

## DAFTAR PUSTAKA

- Agustina, R. 2021. *Metabolomic Study of Food Derived Compounds Interacting with ABC Transporter*. Kanazawa.
- Amlerova Z, Chmelova M, Anderova M and Vargova L 2024. Reactive gliosis in traumatic brain injury: a comprehensive review. *Front. Cell. Neurosci.* 18:1335849. doi: 10.3389/fncel.2024.1335849
- Azharuddin M, Imran P, Ayaz S. 2013. Anticonvulsant Activity of *Lycopersicon esculentum* (Tomato) in Maximum Electroshock Induced Seizures in Mice. *Inventi Rapid: Ethnopharmacology.* 4:1-4.
- Bianchi, A. R., Vitale, E., Guerretti, V., Palumbo, G., De Clemente, I. M., Vitale, L., ... & De Maio, A. 2023. Antioxidant Characterization of Six Tomato Cultivars and Derived Products Destined for Human Consumption. *Antioxidants.* 12(3): 761.
- Camhi SL, Alam J, Otterbein L, Sylvester SL, Choi AM. 1995. Induction of heme oxygenase-1 gene expression by lipopolysaccharide is mediated by AP-1 activation. *Am J Respir Cell Mol Biol.*13:387-98.
- Gibson-Corley. K. N, Olivier A. K, Meyerholz D. K. 2013. Principles for valid histopathologic scoring in research. *Vet Pathol.* 50(6):1007-15. doi: 10.1177/0300985813485099.
- Danton GH, Dietrich WD. 2003. Inflammatory mechanisms after ischemia and stroke. *J Neuropathol Exp Neurol.* 62(2):127–136.
- Domínguez, R., Gullón, P., Pateiro, M., Munekata, P. E., Zhang, W., dan Lorenzo, J. M. 2020. Tomato as Potential Source of Natural Additives For Meat Industry. A review. *Antioxidants.* 9 (1): 73.
- Gokce, E. C., Kahveci, R., Gokce, A., Sargon, M. F., Kisa, U., Aksoy, N., ... Erdogan, B. 2016. Curcumin Attenuates Inflammation, Oxidative Stress, and Ultrastructural Damage Induced by Spinal Cord Ischemia–Reperfusion Injury in Rats. *Journal of Stroke and Cerebrovascular Diseases.* 25(5): 1196–1207. doi:10.1016/j.jstrokecerebrovasdis.2016.01.
- El-Mahdy, N. A., Risha, S., dan Al-Hosiny, F. T. 2020. Lamotrigine and Gabapentin Ameliorate Neurotoxicity Induced by Lipopolysaccharide in Mice. *IJCBR.* 5 (1):133-142.
- Endrawati, K. J. 2018. Respons Sistem Imun pada Epilepsi. *Cermin Dunia Kedokteran.* 45(11): 815-818.
- Fikry, H., Saleh, L. A., & Abdel Gawad, S. 2022. Neuroprotective effects of curcumin on the cerebellum in a rotenone-induced Parkinson's disease Model. *CNS Neuroscience & Therapeutics.* 28(5): 732-748.
- Harrison L, Pfuhlmann K, Schriever SC, Pfluger PT. 2019. Profound weight loss induces reactive astrogliosis in the arcuate nucleus of obese mice. *Mol Metab.* 24:149–55.
- Ji, K.A, Yang M. S, Jou, I., Shong, M. H., Joe, E. H. 2004. Thrombin induces expression of cytokine-induced SH2 protein (CIS) in rat brain astrocytes: involvement of phospholipase A2, cyclooxygenase, and lipoxygenase. *Glia.* 48:102-11.
- Jingjing, C., Huang, L., Zeng, L., Jiang, Z., Xiong, M., Jia, Z. J., ... & Zhang, L. 2023. The reference range of lamotrigine in the treatment of epilepsy in children: a systematic review. *European Journal of Clinical Pharmacology.* 80: 1-10.

- Jeong, H. K., Jou, I., & Joe, E. H. 2010. Systemic LPS administration induces brain inflammation but not dopaminergic neuronal death in the substantia nigra. *Experimental & molecular medicine*. 42(12): 823-832.
- Kahveci, F. O., Kahveci, R., Gokce, E. C., Gokce, A., Kisa, Ü., Sargon, M. F., ... & Gürer, B. 2021. Biochemical, pathological and ultrastructural investigation of whether lamotrigine has neuroprotective efficacy against spinal cord ischemia reperfusion injury. *Injury*. 52(10): 2803-2812.
- Kawabori, M., & Yenari, M. A. 2015. Inflammatory Responses in Brain Ischemia. *Curr Med Chem*. 22(10): 1258-1277. Doi: 10.2174/0929867322666150209154036.
- Khan, M. S., Muhammad, T., Ikram, M., & Kim, M. O. 2019. Dietary supplementation of the antioxidant curcumin halts systemic LPS-induced neuroinflammation-associated neurodegeneration and memory/synaptic impairment via the JNK/NF- $\kappa$ B/Akt signaling pathway in adult rats. *Oxidative medicine and cellular longevity*. 2019: 1-23.
- Khinchi, M. S., Nielsen, K. A., Dahl, M., & Wolf, P. 2008. Lamotrigine therapeutic thresholds. *Seizure*. 17(5): 391-395.
- Kumar, V., Sandeep Kumar Sharma, M., Nagarajan, K., & Praveen Kumar Dixit, M. 2016. Effects of lycopene and sodium valproate on pentylentetrazol-induced kindling in mice. *Iranian Journal of Medical Sciences*. 41(5): 430.
- Kusuhara H, Furuie H, Inano A, Sunagawa A, Yamada S, Wu C, Fukizawa S, Morimoto N, Ieiri I, Morishita M, Sumita K, Mayahara H, Fujita T, Maeda K, Sugiyama Y. 2012. Pharmacokinetic interaction study of sulphasalazine in healthy subjects and the impact of curcumin as an in vivo inhibitor of BCRP. *Br J Pharmacol*. 166(6):1793-803. doi: 10.1111/j.1476-5381.2012.01887.x.
- Kwon, H. S., & Koh, S. H. 2020. Neuroinflammation in neurodegenerative disorders: the roles of microglia and astrocytes. *Translational neurodegeneration*. 9: 1-12.
- Lang DG, Wang CM, Cooper BR. 1993. Lamotrigine, phenytoin and carbamazepine interactions on the sodium current present in N4TG1 mouse neuroblastoma cells. *J Pharmacol Exp Ther*. 266:829-835.
- Laszlo L, Lowe J, Self T, et al. 1992. Lysosomes as key organelles in the pathogenesis of prion encephalopathies. *J Pathol*. 166:333-41
- Lee, K. H., Cha, M., & Lee, B. H. (2020). Neuroprotective effect of antioxidants in the brain. *International journal of molecular sciences*. 21(19): 7152.
- Leng, Y., Fessler, E. B., & Chuang, D. M. 2013. Neuroprotective effects of the mood stabilizer lamotrigine against glutamate excitotoxicity: roles of chromatin remodelling and Bcl-2 induction. *International Journal of Neuropsychopharmacology*. 16(3): 607-620.
- Liu, J. S., Wang J. H., Zhou, J., Tang, X. H., Xu, L., Shen, T., Wu, X. Y., & Hong Z. 2014. Enhanced Brain Delivery of Lamotrigine with Pluronic® P123- based Nanocarrier. *Int. J. Nanomed*. 9: 3923-3935.
- Ma, J., Saleem, M. H., Ali, B., Rasheed, R., Ashraf, M. A., Aziz, H., & Marc, R. A. 2022. Impact of Foliar Application of Syringic Acid On Tomato (*Solanum lycopersicum* L.) under heavy metal stress-insights into Nutrient Uptake, Redox Homeostasis, Oxidative Stress, and Antioxidant Defense. *Frontiers in Plant Science*. 13: 1-21.
- Miziak, B., Konarzewska, A., Ułamek-Koziół, M., Dudra-Jastrzębska, M., Pluta, R., & Czuczwar, S. J. 2020. Anti-epileptogenic effects of antiepileptic drugs. *International journal of molecular sciences*. 21(7): 2340.

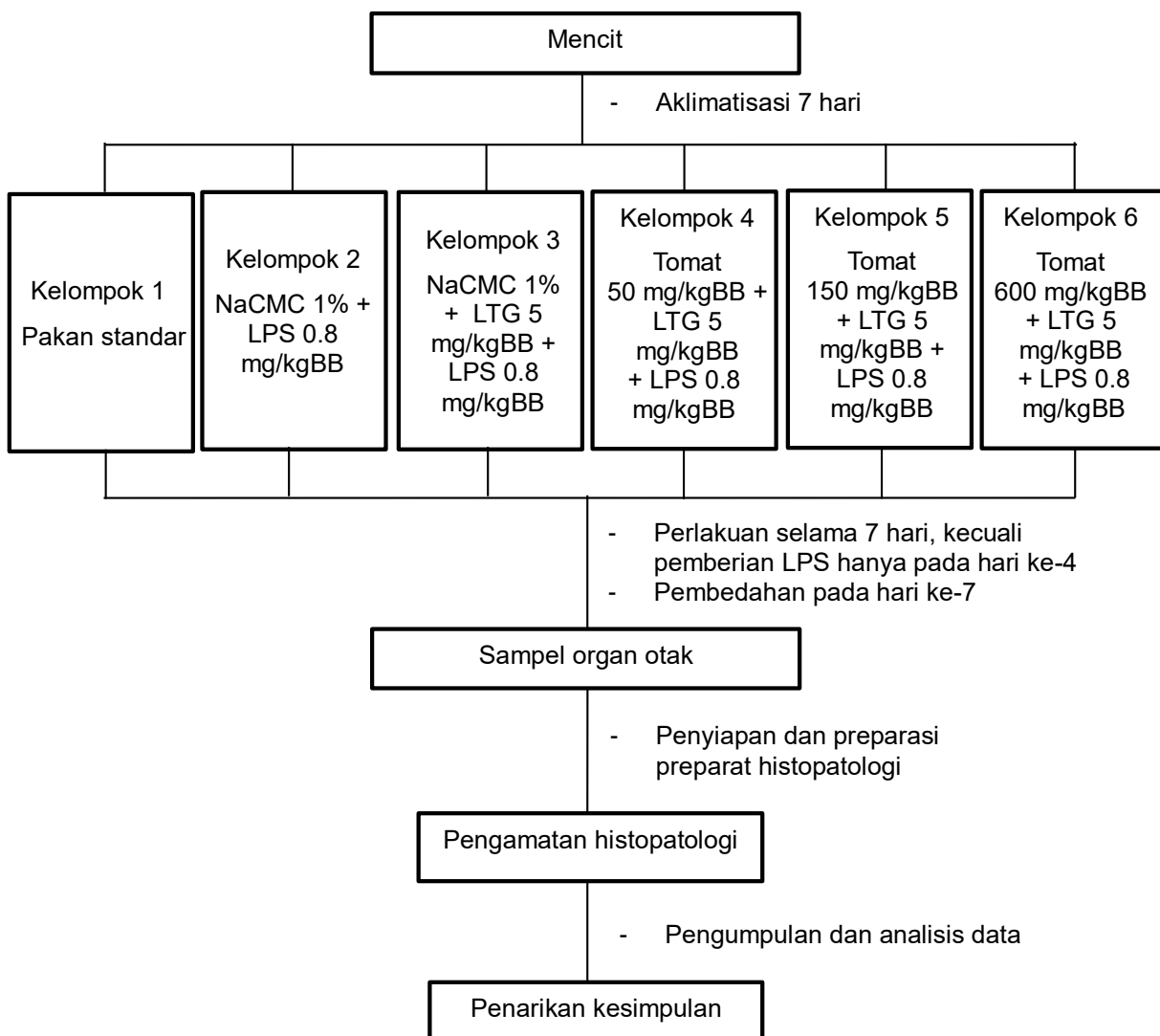
- Musa NH, Mani V, Lim SM, Vidyadaran S, Abdul Majeed AB, & Ramasamy K. 2017. Lactobacilli-fermented cow's milk attenuated lipopolysaccharide-induced neuroinflammation and memory impairment in vitro and in vivo. *J Dairy Res.* 84(4): 488-495.
- Noh, H., Jeon, J. & Seo, H. 2014. Systemic injection of LPS induces region-specific neuroinflammation and mitochondrial dysfunction in normal mouse brain. *Neurochem Int.* 69, 35–40.
- Okhlom, C., Goetze J. P., Svendsen, L. B., & Achiam, M. P. 2014. Inflammatory Response in Laparoscopic vs Open Surgery for Gastric Cancer. *Scand J Gastroenterol.* 49: 1027-1034.
- Paramitha, D., Ulum, M. F., Purnama, A., Wicaksono, D. H. B., Noviana, D., & Hermawan, H. 2017. *Monitoring degradation products and metal ions in vivo. In Monitoring and evaluation of biomaterials and their performance in vivo (pp. 19-44).* Cambridge: Woodhead Publishing.
- Parchi P, Giese A, Capellari S, et al. 1999. Classification of sporadic Creutzfeldt-Jakob disease based on molecular and phenotypic analysis of 300 subjects. *Ann Neurol.* 46:224–33
- Peterson LJ, & Flood PM. 2012. Oxidative stress and microglial cells in Parkinson's disease. *Mediators Inflamm.* 2012: 43.
- Pisoschi, A.M.; & Pop, A. 2015. The role of antioxidants in the chemistry of oxidative stress: A review. *Eur. J. Med. Chem.* 97, 55–74.
- Rahmawanti, A., NurĀ, D., & Mukhlis, A. 2021. Histopathological of Brain, Eye, Liver, Spleen Organs of Grouper Suspected VNN in Penyambuan Village, North Lombok. *Jurnal Biologi Tropis.* 21(1): 140-148.
- Rezaie P, Lantos PL. 2001. Microglia and the pathogenesis of spongiform encephalopathies. *Brain Res Brain Res Rev.* 35:55–72
- Romermann, K., Helmer, R., dan Loscher, W. 2015. The antiepileptic drug lamotrigine is a substrate of mouse and human breast cancer resistance protein (ABCG2). *Neuropharmacology.* 93: 7-14.
- Saedisomeolia A, Wood LG, Garg ML, Gibson PG, Wark PA. 2009. Lycopene enrichment of cultured airway epithelial cells decreases the inflammation induced by rhinovirus infection and lipopolysaccharide. *J Nutr Biochem.* 20:577-585.
- Saper CB. 2010. The dance of the perivascular and endothelial cells: mechanisms of brain response to immune signaling. *Neuron.* 65:4-6.
- Singh N, Gu Y, Bose S, Kalepu S, Mishra RS, Verghese S. 2002. Prion peptide 106–126 as a model for prion replication and neurotoxicity. *Front Biosci.* 7:60–71
- Singh, S., Nagalakshmi, D., Sharma, K. K., & Ravichandiran, V. 2021. Natural antioxidants for neuroinflammatory disorders and possible involvement of Nrf2 pathway: A review. *Heliyon.* 7(2): 1-10.
- Srivalli, K. M. R., & Lakshmi, P. K. (2012). Overview of P-glycoprotein inhibitors: a rational outlook. *Brazilian Journal of Pharmaceutical Sciences.* 48: 353-367.
- Steinert, K., Hövelmann, Y., Hübner, F., & Humpf, H. U. 2020. Identification of Novel iso-Esculeoside B from Tomato Fruits and LC–MS/MS-based Food Screening for Major Dietary Steroidal Alkaloids Focused on Esculeosides. *J. Agric. Food. Chem.* 68 (49): 14492-14501.
- Stoyanov G S, Petkova L, Dzhankov D L, et al. (2020) Gross and Histopathology of COVID-19 With First Histology Report of Olfactory Bulb Changes. *Cureus.* 12(12): e11912. DOI 10.7759/cureus.11912.

- Truchot, L., Bencsik, A., Perret-Liaudet, A., Biacabe, A. G., Richard, M., Ironside, J., ... & Streichenberger, N. 2004. Quantitative study of spongiform change in putamen of 24 cases of Creutzfeldt-Jakob disease. *Journal of Neuropathology & Experimental Neurology*. 63(3): 193-198.
- Van Everbroeck B, Dewulf E, Pals P, Lubke U, Martin JJ, Cras P. 2002. The role of cytokines, astrocytes, microglia and apoptosis in Creutzfeldt-Jakob disease. *Neurobiol Aging*. 23:59–64.
- Ventura, S., Rodrigues, M., Falcão, A., & Alves, G. 2018. Effects of Paullinia cupana extract on lamotrigine pharmacokinetics in rats: A herb-drug interaction on the gastrointestinal tract with potential clinical impact. *Food and Chemical Toxicology*. 115: 170-177.
- Vezzani A, Lang B, & Aronica E. 2016. Immunity and Inflammation in Epilepsy. *Cold Spring Harbor Perspectives in Med*. 6(2):a022699–a022699. doi: 10.1101/cshperspect.a022699.
- Vezzani, A., Balosso, S. & Ravizza, T. 2019. Jalur neuroinflamasi sebagai target pengobatan dan biomarker pada epilepsi. *Nat Rev Neurol*. 15: 459–472. <https://doi.org/10.1038/s41582-019-0217-x>.
- Verrotti A, Striano P, Iapadre G, Zagaroli L, Bonanni P, Coppola G, Elia M, Mecarelli O, Franzoni E, Liso P, Vigevano F, Curatolo P. 2018. Penatalaksanaan farmakologis sindrom Lennox-Gastaut dan tinjauan literatur kritis. *Kejang*. 63 :17-25.
- Viswanath, O., Urits, I., Jones, M. R., Peck, J. M., Kochanski, J., Hasegawa, M., ... & Kaye, A. D. 2019. Membrane stabilizer medications in the treatment of chronic neuropathic pain: a comprehensive review. *Current Pain and Headache Reports*. 23(37): 1-9.
- Volpe BT, Davis HP, Towle A, Dunlap WP. 1992. Loss of hippocampal CA1 pyramidal neurons correlates with memory impairment in rats with ischemic or neurotoxin lesions. *Behav Neurosci*; 106:457-464.
- Wang K, Fernandez-Escobar A, Han S, Zhu P, Wang JH, & Sun Y. 2016. Lamotrigine reduces inflammatory response and ameliorates executive function deterioration in an Alzheimer's-like mouse model. *BioMed research international*. 7810196.
- Wang, Z. F., Fessler, E. B., & Chuang, D. M. (2011). Beneficial effects of mood stabilizers lithium, valproate and lamotrigine in experimental stroke models. *Acta Pharmacologica Sinica*, 32(12), 1433-1445.
- Whatley, B. R., Li, L., & Chin, L. S. (2008). The ubiquitin–proteasome system in spongiform degenerative disorders. *Biochimica et Biophysica Acta (BBA)-Molecular Basis of Disease*. 1782(12): 700-712.
- Wiard, R. P., Dickerson, M. C., Beek, O., Norton, R., & Cooper, B. R. (1995). Neuroprotective properties of the novel antiepileptic lamotrigine in a gerbil model of global cerebral ischemia. *Stroke*. 26(3): 466-472.
- Wisse, B. E., Ogimoto, K., Tang, J., Harris Jr, M. K., Raines, E. W., & Schwartz, M. W. (2007). Evidence that lipopolysaccharide-induced anorexia depends upon central, rather than peripheral, inflammatory signals. *Endocrinology*. 148(11): 5230-5237.
- Yasam VR, Jakki SL, Senthil V, Eswaramoorthy M, Shanmuganathan S, Arjunan K, & Nanjan MJ. 2016. A pharmacological overview of lamotrigine for the treatment of epilepsy. *Expert Rev Clin Pharmacol*. 9(12):1533-1546.

- Yang T, Dai Y, Chen G and Cui S (2020) Dissecting the Dual Role of the Glial Scar and Scar-Forming Astrocytes in Spinal Cord Injury. *Front. Cell. Neurosci.* 14:78. doi: 10.3389/fncel.2020.00078.
- Yi YH, Guo WC, Sun WW, Su T, Lin H, Chen SQ, et al. 2008. Neuroprotection of lamotrigine on hypoxic-ischemic brain damage in neonatal rats: Relations to administration time and doses. *Biologics.* 2: 339–44.
- Yu, C., Nagib, M. M., Yasmen, N., Sluter, M. N., Littlejohn, T. L., Yu, Y., & Jiang, J. 2023. Neuroinflammatory mediators in acquired epilepsy: an update. *Inflammation Research.* 72(4): 683-701.
- Zhao, J., Bi, W., Xiao, S., Lan, X., Cheng, X., Zhang, J., ... & Zhu, L. 2019. Neuroinflammation induced by lipopolysaccharide causes cognitive impairment in mice. *Scientific reports.* 9(1): 5790.
- Zeng C, Hu J, Chen F, Huang T and Zhang L. 2022. The Coordination of mTOR Signaling and Non-Coding RNA in Regulating Epileptic Neuroinflammation. *Front. Immunol.* 13:924642. Doi: 10.3389/fimmu.2022.924642.

## LAMPIRAN

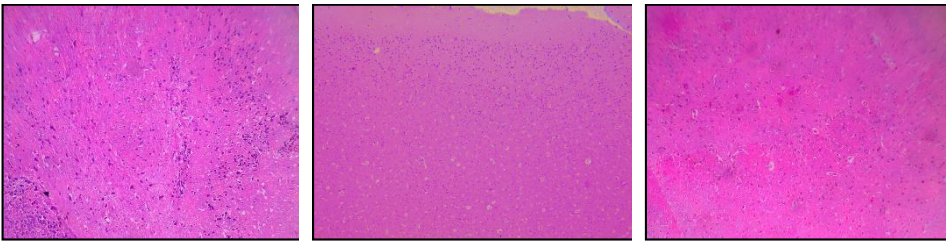
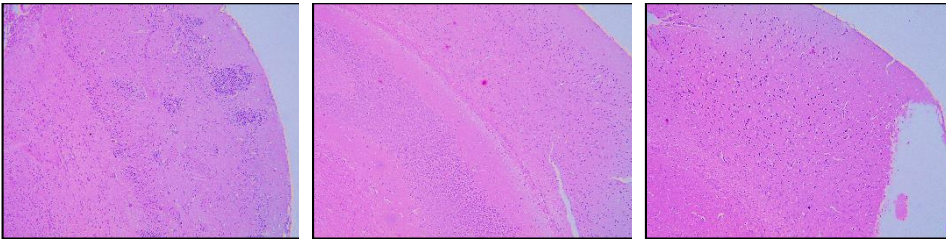
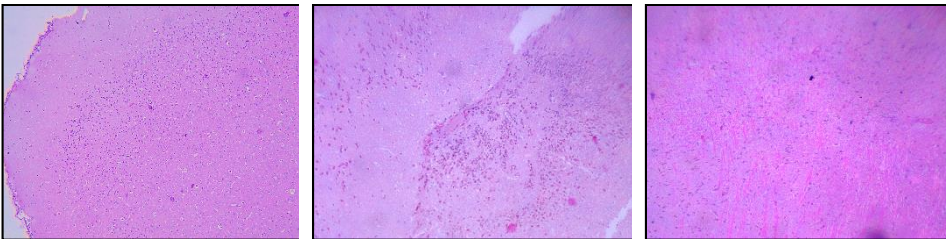
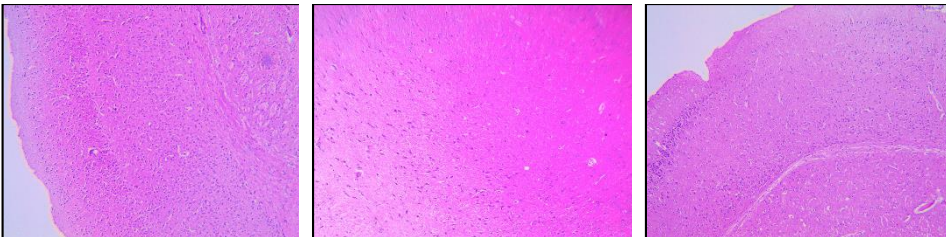
### Lampiran 1. Skema Kerja



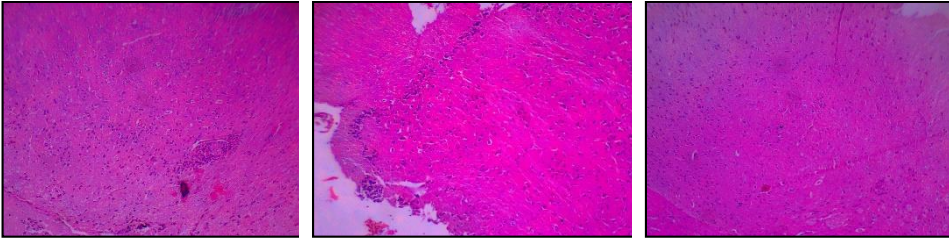
## Lampiran 2. Perhitungan

Dosis 600 mg/kg kemudian dibuat variasi dosis yang lebih rendah, yakni 50 mg/kgBB dan 150 mg/kgBB. Volume pemberian adalah 1% dari bobot rata-rata mencit (30 g), maka sediaan uji yang dibuat yakni:

Tomat 600 mg/kgBB	= 600 mg/1000 gBB = 18 mg/30 gBB/0,30 mL = 90 mg/1,5 mL (Untuk 5 mencit)
Tomat 50 mg/kgBB	= 50 mg/1000 gBB = 1,5 mg/30 gBB/0,30 mL = 7,5 mg/1,5 mL (Untuk 5 mencit)
Tomat 150 g/kgBB	= 150 mg/1000 gBB = 4,5 mg/30 gBB/0,30 mL = 22,5 mg/1,5 mL (Untuk 5 mencit)
LTG 5 mg/kgBB	= 5 mg/1000 gBB = 0,15 mg/30 gBB/0,30 mL = 3,75 mg/7,5 mL (Untuk 25 mencit)
LPS 0,8 mg/kgBB	= 0,8 mg/1000 gBB = 0,024 mg/30 gBB/0,30 MI = 1,08 mg/10,5 mL (Untuk 45 mencit)

**Lampiran 3. Hasil Pengamatan Histopatologi****Kelompok 1 (Tidak diberi perlakuan obat)****Kelompok II (Na CMC 1% + LPS 0,8 mg/kgBB)****Kelompok III (Na CMC 1% + LTG 5 mg/kgBB + LPS 0,8 mg/kgBB)****Kelompok IV (Tomat 50 mg/kgBB + LTG 5 mg/kgBB + LPS 0,8 mg/kgBB)****Kelompok V (Tomat 150 mg/kgBB + LTG 5 mg/kgBB + LPS 0,8 mg/kgBB)**



**Kelompok VI (Tomat 600 mg/kgBB + LTG 5 mg/kgBB + LPS 0,8 mg/kgBB)**

**Keterangan:** Histopatologi otak mencit pada semua kelompok (n = 3, H&E, perbesaran 10x)

#### Lampiran 4. Data Analisis Statistik

**Tabel 3.** Hasil Analisis One-way Anova terhadap Tingkat Perubahan Histopatologi Otak Mencit (n = 3)

Kelompok Perlakuan	Mean (SD)	P-Value
K1	0,33 (0,57)	0,0008
K2	4,33 (1,16)	
K3	3,00 (1,00)	
K4	1,67 (1,15)	
K5	0,33 (0,57)	
K6	2,33 (0,57)	

**Tabel 4.** Hasil Deskriptif Statistik Uji Shapiro-Wilk

Descriptive Statistic	K1	K2	K3	K4	K5	K6
Number of values	3	3	3	3	3	3
Minimum	0.000	3.000	2.000	1.000	0.000	2.000
Maximum	1.000	5.000	4.000	3.000	1.000	3.000
Mean	0.333	4.333	3.000	1.667	0.333	2.333
Std. Deviation	0.5774	1.155	1.000	1.155	0.5774	0.5774
Std. Error of Mean	0.333	0.6667	0.5774	0.6667	0.333	0.3333
P-Value*	0.75	0.75	1.00	0.75	0.75	0.75

Keterangan: \*P-Value > 0,05 = Data terdistribusi normal; p < 0,05 = Data tidak terdistribusi normal

**Tabel 5.** Hasil uji *Dunnett's Multiple Comparisons* (n= 3)

Dunnett's multiple comparisons test	Mean Diff.	95.00% CI of diff.	Below threshold?	Summary	Adjusted P Value
K2 vs. K1	4.000	1.911 to 6.089	Yes	***	0.0005
K2 vs. K3	1.333	-0.756 to 3.423	No	ns	0.2824
K2 vs. K4	2.667	0.576 to 4.756	Yes	*	0.0121
K2 vs. K5	4.000	1.911 to 6.089	Yes	***	0.0005
K2 vs. K6	2.000	-0.089 to 4.089	No	ns	0.0621

Keterangan: ns = tidak signifikan ( p>0,05); \* = p < 0,05; \*\* = p <0,001

## Lampiran 5. Etik Penelitian



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI  
 UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN  
 KOMITE ETIK PENELITIAN UNIVERSITAS HASANUDDIN  
 RSPTN UNIVERSITAS HASANUDDIN  
 RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR  
 Sekretariat : Lantai 2 Gedung Laboratorium Terpadu  
 JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245.  
 Contact Person: dr. Agusallim Bukhari, MMed, PhD, SpGK TELP. 081241850858, 0411 5780103. Fax : 0411-581431

**REKOMENDASI PERSETUJUAN ETIK**

Nomor : 671/UN4.6.4.5.31/ PP36/ 2023

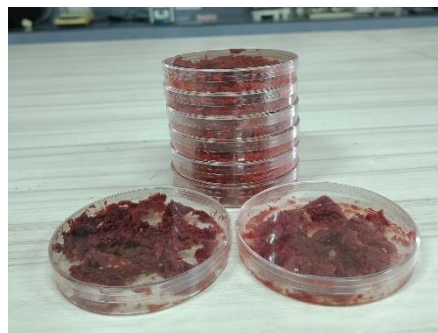
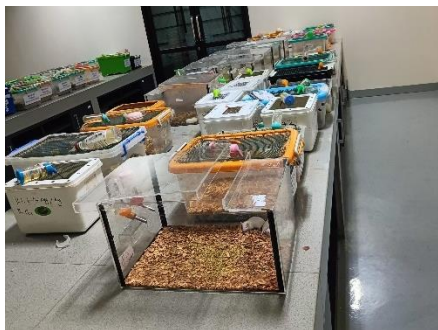
Tanggal: 12 September 2023

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH23080565		No Sponsor	
Peneliti Utama	Putri Diah Anggini. RH		Sponsor	
Judul Peneliti	Studi Interaksi Obat dan Makanan: Eksplorasi Buah Tomat bersama Lamotrigin sebagai Strategi Baru Antiepilepsi melalui Penghambatan Transporter P-glikoprotein (P-gp)			
No Versi Protokol	2	Tanggal Versi	11 September 2023	
No Versi PSP		Tanggal Versi		
Tempat Penelitian	Laboratorium Fakultas Farmasi Universitas Hasanuddin Makassar			
Jenis Review	<input type="checkbox"/> Exempted	Masa Berlaku 12 September 2023 sampai 12 September 2024	Frekuensi review lanjutan	
	<input checked="" type="checkbox"/> Expedited			
	<input type="checkbox"/> Fullboard Tanggal			
Ketua KEP Universitas Hasanuddin	Nama Prof. dr. Muh Nasrum Massi, PhD, SpMK(K)	Tanda tangan		
Sekretaris KEP Universitas Hasanuddin	Nama dr. Firdaus Hamid, PhD, SpMK(K)	Tanda tangan		

## Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari prokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan

**Lampiran 6. Dokumentasi****Gambar 8.** Penyiapan Buah Tomat**Gambar 9.** Pembuatan Konsentrat Tomat**Gambar 10.** *Freeze drying***Gambar 11.** Konsentrat Buah Tomat Kering**Gambar 12.** Aklimatisasi Hewan Uji**Gambar 13.** Penyiapan Suspensi Uji



**Gambar 14.** Perlakuan Hewan Uji



**Gambar 15.** Pembedahan dan Pengambilan Organ



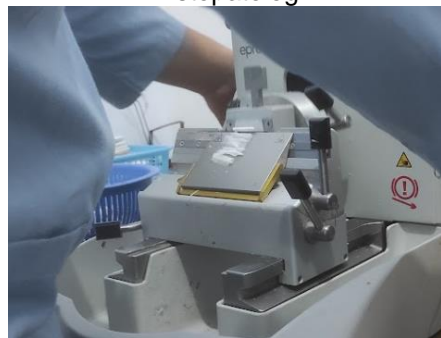
**Gambar 16.** Penyimpanan Organ



**Gambar 17.** Pemotongan Organ Histopatologi



**Gambar 18.** Pembuatan Blok Parafin



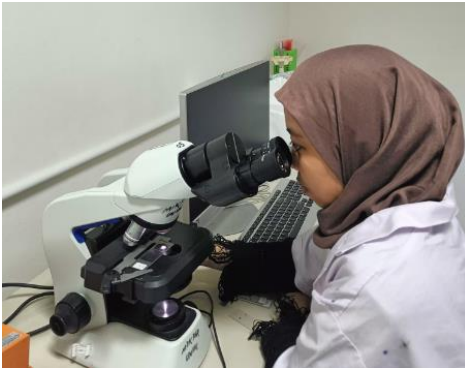
**Gambar 19.** Pemotongan pada Mikrotom dengan ketebalan 5  $\mu$ m



**Gambar 20.** Pewarnaan Preparat



**Gambar 21.** Penyiapan Preparat Histopatologi



**Gambar 22.** Pengamatan Preparat Histopatologi di bawah Mikroskop



**Gambar 23.** Analisis Data