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Lampiran 1. Persetujuan Etik





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. Agussalim Bukhari.,MMed,PhD, SpGK TELP. 081241850858, 0411 5780103. Fax : 0411-581431

**REKOMENDASI PERSETUJUAN ETIK**

Nomor : 120/UN4.6.4.5.31/ PP36/ 2023

Tanggal: 16 Februari 2023

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

No Protokol	UH23010049		No Sponsor	
Peneliti Utama	Dirgah Agum Parawansa, S.Pd		Sponsor	
Judul Peneliti	Efek Protektif Ekstrak Batang Kayu Jawa (<i>Lannea coromandelica</i>) Terhadap Kadar MDA, Ureum & Kreatinin (Fungsi Ginjal) dan Gambaran Histopatologi Ginjal Pada Tikus Wistar Jantan Yang Di Induksi MSG			
No Versi Protokol	1	Tanggal Versi	20 Januari 2023	
No Versi PSP		Tanggal Versi		
Tempat Penelitian	Laboratorium Hewan Fakultas Kedokteran Universitas Hasanuddin Dan Laboratorium Biologi Farmasi STIKES Nani Hasanuddin Makassar			
Jenis Review	<input type="checkbox"/> Exempted	<input checked="" type="checkbox"/> Expedited	<input type="checkbox"/> Fullboard Tanggal	Masa Berlaku 16 Februari 2023 sampai 16 Februari 2024 Frekuensi review lanjutan
Ketua KEP Universitas Hasanuddin	Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)	Tanda tangan 		
Sekretaris KEP Universitas Hasanuddin	Nama dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (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 2. Determinasi Tumbuhan (*Lannea coromandelica*)



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS NEGERI MAKASSAR (UNM)
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
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No : 104/SKAP/LAB.BIOLOGI/VIII/2023
Lamp : Deskripsi dan Klasifikasi
Hal : Hasil Determinasi/Identifikasi Tumbuhan

Makassar, 2 Agustus 2023


Kepada Yth.
Dirgah Agum Parawansa (P062211014)
Program Studi Magister Ilmu Biomedik
UNIVERSITAS HASANUDDIN

Dengan hormat,

Bersama ini kami sampaikan hasil determinasi/identifikasi tumbuhan yang saudara kirimkan ke laboratorium Botani Jurusan Biologi FMIPA Universitas Negeri Makassar, sebagai berikut:

No	No. Koleksi	Species	Familia
1	01	<i>Lannea coromandelica</i> (Houtt.) Merr.	Anacardiaceae

Demikian untuk diketahui dan dipergunakan sebagaimana mestinya.

Kepala Laboratorium Biologi
UNM,

M. Pratiwi, S.Si., S.Pd., M.Biotech, Ph.D
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KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS NEGERI MAKASSAR (UNM)
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
LABORATORIUM BIOLOGI

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Deskripsi *Lannea coromandelica* (Houtt.) Merr.

Habitus pohon, akar tunggang. Batang berwarna coklat, kokoh, diameter \pm 40cm, permukaan kasar, biasanya mengeluarkan getah jika dilukai. Daun majemuk menyirip gasal, anak daun berhadapan, permukaan mengkilap, tepi rata, tulang daun menyirip.

Klasifikasi *Lannea coromandelica* (Houtt.) Merr.

Kingdom : Plantae
Divisio : Magnoliophyta
Classis : Magnoliopsida
Subclassis : Rosidae
Ordo : Sapindales
Familia : Anacardiaceae
Genus : *Lannea*
Species : *Lannea coromandelica* (Houtt.) Merr.

Referensi:

- Dasuki U. A., 1991. Sistematik Tumbuhan Tinggi. Pusat Antar Universitas Bidang Ilmu Hayati ITB, Bandung.
https://id.wikipedia.org/wiki/Pohon_kuda. Diakses pada 1 Agustus 2023
- Syamsiah, K. Azis, S. Saenab, M. Wiharto, A. R. Saleh, 2021. PLANTAPEDIA Ensiklopedia Tumbuhan Berbasis Barcode; Tumbuhan Tingkat Tinggi Wilayah Pantai Tope Jawa, Takalar.

Lampiran 3: Dokumentasi Penelitian

Gambar: adaptasi hewan coba



Gambar: Penimbangan BB Tikus



Gambar: pengambilan kulit batang Lannea



Gambar: mengeringkan kayu jawa

Gambar: pembuatan ekstrak *Lannea Coromandelica*

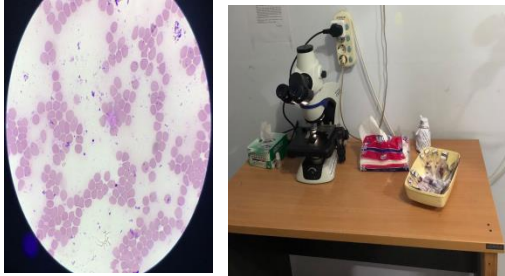
Gambar: pembuatan larutan MSG



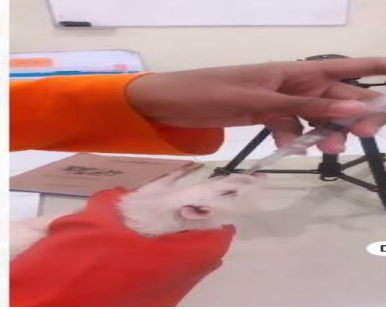
Gambar: larutan Lannea dan MSG



Gambar: pemeriksaan darah Tikus



Gambar: pemberian oral MSG



Gambar: Induksi oral Ekstrak Lannea



Gambar: anestesi tikus



Gambar: pembedahan tikus



Gambar: organ diawetkan nitrogen cair



Gambar: organ diawetkan formalin 10%



Gambar: Pembuatan larutan PBS, TBA, dan TCA



Gambar: menggerus organ



Gambar: sentrifuge



Gambar: mengukur kadar MDA sampel

Gambar: spektrofotometer





Lampiran 4. Analisa Statistic

Kadar Ureum

Descriptives

Ureum

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
KS	5	15.6000	3.97492	1.77764	10.6645	20.5355	11.00	21.00
KN	5	39.2000	6.09918	2.72764	31.6269	46.7731	32.00	46.00
KPA	5	32.0000	1.22474	.54772	30.4793	33.5207	30.00	33.00
KPB	4	25.5000	6.55744	3.27872	15.0657	35.9343	19.00	34.00
KPC	5	31.6000	5.31977	2.37908	24.9946	38.2054	26.00	40.00
Total	24	28.9167	9.33864	1.90624	24.9733	32.8600	11.00	46.00

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Ureum	.130	24	.200*	.961	24	.458

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

Ureum

Levene Statistic	df1	df2	Sig.
2.527	4	19	.075

ANOVA

Ureum

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1545.633	4	386.408	15.953	.000
Within Groups	460.200	19	24.221		
Total	2005.833	23			

Ureum

Duncan^{a,b}

Perlakuan	N	Subset for alpha = 0.05		
		1	2	3
KS	5	15.6000		
KPB	4		25.5000	
KPC	5		31.6000	
KPA	5		32.0000	
KN	5			39.2000
Sig.		1.000	.067	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4,762.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Kadar Kreatinin

Descriptives

Kreatinin

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					KS	5		
KN	5	.6580	.11432	.05113	.5160	.8000	.47	.76
KPA	5	.5700	.04472	.02000	.5145	.6255	.50	.62
KPB	4	.5525	.10372	.05186	.3875	.7175	.40	.63
KPC	5	.5760	.07537	.03370	.4824	.6696	.49	.66
Total	24	.5363	.13580	.02772	.4789	.5936	.29	.76

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Kreatinin	.126	24	.200 [*]	.947	24	.227

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

Kreatinin

Levene Statistic	df1	df2	Sig.
1.949	4	19	.144

ANOVA

Kreatinin

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.306	4	.076	12.244	.000
Within Groups	.119	19	.006		
Total	.424	23			

Kreatinin

Duncan^{a,b}

Perlakuan	N	Subset for alpha = 0.05	
		1	2
KS	5	.3280	
KPB	4		.5525
KPA	5		.5700
KPC	5		.5760
KN	5		.6580
Sig.		1.000	.072

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4.762.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Kadar MDA

Descriptives

MDA

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
KS	5	6.7860	2.16911	.97005	4.0927	9.4793	3.77	9.10
KN	5	8.0160	6.00201	2.68418	.5635	15.4685	3.79	18.57
KPA	5	7.9540	2.13540	.95498	5.3026	10.6054	5.83	11.37
KPB	4	8.1100	1.00688	.50344	6.5078	9.7122	7.17	9.22
KPC	5	8.3480	1.14143	.51046	6.9307	9.7653	6.83	9.60
Total	24	7.8317	2.92489	.59704	6.5966	9.0667	3.77	18.57

Normalitas

One-Sample Kolmogorov-Smirnov Test

		Residual for RES_1
N		24
Normal Parameters ^{a,b}	Mean	.0000
	Std. Deviation	2.86970
Most Extreme Differences	Absolute	.165
	Positive	.165
	Negative	-.105
Test Statistic		.165
Asymp. Sig. (2-tailed)		.091 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
MDA	Based on Mean	2.645	4	19	.066
	Based on Median	.736	4	19	.579
	Based on Median and with adjusted df	.736	4	5.329	.603
	Based on trimmed mean	2.016	4	19	.133

ANOVA

MDA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.355	4	1.839	.184	.944
Within Groups	189.409	19	9.969		
Total	196.764	23			

MDA

Duncan^{a,b}

Perlakuan	N	Subset for alpha
		= 0.05
		1
KS	5	6.7860
KPA	5	7.9540
KN	5	8.0160
KPB	4	8.1100
KPC	5	8.3480
Sig.		.501

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4.762.

b. The group sizes are unequal. The harmonic mean of the group sizes is used.

Type I error levels are not guaranteed.

Histopatologi Ginjal

Descriptives^a

	Perlakuan		Statistic	Std. Error		
Histo	KN	Mean	1.67	.667		
		95% Confidence Interval for Mean	Lower Bound	-1.20		
			Upper Bound	4.54		
		5% Trimmed Mean		.		
		Median		1.00		
		Variance		1.333		
		Std. Deviation		1.155		
		Minimum		1		
		Maximum		3		
		Range		2		
		Interquartile Range		.		
		Skewness		1.732	1.225	
		Kurtosis		.	.	
		KPA	KPA	Mean	1.67	.333
				95% Confidence Interval for Mean	Lower Bound	.23
	Upper Bound			3.10		
5% Trimmed Mean				.		
Median				2.00		
Variance				.333		
Std. Deviation				.577		
Minimum				1		
Maximum				2		
Range				1		
Interquartile Range				.		
Skewness				-1.732	1.225	
Kurtosis				.	.	
KPB	KPB			Mean	.67	.333
				95% Confidence Interval for Mean	Lower Bound	-.77
			Upper Bound	2.10		
		5% Trimmed Mean		.		
		Median		1.00		

	Variance		.333	
	Std. Deviation		.577	
	Minimum		0	
	Maximum		1	
	Range		1	
	Interquartile Range		.	
	Skewness		-1.732	1.225
	Kurtosis		.	.
KPC	Mean		.33	.333
	95% Confidence Interval for Mean	Lower Bound	-1.10	
		Upper Bound	1.77	
	5% Trimmed Mean		.	
	Median		.00	
	Variance		.333	
	Std. Deviation		.577	
	Minimum		0	
	Maximum		1	
	Range		1	
	Interquartile Range		.	
	Skewness		1.732	1.225
	Kurtosis		.	.

a. Histo is constant when Perlakuan = KS. It has been omitted.

	Perlakuan	N	Mean Rank
Histo	KS	3	3.50
	KN	3	11.33
	KPA	3	12.17
	KPB	3	7.50
	KPC	3	5.50
	Total		15

Berat Badam Tikus

Case Processing Summary

		Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
Kelompok	BB AwalkS	5	100.0%	0	0.0%	5	100.0%
	BB Akhir KS	5	100.0%	0	0.0%	5	100.0%

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Kelompok	BB AwalkS	.251	5	.200*	.849	5	.191
	BB Akhir KS	.242	5	.200*	.891	5	.363

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Group Statistics

		N	Mean	Std. Deviation	Std. Error Mean
Kelompok	BB AwalkS	5	216.6000	34.93995	15.62562
	BB Akhir KS	5	224.0000	33.91165	15.16575

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Kelompok	Equal variances assumed	.038	.850	-.340	8	.743	-7.40000	21.77522	-57.61374	42.81374
	Equal variances not assumed			-.340	7.993	.743	-7.40000	21.77522	-57.62153	42.82153

Group Statistics

	Perlakuan	N	Mean	Std. Deviation	Std. Error Mean
Kelompok	BB AwalKN	5	221.4000	48.72166	21.78899
	BB Akhir KN	5	198.2000	27.77949	12.42337

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2- tailed)	Mean Differenc e	Std. Error Differenc e	95% Confidence Interval of the Difference	
									Lower	Upper
Kelompok	Equal variances assumed	10.709	.011	.925	8	.382	23.2000 0	25.0818 7	- 34.6388 9	81.0388 9
	Equal variances not assumed			.925	6.352	.389	23.2000 0	25.0818 7	- 37.3577 4	83.7577 4

Case Processing Summary

	Perlakuan	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
Kelompok	BB AwalKN	5	100.0%	0	0.0%	5	100.0%
	BB Akhir KN	5	100.0%	0	0.0%	5	100.0%

Tests of Normality

	Perlakuan	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Kelompok	BB AwalKN	.313	5	.123	.743	5	.026
	BB Akhir KN	.332	5	.075	.758	5	.035

a. Lilliefors Significance Correction

Group Statistics

	Perlakuan	N	Mean	Std. Deviation	Std. Error Mean
Kelompok	BB AwalkPA	5	221.4000	48.72166	21.78899
	BB Akhir KPA	5	224.0000	13.09580	5.85662

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2- tailed)	Mean Differenc e	Std. Error Differenc e	95% Confidence Interval of the Difference	
									Lower	Upper
Kelom pok	Equal variances assumed	36.835	.000	-.115	8	.911	-2.60000	22.56236	-54.62889	49.42889
	Equal variances not assumed			-.115	4.575	.913	-2.60000	22.56236	-62.25711	57.05711

Group Statistics

	Perlakuan	N	Mean	Std. Deviation	Std. Error Mean
Kelompok	BB AwalkPA	5	221.4000	48.72166	21.78899
	BB Akhir KPA	5	224.0000	13.09580	5.85662

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Kelompok	Equal variances assumed	36.835	.000	-.115	8	.911	-2.60000	22.56236	-54.62889	49.42889
	Equal variances not assumed			-.115	4.575	.913	-2.60000	22.56236	-62.25711	57.05711

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Kelompok	Equal variances assumed	.602	.467	1.174	6	.285	11.50000	9.79371	35.46433	12.46433
	Equal variances not assumed			1.174	5.019	.293	11.50000	9.79371	36.64754	13.64754

Case Processing Summary

	Perlakuan	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
Kelompok	BB AwalKPB	4	100.0%	0	0.0%	4	100.0%
	BB Akhir KPB	4	100.0%	0	0.0%	4	100.0%

Tests of Normality

	Perlakuan	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Kelompok	BB AwalKPB	.298	4	.	.852	4	.233
	BB Akhir KPB	.168	4	.	.990	4	.957

a. Lilliefors Significance Correction

Group Statistics

	Perlakuan	N	Mean	Std. Deviation	Std. Error Mean
Kelompok	BB AwalKPB	4	193.0000	16.63330	8.31665
	BB Akhir KPB	4	204.5000	10.34408	5.17204

Case Processing Summary

		Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
Kelompok	BB AwalKPC	5	100.0%	0	0.0%	5	100.0%
	BB Akhir KPC	5	100.0%	0	0.0%	5	100.0%

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Kelompok	BB AwalKPC	.204	5	.200*	.882	5	.320
	BB Akhir KPC	.275	5	.200*	.832	5	.145

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Group Statistics

		Perlakuan	N	Mean	Std. Deviation	Std. Error Mean
Kelompok	BB AwalKPC		5	201.0000	24.56624	10.98636
	BB Akhir KPC		5	192.6000	22.54551	10.08266

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Kelompok	Equal variances assumed	.076	.790	.563	8	.589	8.40000	14.91174	-25.98653	42.78653
	Equal variances not assumed			.563	7.942	.589	8.40000	14.91174	-26.03047	42.83047

Lampiran 5. Biodata Peneliti**Biodata Penelitian**

Nama Lengkap	: Dirgah Agum Parawansa
Jenis Kelamin	: Laki-laki
Tempat/ Tanggal Lahir	: Jeneponto, 17 Agustus 1998
Agama	: Islam
Anak ke	: Ketiga dari 4 bersaudara
Alamat	: Komp Btn Pebabri B/12
Nama orang tua	
Ayah	: Parawansa, SE
Ibu	: Hj.Sitti Normawati, S.Pd
Pendidikan Formal :	

1. SD Negeri 114 Agang Je'ne, lulusan tahun 2004
2. SMP Negeri 1 Jeneponto, lulusan tahun 2010
3. SMA Negeri 1 Jeneponto, lulusan tahun 2016
4. S1 Jurusan Pendidikan Biologi Fakultas FMIPA UNM, lulusan 2021
5. S2 Biomedik Fisiologi Universitas Hasanuddin, Lulusan 2023