

LAMPIRAN

Lampiran 1. Surat hasil determinasi tanaman sirsak



UPT-LABORATORIUM

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Nomor : 341/DET/UPT-LAB/25.03.2022

Hal : Hasil determinasi tumbuhan

Lamp. : -

Nama Pemesan : Indah Triwani

NIM : 01206306A

Prodi : S1 Farmasi (Transfer), Universitas Setia Budi, Surakarta

Nama Sampel : *Annona muricata*, L.

HASIL DETERMINASI TUMBUHAN

Klasifikasi

Kingdom : Plantae
 Super Divisi : Spermatophyta
 Divisi : Magnoliophyta
 Kelas : Magnoliopsida/Dicotyledoneae
 Ordo : Polycarpiceae
 Famili : Annonaceae
 Genus : Annona
 Species : *Annona muricata*, L.

Hasil Determinasi menurut Steenis, C.G.G.J.V, Bloembergen, H, Eyma, P.J. 1992 :

1b – 2b – 3b – 4b – 6b – 7b – 9b – 10b – 11b – 12b – 13b – 15a. golongan 8. 109b – 119b – 120b – 128b – 129b – 135b – 136b – 139b – 140b – 142b – 143b – 146b – 154b – 155b – 156a – 162b – 163a – 164b – 165b – 166a. Familia 50. Annonaceae. 1b – 2. Annona. 1a. *Annona muricata*, L.

Lampiran 2. Surat keterangan *ethical clearance*

3/2/22, 1:18 PM

KEPK-RSDM



HEALTH RESEARCH ETHICS COMMITTEE
KOMISI ETIK PENELITIAN KESEHATAN

Dr. Moewardi General Hospital
RSUD Dr. Moewardi

ETHICAL CLEARANCE
KELAIKAN ETIK

Nomor : 229 / II / HREC / 2022

The Health Research Ethics Committee Dr. Moewardi
Komisi Etik Penelitian Kesehatan RSUD Dr. Moewardi

after reviewing the proposal design, herewith to certify
setelah menilai rancangan penelitian yang diusulkan, dengan ini menyatakan

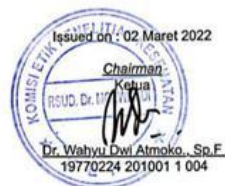
That the research proposal with topic :
Bahwa usulan penelitian dengan judul

UJI AKTIVITAS ANALGETIK EKSTRAK ETANOL BIJI SIRSAK (*Annona muricata* L.) TERHADAP MENCIT PUTIH JANTAN Mus musculus

Principal investigator
Peneliti Utama : Indah Triwani
01206306A

Location of research
Lokasi Tempat Penelitian : Universitas Setia Budi

Is ethically approved
Dinyatakan layak etik



Lampiran 3. Surat bukti pembelian hewan uji

"ABIMANYU FARM"

✓ Mencit putih jantan ✓ Tikus Wistar ✓ Swis Webster ✓ Cacing
✓ Mencit Balb/C ✓ Kelinci New Zealand

Ngampon RT 04 / RW 04. Mojosongo Kec. Jebres Surakarta. Phone 085 629 994 33 / Lab USB Ska

Yang bertanda tangan di bawah ini:

Nama : Sigit Pramono

Selaku pengelola Abimanyu Farm, menerangkan bahwa hewan uji yang digunakan untuk penelitian, oleh:

Nama : Indah Triwani

Nim : 01206306A

Institusi : Universitas Setia Budi Surakarta

Merupakan hewan uji dengan spesifikasi sebagai berikut:

Jenis hewan : Mencit Swiss

Umur : 2-3 bulan

Jenis kelamin : Jantan

Jumlah : 25 ekor

Keterangan : Sehat

Asal-usul : Unit Pengembangan Hewan Percobaan UGM Yogyakarta

Yang pengembangan dan pengelolaannya disesuaikan standar baku penelitian. Demikian surat keterangan ini dibuat untuk digunakan sebagaimana mestinya.

Surakarta, 10 Juni 2022

Hormat kami



Sigit Pramono

"ABIMANYU FARM"

Lampiran 4. Foto alat dan bahan***Rotary evaporator******Moisture balance*****Alat dan bahan uji fitokimia****Oven****Biji sirsak****Hewan uji mencit**

Lampiran 5. Hasil uji susut pengeringan dan kadar air**Uji susut pengeringan****Uji kadar air**

Lampiran 6. Perhitungan kadar air

Kadar air = (Supomo *et al.*, 2016).

1. Replikasi 1 =

=

=

= 5,6 %

2. Replikasi 2 =

=

=

= 5,2 %

Rata-rata kadar air =

S= 5,4%

Lampiran 7. Pembuatan serbuk dan ekstrak simplisia biji sirsak**Buah sirsak****Biji sirsak basah****Biji sirsak kering****Serbuk biji sirsak****Rendaman serbuk****Ekstrak**

Lampiran 8. Perhitungan rendemen biji sirsak

1. Perhitungan rendemen biji kering terhadap biji basah

$$\text{Rendemen biji kering (\%)} = \frac{\text{Biji Kering}}{\text{Biji Basah}} \times 100\%$$

$$\text{Rendemen biji kering (\%)} = \frac{19}{100} \times 100\% = 19\%$$

2. Perhitungan rendemen serbuk terhadap biji kering

$$\text{Rendemen biji kering (\%)} = \frac{\text{Serbuk}}{\text{Biji Kering}} \times 100\%$$

$$\text{Rendemen biji kering (\%)} = \frac{63}{100} \times 100\% = 63\%$$

3. Perhitungan rendemen ekstrak terhadap serbuk

$$\text{Rendemen biji kering (\%)} = \frac{\text{Ekstrak}}{\text{Serbuk}} \times 100\%$$

$$\text{Rendemen biji kering (\%)} = \frac{16,65}{100} \times 100\% = 16,65\%$$

Lampiran 9. Hasil identifikasi kandungan kimia biji sirsak

Flavonoid	
Tannin	
Saponin	
Alkaloid	
Polifenol	

**Lampiran 10. Tabel konversi perhitungan dosis
(Laurence & Bacharach, 1964)**

	Mencit 20 gr	Tikus 200 gr	Marmot 400 gr	Kelinci 1,5 kg	Kucing 2 kg	Kera 4 kg	Anjing 12 kg	Manusia 70 kg
Mencit 20 gr	1.0	7.0	12.25	27.8	29.7	64.1	124.2	387.9
Tikus 200 gr	0.14	1.0	1.74	3.9	4.2	9.2	17.8	56.0
Marmot 400 gr	0.08	0.57	1.0	2.25	2.4	5.2	10.2	31.5
Kelinci 1,5 kg	0.04	0.25	0.44	1.0	1.08	2.4	4.5	14.2
Kucing 2 kg	0.03	0.23	0.41	0.92	1.0	2.2	4.1	13.0
Kera 4 kg	0.016	0.11	0.19	0.42	0.45	1.0	1.9	6.1
Anjing 12 kg	0.008	0.06	0.1	0.22	0.24	0.52	1.0	3.1
Manusia 70 kg	0.0026	0.018	0.031	0.07	0.076	0.16	0.32	1.0

Lampiran 11. Pembuatan larutan stok**Alat dan bahan****Suspensi CMC Na****Penggerusan suspensi ekstrak****Sediaan uji**

Lampiran 12. Uji analgetik



Mencit sebelum perlakuan



Pemberian sediaan



Induksi Asam asetat



Pengamatan geliat

Lampiran 13. Data geliat mencit

Waktu (Menit)	KONTROL (+)					KONTROL (-)					DOSIS I					DOSIS II					DOSIS III				
	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5
5	0	3	2	1	1	0	3	2	10	6	4	5	4	3	3	0	3	2	1	1	4	5	1	2	9
10	1	0	2	3	3	3	3	5	5	5	5	2	3	2	1	1	4	2	3	3	5	3	5	2	6
15	1	1	1	1	1	7	16	3	5	2	2	3	1	0	1	1	1	1	1	1	2	6	4	1	4
20	2	3	1	1	2	2	6	7	4	5	4	4	3	1	2	2	3	1	1	2	4	1	2	4	1
25	0	0	2	2	1	2	1	3	1	2	3	2	3	1	1	0	3	2	2	1	3	2	1	3	1
30	4	1	0	1	0	5	2	3	2	5	1	4	6	4	1	4	1	2	1	0	1	1	1	3	0
35	5	1	1	2	1	6	6	4	3	3	2	2	3	1	2	5	1	1	2	1	2	1	0	5	1
40	1	2	1	4	1	5	3	1	2	3	2	3	1	1	2	1	2	1	4	1	2	2	2	0	0
45	2	1	1	3	1	6	2	3	5	3	2	2	1	2	1	2	1	1	3	1	2	1	0	1	1
50	1	1	2	1	0	4	1	0	1	1	2	0	1	3	0	1	1	2	1	1	2	2	1	1	1
55	3	2	1	1	1	2	0	2	1	2	0	1	2	1	0	3	2	1	1	1	0	0	0	0	0
60	0	0	0	0	0	0	1	1	2	0	0	0	2	1	1	0	0	1	0	0	0	0	1	1	1
Jumlah	0	3	2	1	1	0	3	2	10	6	4	5	4	3	3	0	3	2	1	1	4	5	1	2	9
Rata-rata	16,2					39,4					24					23,4					18,4				
% Penghambatan geliat	58,88324873										39,08629442					40,60913706					53,29949239				

Lampiran 14. Hasil uji statistik analgetik
Tests of Normality^{c,d,e,f}

	DOSIS	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
LIMA	KONTROL POSITIF	.237	5	.200*	.961	5	.814
	KONTROL NEGATIF	.221	5	.200*	.953	5	.758
	DOSIS I	.231	5	.200*	.881	5	.314
	DOSIS II	.237	5	.200*	.961	5	.814
	DOSIS III	.199	5	.200*	.941	5	.670
SEPULUH	KONTROL POSITIF	.221	5	.200*	.902	5	.421
	KONTROL NEGATIF	.367	5	.026	.684	5	.006
	DOSIS I	.254	5	.200*	.914	5	.492
	DOSIS II	.237	5	.200*	.961	5	.814
	DOSIS III	.287	5	.200*	.914	5	.490
LIMABELAS	KONTROL NEGATIF	.272	5	.200*	.842	5	.172
	DOSIS I	.237	5	.200*	.961	5	.814
	DOSIS III	.221	5	.200*	.953	5	.758
	KONTROL POSITIF	.231	5	.200*	.881	5	.314
	KONTROL NEGATIF	.179	5	.200*	.984	5	.955
DUAPULUH	DOSIS I	.221	5	.200*	.902	5	.421
	DOSIS II	.231	5	.200*	.881	5	.314
	DOSIS III	.254	5	.200*	.803	5	.086
	KONTROL POSITIF	.241	5	.200*	.821	5	.119
	KONTROL NEGATIF	.231	5	.200*	.881	5	.314
DUAPULUHLIMA	DOSIS I	.241	5	.200*	.821	5	.119
	DOSIS II	.237	5	.200*	.961	5	.814
	DOSIS III	.241	5	.200*	.821	5	.119
	KONTROL POSITIF	.348	5	.047	.779	5	.054
	KONTROL NEGATIF	.254	5	.200*	.803	5	.086
TIGAPULUH	DOSIS I	.245	5	.200*	.871	5	.272
	DOSIS II	.254	5	.200*	.914	5	.492
	DOSIS III	.372	5	.022	.828	5	.135
	KONTROL POSITIF	.318	5	.109	.701	5	.010
	KONTROL NEGATIF	.245	5	.200*	.871	5	.272
TIGAPULUHLIMA	DOSIS I	.300	5	.161	.883	5	.325
	DOSIS II	.318	5	.109	.701	5	.010
	DOSIS III	.261	5	.200*	.859	5	.223
	KONTROL POSITIF	.330	5	.079	.735	5	.021
	KONTROL NEGATIF	.246	5	.200*	.956	5	.777
EMPATPULUH	DOSIS I	.231	5	.200*	.881	5	.314
	DOSIS II	.330	5	.079	.735	5	.021
	DOSIS III	.367	5	.026	.684	5	.006

EMPATPULUHLIMA	KONTROL POSITIF	.349	5	.046	.771	5	.046
	KONTROL NEGATIF	.287	5	.200*	.914	5	.490
	DOSIS I	.367	5	.026	.684	5	.006
	DOSIS II	.349	5	.046	.771	5	.046
	DOSIS III	.300	5	.161	.883	5	.325
	KONTROL POSITIF	.300	5	.161	.883	5	.325
LIMAPULUH	KONTROL NEGATIF	.404	5	.008	.768	5	.044
	DOSIS I	.221	5	.200*	.902	5	.421
	DOSIS II	.473	5	.001	.552	5	.000
	DOSIS III	.231	5	.200*	.881	5	.314
	KONTROL POSITIF	.349	5	.046	.771	5	.046
	KONTROL NEGATIF	.349	5	.046	.771	5	.046
LIMAPULUHLIMA	DOSIS I	.231	5	.200*	.881	5	.314
	DOSIS II	.349	5	.046	.771	5	.046
	KONTROL POSITIF	.231	5	.200*	.881	5	.314
	KONTROL NEGATIF	.231	5	.200*	.881	5	.314
	DOSIS I	.231	5	.200*	.881	5	.314
	DOSIS II	.473	5	.001	.552	5	.000
ENAMPULUH	DOSIS III	.367	5	.026	.684	5	.006

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

a. Lilliefors Significance Correction

c. LIMABELAS is constant when DOSIS = KONTROL POSITIF. It has been omitted.

d. LIMABELAS is constant when DOSIS = DOSIS II. It has been omitted.

e. LIMAPULUHLIMA is constant when DOSIS = DOSIS III. It has been omitted.

f. ENAMPULUH is constant when DOSIS = KONTROL POSITIF. It has been omitted.

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
LIMA	3.485	4	20	.026
SEPULUH	.459	4	20	.765
LIMABELAS	4.903	4	20	.006
DUAPULUH	1.826	4	20	.163
DUAPULUHLIMA	.171	4	20	.950
TIGAPULUH	1.007	4	20	.427
TIGAPULUHLIMA	1.243	4	20	.325
EMPATPULUH	.279	4	20	.888
EMPATPULUHLIMA	3.538	4	20	.024
LIMAPULUH	1.578	4	20	.219
LIMAPULUHLIMA	3.851	4	20	.018
ENAMPULUH	3.896	4	20	.017

Kruskal-Wallis Test

Rank		
	N	Mean Rank
KONTROL POSITIF	5	9.20
KONTROL NEGATIF	5	20.60
DOSIS I	5	14.20
DOSIS II	5	11.80
DOSIS III	5	9.20
Total	25	

Test Statistics ^{a,b}	
Chi-Square	15.504
Df	4
Asymp. Sig.	.004
a. Kruskal Wallis Test	
b. Grouping Variable: DOSIS	

- a. Kruskal Wallis Test
b. Grouping Variable: DOSIS

Mann-Whitney Test

Ranks			
DOSIS	N	Mean Rank	Sum of Ranks
KONTROL POSITIF	5	3.40	17.00
KONTROL NEGATIF	5	7.60	38.00
Total	10		

Test Statistics^a

Mann-Whitney U	2.000
Wilcoxon W	17.000
Z	-2.227
Asymp. Sig. (2-tailed)	.026
Exact Sig. [2*(1-tailed Sig.)]	.032 ^b

Mann-Whitney Test

Ranks			
DOSIS	N	Mean Rank	Sum of Ranks
KONTROL NEGATIF	5	6.90	34.50
DOSIS I	5	4.10	20.50
Total	10		

Test Statisticsa

Mann-Whitney U	3.000
Wilcoxon W	18.000
Z	-2.009
Asymp. Sig. (2-tailed)	.045
Exact Sig. [2*(1-tailed Sig.)]	.056 ^b

Mann-Whitney Test

Ranks			
DOSIS	N	Mean Rank	Sum of Ranks
KONTROLPOSITIF	5	4.30	21.50
DOSIS I	5	6.70	33.50
Total	10		

Test Statisticsa

Mann-Whitney U	6.000
Wilcoxon W	21.000
Z	-1.401
Asymp. Sig. (2-tailed)	.161
Exact Sig. [2*(1-tailed Sig.)]	.222 ^b

Mann-Whitney Test

Ranks			
DOSIS	N	Mean Rank	Sum of Ranks
KONTROL NEGATIF	6.60	6.60	6.60
DOSIS II	4.40	4.40	4.40

Total	10		
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Test Statisticsa

Mann-Whitney U	3.000
Wilcoxon W	18.000
Z	-2.124
Asymp. Sig. (2-tailed)	.034
Exact Sig. [2*(1-tailed Sig.)]	.056 ^b

Mann-Whitney Test

Ranks			
DOSIS	N	Mean Rank	Sum of Ranks
KONTROL POSITIF	5	4.90	24.50
DOSIS II	5	6.10	30.50
Total	10		

Test Statisticsa

Mann-Whitney U	8.500
Wilcoxon W	23.500
Z	-.876
Asymp. Sig. (2-tailed)	.381
Exact Sig. [2*(1-tailed Sig.)]	.421 ^b

Mann-Whitney Test

Ranks			
DOSIS	N	Mean Rank	Sum of Ranks
KONTROL NEGATIF	5	7.90	39.50
DOSIS III	5	3.10	15.50
Total	10		

Test Statisticsa

Mann-Whitney U	2.500
Wilcoxon W	17.500
Z	-2.148
Asymp. Sig. (2-tailed)	.032
Exact Sig. [2*(1-tailed Sig.)]	.032 ^b

Mann-Whitney Test

Ranks			
DOSIS	N	Mean Rank	Sum of Ranks
KONTROL POSITIF	5	5.20	26.00
DOSIS III	5	5.80	29.00
Total	10		

Test Statistics^a

Mann-Whitney U	11.000
Wilcoxon W	26.000
Z	-.339
Asymp. Sig. (2-tailed)	.735
Exact Sig. [2*(1-tailed Sig.)]	.841 ^b