

## DAFTAR PUSTAKA

- Aldhafiri, F.K. 2023. Investigating The Role of EPA and DHA in Cellular Oxidative Stress: profiling Antidiabetic and Antihypertensive Potensial. 14(4): 178-185. <https://doi.10.4103/jpbs.jpbs.383.22>.
- Avondt, K.V., Nur, E & Zeerledir, S. 2019. Mechanisms of Heaemolysis-Induced Kidney Injury. Nature review nephrology. Pp(1-18). <https://doi.org/10.1038/541581-019-0181-0>.
- Balacuit, J.N.G., Guillermo, J.D.A., Buenafe, R.J.Q and Soriana, A.N. 2021. Comparison of Microwafe-Assisted Extraction of Mango Seed Kemel Oil Using Ethanol and n-Hexane as Solvent: ASEAN Journal of Chemical Enginern. 21(2): 158-169
- Braunstein, E., M. 2022. Etiology of Anemia. Copyright© 2024Merck & Co., Inc., Rahway, NJ, USA.
- Diaz *et al.* 2019. A Nutraceutical Rich in Docosahexaenoic Acid Improves Portal Hypertension in a Preclinical Model of Advanced Chronic Liver Disease. Nutrients Journal. 11(10):2358. <https://doi:10.3390/nu11102358>
- Didier, et al. 2023. Antioxidant and Anti-Tumor Effects of Dietary Vitamins A, C, and E. PubMed. 12(3):632. <https://doi.10.3390/antiox12030632>.
- Chapparo, N. C. & V. Suchdev, P. S., (2019). Anemia Epidemiology, Pathophysiology, and etiology in low and middle-income contures, pp. (2-4). <https://doi.10.1111/nyas.14092>.
- Edward, C.Q. 2002. Hepatobiliary Manisfestations of Anemia. Elsevier Journal. Vol 6(4). P891-907. [https://doi.org/10.1016/S1089-3261\(02\)00050-8](https://doi.org/10.1016/S1089-3261(02)00050-8)
- Freeman, A., M, Rai., M and Morando, D., W. 2024. Anemia Screening. In StatPearls. Treasure Island (FL): StatPearls Publishing, Copyright © 2024, StatPearls Publishing LLC.
- Hakim, A.R dan Saputri, R. 2020. Narrative Review: Optimasi Etanol Sebagai Pelarut Senyawa Falvonoid dan Fenolik. Jurnal Surya Medika. 6(1): 177-180

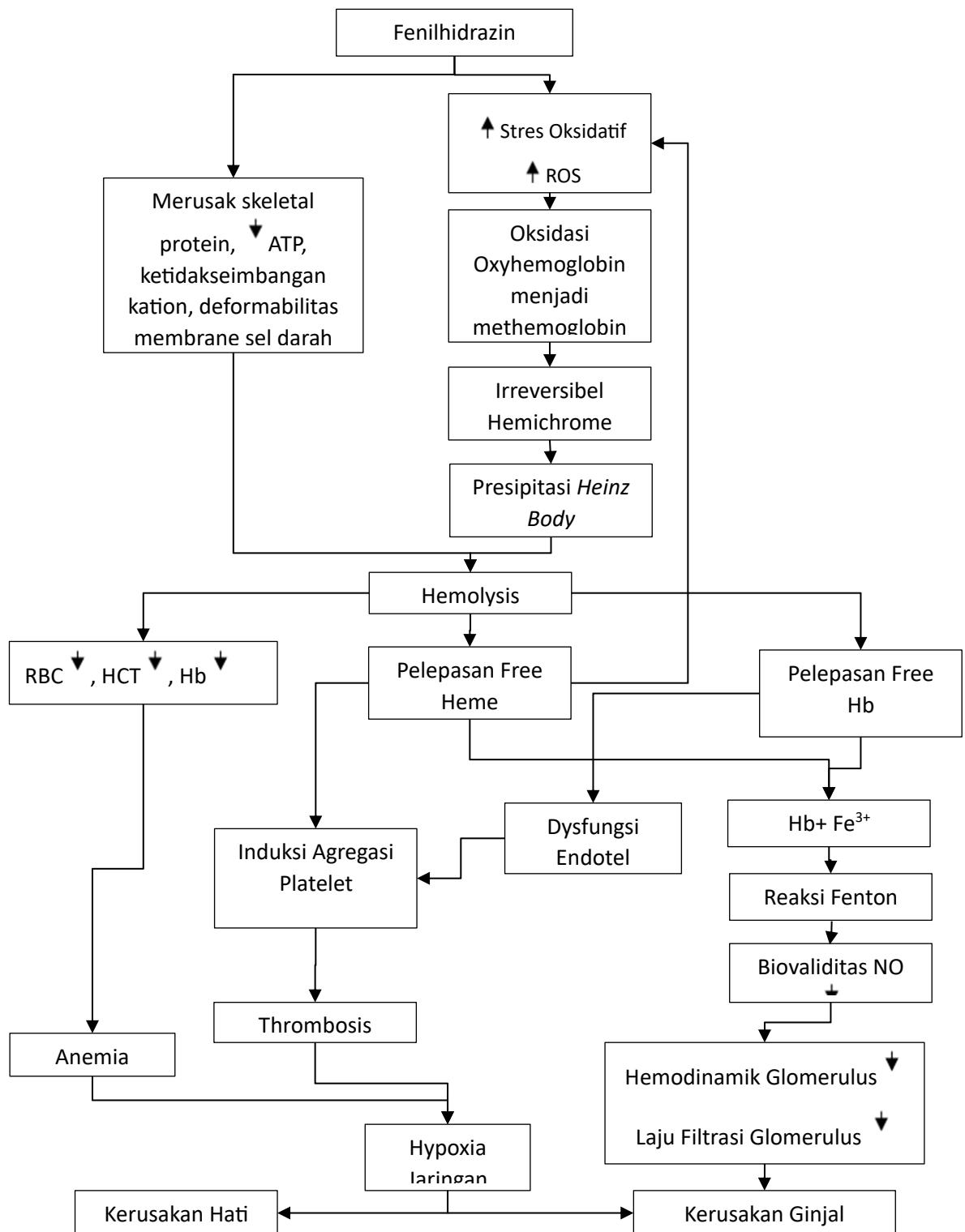
- Hashim, N. A., Mazilan, M. S. R., Man, R. C., Arshad, Z. I. M., & Mudalip, S. K. 2022. Recovery of omega-3 fish oil from *Monopterus albus* using microwave assisted extraction process. In AIP Conference Proceedings, 2610(1).
- Hendrawan, V. F., Ikhsan, F., Sehaningrum, A. & Widayaputri, T., (2020). The Potency of Eel Meat (*Monopterus albus*) extract On Tumor Necrosis Factor Alpha (TNF $\alpha$ ) expression and epidermal thickness incision wounds on rats (*Rattus norvegicus*), p. (78). <https://doi.org/10.5455/javar.2020.9396>.
- Kemenkes RI. 2018. Pencegahan dan Penanggulangan Anemia Pada Remaja Putri dan Wanita Usia Subur. Direktorat RI
- Kim, D. J. et al., (2020). Vitamin B12 and Folic Acid Alleviate Symptoms of nutrisional Deficiency by Antagonizing aryl hydrocarbon receptor,p.(1). Medical Science. <https://doi.10.1073/pnas.2006949117>.
- Lopes, et al. 2021. Nutrition-Specific Interventions for Preventing and Controlling Anemia Throughout The Life Cycle: an Overview of Systematic Reviews. PubMed Central. <https://doi.10.1002/14651858.CO013092.Pub2>.
- Moreau, et al. 2012. Alterations in Bone and Erythropoiesis in Hemolytic Anemia: Comparative Study in Beld, Phenylhydrazine, Treated and Plasmodium-Infected Mice. Plus One. 7(9). <https://doi.10.1371/journal.pone.0046101>.
- Ousaaid, D., Ghouizi, A. E., Laaroussi, H., Bakour, M., Mechchate, H., Es-Safi, I., & El Arabi, I. 2022. Anti-anemic Effect of Antioxidant-rich Apple Vinegar Gaint Fenilhidrazin-Induced Hemolytic Anemia in Rats. Life, 12(2), 239.
- Ong Kwok et al. 2023. Association of Omega-3 Polyunsaturated Fatty Acids with Incident Chronic Kidney Disease: Pooled Analysis of 19 Cohorts. PubMed. <https://doi.10.1136/bmj-2022-072909>
- Pandey, K., Meena, A. K., Jain, A. & Singh, R. K., (2018). Molecular Mechanism of Phenylhydrazine Induced Hematotoxicity : A Review, pp. (390-394).

- Rahman, H., Sari, P. M., Maharini, I., & Septiana, B. A. 2020. Potensi ekstrak kering belut (*Monopterus albus*) pada pengobatan tukak lambung. PHARMACY: Jurnal Farmasi Indonesia (Pharmaceutical Journal of Indonesia), 17(1), 98-107.
- Razak, Z. K. A. et al., (2001). Extraction and Characterization of Fish Oil from *Monopterus albus*, p. (1). Malaysian Journal of Analytical Sciences.
- Rezvankhah, et al. 2019 Microwafe-Assisted Extraction of Hempseed Oil: Studying and Comparing of Fatty Acid Composition, Antioxidant Activity, Physiochemical and Thermal Properties With Soxhlet extraction. PubMed. 56(9). <https://doi.10.1007/513197-019-03890-8>.
- Sambra, V. et al., (2021). Docosahexaenoic and Arachidonic Acids as Neuroprotective Nutrients throughout the Life Cycle, p. (1). MDPI. <https://doi.10.3390/nu13030986>.
- Setty, et al. 2019. Relationship of Omega-3 Fatty Acids, DHA and EPA With The Inflammatory Biomarker Hs-CRP in Children With Sickle Cell Anemia. 146:11-18. <https://doi.10.1016/j.plefa.2019.05.004>.
- Sheth, P. A., Pawar, A. T., Mote, C. S. & More, C., (2021). Antianemic Activity of Polyherbal formulation, Raktavardhak Kadha against Fenilhidrazin-induced anemia in rats, p. (1). Journal of Ayurveda and Integrative Medicine. <https://doi.org/10.10.16/j.jaim.2021.02.009>.
- Turner, J., Parsi, M., Badireddy, M. 2023. Anemia. In StatPearls. Treasure Island (FL): StatPearls Publishing, Copyright © 2023, StatPearls Publishing LLC.
- Weiwei, L. et al., 2022. Asian Swamp Eel *Monopterus Albus* Population Structure and Genetic diversity in China, pp. (1-2). <https://doi.10.3389/ffgene.2022.898958>.
- World Heart Organization. 2023. Anaemia. <https://www.who.int/news-room/fact-sheets/detail/ANAEAMIA>

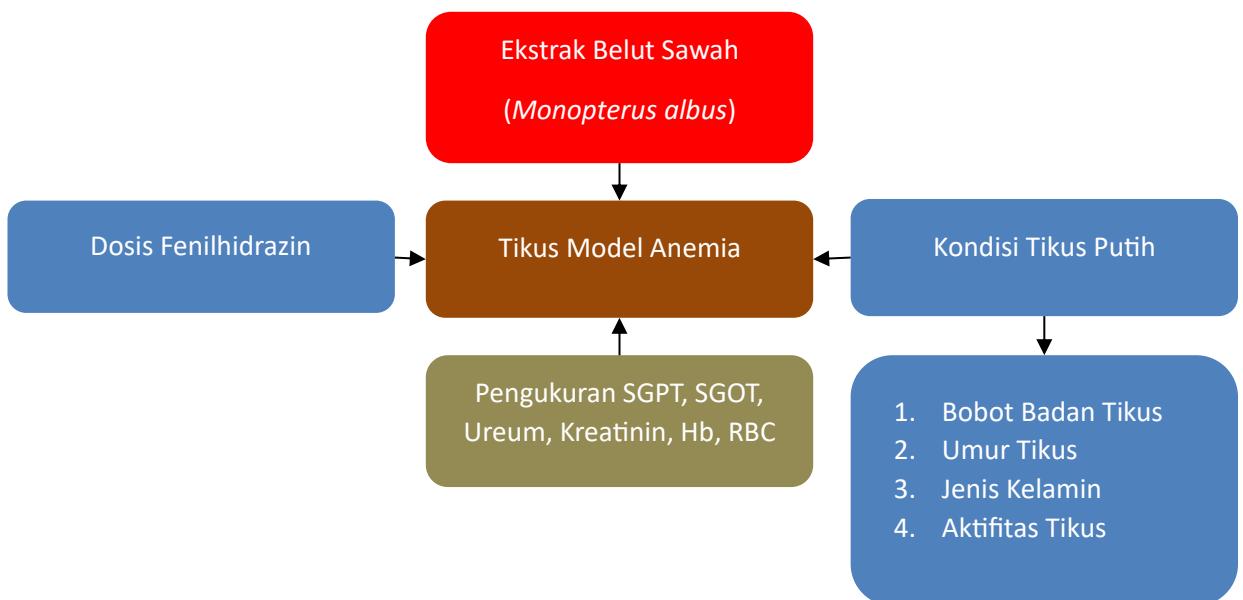
Zaimi *et al.* 2021. Anemia-induced liver injury: A rare case revealing glucose-6-phosphate dehydrogenase deficiency. Clin Case rep. 9(4): 2442–2444. DOI: [10.1002/ccr3.4061](https://doi.org/10.1002/ccr3.4061).

## LAMPIRAN

### Lampiran 1. Kerangka Teori



## Lampiran 2. Kerangka Konsep



Keterangan:

1. SGPT: Serum Glutamic Pyruvic Transaminase
2. SGOT: Serum Glutamic Oxaloacetic Transaminase
3. Hb: Hemoglobin
4. RBC: Red Blood Cell

Variabel Independen

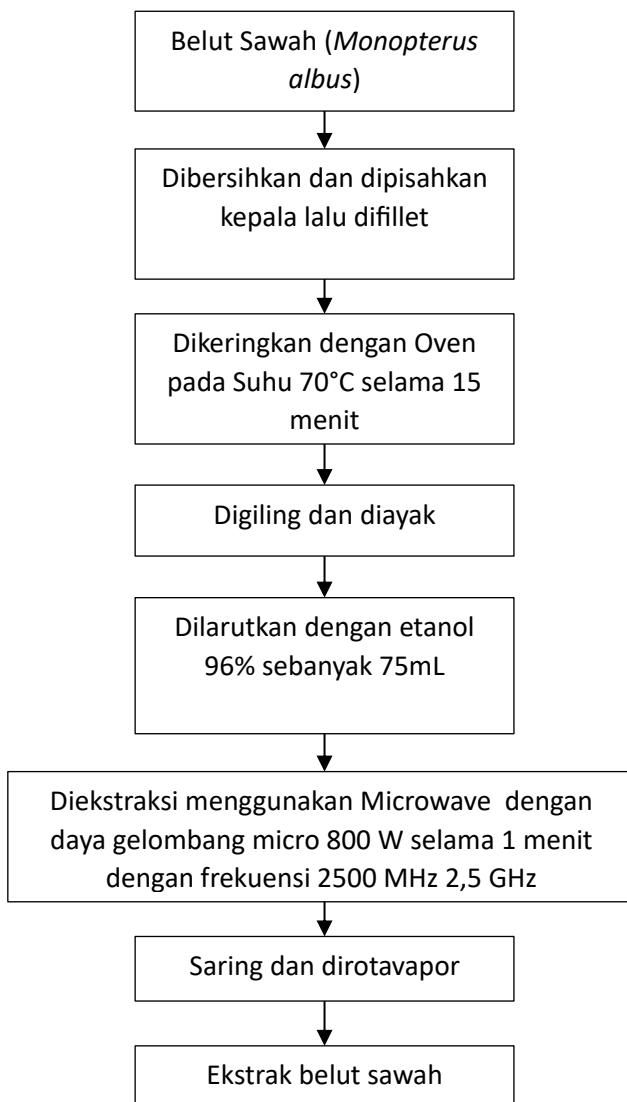
Variabel Kontrol

Variabel Antara

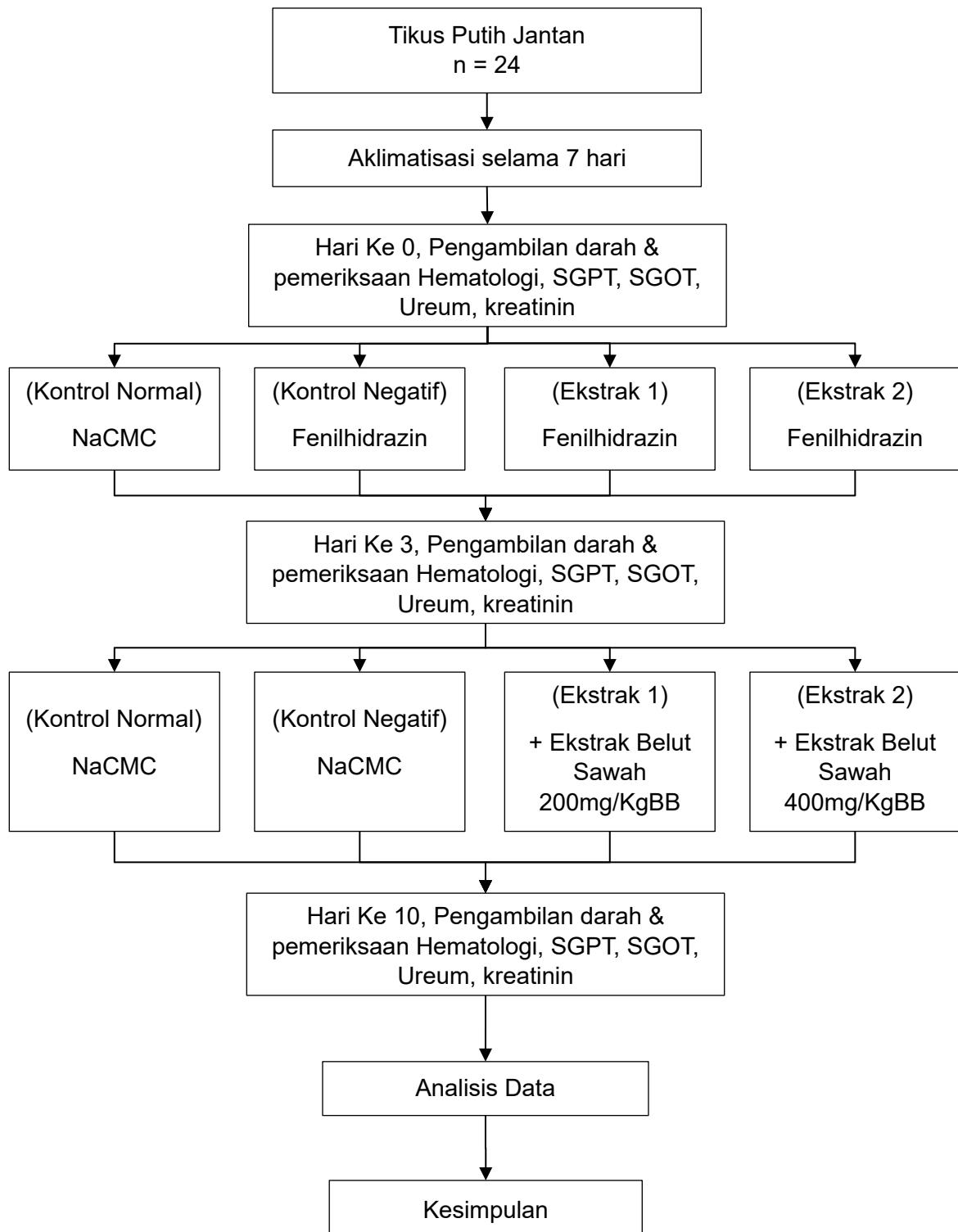
Variabel Dependen

### Lampiran 3. Alur Penelitian

#### Lampiran 3.1 Pembuatan Ekstrak



### Lampiran 3.2 Pengujian Ekstrak



## **Lampiran 4. Perhitungan Dosis**

### **Lampiran 4.1 Jumlah tikus yang digunakan**

Untuk menentukan jumlah hewan coba pada setiap kendang digunakan perhitungan besar sampel dengan rumus Federer, yaitu sebagai berikut:

$$(t-1)(n-1) \geq 15$$

$$(4-1)(n-1) \geq 15$$

$$3(n-1) \geq 15$$

$$3n - 3 \geq 15$$

$$3n \geq 18$$

$$n \geq 6$$

### **Lampiran 4.2 Jumlah dosis yang digunakan**

- Dosis fenilhidrazin 40 mg/kgBB (Pengenceran 50 mg/1 ml)

$$\text{Dosis untuk tikus } 200 \text{ g} = \frac{40 \text{ mg}}{1 \text{ kg/BB}} \times 0,2 \text{ kgBB} = 8 \text{ mg}$$

$$\begin{aligned}\text{Pengenceran} &= \frac{8 \text{ mg}}{x} = \frac{50 \text{ mg}}{1 \text{ ml}} \\ &= 0,16 \text{ ml}\end{aligned}$$

- Dosis ekstrak belut 200 mg/kgBB

$$\text{Dosis untuk tikus } 200 \text{ g} = \frac{200 \text{ mg}}{1000 \text{ g}} \times 200 \text{ g} = 40 \text{ mg/200 gBB}$$

- Dosis ekstrak belut 400 mg/kgBB

$$\text{Dosis untuk tikus } 400 \text{ g} = \frac{400 \text{ mg}}{1000 \text{ g}} \times 200 \text{ g} = 80 \text{ mg/200 gBB}$$

## Lampiran 5. Analisis Statistik

### Lampiran 5.1 Hasil analisis normalitas

#### Normalitas antar kelompok

**Tests of Normality**

	kelompok perlakuan	Kolmogorov-Smirnova <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
sgpt hari ke-0	kontrol normal	.214	4	.	.963	4	.798
	kontrol negatif	.192	4	.	.971	4	.850
	EBS 200	.237	4	.	.939	4	.650
	EBS 400	.303	4	.	.791	4	.086
sgpt hari ke-3	kontrol normal	.314	4	.	.854	4	.240
	kontrol negatif	.206	4	.	.968	4	.831
	EBS 200	.151	4	.	.993	4	.972
	EBS 400	.295	4	.	.858	4	.252
sgpt hari ke-10	kontrol normal	.240	4	.	.893	4	.395
	kontrol negatif	.215	4	.	.946	4	.689
	EBS 200	.329	4	.	.895	4	.406
	EBS 400	.298	4	.	.926	4	.572
sgot hari ke-0	kontrol normal	.250	4	.	.945	4	.683
	kontrol negatif	.320	4	.	.905	4	.459
	EBS 200	.141	4	.	.997	4	.992
	EBS 400	.250	4	.	.945	4	.683
sgot hari ke-3	kontrol normal	.205	4	.	.968	4	.828
	kontrol negatif	.319	4	.	.899	4	.426
	EBS 200	.289	4	.	.933	4	.615
	EBS 400	.145	4	.	1.000	4	.999
sgot hari ke-10	kontrol normal	.162	4	.	.989	4	.952
	kontrol negatif	.251	4	.	.844	4	.207
	EBS 200	.201	4	.	.966	4	.817
	EBS 400	.263	4	.	.819	4	.142
ureum hari ke-0	kontrol normal	.151	4	.	.993	4	.972
	kontrol negatif	.194	4	.	.975	4	.871
	EBS 200	.252	4	.	.916	4	.513
	EBS 400	.234	4	.	.928	4	.584
ureum hari ke-3	kontrol normal	.314	4	.	.854	4	.240
	kontrol negatif	.237	4	.	.930	4	.594
	EBS 200	.216	4	.	.976	4	.881

	EBS 400	.200	4	.	.987	4	.940
ureum hari ke-10	kontrol normal	.192	4	.	.971	4	.850
	kontrol negatif	.221	4	.	.972	4	.856
	EBS 200	.303	4	.	.791	4	.086
	EBS 400	.250	4	.	.961	4	.785
kreatinin hari ke-0	kontrol normal	.208	4	.	.950	4	.714
	kontrol negatif	.274	4	.	.939	4	.650
	EBS 200	.252	4	.	.882	4	.348
	EBS 400	.260	4	.	.827	4	.161
kreatinin hari ke-3	kontrol normal	.329	4	.	.895	4	.406
	kontrol negatif	.236	4	.	.911	4	.488
	EBS 200	.289	4	.	.864	4	.274
	EBS 400	.298	4	.	.926	4	.572
kreatinin hari ke-10	kontrol normal	.208	4	.	.950	4	.714
	kontrol negatif	.267	4	.	.898	4	.420
	EBS 200	.329	4	.	.895	4	.406
	EBS 400	.364	4	.	.840	4	.195
Hb hari ke-0	kontrol normal	.245	4	.	.916	4	.517
	kontrol negatif	.364	4	.	.840	4	.195
	EBS 200	.241	4	.	.968	4	.828
	EBS 400	.304	4	.	.811	4	.123
Hb hari ke-3	kontrol normal	.250	4	.	.895	4	.405
	kontrol negatif	.250	4	.	.852	4	.233
	EBS 200	.270	4	.	.876	4	.323
	EBS 400	.276	4	.	.838	4	.189
Hb hari ke-10	kontrol normal	.237	4	.	.926	4	.569
	kontrol negatif	.161	4	.	.991	4	.961
	EBS 200	.187	4	.	.990	4	.957
	EBS 400	.185	4	.	.972	4	.855
RBC hari ke-0	kontrol normal	.237	4	.	.924	4	.560
	kontrol negatif	.263	4	.	.886	4	.366
	EBS 200	.307	4	.	.898	4	.424
	EBS 400	.288	4	.	.933	4	.614
RBC hari ke-3	kontrol normal	.245	4	.	.916	4	.512
	kontrol negatif	.308	4	.	.873	4	.309
	EBS 200	.242	4	.	.898	4	.420
	EBS 400	.222	4	.	.955	4	.745

RBC hari ke-10	kontrol normal	.285	4	.	.927	4	.578
	kontrol negatif	.257	4	.	.839	4	.193
	EBS 200	.276	4	.	.888	4	.373
	EBS 400	.240	4	.	.917	4	.518

a. Lilliefors Significance Correction

### Analisis normalitas antar Hari

#### a. SGPT

**Tests of Normality**

Hari Perlakuan	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	
Kontrol Sehat	Hari ke-0	.214	4	.	.963	4	.798
	Hari ke-3	.314	4	.	.854	4	.240
	Hari ke-10	.240	4	.	.893	4	.395
Kontrol Placebo	Hari ke-0	.192	4	.	.971	4	.850
	Hari ke-3	.206	4	.	.968	4	.831
	Hari ke-10	.399	4	.	.717	4	.018
Dosis 200 mg/kgBB	Hari ke-0	.237	4	.	.939	4	.650
	Hari ke-3	.151	4	.	.993	4	.972
	Hari ke-10	.329	4	.	.895	4	.406
Dosis 400 mg/kgBB	Hari ke-0	.441	4	.	.630	4	.001
	Hari ke-3	.295	4	.	.858	4	.252
	Hari ke-10	.298	4	.	.926	4	.572

a. Lilliefors Significance Correction

#### b. SGOT

**Tests of Normality**

Hari Perlakuan	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	
Kontrol Sehat	Hari ke-0	.250	4	.	.945	4	.683
	Hari ke-3	.205	4	.	.968	4	.828
	Hari ke-10	.162	4	.	.989	4	.952
Kontrol Placebo	Hari ke-0	.320	4	.	.905	4	.459
	Hari ke-3	.319	4	.	.899	4	.426
	Hari ke-10	.251	4	.	.844	4	.207
Dosis 200 mg/kgBB	Hari ke-0	.141	4	.	.997	4	.992
	Hari ke-3	.289	4	.	.933	4	.615
	Hari ke-10	.201	4	.	.966	4	.817
Dosis 400 mg/kgBB	Hari ke-0	.250	4	.	.945	4	.683
	Hari ke-3	.145	4	.	1.000	4	.999
	Hari ke-10	.263	4	.	.819	4	.142

a. Lilliefors Significance Correction

### c. Kreatinin

**Tests of Normality**

	Hari	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Perlakuan	Statistic	df	Sig.	Statistic	df
Kontrol Normal	Hari ke-0	.208		4	.	.950	4
	Hari ke-3	.329		4	.	.895	4
	Hari ke-10	.208		4	.	.950	4
Kontrol Placebo	Hari ke-0	.274		4	.	.939	4
	Hari ke-3	.236		4	.	.911	4
	Hari ke-10	.267		4	.	.898	4
Dosis 200 mg/kgBB	Hari ke-0	.252		4	.	.882	4
	Hari ke-3	.289		4	.	.864	4
	Hari ke-10	.329		4	.	.895	4
Dosis 400 mg/kgBB	Hari ke-0	.260		4	.	.827	4
	Hari ke-3	.298		4	.	.926	4
	Hari ke-10	.364		4	.	.840	4

a. Lilliefors Significance Correction

### d. Ureum

**Tests of Normality**

	Hari	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Perlakuan	Statistic	df	Sig.	Statistic	df
Kontrol Normal	Hari ke-0	.151		4	.	.993	4
	Hari ke-3	.314		4	.	.854	4
	Hari ke-10	.192		4	.	.971	4
Kontrol Placebo	Hari ke-0	.194		4	.	.975	4
	Hari ke-3	.237		4	.	.930	4
	Hari ke-10	.221		4	.	.972	4
Dosis 200 mg/kgBB	Hari ke-0	.252		4	.	.916	4
	Hari ke-3	.216		4	.	.976	4
	Hari ke-10	.303		4	.	.791	4
Dosis 400 mg/kgBb	Hari ke-0	.234		4	.	.928	4
	Hari ke-3	.200		4	.	.987	4
	Hari ke-10	.250		4	.	.961	4

a. Lilliefors Significance Correction

**e. Hb**

**Tests of Normality**

	Hari	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Perlakuan	Statistic	df	Sig.	Statistic	df
Kontrol Normal	Hari ke-0	.245		4	.	.916	4
	Hari ke-3	.367		4	.	.729	4
	Hari ke-10	.354		4	.	.754	4
Kontrol Placebo	Hari ke-0	.364		4	.	.840	4
	Hari ke-3	.250		4	.	.852	4
	Hari ke-10	.161		4	.	.991	4
Dosis 200 mg/kgBB	Hari ke-0	.241		4	.	.968	4
	Hari ke-3	.270		4	.	.876	4
	Hari ke-10	.187		4	.	.990	4
Dosis 400 mg/kgBB	Hari ke-0	.304		4	.	.811	4
	Hari ke-3	.276		4	.	.838	4
	Hari ke-10	.185		4	.	.972	4

a. Lilliefors Significance Correction

**f. RBC**

**Tests of Normality**

	Hari	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Perlakuan	Statistic	df	Sig.	Statistic	df
Kontrol normal	Hari ke-0	.237		4	.	.924	4
	Hari ke-3	.225		4	.	.923	4
	Hari ke-10	.333		4	.	.787	4
Kontrol placebo	Hari ke-0	.263		4	.	.886	4
	Hari ke-3	.308		4	.	.873	4
	Hari ke-10	.257		4	.	.839	4
Dosis 200 mg/kgBB	Hari ke-0	.413		4	.	.702	4
	Hari ke-3	.242		4	.	.898	4
	Hari ke-10	.276		4	.	.888	4
Dosis 400 mg/kgBB	Hari ke-0	.288		4	.	.933	4
	Hari ke-3	.222		4	.	.955	4
	Hari ke-10	.240		4	.	.917	4

a. Lilliefors Significance Correction

## Lampiran 5.2 Hasil Analisis ANOVA dan Kruskal Wallist

### Analisis antar kelompok

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
sgpt hari ke-0	Between Groups	27.688	3	9.229	.884	.477
	Within Groups	125.250	12	10.438		
	Total	152.938	15			
sgpt hari ke-3	Between Groups	386.188	3	128.729	1.078	.395
	Within Groups	1432.750	12	119.396		
	Total	1818.938	15			
sgpt hari ke-10	Between Groups	417.688	3	139.229	.713	.563
	Within Groups	2343.750	12	195.313		
	Total	2761.438	15			
sgot hari ke-0	Between Groups	830.500	3	276.833	3.165	.064
	Within Groups	1049.500	12	87.458		
	Total	1880.000	15			
sgot hari ke-3	Between Groups	37858.250	3	12619.417	20.976	.000
	Within Groups	7219.500	12	601.625		
	Total	45077.750	15			
sgot hari ke-10	Between Groups	3883.500	3	1294.500	5.664	.012
	Within Groups	2742.500	12	228.542		
	Total	6626.000	15			
ureum hari ke-0	Between Groups	313.688	3	104.563	2.635	.098
	Within Groups	476.250	12	39.687		
	Total	789.938	15			
ureum hari ke-3	Between Groups	1882.688	3	627.563	4.277	.029
	Within Groups	1760.750	12	146.729		
	Total	3643.438	15			
ureum hari ke-10	Between Groups	1164.500	3	388.167	4.157	.031
	Within Groups	1120.500	12	93.375		
	Total	2285.000	15			
kreatinin hari ke-0	Between Groups	.008	3	.003	3.259	.060
	Within Groups	.009	12	.001		
	Total	.017	15			
kreatinin hari ke-3	Between Groups	.014	3	.005	6.219	.009
	Within Groups	.009	12	.001		

	Total	.023	15			
kreatinin hari ke-10	Between Groups	.009	3	.003	3.695	.043
	Within Groups	.009	12	.001		
	Total	.018	15			
Hb hari ke-0	Between Groups	6.347	3	2.116	3.298	.058
	Within Groups	7.698	12	.641		
	Total	14.044	15			
Hb hari ke-3	Between Groups	79.437	3	26.479	4.726	.021
	Within Groups	67.238	12	5.603		
	Total	146.674	15			
Hb hari ke-10	Between Groups	4.452	3	1.484	2.843	.082
	Within Groups	6.265	12	.522		
	Total	10.717	15			
RBC hari ke-0	Between Groups	.136	3	.045	.407	.751
	Within Groups	1.333	12	.111		
	Total	1.468	15			
RBC hari ke-3	Between Groups	51.360	3	17.120	88.854	.000
	Within Groups	2.312	12	.193		
	Total	53.672	15			
RBC hari ke-10	Between Groups	4.487	3	1.496	6.966	.006
	Within Groups	2.577	12	.215		
	Total	7.064	15			

### Analisis antar Hari

#### a. SGPT

#### ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Kontrol normal	Between Groups	228.167	2	114.083	7.734	.011
	Within Groups	132.750	9	14.750		
	Total	360.917	11			
Kontrol placebo	Between Groups	445.167	2	222.583	.816	.472
	Within Groups	2455.500	9	272.833		
	Total	2900.667	11			
Dosis 200 mg/kgBB	Between Groups	220.167	2	110.083	9.834	.005

	Within Groups	100.750	9	11.194		
	Total	320.917	11			
Dosis 400 mg/kgBB	Between Groups	754.667	2	377.333	2.797	.114
	Within Groups	1214.000	9	134.889		
	Total	1968.667	11			

### Test Statistics<sup>a,b</sup>

	Kontrol Sehat	Kontrol Placebo	Dosis 200 mg/kgBB	Dosis 400 mg/kgBB
Kruskal-Wallis H	7.475	3.254	7.446	7.664
df	2	2	2	2
Asymp. Sig.	.024	.197	.024	.022

a. Kruskal Wallis Test

b. Grouping Variable: Hari Perlakuan

### b. SGOT

#### ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Kontrol Sehat	Between Groups	3036.500	2	1518.250	15.532	.001
	Within Groups	879.750	9	97.750		
	Total	3916.250	11			
Kontrol Placebo	Between Groups	46346.167	2	23173.083	89.223	.000
	Within Groups	2337.500	9	259.722		
	Total	48683.667	11			
Dosis 200 mg/kgBB	Between Groups	45300.667	2	22650.333	117.953	.000
	Within Groups	1728.250	9	192.028		
	Total	47028.917	11			
Dosis 400 mg/kgBB	Between Groups	29834.000	2	14917.000	22.132	.000
	Within Groups	6066.000	9	674.000		
	Total	35900.000	11			

### c. Kreatinin

**ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
Kontrol Normal	Between Groups	.002	2	.001	2.939	.104
	Within Groups	.002	9	.000		
	Total	.004	11			
Kontrol Placebo	Between Groups	.005	2	.003	1.692	.238
	Within Groups	.014	9	.002		
	Total	.019	11			
Dosis 200 mg/kgBB	Between Groups	.010	2	.005	4.880	.037
	Within Groups	.009	9	.001		
	Total	.018	11			
Dosis 400 mg/kgBB	Between Groups	.010	2	.005	16.730	.001
	Within Groups	.003	9	.000		
	Total	.013	11			

### d. Ureum

**ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
Kontrol Normal	Between Groups	551.167	2	275.583	42.948	.000
	Within Groups	57.750	9	6.417		
	Total	608.917	11			
Kontrol Placebo	Between Groups	205.167	2	102.583	.582	.579
	Within Groups	1586.500	9	176.278		
	Total	1791.667	11			
Dosis 200 mg/kgBB	Between Groups	1513.167	2	756.583	9.477	.006
	Within Groups	718.500	9	79.833		
	Total	2231.667	11			

Dosis 400 mg/kgBb	Between Groups	1030.167	2	515.083	4.660	.041
	Within Groups	994.750	9	110.528		
	Total	2024.917	11			

**e. Hb**

**ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
Kontrol normal	Between Groups	39.562	2	19.781	1.308	.317
	Within Groups	136.147	9	15.127		
	Total	175.709	11			
Kontrol placebo	Between Groups	104.172	2	52.086	19.782	.001
	Within Groups	23.698	9	2.633		
	Total	127.869	11			
Dosis 200 mg/kgBB	Between Groups	172.262	2	86.131	19.631	.001
	Within Groups	39.488	9	4.387		
	Total	211.749	11			
Dosis 400 mg/kgBB	Between Groups	58.362	2	29.181	21.235	.000
	Within Groups	12.368	9	1.374		
	Total	70.729	11			

**Test Statistics<sup>a,b</sup>**

	Kontrol Normal	Kontrol Placebo	Dosis 200 mg/kgBB	Dosis 400 mg/kgBB
Kruskal-Wallis H	5.828	9.881	9.269	7.565
df	2	2	2	2
Asymp. Sig.	.054	.007	.010	.023

a. Kruskal Wallis Test

b. Grouping Variable: Hari Perlakuan

**f. RBC**

**ANOVA**

	Sum of Squares	df	Mean Square	F	Sig.
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Kontrol normal	<u>Between Groups</u>	4.017	2	2.009	1.103	.373
	<u>Within Groups</u>	16.391	9	1.821		
	Total	20.409	11			
Kontrol placebo	<u>Between Groups</u>	44.717	2	22.359	75.844	.000
	<u>Within Groups</u>	2.653	9	.295		
	Total	47.371	11			
Dosis 200 mg/kgBB	<u>Between Groups</u>	42.681	2	21.341	14.380	.002
	<u>Within Groups</u>	13.357	9	1.484		
	Total	56.038	11			
Dosis 400 mg/kgBB	<u>Between Groups</u>	42.100	2	21.050	201.881	.000
	<u>Within Groups</u>	.938	9	.104		
	Total	43.038	11			

**Lampuran 5.3 Hasil analisis Multiple Comparisons Kadar SGPT, SGOT, Ureum, Kreatinin, Hb, dan RBC**  
**Analisis antar kelompok**

**Multiple Comparisons**

Tukey HSD

Dependent Variable	(I) kelompok perlakuan	(J) kelompok perlakuan	Mean	Std. Error	Sig.	95% Confidence Interval	
			Difference (I-J)			Lower Bound	Upper Bound
sgpt hari ke-0	kontrol normal	kontrol negatif	-3.5000	2.2845	.450	-10.282	3.282
		EBS 200	-1.2500	2.2845	.946	-8.032	5.532
		EBS 400	-2.5000	2.2845	.699	-9.282	4.282
	kontrol negatif	kontrol normal	3.5000	2.2845	.450	-3.282	10.282
		EBS 200	2.2500	2.2845	.761	-4.532	9.032
		EBS 400	1.0000	2.2845	.971	-5.782	7.782
	EBS 200	kontrol normal	1.2500	2.2845	.946	-5.532	8.032
		kontrol negatif	-2.2500	2.2845	.761	-9.032	4.532
		EBS 400	-1.2500	2.2845	.946	-8.032	5.532
	EBS 400	kontrol normal	2.5000	2.2845	.699	-4.282	9.282
		kontrol negatif	-1.0000	2.2845	.971	-7.782	5.782
		EBS 200	1.2500	2.2845	.946	-5.532	8.032
sgpt hari ke-3	kontrol normal	kontrol negatif	-7.7500	7.7264	.751	-30.689	15.189
		EBS 200	-2.0000	7.7264	.994	-24.939	20.939
		EBS 400	-12.5000	7.7264	.405	-35.439	10.439
	kontrol negatif	kontrol normal	7.7500	7.7264	.751	-15.189	30.689

		EBS 200	5.7500	7.7264	.877	-17.189	28.689
		EBS 400	-4.7500	7.7264	.925	-27.689	18.189
EBS 200	kontrol normal	2.0000	7.7264	.994	-20.939	24.939	
	kontrol negatif	-5.7500	7.7264	.877	-28.689	17.189	
EBS 400	EBS 400	-10.5000	7.7264	.546	-33.439	12.439	
	kontrol normal	12.5000	7.7264	.405	-10.439	35.439	
sgpt hari ke-10	kontrol negatif	4.7500	7.7264	.925	-18.189	27.689	
	EBS 200	10.5000	7.7264	.546	-12.439	33.439	
kontrol normal	kontrol negatif	7.0000	3.6443	.270	-3.820	17.820	
	EBS 200	5.7500	3.6443	.426	-5.070	16.570	
kontrol negatif	EBS 400	-6.5000	3.6443	.327	-17.320	4.320	
	kontrol normal	-7.0000	3.6443	.270	-17.820	3.820	
EBS 200	EBS 200	-1.2500	3.6443	.985	-12.070	9.570	
	EBS 400	-13.5000*	3.6443	1.000	-24.320	-2.680	
kontrol normal	kontrol normal	-5.7500	3.6443	.426	-16.570	5.070	
	kontrol negatif	1.2500	3.6443	.985	-9.570	12.070	
EBS 400	EBS 400	-12.2500*	3.6443	0.615	-23.070	-1.430	

	EBS 400	kontrol normal	6.5000	3.6443	.327	-4.320	17.320
		kontrol negatif	13.5000*	3.6443	1.000	2.680	24.320
		EBS 200	12.2500*	3.6443	0.615	1.430	23.070
sgot hari ke-0	kontrol normal	kontrol negatif	-20.2500*	6.6128	.043	-39.883	-.617
		EBS 200	-8.7500	6.6128	.567	-28.383	10.883
		EBS 400	-11.0000	6.6128	.383	-30.633	8.633
	kontrol negatif	kontrol normal	20.2500*	6.6128	.043	.617	39.883
		EBS 200	11.5000	6.6128	.347	-8.133	31.133
		EBS 400	9.2500	6.6128	.523	-10.383	28.883
	EBS 200	kontrol normal	8.7500	6.6128	.567	-10.883	28.383
		kontrol negatif	-11.5000	6.6128	.347	-31.133	8.133
		EBS 400	-2.2500	6.6128	.986	-21.883	17.383
	EBS 400	kontrol normal	11.0000	6.6128	.383	-8.633	30.633
		kontrol negatif	-9.2500	6.6128	.523	-28.883	10.383
		EBS 200	2.2500	6.6128	.986	-17.383	21.883
sgot hari ke-3	kontrol normal	kontrol negatif	-128.75000*	17.34395	.000	-180.2425	-77.2575
		EBS 200	-105.75000*	17.34395	.000	-157.2425	-54.2575
		EBS 400	-85.00000*	17.34395	.002	-136.4925	-33.5075
	kontrol negatif	kontrol normal	128.75000*	17.34395	.000	77.2575	180.2425
		EBS 200	23.00000	17.34395	.565	-28.4925	74.4925
		EBS 400	43.75000	17.34395	.106	-7.7425	95.2425
	EBS 200	kontrol normal	105.75000*	17.34395	.000	54.2575	157.2425
		kontrol negatif	-23.00000	17.34395	.565	-74.4925	28.4925

		EBS 400	20.75000	17.34395	.640	-30.7425	72.2425
EBS 400	kontrol normal	kontrol normal	85.00000*	17.34395	.002	33.5075	136.4925
		kontrol negatif	-43.75000	17.34395	.106	-95.2425	7.7425
	EBS 200		-20.75000	17.34395	.640	-72.2425	30.7425
sgot hari ke-10	kontrol normal	kontrol negatif	-41.7500*	10.6898	.010	-73.487	-10.013
		EBS 200	-9.0000	10.6898	.834	-40.737	22.737
		EBS 400	-14.2500	10.6898	.561	-45.987	17.487
	kontrol negatif	kontrol normal	41.7500*	10.6898	.010	10.013	73.487
		EBS 200	32.7500*	10.6898	.042	1.013	64.487
		EBS 400	27.5000	10.6898	.098	-4.237	59.237
EBS 200	kontrol normal	kontrol normal	9.0000	10.6898	.834	-22.737	40.737
		kontrol negatif	-32.7500*	10.6898	.042	-64.487	-1.013
		EBS 400	-5.2500	10.6898	.960	-36.987	26.487
	EBS 400	kontrol normal	14.2500	10.6898	.561	-17.487	45.987
		kontrol negatif	-27.5000	10.6898	.098	-59.237	4.237
		EBS 200	5.2500	10.6898	.960	-26.487	36.987
ureum hari ke-0	kontrol normal	kontrol negatif	-8.2500	4.4546	.298	-21.475	4.975
		EBS 200	-10.2500	4.4546	.152	-23.475	2.975
		EBS 400	-11.2500	4.4546	.106	-24.475	1.975
	kontrol negatif	kontrol normal	8.2500	4.4546	.298	-4.975	21.475
		EBS 200	-2.0000	4.4546	.969	-15.225	11.225
		EBS 400	-3.0000	4.4546	.905	-16.225	10.225
	EBS 200	kontrol normal	10.2500	4.4546	.152	-2.975	23.475

		kontrol negatif	2.0000	4.4546	.969	-11.225	15.225
		EBS 400	-1.0000	4.4546	.996	-14.225	12.225
	EBS 400	kontrol normal	11.2500	4.4546	.106	-1.975	24.475
		kontrol negatif	3.0000	4.4546	.905	-10.225	16.225
		EBS 200	1.0000	4.4546	.996	-12.225	14.225
ureum hari ke-3	kontrol normal	kontrol negatif	-30.0000*	8.5653	.020	-55.430	-4.570
		EBS 200	-20.2500	8.5653	.138	-45.680	5.180
		EBS 400	-18.5000	8.5653	.190	-43.930	6.930
	kontrol negatif	kontrol normal	30.0000*	8.5653	.020	4.570	55.430
		EBS 200	9.7500	8.5653	.674	-15.680	35.180
		EBS 400	11.5000	8.5653	.555	-13.930	36.930
	EBS 200	kontrol normal	20.2500	8.5653	.138	-5.180	45.680
		kontrol negatif	-9.7500	8.5653	.674	-35.180	15.680
		EBS 400	1.7500	8.5653	.997	-23.680	27.180
	EBS 400	kontrol normal	18.5000	8.5653	.190	-6.930	43.930
		kontrol negatif	-11.5000	8.5653	.555	-36.930	13.930
		EBS 200	-1.7500	8.5653	.997	-27.180	23.680
ureum hari ke-10	kontrol normal	kontrol negatif	-20.00000	6.83283	.054	-40.2860	.2860
		EBS 200	1.25000	6.83283	.998	-19.0360	21.5360
		EBS 400	-3.25000	6.83283	.963	-23.5360	17.0360
	kontrol negatif	kontrol normal	20.00000	6.83283	.054	-2860	40.2860
		EBS 200	21.25000*	6.83283	.039	.9640	41.5360
		EBS 400	16.75000	6.83283	.120	-3.5360	37.0360

EBS 200	kontrol normal		-1.25000	6.83283	.998	-21.5360
						19.0360
	kontrol negatif		-21.25000*	6.83283	.039	-41.5360
	EBS 400		-4.50000	6.83283	.911	-24.7860
	EBS 400	kontrol normal	3.25000	6.83283	.963	-17.0360
		kontrol negatif	-16.75000	6.83283	.120	-37.0360
		EBS 200	4.50000	6.83283	.911	-15.7860
kreatinin hari ke-0	kontrol normal	kontrol negatif	.05750	.01987	.057	-.0015
		EBS 200	.03000	.01987	.462	-.0290
		EBS 400	.01000	.01987	.957	-.0490
	kontrol negatif	kontrol normal	-.05750	.01987	.057	-.1165
		EBS 200	-.02750	.01987	.532	-.0865
		EBS 400	-.04750	.01987	.132	-.1065
	EBS 200	kontrol normal	-.03000	.01987	.462	-.0890
		kontrol negatif	.02750	.01987	.532	-.0315
		EBS 400	-.02000	.01987	.749	-.0790
	EBS 400	kontrol normal	-.01000	.01987	.957	-.0690
		kontrol negatif	.04750	.01987	.132	-.0115
		EBS 200	.02000	.01987	.749	-.0390
kreatinin hari ke-3	kontrol normal	kontrol negatif	.07750*	.01953	.009	.0195
		EBS 200	.06750*	.01953	.021	.0095
		EBS 400	.05000	.01953	.100	-.0080
	kontrol negatif	kontrol normal	-.07750*	.01953	.009	-.1355
		EBS 200	-.01000	.01953	.955	-.0680
						.0480

		EBS 400	-.02750	.01953	.518	-.0855	.0305
EBS 200	kontrol normal	-.06750*	.01953	.021	-.1255	-.0095	
	kontrol negatif	.01000	.01953	.955	-.0480	.0680	
EBS 400	EBS 400	-.01750	.01953	.807	-.0755	.0405	
	kontrol normal	-.05000	.01953	.100	-.1080	.0080	
	kontrol negatif	.02750	.01953	.518	-.0305	.0855	
kreatinin hari ke-10	EBS 200	.01750	.01953	.807	-.0405	.0755	
	kontrol normal	kontrol negatif	.04500	.01966	.155	-.0134	.1034
	EBS 200	.06250*	.01966	.035	.0041	.1209	
kontrol negatif	EBS 400	.04500	.01966	.155	-.0134	.1034	
	kontrol normal	-.04500	.01966	.155	-.1034	.0134	
	EBS 200	.01750	.01966	.810	-.0409	.0759	
EBS 200	EBS 400	.00000	.01966	1.000	-.0584	.0584	
	kontrol normal	-.06250*	.01966	.035	-.1209	-.0041	
	kontrol negatif	-.01750	.01966	.810	-.0759	.0409	
EBS 400	EBS 400	-.01750	.01966	.810	-.0759	.0409	
	kontrol normal	-.04500	.01966	.155	-.1034	.0134	
	kontrol negatif	.00000	.01966	1.000	-.0584	.0584	
Hb hari ke-0	EBS 200	.01750	.01966	.810	-.0409	.0759	
	kontrol normal	kontrol negatif	-1.40000	.56633	.116	-3.0814	.2814
	EBS 200	-.82500	.56633	.491	-2.5064	.8564	
kontrol negatif	EBS 400	.15000	.56633	.993	-1.5314	1.8314	
	kontrol normal	1.40000	.56633	.116	-.2814	3.0814	

		EBS 200	.57500	.56633	.744	-1.1064	2.2564
		EBS 400	1.55000	.56633	.074	-.1314	3.2314
EBS 200	kontrol normal	.82500	.56633	.491	-.8564	2.5064	
	kontrol negatif	-.57500	.56633	.744	-2.2564	1.1064	
EBS 400	EBS 400	.97500	.56633	.355	-.7064	2.6564	
	kontrol normal	-.15000	.56633	.993	-1.8314	1.5314	
Hb hari ke-3	kontrol negatif	-1.55000	.56633	.074	-3.2314	.1314	
	EBS 200	-.97500	.56633	.355	-2.6564	.7064	
	kontrol normal	kontrol negatif	3.95000	1.67379	.139	-1.0193	8.9193
	EBS 200	6.20000*	1.67379	.014	1.2307	11.1693	
	EBS 400	2.92500	1.67379	.343	-2.0443	7.8943	
	kontrol negatif	kontrol normal	-3.95000	1.67379	.139	-8.9193	1.0193
	EBS 200	2.25000	1.67379	.554	-2.7193	7.2193	
	EBS 400	-1.02500	1.67379	.926	-5.9943	3.9443	
	EBS 200	kontrol normal	-6.20000*	1.67379	.014	-11.1693	-1.2307
	EBS 400	kontrol negatif	-2.25000	1.67379	.554	-7.2193	2.7193
	EBS 400	-3.27500	1.67379	.257	-8.2443	1.6943	
	kontrol normal	-2.92500	1.67379	.343	-7.8943	2.0443	
	EBS 400	kontrol negatif	1.02500	1.67379	.926	-3.9443	5.9943
	EBS 200	3.27500	1.67379	.257	-1.6943	8.2443	
	kontrol normal	kontrol negatif	.35000	.51092	.901	-1.1669	1.8669
Hb hari ke-10	EBS 200	.12500	.51092	.995	-1.3919	1.6419	
	EBS 400	-1.02500	.51092	.239	-2.5419	.4919	

RBC hari ke-0	kontrol negatif	kontrol normal	-.35000	.51092	.901	-1.8669
		EBS 200	-.22500	.51092	.970	-1.7419
		EBS 400	-1.37500	.51092	.080	-2.8919
	EBS 200	kontrol normal	-.12500	.51092	.995	-1.6419
		kontrol negatif	.22500	.51092	.970	-1.2919
		EBS 400	-1.15000	.51092	.165	-2.6669
	EBS 400	kontrol normal	1.02500	.51092	.239	-.4919
		kontrol negatif	1.37500	.51092	.080	-.1419
		EBS 200	1.15000	.51092	.165	-3.6669
RBC hari ke-3	kontrol normal	kontrol negatif	.03250	.23564	.999	-.6671
		EBS 200	.15000	.23564	.918	-.5496
		EBS 400	.23000	.23564	.765	-.4696
	kontrol negatif	kontrol normal	-.03250	.23564	.999	-.7321
		EBS 200	.11750	.23564	.958	-.5821
		EBS 400	.19750	.23564	.835	-.5021
	EBS 200	kontrol normal	-.15000	.23564	.918	-.8496
		kontrol negatif	-.11750	.23564	.958	-.8171
		EBS 400	.08000	.23564	.986	-.6196
RBC hari ke-3	EBS 400	kontrol normal	-.23000	.23564	.765	-.9296
		kontrol negatif	-.19750	.23564	.835	-.8971
		EBS 200	-.08000	.23564	.986	-.7796
RBC hari ke-3	kontrol normal	kontrol negatif	4.05750*	.31038	.000	3.1360
		EBS 200	4.40750*	.31038	.000	3.4860

		EBS 400	3.87750*	.31038	.000	2.9560	4.7990
kontrol negatif	kontrol normal		-4.05750*	.31038	.000	-4.9790	-3.1360
	EBS 200		.35000	.31038	.680	-.5715	1.2715
	EBS 400		-.18000	.31038	.936	-1.1015	.7415
EBS 200	kontrol normal		-4.40750*	.31038	.000	-5.3290	-3.4860
	kontrol negatif		-.35000	.31038	.680	-1.2715	.5715
	EBS 400		-.53000	.31038	.362	-1.4515	.3915
EBS 400	kontrol normal		-3.87750*	.31038	.000	-4.7990	-2.9560
	kontrol negatif		.18000	.31038	.936	-.7415	1.1015
	EBS 200		.53000	.31038	.362	-.3915	1.4515
RBC hari ke-10	kontrol normal	kontrol negatif	1.46750*	.32765	.004	.4947	2.4403
		EBS 200	.98750*	.32765	.046	.0147	1.9603
		EBS 400	.76500	.32765	.144	-.2078	1.7378
	kontrol negatif	kontrol normal	-1.46750*	.32765	.004	-2.4403	-.4947
		EBS 200	-.48000	.32765	.486	-1.4528	.4928
		EBS 400	-.70250	.32765	.194	-1.6753	.2703
	EBS 200	kontrol normal	-.98750*	.32765	.046	-1.9603	-.0147
		kontrol negatif	.48000	.32765	.486	-.4928	1.4528
		EBS 400	-.22250	.32765	.903	-1.1953	.7503
EBS 400	kontrol normal		-.76500	.32765	.144	-1.7378	.2078
		kontrol negatif	.70250	.32765	.194	-.2703	1.6753
	EBS 200		.22250	.32765	.903	-.7503	1.1953

\*: The mean difference is significant at the 0.05 level.

### Paired Samples Test

		Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	sgpt hari ke-0 - sgpt hari ke-3	-13.0000	11.5181	2.8795	-19.1376	-6.8624	-4.515	15	.000
Pair 2	sgpt hari ke-0 - sgpt hari ke-10	-5.8750	8.4922	2.1230	-10.4001	-1.3499	-2.767	15	.014
Pair 3	sgpt hari ke-3 - sgpt hari ke-10	7.1250	12.3173	3.0793	.5616	13.6884	2.314	15	.035
Pair 4	sgot hari ke-0 - sgot hari ke-3	-100.37500	50.21935	12.55484	-	-73.61500	-7.995	15	.000
					127.13500				
Pair 5	sgot hari ke-0 - sgot hari ke-10	-.5000	19.1868	4.7967	-10.7239	9.7239	-.104	15	.918
Pair 6	sgot hari ke-3 - sgot hari ke-10	99.87500	44.27320	11.06830	76.28347	123.46653	9.024	15	.000
Pair 7	ureum hari ke-0 - ureum hari ke-3	4.7500	14.3689	3.5922	-2.9067	12.4067	1.322	15	.206
Pair 8	ureum hari ke-0 - ureum hari ke-10	16.18750	12.76568	3.19142	9.38515	22.98985	5.072	15	.000
Pair 9	ureum hari ke-3 - ureum hari ke-10	11.43750	13.00753	3.25188	4.50628	18.36872	3.517	15	.003
Pair 10	kreatinin hari ke-0 - kreatinin hari ke-3	.05187	.03781	.00945	.03173	.07202	5.488	15	.000
Pair 11	kreatinin hari ke-0 - kreatinin hari ke-10	.03375	.02918	.00730	.01820	.04930	4.626	15	.000

Pair 12	kreatinin hari ke-3 - kreatinin hari ke-10	-.01813	.03449	.00862	-.03650	.00025	-2.102	15	.053
Pair 13	Hb hari ke-0 - Hb hari ke-3	5.58750	3.58122	.89531	3.67920	7.49580	6.241	15	.000
Pair 14	Hb hari ke-0 - Hb hari ke-10	1.35625	1.42734	.35683	.59568	2.11682	3.801	15	.002
Pair 15	Hb hari ke-3 - Hb hari ke-10	-4.23125	3.37910	.84477	-6.03184	-2.43066	-5.009	15	.000
Pair 16	RBC hari ke-0 - RBC hari ke-3	3.61000	1.84402	.46100	2.62739	4.59261	7.831	15	.000
Pair 17	RBC hari ke-0 - RBC hari ke-10	.86188	.77981	.19495	.44635	1.27740	4.421	15	.000
Pair 18	RBC hari ke-3 - RBC hari ke-10	-2.74812	1.52204	.38051	-3.55916	-1.93709	-7.222	15	.000

### Analisis antar hari pada masing-masing kelompok

#### a. SGPT

#### Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Hari Perlakuan	(J) Hari Perlakuan	Mean Difference		Sig.	95% Confidence Interval	
			(I-J)	Std. Error		Lower Bound	Upper Bound
Kontrol normal	Hari ke-0	Hari ke-3	-9.25000*	2.71570	.019	-16.8322	-1.6678
		Hari ke-10	-9.25000*	2.71570	.019	-16.8322	-1.6678
	Hari ke-3	Hari ke-0	9.25000*	2.71570	.019	1.6678	16.8322
		Hari ke-10	.00000	2.71570	1.000	-7.5822	7.5822
	Hari ke-10	Hari ke-0	9.25000*	2.71570	.019	1.6678	16.8322

		Hari ke-3	.00000	2.71570	1.000	-7.5822	7.5822
Kontrol placebo	Hari ke-0	Hari ke-3	-13.50000	11.67975	.506	-46.1099	19.1099
		Hari ke-10	-12.25000	11.67975	.567	-44.8599	20.3599
	Hari ke-3	Hari ke-0	13.50000	11.67975	.506	-19.1099	46.1099
		Hari ke-10	1.25000	11.67975	.994	-31.3599	33.8599
	Hari ke-10	Hari ke-0	12.25000	11.67975	.567	-20.3599	44.8599
		Hari ke-3	-1.25000	11.67975	.994	-33.8599	31.3599
Dosis 200 mg/kgBB	Hari ke-0	Hari ke-3	-10.00000*	2.36584	.006	-16.6055	-3.3945
		Hari ke-10	-2.25000	2.36584	.624	-8.8555	4.3555
	Hari ke-3	Hari ke-0	10.00000*	2.36584	.006	3.3945	16.6055
		Hari ke-10	7.75000*	2.36584	.024	1.1445	14.3555
	Hari ke-10	Hari ke-0	2.25000	2.36584	.624	-4.3555	8.8555
		Hari ke-3	-7.75000*	2.36584	.024	-14.3555	-1.1445
Dosis 400 mg/kgBB	Hari ke-0	Hari ke-3	-19.00000	8.21246	.105	-41.9292	3.9292
		Hari ke-10	-13.00000	8.21246	.301	-35.9292	9.9292
	Hari ke-3	Hari ke-0	19.00000	8.21246	.105	-3.9292	41.9292
		Hari ke-10	6.00000	8.21246	.752	-16.9292	28.9292
	Hari ke-10	Hari ke-0	13.00000	8.21246	.301	-9.9292	35.9292
		Hari ke-3	-6.00000	8.21246	.752	-28.9292	16.9292

\*. The mean difference is significant at the 0.05 level.

### Mann-Whitney Test pada hari ke-0 dan hari ke-3

	Test Statistics <sup>a</sup>		Dosis 200	Dosis 400
	Kontrol Sehat	Kontrol Placebo	mg/kgBB	mg/kgBB
Mann-Whitney U	.000	1.000	.000	.000
Wilcoxon W	10.000	11.000	10.000	10.000
Z	-2.309	-2.021	-2.309	-2.381
Asymp. Sig. (2-tailed)	.021	.043	.021	.017
Exact Sig. [2*(1-tailed Sig.)]	.029 <sup>b</sup>	.057 <sup>b</sup>	.029 <sup>b</sup>	.029 <sup>b</sup>

a. Grouping Variable: Hari Perlakuan

b. Not corrected for ties.

### Mann-Whitney Test pada hari ke-3 dan hari ke-10

	Test Statistics <sup>a</sup>		Dosis 200	Dosis 400
	Kontrol Sehat	Kontrol Placebo	mg/kgBB	mg/kgBB
Mann-Whitney U	7.000	5.000	.000	7.000
Wilcoxon W	17.000	15.000	10.000	17.000
Z	-.292	-.866	-2.323	-.298
Asymp. Sig. (2-tailed)	.770	.386	.020	.766
Exact Sig. [2*(1-tailed Sig.)]	.886 <sup>b</sup>	.486 <sup>b</sup>	.029 <sup>b</sup>	.886 <sup>b</sup>

a. Grouping Variable: Hari Perlakuan

b. Not corrected for ties.

### b. SGOT

#### Multiple Comparisons

Tukey HSD

Dependent Variable			Mean Difference		Sig.	95% Confidence Interval	
	(I) Hari Perlakuan	(J) Hari Perlakuan	(I-J)	Std. Error		Lower Bound	Upper Bound
Kontrol Sehat	Hari ke-0	Hari ke-3	-30.50000*	6.99107	.005	-50.0191	-10.9809
		Hari ke-10	5.75000	6.99107	.699	-13.7691	25.2691
	Hari ke-3	Hari ke-0	30.50000*	6.99107	.005	10.9809	50.0191
		Hari ke-10	36.25000*	6.99107	.001	16.7309	55.7691
	Hari ke-10	Hari ke-0	-5.75000	6.99107	.699	-25.2691	13.7691

		Hari ke-3	-36.25000*	6.99107	.001	-55.7691	-16.7309
Kontrol Placebo	Hari ke-0	Hari ke-3	-139.00000*	11.39566	.000	-170.8168	-107.1832
		Hari ke-10	-15.75000	11.39566	.389	-47.5668	16.0668
	Hari ke-3	Hari ke-0	139.00000*	11.39566	.000	107.1832	170.8168
		Hari ke-10	123.25000*	11.39566	.000	91.4332	155.0668
	Hari ke-10	Hari ke-0	15.75000	11.39566	.389	-16.0668	47.5668
		Hari ke-3	-123.25000*	11.39566	.000	-155.0668	-91.4332
Dosis 200 mg/kgBB	Hari ke-0	Hari ke-3	-127.50000*	9.79867	.000	-154.8579	-100.1421
		Hari ke-10	5.50000	9.79867	.843	-21.8579	32.8579
	Hari ke-3	Hari ke-0	127.50000*	9.79867	.000	100.1421	154.8579
		Hari ke-10	133.00000*	9.79867	.000	105.6421	160.3579
	Hari ke-10	Hari ke-0	-5.50000	9.79867	.843	-32.8579	21.8579
		Hari ke-3	-133.00000*	9.79867	.000	-160.3579	-105.6421
Dosis 400 mg/kgBB	Hari ke-0	Hari ke-3	-104.50000*	18.35756	.001	-155.7544	-53.2456
		Hari ke-10	2.50000	18.35756	.990	-48.7544	53.7544
	Hari ke-3	Hari ke-0	104.50000*	18.35756	.001	53.2456	155.7544
		Hari ke-10	107.00000*	18.35756	.001	55.7456	158.2544
	Hari ke-10	Hari ke-0	-2.50000	18.35756	.990	-53.7544	48.7544
		Hari ke-3	-107.00000*	18.35756	.001	-158.2544	-55.7456

\*. The mean difference is significant at the 0.05 level.

### c. Kreatinin

#### Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Hari Perlakuan	(J) Hari Perlakuan	Mean Difference		Sig.	95% Confidence Interval	
			(I-J)	Std. Error		Lower Bound	Upper Bound
Kontrol Normal	Hari ke-0	Hari ke-3	.02750	.01173	.100	-.0052	.0602
		Hari ke-10	.02000	.01173	.255	-.0127	.0527
	Hari ke-3	Hari ke-0	-.02750	.01173	.100	-.0602	.0052
		Hari ke-10	-.00750	.01173	.803	-.0402	.0252
	Hari ke-10	Hari ke-0	-.02000	.01173	.255	-.0527	.0127
		Hari ke-3	.00750	.01173	.803	-.0252	.0402
Kontrol Placebo	Hari ke-0	Hari ke-3	.04750	.02776	.253	-.0300	.1250
		Hari ke-10	.00750	.02776	.961	-.0700	.0850
	Hari ke-3	Hari ke-0	-.04750	.02776	.253	-.1250	.0300
		Hari ke-10	-.04000	.02776	.362	-.1175	.0375
	Hari ke-10	Hari ke-0	-.00750	.02776	.961	-.0850	.0700
		Hari ke-3	.04000	.02776	.362	-.0375	.1175
Dosis 200 mg/kgBB	Hari ke-0	Hari ke-3	.06500*	.02208	.039	.0034	.1266
		Hari ke-10	.05250	.02208	.095	-.0091	.1141
	Hari ke-3	Hari ke-0	-.06500*	.02208	.039	-.1266	-.0034
		Hari ke-10	-.01250	.02208	.841	-.0741	.0491
	Hari ke-10	Hari ke-0	-.05250	.02208	.095	-.1141	.0091
		Hari ke-3	.01250	.02208	.841	-.0491	.0741

Dosis 400 mg/kgBB	Hari ke-0	Hari ke-3	.06750*	.01242	.001	.0328	.1022
		Hari ke-10	.05500*	.01242	.004	.0203	.0897
	Hari ke-3	Hari ke-0	-.06750*	.01242	.001	-.1022	-.0328
		Hari ke-10	-.01250	.01242	.591	-.0472	.0222
	Hari ke-10	Hari ke-0	-.05500*	.01242	.004	-.0897	-.0203
		Hari ke-3	.01250	.01242	.591	-.0222	.0472

\*. The mean difference is significant at the 0.05 level.

#### d. Ureum

##### Multiple Comparisons

###### Tukey HSD

Dependent Variable	(I) Hari Perlakuan	(J) Hari Perlakuan	Mean Difference		Sig.	95% Confidence Interval	
			(I-J)	Std. Error		Lower Bound	Upper Bound
Kontrol Normal	Hari ke-0	Hari ke-3	14.50000*	1.79118	.000	9.4990	19.5010
		Hari ke-10	14.25000*	1.79118	.000	9.2490	19.2510
	Hari ke-3	Hari ke-0	-14.50000*	1.79118	.000	-19.5010	-9.4990
		Hari ke-10	-.25000	1.79118	.989	-5.2510	4.7510
	Hari ke-10	Hari ke-0	-14.25000*	1.79118	.000	-19.2510	-9.2490
		Hari ke-3	.25000	1.79118	.989	-4.7510	5.2510
Kontrol Placebo	Hari ke-0	Hari ke-3	-7.25000	9.38823	.728	-33.4620	18.9620
		Hari ke-10	2.50000	9.38823	.962	-23.7120	28.7120
	Hari ke-3	Hari ke-0	7.25000	9.38823	.728	-18.9620	33.4620
		Hari ke-10	9.75000	9.38823	.573	-16.4620	35.9620

	Hari ke-10	Hari ke-0	-2.50000	9.38823	.962	-28.7120	23.7120
		Hari ke-3	-9.75000	9.38823	.573	-35.9620	16.4620
Dosis 200 mg/kgBB	Hari ke-0	Hari ke-3	4.50000	6.31796	.763	-13.1398	22.1398
		Hari ke-10	25.75000*	6.31796	.007	8.1102	43.3898
	Hari ke-3	Hari ke-0	-4.50000	6.31796	.763	-22.1398	13.1398
		Hari ke-10	21.25000*	6.31796	.021	3.6102	38.8898
	Hari ke-10	Hari ke-0	-25.75000*	6.31796	.007	-43.3898	-8.1102
		Hari ke-3	-21.25000*	6.31796	.021	-38.8898	-3.6102
Dosis 400 mg/kgBb	Hari ke-0	Hari ke-3	7.25000	7.43397	.610	-13.5057	28.0057
		Hari ke-10	22.25000*	7.43397	.037	1.4943	43.0057
	Hari ke-3	Hari ke-0	-7.25000	7.43397	.610	-28.0057	13.5057
		Hari ke-10	15.00000	7.43397	.163	-5.7557	35.7557
	Hari ke-10	Hari ke-0	-22.25000*	7.43397	.037	-43.0057	-1.4943
		Hari ke-3	-15.00000	7.43397	.163	-35.7557	5.7557

\*. The mean difference is significant at the 0.05 level.

### e. Hb

#### Multiple Comparisons

##### Tukey HSD

Dependent Variable	(I) Hari Perlakuan	(J) Hari Perlakuan	Mean Difference		Sig.	95% Confidence Interval	
			(I-J)	Std. Error		Lower Bound	Upper Bound
Kontrol normal	Hari ke-0	Hari ke-3	-9.25000*	2.71570	.019	-16.8322	-1.6678
		Hari ke-10	-9.25000*	2.71570	.019	-16.8322	-1.6678

	Hari ke-3	Hari ke-0	9.25000*	2.71570	.019	1.6678	16.8322
		Hari ke-10	.00000	2.71570	1.000	-7.5822	7.5822
	Hari ke-10	Hari ke-0	9.25000*	2.71570	.019	1.6678	16.8322
		Hari ke-3	.00000	2.71570	1.000	-7.5822	7.5822
Kontrol placebo	Hari ke-0	Hari ke-3	-13.50000	11.67975	.506	-46.1099	19.1099
		Hari ke-10	-12.25000	11.67975	.567	-44.8599	20.3599
	Hari ke-3	Hari ke-0	13.50000	11.67975	.506	-19.1099	46.1099
		Hari ke-10	1.25000	11.67975	.994	-31.3599	33.8599
	Hari ke-10	Hari ke-0	12.25000	11.67975	.567	-20.3599	44.8599
		Hari ke-3	-1.25000	11.67975	.994	-33.8599	31.3599
	Hari ke-0	Hari ke-3	-10.00000*	2.36584	.006	-16.6055	-3.3945
		Hari ke-10	-2.25000	2.36584	.624	-8.8555	4.3555
	Hari ke-3	Hari ke-0	10.00000*	2.36584	.006	3.3945	16.6055
		Hari ke-10	7.75000*	2.36584	.024	1.1445	14.3555
Dosis 200 mg/kgBB	Hari ke-0	Hari ke-3	2.25000	2.36584	.624	-4.3555	8.8555
		Hari ke-3	-7.75000*	2.36584	.024	-14.3555	-1.1445
	Hari ke-0	Hari ke-3	-19.00000	8.21246	.105	-41.9292	3.9292
		Hari ke-10	-13.00000	8.21246	.301	-35.9292	9.9292
	Hari ke-3	Hari ke-0	19.00000	8.21246	.105	-3.9292	41.9292
		Hari ke-10	6.00000	8.21246	.752	-16.9292	28.9292
	Hari ke-10	Hari ke-0	13.00000	8.21246	.301	-9.9292	35.9292
		Hari ke-3	-6.00000	8.21246	.752	-28.9292	16.9292
	Hari ke-0	Hari ke-3	13.00000	8.21246	.301	-9.9292	35.9292
		Hari ke-10	6.00000	8.21246	.752	-16.9292	28.9292

\*: The mean difference is significant at the 0.05 level.

### Mann-Whitney Test pada hari ke-3 dan hari ke-10

**Test Statistics<sup>a</sup>**

	Kontrol Normal	Kontrol Placebo	Dosis 200 mg/kgBB	Dosis 400 mg/kgBB
Mann-Whitney U	.000	.000	.000	.000
Wilcoxon W	10.000	10.000	10.000	10.000
Z	-2.323	-2.323	-2.309	-2.323
Asymp. Sig. (2-tailed)	.020	.020	.021	.020
Exact Sig. [2*(1-tailed Sig.)]	.029 <sup>b</sup>	.029 <sup>b</sup>	.029 <sup>b</sup>	.029 <sup>b</sup>

a. Grouping Variable: Hari Perlakuan

b. Not corrected for ties.

### Mann-Whitney Test pada hari ke-3 dan hari ke-10

**Test Statistics<sup>a</sup>**

	Kontrol Normal	Kontrol Placebo	Dosis 200 mg/kgBB	Dosis 400 mg/kgBB
Mann-Whitney U	7.000	.000	.000	.000
Wilcoxon W	17.000	10.000	10.000	10.000
Z	-.290	-2.309	-2.309	-2.309
Asymp. Sig. (2-tailed)	.772	.021	.021	.021
Exact Sig. [2*(1-tailed Sig.)]	.886 <sup>b</sup>	.029 <sup>b</sup>	.029 <sup>b</sup>	.029 <sup>b</sup>

a. Grouping Variable: Hari Perlakuan

b. Not corrected for ties.

**f. RBC**

**Multiple Comparisons**

Tukey HSD

Dependent Variable	(I) Hari Perlakuan	(J) Hari Perlakuan	Mean Difference		Sig.	95% Confidence Interval	
			(I-J)	Std. Error		Lower Bound	Upper Bound
Kontrol normal	Hari ke-0	Hari ke-3	.97750	.95427	.581	-1.6868	3.6418
		Hari ke-10	1.37750	.95427	.361	-1.2868	4.0418
	Hari ke-3	Hari ke-0	-.97750	.95427	.581	-3.6418	1.6868
		Hari ke-10	.40000	.95427	.909	-2.2643	3.0643
	Hari ke-10	Hari ke-0	-1.37750	.95427	.361	-4.0418	1.2868
		Hari ke-3	-.40000	.95427	.909	-3.0643	2.2643
Kontrol placebo	Hari ke-0	Hari ke-3	4.65250*	.38393	.000	3.5806	5.7244
		Hari ke-10	1.59500*	.38393	.006	.5231	2.6669
	Hari ke-3	Hari ke-0	-4.65250*	.38393	.000	-5.7244	-3.5806
		Hari ke-10	-3.05750*	.38393	.000	-4.1294	-1.9856
	Hari ke-10	Hari ke-0	-1.59500*	.38393	.006	-2.6669	-.5231
		Hari ke-3	3.05750*	.38393	.000	1.9856	4.1294
Dosis 200 mg/kgBB	Hari ke-0	Hari ke-3	4.10500*	.86142	.003	1.6999	6.5101
		Hari ke-10	.21750	.86142	.966	-2.1876	2.6226
	Hari ke-3	Hari ke-0	-4.10500*	.86142	.003	-6.5101	-1.6999
		Hari ke-10	-3.88750*	.86142	.004	-6.2926	-1.4824
	Hari ke-10	Hari ke-0	-.21750	.86142	.966	-2.6226	2.1876
		Hari ke-3	3.88750*	.86142	.004	1.4824	6.2926

Dosis 400 mg/kgBB	Hari ke-0	Hari ke-3	4.27500*	.22833	.000	3.6375	4.9125
		Hari ke-10	.69500*	.22833	.034	.0575	1.3325
	Hari ke-3	Hari ke-0	-4.27500*	.22833	.000	-4.9125	-3.6375
		Hari ke-10	-3.58000*	.22833	.000	-4.2175	-2.9425
	Hari ke-10	Hari ke-0	-.69500*	.22833	.034	-1.3325	-.0575
		Hari ke-3	3.58000*	.22833	.000	2.9425	4.2175

\*. The mean difference is significant at the 0.05 level.

## Lampiran 6. Determinasi Belut Sawah (*Monopterus albus*)



**LABORATORIUM ZOOLOGI DEPARTEMEN BIOLOGI  
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### **SURAT KETERANGAN** No. : 047/ZOO/BIO/2024

Hal : Identifikasi Sampel  
Lampiran : 1 Lembar

Yang bertanda tangan dibawah ini, menerangkan bahwa setelah mengkaji karakter dan mengidentifikasi maka sampel merupakan spesies Belut Sawah *Monopterus albus* (Zuiwe, 1793) dengan keterangan sebagai berikut:

Klasifikasi:

Kingdom : Animalia  
Filum : Chordata  
Kelas : Actinopterygii  
Ordo : Synbranchiformes  
Famili : Synbranchidae  
Genus : *Monopterus*  
Spesies : *Monopterus albus* (Zuiwe, 1793)

Nama Lokal : Belut sawah, Mua, Lendong, Lenrong, Lindung

Sampel : Terima tanggal 10 Juni 2024

Diskripsi : Tubuh anguilliform (belut-belutan); tidak memiliki sisik; tidak ada sirip dada dan sirip perut; sirip punggung, ekor, dan dubur menyatu dan mengecil menjadi lipatan kulit; bukaan insang menyatu menjadi satu celah di bawah kepala. Berwarna merah sampai coklat dengan taburan bintik hitam di punggungnya; mulut besar dan mata kecil. Panjang rata-rata sekitar 40cm dan maksimal dapat mencapai 100cm. Tubuh licin karena dilapisi lendir.

Sumber : [www.fishbase.se](http://www.fishbase.se)

Tembusan :  
1. Arsip



Makassar, 12 Juni 2024  
Kepala Laboratorium  
*[Signature]*  
Dr. Eddyman W. Ferial, S.Si., M.Si.  
NIP. 197001101997021001

## Lampiran 7. Persetujuan Etik



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN  
RISET, DAN TEKNOLOGI  
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### REKOMENDASI PERSETUJUAN ETIK

Nomor : 1650/UN4.14.1/TP.01.02/2024

Tanggal: 12 Juli 2024

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

No. Protokol	3724092200	No. Sponsor Protokol	
Peneliti Utama	Indy Safitri	Sponsor	Pribadi
Judul Peneliti	Efek terapi ekstrak belut sawah ( <i>Monopterus albus</i> ) terhadap disfungsi hati dan ginjal tikus putih anemia yang diinduksi fenilhidrazin		
No.Versi Protokol	1	Tanggal Versi	03 Juli 2024
No.Versi PSP	1	Tanggal Versi	03 Juli 2024
Tempat Penelitian	1. Laboratorium BioFarmasi Fakultas Farmasi Universitas Hasanuddin 2. Laboratorium Farmasi Klinik Fakultas Farmasi Universitas Hasanuddin 3. Laboratorium Farmakognosi Fitokimia Fakultas Farmasi Universitas Hasanuddin		
Judul Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard	Masa Berlaku <b>12 Juli 2024</b> Sampai 12 Juli 2025	Frekuensi review lanjutan
Ketua Komisi Etik Penelitian	Nama : Prof.dr. Veni Hadju,M.Sc,Ph.D	Tanda tangan	Tanggal  12 Juli 2024
Sekretaris komisi Etik Penelitian	Nama : Dr. Wahiduddin, SKM.,M.Kes	Tanda tangan	Tanggal  12 Juli 2024

Kewajiban Peneliti Utama :

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

Lampiran 8. Dokumentasi



Gambar 1. Sampel Belut Sawah  
(*Monopterus albus*)



Gambar 2. Sampel Belut Sawah  
(*Monopterus albus*) dibersihkan



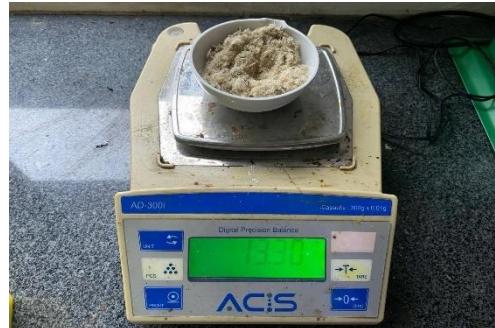
Gambar 3. Proses pengeringan sampel



Gambar 4. Sampel dihaluskan



Gambar 5. Bubuk sampel yang dihasilkan



Gambar 6. Penimbangan bubuk sampel



Gambar 7. *Microwave-assisted extraction* (MAE) sampel



Gambar 8. Hasil ekstrak belut sawah (*Monopterus albus*)



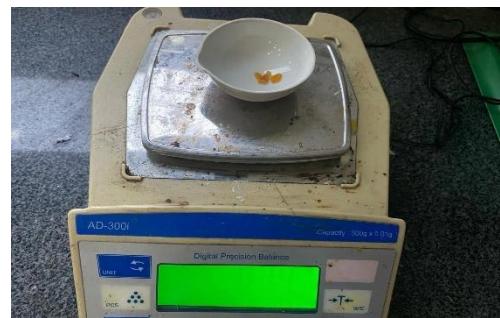
Gambar 9. Penyaringan pelarut



Gambar 10. Penguapan pelarut



Gambar 11. Hasil ekstraksi belut sawah (*Monopterus albus*)



Gambar 12. Penimbangan ekstrak belut sawah (*Monopterus albus*)



Gambar 13. Penyiapan ekstrak belut sawah (*Monopterus albus*)



Gambar 14. Pemberian perlakuan pada tikus



Gambar 15. Pengambilan darah tikus



Gambar 16. Pemisahan serum



Gambar 17. Serum sampel



Gambar 18. Chemical Chemistry Analyzer (Thermo Scientific)