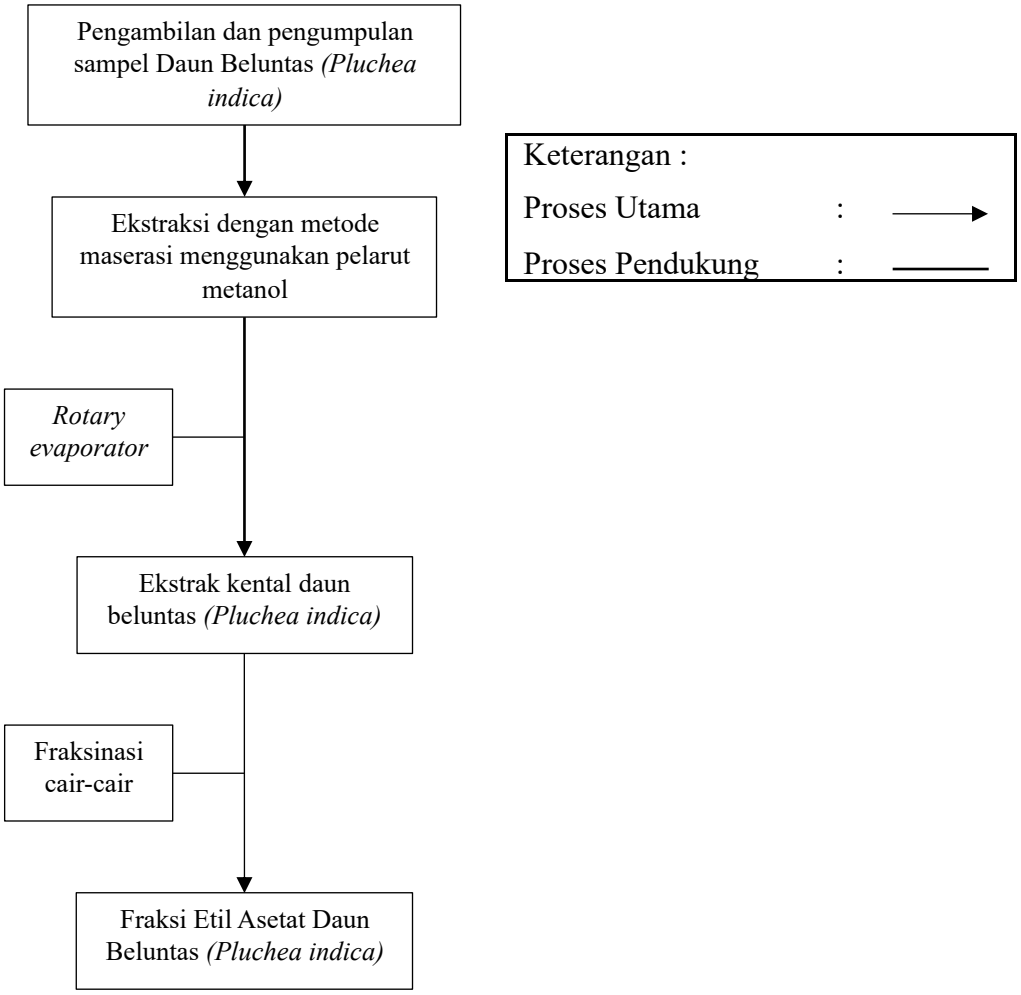
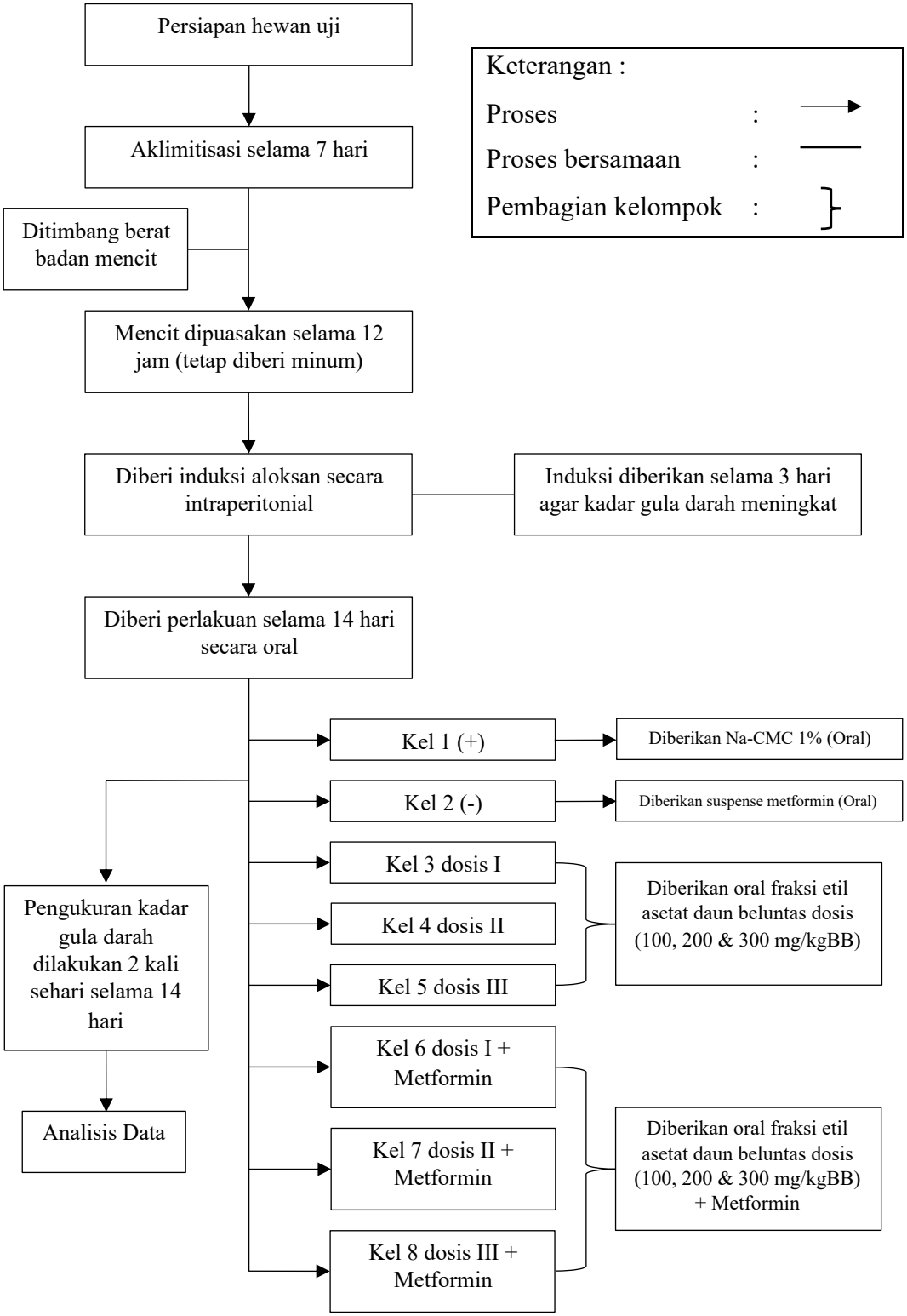
LAMPIRAN

Lampiran 1 Alur Pembuatan Fraksi Etil Asetat



Lampiran 2 Skema Kerja Penurunan Kadar Gula Darah Puasa



Lampiran 3 Hasil Determinasi

HERBARIUM UNIVERSITAS ANDALAS (ANDA)
Departemen Biologi FMIPA Universitas Andalas Kampus Limau Manih Padang
Sumbar Indonesia 25163 Telp. +62-751-777427 e-mail: herbariumanda@yahoo.com

HASIL IDENTIFKASI

Nama : Ghalib Syukrillah Syahputra., M. Farm
Instansi : Institut Kesehatan Mitra Bunda

No	Family	Spesies	Nama Koleksi
1.	Moraceae	*Artocarpus altilis* (Parkinson) Fosberg	IKMB. 22.5. Tanaman Sukun
2.	Asteraceae	*Pluchea indica* (L.) Less.	IKMB. 22.6. Tanaman Beluntas
3.	Amaryllidaceae	*Crinum asiaticum* L.	IKMB. 22.15. Tanaman Bakung
4.	Pandanaceae	*Pandanus odorifer* (Forssk.) Kuntze	IKMB. 22.24. Tanaman Pandan Laut
5.	Bonnetiaceae	*Ploiarium elegans* Korth.	IKMB. 22.27. Tanaman Beriang
6.	Acanthaceae	*Ruellia simplex* C.Wright	IKMB. 22.42. Tanaman Kencana Ungu
7.	Asteraceae	*Gynura procumbens* (Lour.) Merr.	IKMB. 22.51. Tanaman Sambung Nyawa

Padang, 30 Januari 2026
Kepala,

Dr. Nurainas
NIP. 196908141995122001

Lampiran 4 Etik Penelitian

YAYASAN HARAPAN BUNDA BATAM
INSTITUT KESEHATAN MITRA BUNDA
KOMITE ETIK PENELITIAN
Jl. Seraya No 1 KOTA BATAM Telp/Fax (0778) 429431, website : http:\\ikmb.ac.id
SURAT KEPUTUSAN MENTERI PENDIDIKAN DAN KEBUDAYAAN REPUBLIK INDONESIA No. 284/M/2020

KOMITE ETIK PENELITIAN
INSTITUT KESEHATAN MITRA BUNDA
THE RESEARCH ETHICAL COMMITTEE INSTITUT KESEHATAN MITRA BUNDA

SURAT KETERANGAN
ETHICAL APPROVAL
No. 030/K/KEP/IKMB/IV/2026

Komite Etik Penelitian Institut Kesehatan Mitra Bunda, menyatakan dengan ini bahwa penelitian dengan judul :
The Research Ethical Committee of Institut Kesehatan Mitra Bunda states hereby that the following proposal :

"Uji Efektifitas Kombinasi Metformin dan Fraksi Etil Asetat Daun Beluntas (*Pluchea indica*) Sebagai Penurun Kadar Gula Darah Puasa Pada Hewan Uji Mencit (*Mus musculus*)"
"Effectiveness Test of the Combination of Metformin and Ethyl Acetate Fraction of Pluchea indica Leaves as a Fasting Blood Sugar Reducer in Mice (Mus musculus)"

Peneliti Utama : Sary Indriany
Principal Investigato

Lokasi Penelitian : Laboratorium Farmakologi dan Toksikologi
Research Location

Waktu Penelitian : April - Juli 2026
Time Schedule

Responden/Subjek Penelitian : Hewan Percobaan (24 ekor mencit)
Respondent/Research Subject

Telah melalui prosedur kaji etik dan dinyatakan layak untuk dilaksanakan
Has proceeded the ethichal assessment procedure and been approved fot implementation

Batam, 29 April 2026
Ketua / *Chairman*,

dr. Ibnu Rushd, M.K.M

Lampiran 5 Perhitungan Rendemen Ekstrak Metanol Daun Beluntas

- Berat Awal Sampel Simplisia Daun Beluntas : 500 gram
- Berat Esktrak Kental yang diperoleh : 56,509 gram

$$\textit{R}\text{endemen} = \frac{\text{Berat Ekstrak}}{\text{Berat Simplisia yang di ektraksi}} \text{ x } 100\%$$

$$= \frac{56{,}509 \text{ g}}{500 \text{ g}} \text{ x } 100\%$$

$$= 11{,}30\ \%$$

Lampiran 6 Perhitungan Rendemen Fraksi Etil Asetat Daun Beluntas

- Berat Awal Sampel Ekstrak Daun Beluntas : 56,509 gram
- Berat Fraksi yang diperoleh : 15,560 gram

$$\text{Rendemen} = \frac{\text{Berat Fraksi}}{\text{Berat Ekstrak}} \text{ x } 100\%$$

$$= \frac{15{,}560 \text{ g}}{56{,}509 \text{ g}} \text{ x } 100\%$$

$$= 27{,}53\ \%$$

Lampiran 7 Perhitungan Dosis

1. Pembuatan larutan Aloksan (Penginduksi)

- Dosis Aloksan 120 mg/kgBB Tikus

  Konversi dosis ke mencit = $120\frac{\text{mg}}{\text{kgBB}} \text{x} \frac{6}{3}$ = 240 mg/kgBB

  Maka dosis aloksan untuk mencit : 240 mg/kgBB

- Larutan stok

  $\frac{240 \text{ mg/kgBB}}{1000 \text{ g}}$ x 42 g = 10,08 mg

  Akan dibuat dalam 25 ml

  10,08 mg x 25 ml = 252 mg = 0,252 gram/ml

- Volume pemberian pada mencit

Negatif -		
$\frac{24}{42}$ x 1 ml = 0,57 ml	$\frac{37}{42}$ x 1 ml = 0,88 ml	$\frac{39}{42}$ x 1 ml = 0,92 ml
Positif +		
$\frac{42}{42}$ x 1 ml = 1 ml	$\frac{36}{42}$ x 1 ml = 0,85 ml	$\frac{27}{42}$ x 1 ml = 0,64 ml
Fraksi 100 mg/dL		
$\frac{35}{42}$ x 1 ml = 0,83 ml	$\frac{37}{42}$ x 1 ml=0,88 ml	$\frac{30}{42}$ x 1 ml=0,71 ml
Fraksi 200 mg/dL		
$\frac{34}{42}$ x 1 ml = 0,80 ml	$\frac{32}{42}$ x 1 ml = 0,76 ml	$\frac{24}{42}$ x 1 ml=0,57 ml
Fraksi 300 mg/dL		
$\frac{39}{42}$ x 1 ml = 0,92 ml	$\frac{33}{42}$ x 1 ml = 0,78 ml	$\frac{34}{42}$ x 1 ml = 0,80 ml
Kombinasi 100 mg/dL		
$\frac{37}{42}$ x 1 ml = 0,88 ml	$\frac{36}{42}$ x 1 ml = 0,85 ml	$\frac{39}{42}$ x 1 ml = 0,92 ml
Kombinasi 200 mg/dL		
$\frac{35}{42}$ x 1 ml = 0,83 ml	$\frac{34}{42}$ x 1 ml = 0,80 ml	$\frac{29}{42}$ x 1 ml = 0,69 ml
Kombinasi 300 mg/dL		
$\frac{33}{42}$ x 1 ml = 0,78 ml	$\frac{32}{42}$ x 1 ml = 0,76 ml	$\frac{31}{42}$ x 1 ml = 0, 73ml

2. Pembuatan Na-CMC (Kontrol Negatif)

Ditimbang sebanyak 1 gr Na-CMC, dikembangakn dengan aquadest panas, aduk hingga homogen dan cukupkan volumenya hingga 100 ml kemudian gerus kembali hingga membentuk suspense.

- Volume pemberian pada mencit

Kontrol -		
$\frac{24}{39}$ x 1 ml = 0,61 ml	$\frac{37}{39}$ x 1 ml = 0,94 ml	$\frac{39}{39}$ x 1 ml = 1 ml

3. Pembuatan Metformin (Kontrol Positif)

- Dosis Metformin

Dosis lazim manusia : 500 mg

Konversi : 500 mg x 0,0026 mg

: 1,3 mg

Dosis yang dibutuhkan 42 max : $\frac{42}{27}$ x 1,3 mg

: 2,02

Rata-rata tablet metformin :

$$\frac{0,55+0,53+0,53+0,54+0,53+0,54+0,54+0,54+0,54+0,53}{10}$$

= 0,537 g = 537 mg

Jumlah suspensi : 100 ml

Maka metformin yang dibutuhkan : 500 mg/tablet

$\frac{202}{500}$ x 537 mg = 216,94 mg = 0,216 g

Jadi, metformin yang ditimbang sebesar 0,216 g dan dilarutkan dalam 100 ml Na-CMC 1%

- Volume pemberian pada mencit

Kontrol +		
$\frac{42}{42}$ x 1 ml = 1 ml	$\frac{36}{42}$ x 1 ml = 0,85 ml	$\frac{27}{42}$ x 1 ml = 0,64 ml
Kombinasi 100 mg/kgBB		
$\frac{37}{42}$ x 1 ml = 0,88 ml	$\frac{36}{42}$ x 1 ml = 0,85 ml	$\frac{39}{42}$ x 1 ml = 0,92 ml
Kombinasi 200 mg/kgBB		
$\frac{35}{42}$ x 1 ml = 0,83 ml	$\frac{34}{42}$ x 1 ml = 0,80 ml	$\frac{29}{42}$ x 1 ml = 0,69 ml
Kombinasi 300 mg/kgBB		
$\frac{33}{42}$ x 1 ml = 0,78 ml	$\frac{32}{42}$ x 1 ml = 0,76 ml	$\frac{31}{42}$ x 1 ml = 0,73 ml

4. Pembuatan suspense larutan fraksi etil asetat daun beluntas

- Dosis 100 mg/kgBB

  $\frac{100\text{ mg}}{1000\text{ g}}$ x 30 gr : 3 mg

  Larutan stok : 100 ml

  Ekstrak yang ditimbang : 3 mg x $\frac{100}{1}$: 300 mg →100 ml Na-CMC

  Volume pemberian pada mencit :

Fraksi 100 mg/kgBB		
$\frac{35}{39}$ x 1 ml = 0,89 ml	$\frac{37}{39}$ x 1 ml = 0,94 ml	$\frac{30}{39}$ x 1 ml = 0,76 ml
Kombinasi 100 mg/kgBB		
$\frac{37}{39}$ x 1 ml = 0,94 ml	$\frac{36}{39}$ x 1 ml = 0,92 ml	$\frac{39}{39}$ x 1 ml = 1 ml

- Dosis 200 mg/kgBB

  $\frac{200}{1000\ g}$ x 24 gr : 4,8 mg

  Larutan stok : 100 ml

  Ekstrak yang ditimbang : 4,8 mg x $\frac{100}{1}$: 480 mg →100 ml Na-CMC

  Volume pemberian pada mencit :

Fraksi 200 mg/kgBB		
$\frac{34}{35}$ x 1 ml = 0,97 ml	$\frac{32}{35}$ x 1 ml = 0,91 ml	$\frac{24}{35}$ x 1 ml = 0,68 ml
Kombinasi 200 mg/kgBB		
$\frac{35}{35}$ x 1 ml = 1 ml	$\frac{34}{35}$ x 1 ml = 0,97 ml	$\frac{29}{35}$ x 1 ml = 0,82 ml

- Dosis 300 mg/kgBB

  $\frac{300}{1000\ g}$ x 31 gr : 9,3 mg

  Larutan stok : 100 ml

  Ekstrak yang ditimbang : 9,3 mg x $\frac{100}{1}$: 930 mg →100 ml Na-CMC

  Volume pemberian pada mencit :

Fraksi 300 mg/kgBB		
$\frac{39}{39}$ x 1 ml = 1 ml	$\frac{33}{39}$ x 1 ml = 0,84 ml	$\frac{34}{39}$ x 1 ml = 0,87 ml
Kombinasi 300 mg/kgBB		
$\frac{33}{39}$ x 1 ml = 0, 84 ml	$\frac{32}{39}$ x 1 ml = 0,82 ml	$\frac{31}{39}$ x 1 ml = 0,79 ml

Lampiran 8 Data Hasil Penurunan Kadar Gula Darah

Kelompok	BB Mencit	Kadar gula darah awal (mg/dL)	Kadar gula darah setelah diberikan aloksan (mg/dL)		Kadar Gula Darah Setelah diberikan terapi (mg/dL)				
			2	4	6	8	10	12	14
Negatif -	1 : 24 gr	78	106	148	156	177	186	175	186
	2 : 37 gr	107	130	159	167	188	192	197	202
	3 : 39 gr	91	127	165	150	165	170	179	184
Positif +	1 : 42 gr	100	122	160	132	122	96	89	81
	2 : 36 gr	72	104	188	126	101	91	83	77
	3 : 27 gr	68	126	158	127	105	86	76	72
Fraksi 100 mg/kgBB	1 : 35 gr	74	122	169	122	104	96	87	83
	2 : 37 gr	92	119	202	161	122	99	83	77
	3 : 30 gr	60	123	167	139	117	98	84	76
Fraksi 200 mg/kgBB	1 : 34 gr	95	105	189	142	126	104	91	85
	2 : 32 gr	64	127	187	170	154	113	89	75
	3 : 24 gr	55	120	176	126	116	97	82	72
Fraksi 300 mg/kgBB	1 : 39 gr	81	198	255	228	186	157	127	96
	2 : 33 gr	77	117	242	216	177	142	112	94
	3 : 34 gr	79	167	247	212	164	144	118	92
Kombinasi 100 mg/kgBB	1 : 37 gr	99	105	177	121	104	91	86	80
	2 : 36 gr	79	113	157	133	105	95	87	81
	3 : 39 gr	91	116	156	123	111	96	83	71
Kombinasi 200 mg/kgBB	1 : 35 gr	63	101	169	126	105	89	81	76
	2 : 34 gr	56	97	176	119	97	85	79	72
	3 : 29 gr	58	97	157	115	102	93	82	75
Kombinasi 300 mg/kgBB	1 : 33 gr	66	112	245	178	120	95	81	74
	2 : 32 gr	71	156	224	186	153	123	96	87
	3 : 31 gr	77	136	237	198	164	110	91	84

Lampiran 9 Analisis Data

1. Uji Normalitas *(Shapiro-Wilk)*

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelompok	Statistic	df	Sig.	Statistic	df	Sig.
H4	Fraksi10	.367	3	.	.793	3	.097
	Fraksi20	.333	3	.	.862	3	.274
	Fraksi30	.227	3	.	.983	3	.747
	Komb100	.370	3	.	.786	3	.081
	Komb200	.236	3	.	.977	3	.712
	Komb300	.229	3	.	.981	3	.739
	Negatif	.243	3	.	.972	3	.679
	Positif	.364	3	.	.800	3	.114
H6	Fraksi10	.201	3	.	.995	3	.859
	Fraksi20	.238	3	.	.976	3	.702
	Fraksi30	.292	3	.	.923	3	.463
	Komb100	.328	3	.	.871	3	.298
	Komb200	.238	3	.	.976	3	.702
	Komb300	.219	3	.	.987	3	.780
	Negatif	.243	3	.	.972	3	.679
	Positif	.328	3	.	.871	3	.298
H8	Fraksi10	.280	3	.	.938	3	.520
	Fraksi20	.286	3	.	.930	3	.490
	Fraksi30	.215	3	.	.989	3	.800
	Komb100	.337	3	.	.855	3	.253
	Komb200	.232	3	.	.980	3	.726
	Komb300	.292	3	.	.923	3	.463
	Negatif	.178	3	.	.999	3	.952
	Positif	.318	3	.	.887	3	.344
H10	Fraksi10	.253	3	.	.964	3	.637
	Fraksi20	.200	3	.	.995	3	.862
	Fraksi30	.340	3	.	.848	3	.235
	Komb100	.314	3	.	.893	3	.363
	Komb200	.175	3	.	1.000	3	1.000
	Komb300	.186	3	.	.998	3	.921
	Negatif	.282	3	.	.936	3	.510
	Positif	.175	3	.	1.000	3	1.000
H12	Fraksi10	.292	3	.	.923	3	.463
	Fraksi20	.304	3	.	.907	3	.407
	Fraksi30	.219	3	.	.987	3	.780
	Komb100	.292	3	.	.923	3	.463
	Komb200	.253	3	.	.964	3	.637
	Komb300	.253	3	.	.964	3	.637
	Negatif	.321	3	.	.881	3	.328
	Positif	.187	3	.	.998	3	.915
H14	Fraksi10	.337	3	.	.855	3	.253
	Fraksi20	.301	3	.	.912	3	.424
	Fraksi30	.175	3	.	1.000	3	1.000
	Komb100	.353	3	.	.824	3	.174
	Komb200	.292	3	.	.923	3	.463
	Komb300	.301	3	.	.912	3	.424
	Negatif	.349	3	.	.832	3	.194
	Positif	.196	3	.	.996	3	.878

a. Lilliefors Significance Correction

2. Uji Homogenitas *(Levene)*

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
H4	Based on Mean	1.922	7	16	.132
	Based on Median	.185	7	16	.985
	Based on Median and with adjusted df	.185	7	7.695	.980
	Based on trimmed mean	1.646	7	16	.193
H6	Based on Mean	1.884	7	16	.139
	Based on Median	1.026	7	16	.451
	Based on Median and with adjusted df	1.026	7	7.598	.483
	Based on trimmed mean	1.824	7	16	.151
H8	Based on Mean	2.341	7	16	.075
	Based on Median	.630	7	16	.725
	Based on Median and with adjusted df	.630	7	7.635	.722
	Based on trimmed mean	2.166	7	16	.095
H10	Based on Mean	1.854	7	16	.145
	Based on Median	.885	7	16	.540
	Based on Median and with adjusted df	.885	7	8.435	.556
	Based on trimmed mean	1.785	7	16	.160
H12	Based on Mean	2.649	7	16	.051
	Based on Median	.728	7	16	.651
	Based on Median and with adjusted df	.728	7	6.008	.659
	Based on trimmed mean	2.458	7	16	.065
H14	Based on Mean	2.630	7	16	.052
	Based on Median	.358	7	16	.914
	Based on Median and with adjusted df	.358	7	7.647	.902
	Based on trimmed mean	2.302	7	16	.079

3. *One-way ANOVA*

ANOVA

Selisih

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	70943.167	7	10134.738	55.255	.000
Within Groups	2934.667	16	183.417		
Total	73877.833	23			

4. *Tukey HSD*

Multiple Comparisons

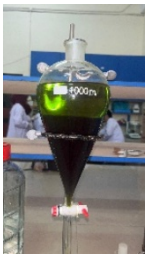
Dependent Variable: Selisih

Tukey HSD

(I) NO	(J) NO	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Negatif	Positif	-125.333*	11.058	.000	-163.62	-87.05
	Fraksi 100	-134.000*	11.058	.000	-172.28	-95.72
	Fraksi 200	-140.000*	11.058	.000	-178.28	-101.72
	Fraksi 300	-187.333*	11.058	.000	-225.62	-149.05
	Komb 100	-119.333*	11.058	.000	-157.62	-81.05
	Komb 200	-126.333*	11.058	.000	-164.62	-88.05
	Komb 300	-187.000*	11.058	.000	-225.28	-148.72
Positif	Negatif	125.333*	11.058	.000	87.05	163.62
	Fraksi 100	-8.667	11.058	.992	-46.95	29.62
	Fraksi 200	-14.667	11.058	.876	-52.95	23.62
	Fraksi 300	-62.000*	11.058	.001	-100.28	-23.72
	Komb 100	6.000	11.058	.999	-32.28	44.28
	Komb 200	-1.000	11.058	1.000	-39.28	37.28
	Komb 300	-61.667*	11.058	.001	-99.95	-23.38
Fraksi 100	Negatif	134.000*	11.058	.000	95.72	172.28
	Positif	8.667	11.058	.992	-29.62	46.95
	Fraksi 200	-6.000	11.058	.999	-44.28	32.28
	Fraksi 300	-53.333*	11.058	.004	-91.62	-15.05
	Komb 100	14.667	11.058	.876	-23.62	52.95
	Komb 200	7.667	11.058	.996	-30.62	45.95
	Komb 300	-53.000*	11.058	.004	-91.28	-14.72
Fraksi 200	Negatif	140.000*	11.058	.000	101.72	178.28
	Positif	14.667	11.058	.876	-23.62	52.95
	Fraksi 100	6.000	11.058	.999	-32.28	44.28
	Fraksi 300	-47.333*	11.058	.010	-85.62	-9.05
	Komb 100	20.667	11.058	.588	-17.62	58.95
	Komb 200	13.667	11.058	.909	-24.62	51.95
	Komb 300	-47.000*	11.058	.011	-85.28	-8.72
Fraksi 300	Negatif	187.333*	11.058	.000	149.05	225.62
	Positif	62.000*	11.058	.001	23.72	100.28
	Fraksi 100	53.333*	11.058	.004	15.05	91.62
	Fraksi 200	47.333*	11.058	.010	9.05	85.62
	Komb 100	68.000*	11.058	.000	29.72	106.28
	Komb 200	61.000*	11.058	.001	22.72	99.28
	Komb 300	.333	11.058	1.000	-37.95	38.62
Komb 100	Negatif	119.333*	11.058	.000	81.05	157.62
	Positif	-6.000	11.058	.999	-44.28	32.28
	Fraksi 100	-14.667	11.058	.876	-52.95	23.62
	Fraksi 200	-20.667	11.058	.588	-58.95	17.62
	Fraksi 300	-68.000*	11.058	.000	-106.28	-29.72
	Komb 200	-7.000	11.058	.998	-45.28	31.28
	Komb 300	-67.667*	11.058	.000	-105.95	-29.38
Komb 200	Negatif	126.333*	11.058	.000	88.05	164.62
	Positif	1.000	11.058	1.000	-37.28	39.28
	Fraksi 100	-7.667	11.058	.996	-45.95	30.62
	Fraksi 200	-13.667	11.058	.909	-51.95	24.62
	Fraksi 300	-61.000*	11.058	.001	-99.28	-22.72
	Komb 100	7.000	11.058	.998	-31.28	45.28
	Komb 300	-60.667*	11.058	.001	-98.95	-22.38
Komb 300	Negatif	187.000*	11.058	.000	148.72	225.28
	Positif	61.667*	11.058	.001	23.38	99.95
	Fraksi 100	53.000*	11.058	.004	14.72	91.28
	Fraksi 200	47.000*	11.058	.011	8.72	85.28
	Fraksi 300	-.333	11.058	1.000	-38.62	37.95
	Komb 100	67.667*	11.058	.000	29.38	105.95
	Komb 200	60.667*	11.058	.001	22.38	98.95

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

Lampiran 10 Kegiatan Perlakuan

No	Gambar	Perlakuan
1		Dirotary hasil maserasi daun beluntas
2		Proses ekstrak cair-cair partisi N-Heksan
3		Proses ekstrak cair-cair partisi etil asetat
4		Aklimatisasi hewan uji
5		Pemberian aloksan sebagai induksi secara intraperitonial

6		Pembuatan sediaan suspensi
7		Pemberian larutan uji secara oral