Chemistry*, 336, 131–139.  
<https://doi.org/10.1016/j.jphotochem.2016.12.027>
- Chauhan, I., Yasir, M., Verma, M., & Singh, A. P. (2020). Nanostructured Lipid Carriers: A Groundbreaking Approach for Transdermal Drug Delivery. *Adv Pharm Bull*, 10(2), 150–165. <https://doi.org/10.34172/apb.2020.021>
- Chen, C., Wu, J., Hua, Q., Tel-Zur, N., Xie, F., Zhang, Z., Chen, J., Zhang, R., Hu, G., Zhao, J., & Qin, Y. (2019). Identification of Reliable Reference Genes

- for Quantitative Real-Time PCR Normalization in Pitaya. *Plant Methods*, 15, 70. <https://doi.org/10.1186/s13007-019-0455-3>
- Chen, L., Deng, H., Cui, H., Fang, J., Zuo, Z., Deng, J., Li, Y., Wang, X., & Zhao, L. (2018). Inflammatory Responses and Inflammation-Associated Diseases in Organs. *Oncotarget*, 9(6), 7204–7218. <https://doi.org/10.18632/oncotarget.23208>
- Cunningham, R. P., & Porat-Shliom, N. (2021). Liver Zonation - Revisiting Old Questions with New Technologies. *Front Physiol*, 12, 732929. <https://doi.org/10.3389/fphys.2021.732929>
- Duong, V. A., Nguyen, T. T., & Maeng, H. J. (2020). Preparation of Solid Lipid Nanoparticles and Nanostructured Lipid Carriers for Drug Delivery and the Effects of Preparation Parameters of Solvent Injection Method. *Molecules*, 25(20). <https://doi.org/10.3390/molecules25204781>
- Elmowafy, M., & Al-Sanea, M. M. (2021). Nanostructured Lipid Carriers (Nlcs) as Drug Delivery Platform: Advances in Formulation and Delivery Strategies. *Saudi Pharm J*, 29(9), 999–1012. <https://doi.org/10.1016/j.jsps.2021.07.015>
- Elshazly, E. M., Arafa, M. G., & Nour, S. A. (2025). Development and Optimization of Moxifloxacin Solid Lipid Nanoparticles Via Double Emulsion Organic Solvent Free Technique Applying Box-Behnken Experimental Design. *Sci Rep*, 15(1), 42013. <https://doi.org/10.1038/s41598-025-26860-x>
- Esteves, F., Rueff, J., & Kranendonk, M. (2021). The Central Role of Cytochrome P450 in Xenobiotic Metabolism-A Brief Review on a Fascinating Enzyme Family. *J Xenobiot*, 11(3), 94–114. <https://doi.org/10.3390/jox11030007>
- FavorGen. (2025). *FavorPrep™ Tissue Total RNA Mini Kit: User manual*. <https://favorgen.com/data/manual/files/1751273798119458366.pdf>
- Gandhirajan, A., Roychowdhury, S., Kibler, C., Bauer, S. R., Nagy, L. E., & Vachharajani, V. (2021). Ethanol Exposure Attenuates Immune Response in Sepsis via Sirtuin 2 Expression. *Alcohol Clin Exp Res*, 45(2), 338–350. <https://doi.org/10.1111/acer.14542>
- Gao, N., Huo, Y., Cheng, F., Wang, T., Zhang, X., Zhang, L., Hu, W., Li, J., Yuan, P., Liu, J., Wang, Y., & Yan, J. (2024). Evaluation of Reverse Transcription Yield of RNA Standards and Forensic Samples Based on Droplet Digital

- PCR. *Biochemical and Biophysical Research Communications*, 711, Article 149909. <https://doi.org/https://doi.org/10.1016/j.bbrc.2024.149909>
- Gratz, C., Bui, M. L. U., Thaqi, G., Kirchner, B., Loewe, R. P., & Pfaffl, M. W. (2022). Obtaining Reliable RT-qPCR Results in Molecular Diagnostics-MIQE Goals and Pitfalls for Transcriptional Biomarker Discovery. *Life (Basel)*, 12(3). <https://doi.org/10.3390/life12030386>
- Haider, M., Abdin, S. M., Kamal, L., & Orive, G. (2020). Nanostructured Lipid Carriers for Delivery of Chemotherapeutics: A Review. *Pharmaceutics*, 12(3). <https://doi.org/10.3390/pharmaceutics12030288>
- Hariadi, N. N. A., Basmalah, N., Laprilski, D. H., Azzahra, K., & mulki, M. A. (2025). Literature Review: Effect of Thin Layer Chromatography Method Parameters for Identification of Caffeine in Coffee. *Journal of Pharmaceutical and Sciences*. <https://doi.org/10.36490/journal-jps.com>
- Hashemi, F. S., Farzadnia, F., Aghajani, A., Ahmadzadeh NobariAzar, F., & Pezeshki, A. (2020). Conjugated Linoleic Acid Loaded Nanostructured Lipid Carrier as a Potential Antioxidant Nanocarrier for Food Applications. *Food Sci Nutr*, 8(8), 4185–4195. <https://doi.org/10.1002/fsn3.1712>
- He, K., Wei, D., Liu, Q., Liu, X., Zhou, D., Chen, S., Zhu, D., & Xu, X. (2024). Identification of Stable Housekeeping Genes in Mouse Liver for Studying Carbon Tetrachloride-Induced Injury and Cellular Senescence. *Sci Rep*, 14(1), 26544. <https://doi.org/10.1038/s41598-024-78183-y>
- Ho, I. C., & Miaw, S. C. (2016). Regulation of IL-4 Expression in Immunity and Diseases. *Adv Exp Med Biol*, 941, 31–77. [https://doi.org/10.1007/978-94-024-0921-5\\_3](https://doi.org/10.1007/978-94-024-0921-5_3)
- Hylander, B. L., Repasky, E. A., & Sexton, S. (2022). Using Mice to Model Human Disease: Understanding the Roles of Baseline Housing-Induced and Experimentally Imposed Stresses in Animal Welfare and Experimental Reproducibility. *Animals (Basel)*, 12(3). <https://doi.org/10.3390/ani12030371>
- Hyun, J. E., Yi, H.-Y., Hong, G.-P., & Chun, J.-Y. (2022). Digestion Stability of Curcumin-Loaded Nanostructured Lipid Carrier. *Lwt*, 162. <https://doi.org/10.1016/j.lwt.2022.113474>

- Ishibashi, R., Matsuhisa, R., Nomoto, M., Chudan, S., Nishikawa, M., Tabuchi, Y., Ikushiro, S., Nagai, Y., & Furusawa, Y. (2023). Effect of Oral Administration of Polyethylene Glycol 400 on Gut Microbiota Composition and Diet-Induced Obesity in Mice. *Microorganisms*, *11*(8). <https://doi.org/10.3390/microorganisms11081882>
- Ishida, K., Nagatake, T., Saika, A., Kawai, S., Node, E., Hosomi, K., & Kunisawa, J. (2023). Induction of Unique Macrophage Subset by Simultaneous Stimulation With LPS and IL-4. *Front Immunol*, *14*, 1111729. <https://doi.org/10.3389/fimmu.2023.1111729>
- Jager, R., Purpura, M., & Fuller, J. C., Jr. (2020). Subchronic (90-Day) Repeated Dose Toxicity Study of Disodium Adenosine-5'-Triphosphate in Rats. *Regul Toxicol Pharmacol*, *116*, 104760. <https://doi.org/10.1016/j.yrtph.2020.104760>
- Jalali, M., Zaborowska, J., & Jalali, M. (2017). The Polymerase Chain Reaction. In *Basic Science Methods for Clinical Researchers* (pp. 1–18). <https://doi.org/10.1016/b978-0-12-803077-6.00001-1>
- Jiang, Y., Cai, R., Huang, Y., Zhu, L., Xiao, L., Wang, C., & Wang, L. (2024). Macrophages in organ fibrosis: from pathogenesis to therapeutic targets. *Cell Death Discov*, *10*(1), 487. <https://doi.org/10.1038/s41420-024-02247-1>
- Kemenkes, R. I. (2017). *Farmakope Herbal Indonesia* (3 ed.). Kementrian Kesehatan Republik Indonesia.
- Kim, N., Lertnimitphun, P., Jiang, Y., Tan, H., Zhou, H., Lu, Y., & Xu, H. (2019). Andrographolide inhibits inflammatory responses in LPS-stimulated macrophages and murine acute colitis through activating AMPK. *Biochem Pharmacol*, *170*, 113646. <https://doi.org/10.1016/j.bcp.2019.113646>
- Koepfen, B. M. S., B. A. (2024). *Berne & Levy Physiology* (8th ed.). Elsevier.
- Kovarik, P., Bestehorn, A., & Fesselet, J. (2021). Conceptual Advances in Control of Inflammation by the RNA-Binding Protein Tristetraprolin. *Front Immunol*, *12*, 751313. <https://doi.org/10.3389/fimmu.2021.751313>
- Koyama, Y., & Brenner, D. A. (2017). Liver inflammation and fibrosis. *J Clin Invest*, *127*(1), 55–64. <https://doi.org/10.1172/JCI88881>

- Kurniawan, D. W. (2022). Targeting of Macrophages and Hepatic Stellate Cells for The Treatment of Liver Diseases.
- Kurniawan, D. W. (2024). *Nanoteknologi Untuk Kesehatan*. CV. Sakti.
- Kurniawan, D. W., Jajoriya, A. K., Dhawan, G., Mishra, D., Argemi, J., Bataller, R., Storm, G., Mishra, D. P., Prakash, J., & Bansal, R. (2018). Therapeutic Inhibition of Spleen Tyrosine Kinase in Inflammatory Macrophages Using PLGA Nanoparticles for The Treatment of Non-Alcoholic Steatohepatitis. *J Control Release*, 288, 227–238. <https://doi.org/10.1016/j.jconrel.2018.09.004>
- Lapmanee, S., Rimsueb, N., Bunwatcharaphansakun, P., Namdee, K., Wongchitrat, P., Bhubhanil, S., Supkamonseni, N., Charoenphon, N., Inchan, A., Saenmuangchin, R., & Khongkow, M. (2025). Oral Andrographolide Loaded Lipid Nanocarriers Alleviate Stress Behaviors and Hippocampal Damage in Tnf Alpha Induced Neuroinflammatory Mice. *Sci Rep*, 15(1), 11939. <https://doi.org/10.1038/s41598-025-96758-1>
- Laurence, D. R. B., A. L. (1964). *Evaluation of Drug Activities: Pharmacometrics*. Academic Press.
- Layton, R., Layton, D., Beggs, D., Fisher, A., Mansell, P., & Stanger, K. J. (2023). The Impact of Stress and Anesthesia on Animal Models of Infectious Disease. *Front Vet Sci*, 10, 1086003. <https://doi.org/10.3389/fvets.2023.1086003>
- Lee, C., Yoon, S., & Moon, J. O. (2023). Kaempferol Suppresses Carbon Tetrachloride-Induced Liver Damage in Rats via the MAPKs/NF-kappaB and AMPK/Nrf2 Signaling Pathways. *Int J Mol Sci*, 24(8). <https://doi.org/10.3390/ijms24086900>
- Lestari, U., Muhaimin, M., Chaerunisaa, A. Y., & Sujarwo, W. (2023). Improved Solubility and Activity of Natural Product in Nanohydrogel. *Pharmaceuticals (Basel)*, 16(12). <https://doi.org/10.3390/ph16121701>
- Li, M., Wang, M., Wen, Y., Zhang, H., Zhao, G. N., & Gao, Q. (2023). Signaling Pathways in Macrophages: Molecular Mechanisms and Therapeutic Targets. *MedComm (2020)*, 4(5), e349. <https://doi.org/10.1002/mco2.349>

- Li, R., Yang, W., Yin, Y., Ma, X., Zhang, P., & Tao, K. (2021). 4-OI Attenuates Carbon Tetrachloride-Induced Hepatic Injury via Regulating Oxidative Stress and the Inflammatory Response. *Front Pharmacol*, *12*, 651444. <https://doi.org/10.3389/fphar.2021.651444>
- Lu, L., Hu, X., & Jin, X. (2023). IL-4 as a Potential Biomarker for Differentiating Major Depressive Disorder From Bipolar Depression. *Medicine (Baltimore)*, *102*(15), e33439. <https://doi.org/10.1097/MD.00000000000033439>
- Masaenah, E., Elya, B., Setiawan, H., Fadhilah, Z., & Arianti, V. (2021). Quantification of Andrographolide in *Andrographis paniculata* (Burm.f.) Nees, Myricetin in *Syzygium cumini* (L.) Skeels, and Brazilin in *Caesalpinia sappan* L. by HPLC Method. *Pharmacognosy Journal*, *13*(6), 1437–1444. <https://doi.org/10.5530/pj.2021.13.182>
- Maurer, M., Klassert, T. E., Loffler, B., Slevogt, H., & Tuchscher, L. (2023). Extraction of High-Quality RNA from *S. aureus* Internalized by Endothelial Cells. *Microorganisms*, *11*(4). <https://doi.org/10.3390/microorganisms11041020>
- Min, X., Zhu, T., Hu, X., Hou, C., He, J., & Liu, X. (2023). Transcriptome and Metabolome Analysis of Isoquinoline Alkaloid Biosynthesis of *Coptis chinensis* in Different Years. *Genes (Basel)*, *14*(12). <https://doi.org/10.3390/genes14122232>
- Munakarmi, S., Gurau, Y., Shrestha, J., Risal, P., Park, H. S., Shin, H. B., & Jeong, Y. J. (2022). Hepatoprotective Effects of a Natural Flavanol 3,3'-Diindolylmethane against CCl<sub>4</sub>-Induced Chronic Liver Injury in Mice and TGFβ1-Induced EMT in Mouse Hepatocytes via Activation of Nrf2 Cascade. *Int J Mol Sci*, *23*(19). <https://doi.org/10.3390/ijms231911407>
- Mussard, E., Cesaro, A., Lespessailles, E., Legrain, B., Berteina-Raboin, S., & Toumi, H. (2019). Andrographolide, a Natural Antioxidant: An Update. *Antioxidants (Basel)*, *8*(12). <https://doi.org/10.3390/antiox8120571>
- Nemeth, Z., Csoka, I., Semnani Jazani, R., Sipos, B., Haspel, H., Kozma, G., Konya, Z., & Dobo, D. G. (2022). Quality by Design-Driven Zeta Potential Optimisation Study of Liposomes with Charge Imparting Membrane

Additives. *Pharmaceutics*, 14(9).  
<https://doi.org/10.3390/pharmaceutics14091798>

Nie, W., Xu, F., Zhou, K., Yang, X., Zhou, H., & Xu, B. (2022). Stearic Acid Prevent Alcohol-Induced Liver Damage by Regulating The Gut Microbiota. *Food Research International*, 155, Article 111095.  
<https://doi.org/https://doi.org/10.1016/j.foodres.2022.111095>

Nouvel, A., Laget, J., Duranton, F., Leroy, J., Desmetz, C., Servais, M. D., de Preville, N., Galtier, F., Nocca, D., Builles, N., Rebuffat, S., & Lajoix, A. D. (2021). Optimization of RNA Extraction Methods From Human Metabolic Tissue Samples of The COMET Biobank. *Sci Rep*, 11(1), 20975.  
<https://doi.org/10.1038/s41598-021-00355-x>

Ortiz, A. C., Yanez, O., Salas-Huenuleo, E., & Morales, J. O. (2021). Development of a Nanostructured Lipid Carrier (NLC) by a Low-Energy Method, Comparison of Release Kinetics and Molecular Dynamics Simulation. *Pharmaceutics*, 13(4). <https://doi.org/10.3390/pharmaceutics13040531>

Parthasarathy, M., & Prince, S. E. (2023). Andrographis paniculata (Burm.f.) Nees Alleviates Methotrexate-Induced Hepatotoxicity in Wistar Albino Rats. *Life (Basel)*, 13(5). <https://doi.org/10.3390/life13051173>

Pathak, A. K., Kural, S., Singh, S., Kumar, L., Gupta, M., & Jain, G. (2025). Analysis of qRT-PCR Data to Identify the Most Stable Reference Gene Using gQuant. *Bio Protoc*, 15(9), e5292.  
<https://doi.org/10.21769/BioProtoc.5292>

Patil, R., & Jain, V. (2021). Andrographolide: A Review of Analytical Methods. *J Chromatogr Sci*, 59(2), 191–203.  
<https://doi.org/10.1093/chromsci/bmaa091>

Prema, R., Prabhakaran, M., Meenakshi, M., & Sankar, C. (2025). A Comprehensive Review on Nanostructured Lipid Carriers. *Journal of Drug Delivery and Therapeutics*, 15(10), 172–186.  
<https://doi.org/10.22270/jddt.v15i10.7390>

Qi, J., Li, L., Yan, X., Hua, W., & Zhou, Z. (2023). Sappanone a Alleviates The Severity of Carbon Tetrachloride-Induced Liver Fibrosis in Mice. *Antioxidants (Basel)*, 12(9). <https://doi.org/10.3390/antiox12091718>

- Raman, S., Murugaiyah, V., & Parumasivam, T. (2022). Andrographis paniculata Dosage Forms and Advances in Nanoparticulate Delivery Systems: An Overview. *Molecules*, 27(19). <https://doi.org/10.3390/molecules27196164>
- Ressa, M., Widji, S., & Tristiana Erawati, M. (2025). Design and Optimization of Nanostructured Lipid Carriers for Quercetin in Skin Lightening Applications. *Jurnal Farmasi Dan Ilmu Kefarmasian Indonesia*, 12(1), 15–25. <https://doi.org/10.20473/jfiki.v12i12025.15-25>
- Rice, J. B., White, A. G., Scarpati, L. M., Wan, G., & Nelson, W. W. (2017). Long-term Systemic Corticosteroid Exposure: A Systematic Literature Review. *Clin Ther*, 39(11), 2216–2229. <https://doi.org/10.1016/j.clinthera.2017.09.011>
- Roohani, S., & Tacke, F. (2021). Liver Injury and the Macrophage Issue: Molecular and Mechanistic Facts and Their Clinical Relevance. *Int J Mol Sci*, 22(14). <https://doi.org/10.3390/ijms22147249>
- Rowe, R. C., Sheskey, P. J., & Quinn, M. E. (2017). Handbook of Pharmaceutical Excipients. In (Eight ed.). Pharmaceutical Press.
- Salvi, V. R., & Pawar, P. (2019). Nanostructured Lipid Carriers (NLC) System: A Novel Drug Targeting Carrier. *Journal of Drug Delivery Science and Technology*, 51, 255–267. <https://doi.org/10.1016/j.jddst.2019.02.017>
- Shaharudin, N. S., Surindar Singh, G. K., Kek, T. L., & Sultan, S. (2024). Targeting Signaling Pathways with Andrographolide in Cancer Therapy (Review). *Mol Clin Oncol*, 21(5), 81. <https://doi.org/10.3892/mco.2024.2779>
- Shao, S., Zhang, Y., Li, G., Yu, Z., Cao, Y., Zheng, L., Zhang, K., Han, X., Shi, Z., Cui, H., Song, X., Hong, W., & Han, T. (2022). The Dynamics of Cell Death Patterns and Regeneration During Acute Liver Injury in Mice. *FEBS Open Bio*, 12(5), 1061–1074. <https://doi.org/10.1002/2211-5463.13383>
- Shen, H., Huang, S., Li, R., Wang, H., Yang, Y., Liu, Y., Ye, J., & Ma, X. (2025). Development and validation of a static multiple light scattering (SMLS) method for real-time colloidal stability assessment in nanoparticle formulations. *Journal of Pharmaceutical Analysis*. <https://doi.org/10.1016/j.jpha.2025.101396>

- Shiau, M. Y., Chuang, P. H., Yang, C. P., Hsiao, C. W., Chang, S. W., Chang, K. Y., Liu, T. M., Chen, H. W., Chuang, C. C., Yuan, S. Y., & Chang, Y. H. (2019). Mechanism of Interleukin-4 Reducing Lipid Deposit by Regulating Hormone-Sensitive Lipase. *Sci Rep*, 9(1), 11974. <https://doi.org/10.1038/s41598-019-47908-9>
- Shidfar, F., Bahrololumi, S. S., Doaei, S., Mohammadzadeh, A., Gholamalizadeh, M., & Mohammadimanesh, A. (2018). The Effects of Extra Virgin Olive Oil on Alanine Aminotransferase, Aspartate Aminotransferase, and Ultrasonographic Indices of Hepatic Steatosis in Nonalcoholic Fatty Liver Disease Patients Undergoing Low Calorie Diet. *Can J Gastroenterol Hepatol*, 2018, 1053710. <https://doi.org/10.1155/2018/1053710>
- Singh, A. S., P. (2024). CCl4 Induced Hepatotoxicity Study of *Andrographis paniculata* and Its Phytoconstituents. *Afr. J. Biomed. Res*, 27(4). <https://doi.org/10.53555/AJBR.v27i4S.7165>
- Singh, K. P., Miaskowski, C., Dhruva, A. A., Flowers, E., & Kober, K. M. (2018). Mechanisms and Measurement of Changes in Gene Expression. *Biol Res Nurs*, 20(4), 369–382. <https://doi.org/10.1177/1099800418772161>
- Songvut, P., Boonyarattanasoonthorn, T., Nuengchamnong, N., Junsai, T., Kongratanapasert, T., Supannapan, K., & Khemawoot, P. (2024). Enhancing oral bioavailability of andrographolide using solubilizing agents and bioenhancer: comparative pharmacokinetics of *Andrographis paniculata* formulations in beagle dogs. *Pharm Biol*, 62(1), 183–194. <https://doi.org/10.1080/13880209.2024.2311201>
- Subramaniam, B., Siddik, Z. H., & Nagoor, N. H. (2020). Optimization of Nanostructured Lipid Carriers: Understanding The Types, Designs, and Parameters in The Process of Formulations. *Journal of Nanoparticle Research*, 22(6). <https://doi.org/10.1007/s11051-020-04848-0>
- Subroto, E., Andoyo, R., & Indiarso, R. (2023). Solid Lipid Nanoparticles: Review of the Current Research on Encapsulation and Delivery Systems for Active and Antioxidant Compounds. *Antioxidants (Basel)*, 12(3). <https://doi.org/10.3390/antiox12030633>

- Susilo, R. J. K., Winarni, D., Husen, S. A., Hayaza, S., Wahyuningsih, S. P. A., Doong, R., & Darmanto, W. (2021). Hepatoprotective Effect of Ganoderma applanatum Crude Polysaccharides on Carbon Tetrachloride-Induced Early Liver Fibrosis in Mice. *Pharmacognosy Journal*, *13*(6), 1428–1436. <https://doi.org/10.5530/pj.2021.13.181>
- Tamboli, A. M. M. T., J. M. (2025). Zeta Potential: A Comprehensive Review. *International Research Journal of Pharmacy and Medical Sciences*, *8*(2), 115–124.
- Tian, Y., Zhou, S., Takeda, R., Okazaki, K., Sekita, M., & Sakamoto, K. (2021). Anti-Inflammatory Activities of Amber Extract in Lipopolysaccharide-Induced RAW 264.7 Macrophages. *Biomed Pharmacother*, *141*, 111854. <https://doi.org/10.1016/j.biopha.2021.111854>
- Tipduangta, P., Chansakaow, S., Tansakul, P., Meungjai, R., & Dilokthornsakul, P. (2024). Polymer Matrix and Manufacturing Methods in Solid Dispersion System for Enhancing Andrographolide Solubility and Absorption: A Systematic Review. *Pharmaceutics*, *16*(5). <https://doi.org/10.3390/pharmaceutics16050688>
- Ullah, H., Khan, A., Baig, M. W., Ullah, N., Ahmed, N., Tipu, M. K., Ali, H., & Khan, S. (2020). Poncirin Attenuates CCL4-Induced Liver Injury Through Inhibition of Oxidative Stress and Inflammatory Cytokines in Mice. *BMC Complement Med Ther*, *20*(1), 115. <https://doi.org/10.1186/s12906-020-02906-7>
- Villa, A., Rizzi, N., Vegeto, E., Ciana, P., & Maggi, A. (2015). Estrogen Accelerates The Resolution of Inflammation in Macrophagic Cells. *Scientific reports*, *5*(1), 15224.
- Voelkl, B., Altman, N. S., Forsman, A., Forstmeier, W., Gurevitch, J., Jaric, I., Karp, N. A., Kas, M. J., Schielzeth, H., Van de Castele, T., & Wurbel, H. (2020). Reproducibility of Animal Research in Light of Biological Variation. *Nat Rev Neurosci*, *21*(7), 384–393. <https://doi.org/10.1038/s41583-020-0313-3>
- Wang, B., Zhu, F., Zheng, X., Yang, L., Diao, Y., & Hu, Z. (2024). Evaluation and Validation of Suitable Reference Genes For Quantitative Real-Time PCR

- Analysis in Lotus (*Nelumbo nucifera* Gaertn.). *Sci Rep*, 14(1), 10857. <https://doi.org/10.1038/s41598-024-61806-9>
- Wang, J., Wang, L., Wu, Q., Cai, Y., Cui, C., Yang, M., Sun, B., Mao, L., & Wang, Y. (2024). Interleukin-4 Modulates Neuroinflammation by Inducing Phenotypic Transformation of Microglia Following Subarachnoid Hemorrhage. *Inflammation*, 47(1), 390–403. <https://doi.org/10.1007/s10753-023-01917-z>
- Wang, S., Wang, J., & Lv, X. (2018). Selection of Reference Genes for Expression Analysis in Mouse Models of Acute Alcoholic Liver Injury. *Int J Mol Med*, 41(6), 3527–3536. <https://doi.org/10.3892/ijmm.2018.3527>
- Watanabe, S., Alexander, M., Misharin, A. V., & Budinger, G. R. S. (2019). The Role of Macrophages in The Resolution of Inflammation. *J Clin Invest*, 129(7), 2619–2628. <https://doi.org/10.1172/JCI124615>
- Wei, J., Wang, S., Huang, J., Zhou, X., Qian, Z., Wu, T., Fan, Q., Liang, Y., & Cui, G. (2024). Network Medicine-Based Analysis of The Hepatoprotective Effects of *Amomum villosum* Lour. on Alcoholic Liver Disease in Rats. *Food Sci Nutr*, 12(5), 3759–3773. <https://doi.org/10.1002/fsn3.4046>
- Weng, S. Y., Wang, X., Vijayan, S., Tang, Y., Kim, Y. O., Padberg, K., Regen, T., Molokanova, O., Chen, T., Bopp, T., Schild, H., Brombacher, F., Crosby, J. R., McCaleb, M. L., Waisman, A., Bockamp, E., & Schuppan, D. (2018). IL-4 Receptor Alpha Signaling through Macrophages Differentially Regulates Liver Fibrosis Progression and Reversal. *EBioMedicine*, 29, 92–103. <https://doi.org/10.1016/j.ebiom.2018.01.028>
- White, A. G., Elias, E., Orozco, A., Robinson, S. A., & Manners, M. T. (2024). Chronic Stress-Induced Neuroinflammation: Relevance of Rodent Models to Human Disease. *Int J Mol Sci*, 25(10). <https://doi.org/10.3390/ijms25105085>
- Yeo, H. J., Shin, M. J., You, J. H., Kim, J. S., Kim, M. Y., Kim, D. W., Kim, D. S., Eum, W. S., & Choi, S. Y. (2019). Transduced Tat-CIAPIN1 Reduces The Inflammatory Response on LPS- and TPA-Induced Damages. *BMB Rep*, 52(12), 695–699. <https://doi.org/10.5483/BMBRep.2019.52.12.245>

- Zhang, L., & Bansal, M. B. (2020). Role of Kupffer Cells in Driving Hepatic Inflammation and Fibrosis in HIV Infection. *Front Immunol*, *11*, 1086. <https://doi.org/10.3389/fimmu.2020.01086>
- Zhao, B., Hui, X., Wang, J., Zeng, H., Yan, Y., Hu, Q., Ge, G., & Lei, T. (2021). Matrine Suppresses Lung Cancer Metastasis Via Targeting M2-Like Tumour-Associated-Macrophages Polarization. *American journal of cancer research*, *11*(9), 4308.
- Zhou, Y., Zhao, X., Hu, W., Ruan, F., He, C., Huang, J., & Zuo, Z. (2021). Acute and Subacute Oral Toxicity of Propylene Glycol Enantiomers in Mice and The Underlying Nephrotoxic Mechanism. *Environmental Pollution*, *290*. <https://doi.org/https://doi.org/10.1016/j.envpol.2021.118050>
- Zou, J., Wang, S. P., Wang, Y. T., & Wan, J. B. (2021). Regulation of The NLRP3 Inflammasome with Natural Products Against Chemical-Induced Liver Injury. *Pharmacol Res*, *164*, 105388. <https://doi.org/10.1016/j.phrs.2020.105388>

