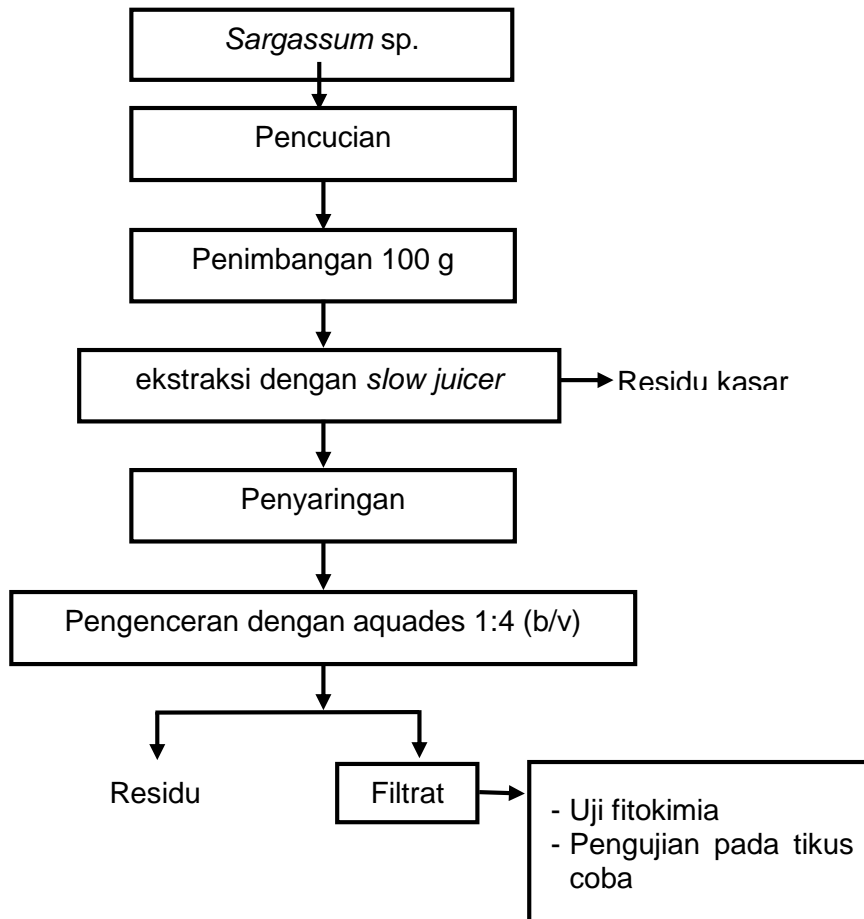
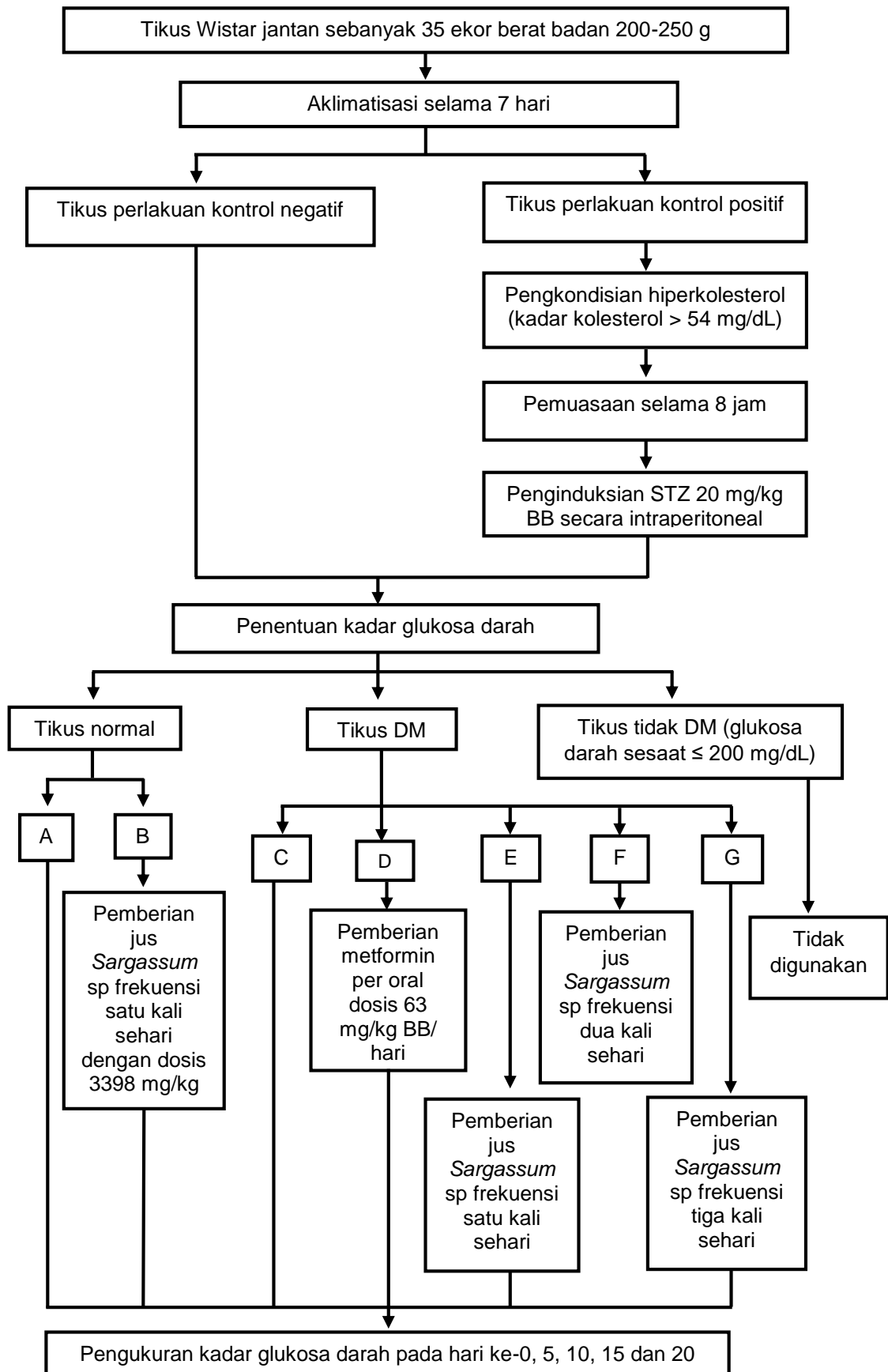


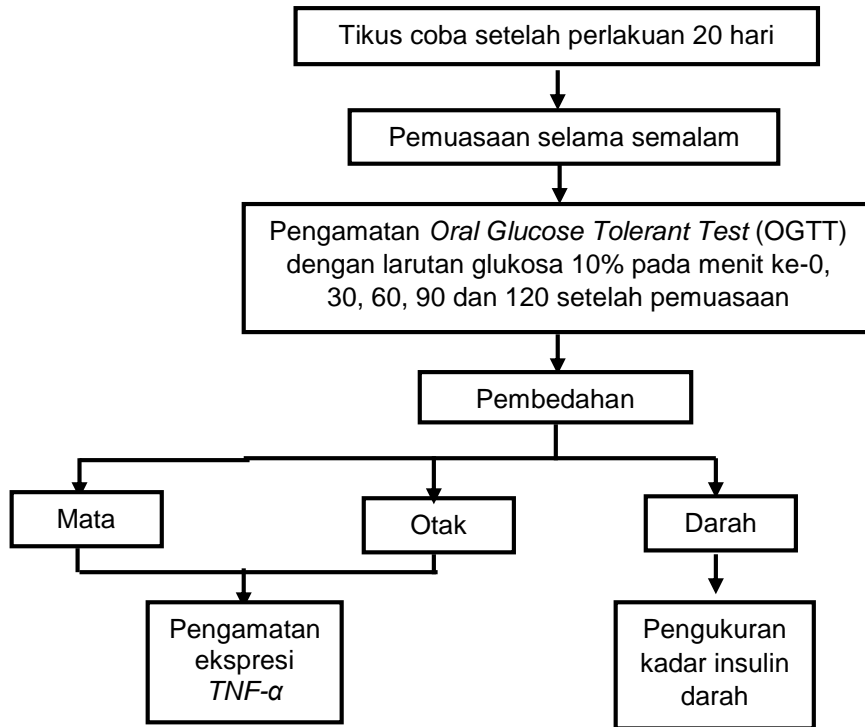
LAMPIRAN

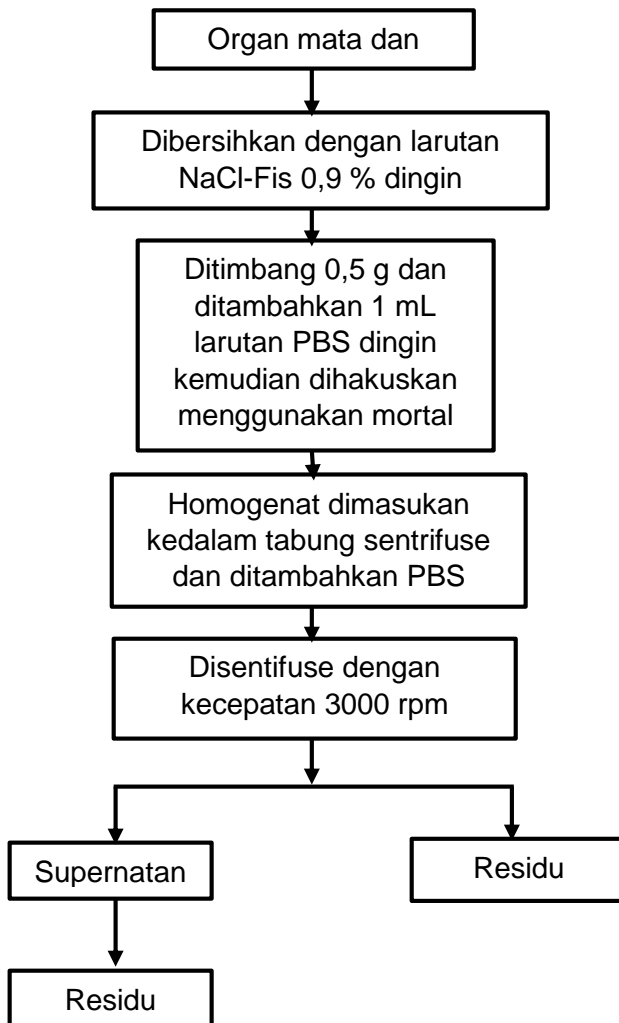
Lampiran 1. Skema Kerja Pembuatan Jus *Sargassum* sp.

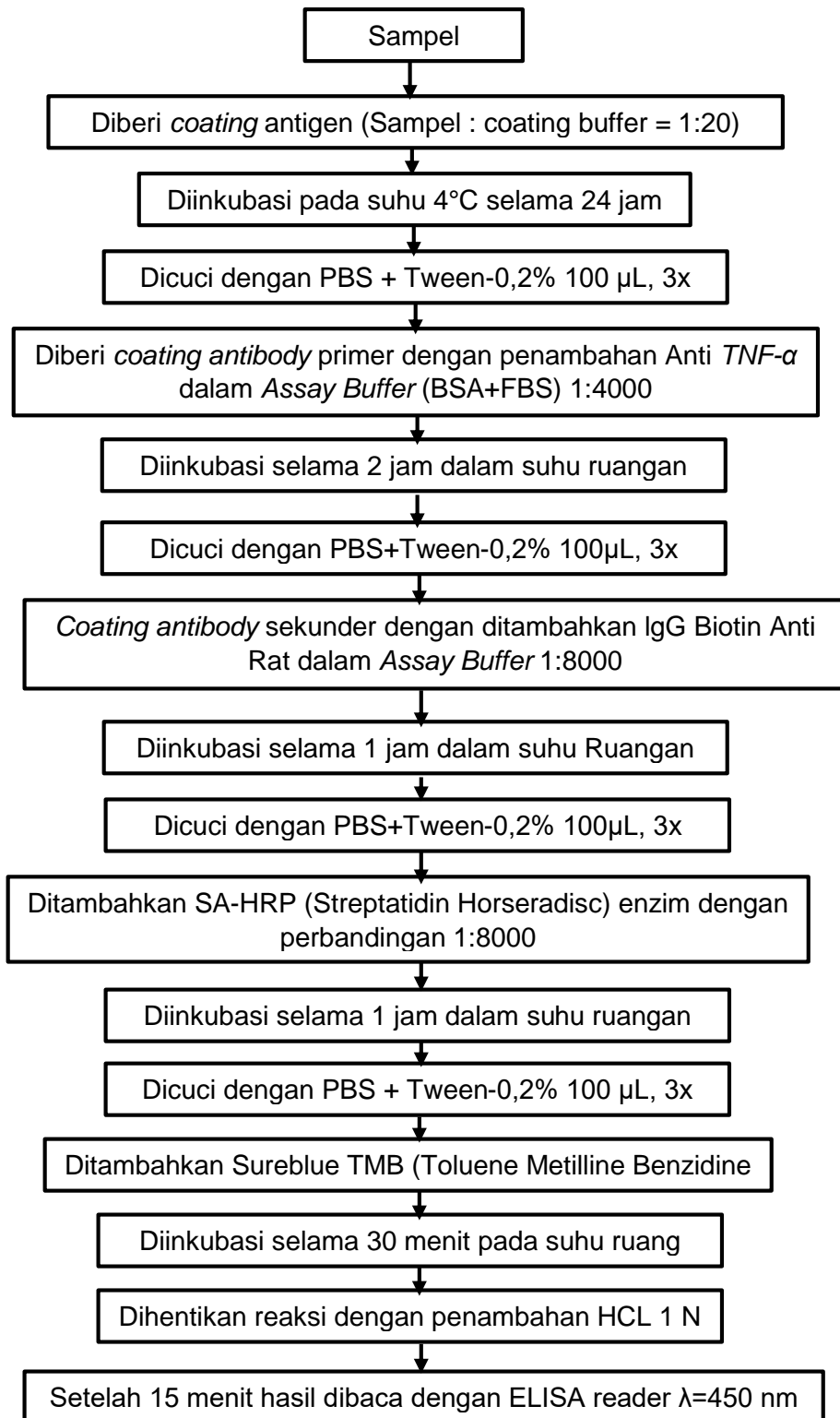


Lampiran 2. Skema Kerja Permodelan dan Perlakuan Tikus Coba





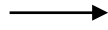
Lampiran 3. Skema Kerja Preparasi Organ dan Uji ELISA *TNF- α* 



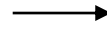
Lampiran 4. Pembuatan Jus Sargassum sp



Sargassum sp



Pencucian



Penimbangan



Penghalusan
menggunakan *slow juicer*



Pengenceran
dengan akuades
1:4



Jus *Sargassum* sp

Lampiran 5. Permodelan dan Treatment pada Tikus Coba



Pengelompokan tikus



Pemeliharaan tikus selama 30 hari penelitian



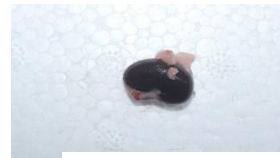
Pengukuran Kadar glukosa darah pada hari ke 5, 10, 15, dan 20



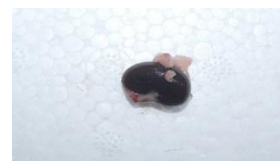
Penyondean tikus uji dengan lemak babi, aquades, jus *Sargassum* sp dan metformin



Pembedahan serta pengambilan organ dan darah



Organ mata



Organ otak



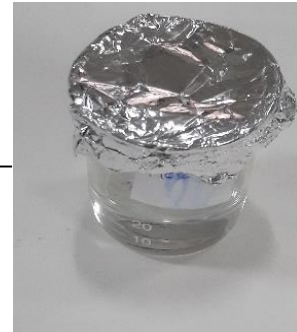
Serum darah

Lampiran 6. Penginduksian Streptozotocin Dan Uji ELISA

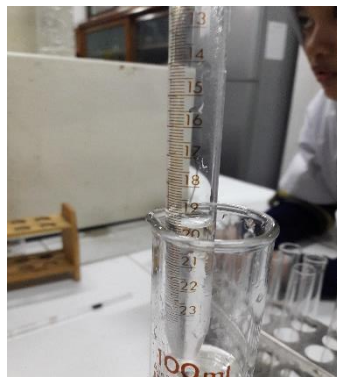
Streptozotocin



Penimbangan
Streptozotocin 20
mg/kgBB



Buffer Sitrat pH
4,5



Streptozotocin dilarutkan dalam
buffer sitrat pH 4,5



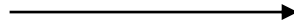
Persiapan penginduksian *streptozotocin*
seara intraperitoneal



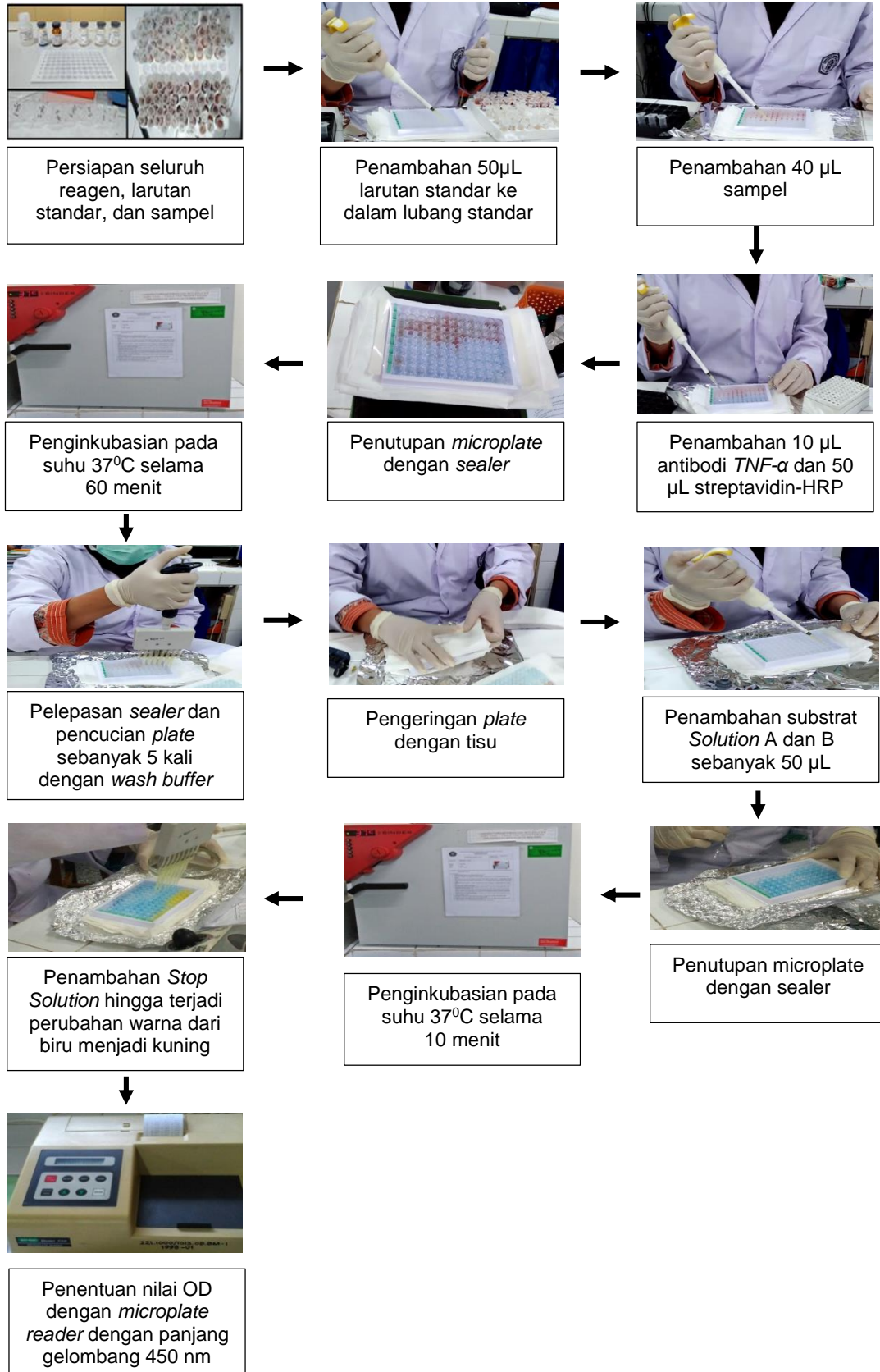
Tikus yang telah hiperkolesterol
dan mempunyai berat ≥ 200 g



Tikus diinduksi *streptozotocin* secara intraperitoneal



Pengukuran kadar glukosa darah pada hari ke 10 setelah penginduksian. Tikus dengan kadar glukosa > 200 mg/dL akan digunakan dalam penelitian. Sedangkan tikus dengan kadar glukosa < 200 mg/dL tidak digunakan dalam penelitian.

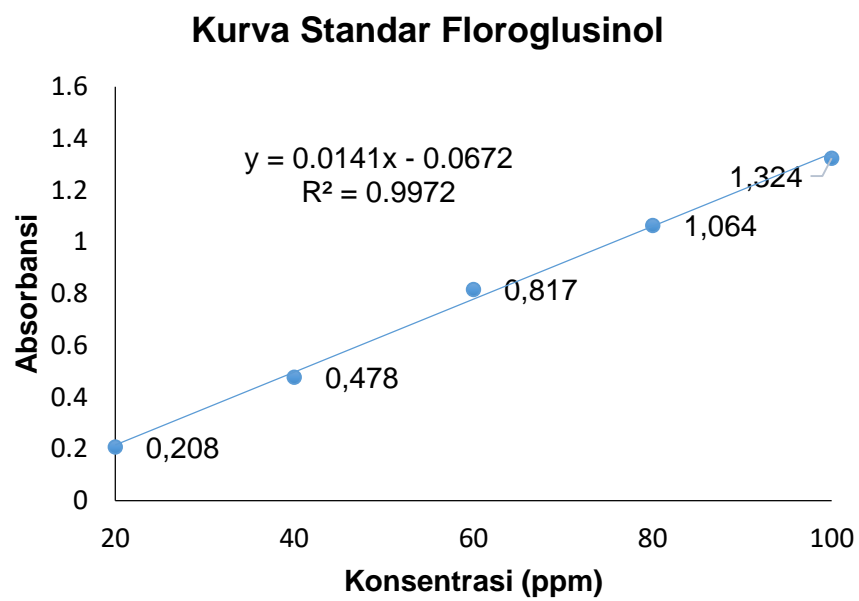


Lampiran 7. Penelitian Pendahuluan Polifenol pada *Sargassum sp.*

Data pengamatan absorbansi floroglusinol

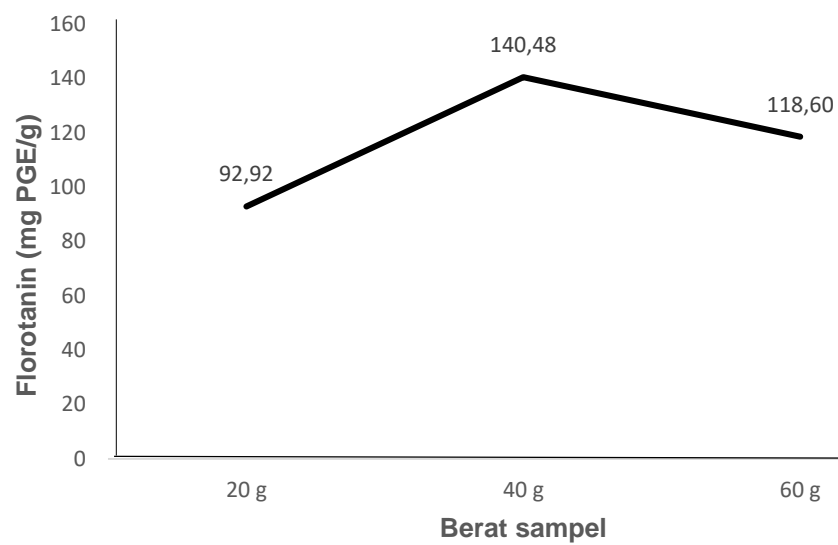
Konsentrasi (ppm)	20	40	60	80	100
absorbansi	0,208	0,478	0,817	1,064	1,324

Persamaan hubungan linear antara konsentrasi floroglusinol dan absorbansi



Lampiran 8. Penelitian Pendahuluan Titik Kombinasi

Berat Sampel (g)	Ulangan		Rerata	Kadar Florotanin (mg PGE/g)
	A	B		
20	0.785	1.701	1.243	92.92
40	1.939	1.888	1.914	140.48
60	1.627	1.583	1.605	118.60



Lampiran 9. Perhitungan Dosis Jus *Sargassum sp* untuk Tikus Uji

1. Perhitungan Pemberian Florotanin *Sargassum sp*

Persamaan : $Y = bx - a$

$$Y = 0,0141X - 0,0672$$

Sehingga:

$$Y = 0,0141X - 0,0672$$

$$1,91 = 0,0141X - 0,0672$$

$$X = 140 \text{ ppm (mg/mL)}$$

Pemberian jus pada tikus uji diasumsikan sebanyak 5 mL sehingga

$$5 \text{ mL} \times 140 \text{ mg/mL} = 700 \text{ mg}$$

Dengan demikian telah diketahui dalam jus *Sargassum sp* sebanyak 5 mL terdapat 700 mg florotanin.

2. Cara menghitung dosis (mg/kg BB)

Diketahui rata-rata BB tikus sebesar 206 g dikonversi menjadi kg yaitu 0,206 sehingga diperoleh perhitungan dosis yaitu :

$$\frac{700 \text{ mg}}{0,206 \text{ kg}} = \frac{x}{1 \text{ kg}}$$

$$X = 3398 \text{ mg/kg BB}$$

Pengukuran berat badan dilakukan, misalnya untuk tikus dengan BB 250 g dikonversi menjadi kg yaitu 0,250 kg membutuhkan polifenol dengan dosis rendah seberat :

$$\frac{3398 \text{ mg}}{1 \text{ kg}} = \frac{x}{0,250 \text{ kg}}$$

$$X = 849 \text{ mg}$$

Untuk tikus dengan BB 250 g membutuhkan jumlah mL polifenol sebanyak :

$$\frac{700\text{mg}}{5\text{mL}} = \frac{849\text{mg}}{x}$$

$$x = \frac{5\text{mL} \cdot 849\text{mg}}{700\text{mg}}$$

$$X = 6,1 \text{ mL}$$

Sebanyak 6,1 mL disondekan ke tikus dengan berat badan 250 g.

Lampiran 10. Cara Pembuatan Buffer Sitrat

Buffer sitrat dibuat dengan campuran larutan A yaitu larutan asam sitrat dan larutan B yaitu Na-sitrat, adapun ketentuan larutan yang digunakan :

Larutan A : 0,1 M larutan asam sitrat (21,01 g dalam 1000 mL)

Larutan B : 0,1 M larutan Na-sitrat (29,41 $C_6H_5O_7Na_3 \cdot 2H_2O$ dalam 1000 mL)

X mL larutan A + Y mL larutan B, kemudian diencerkan hingga 100 mL

Untuk mendapatkan pH 4,5, maka campuran yang dibuat yaitu 26,75 larutan A dan 23,25 larutan B kemudian ditambahkan akuades hingga volume 100 mL, sehingga didapatkan pH 4,5.

Lampiran 11. Cara Perhitungan

1. Induksi *Streptozotocin* (STZ)

$$\frac{20\text{mg}}{1\text{kgBB}} = \frac{20\text{mg}}{1000\text{g}} = \frac{2\text{mg}}{100\text{g}}$$

Pengukuran berat badan, misalnya untuk tikus dengan BB 250 g membutuhkan STZ seberat :

$$\frac{2\text{mg}}{100\text{g}} = \frac{x}{250\text{g}}$$

$$x = \frac{250\text{g} \cdot 2\text{mg}}{100\text{g}}$$

$$= 5 \text{ mg per tikus dengan BB 250 g}$$

STZ yang telah ditimbang kemudian dicampurkan dengan *buffer* sitrat. STZ dibuat dengan berat 75 mg dan *buffer* sitrat sebanyak 3 mL untuk satu ekor tikus dengan berat badan 250 g jumlah mL STZ yang telah dicampur *buffer* sitrat dibutuhkan sebesar :

$$\frac{75\text{mg}}{3\text{mL}} = \frac{5\text{mg}}{x}$$

$$x = \frac{3\text{mL} \cdot 5\text{mg}}{75\text{g}}$$

$$= 0,2 \text{ mL}$$

Sebanyak 0,2 mL campuran STZ dan *buffer* sitrat diinduksi ke tikus dengan berat badan 250 g.

2. Pemberian Obat Hiperglikemik Oral (Metformin)

$$\frac{63\text{mg}}{1\text{kgBB}} = \frac{63\text{mg}}{1000\text{g}} = \frac{6,3\text{mg}}{100\text{g}}$$

Pengukuran berat badan dilakukan, misalnya untuk tikus dengan BB 250 g membutuhkan metformin sebesar :

$$\frac{6,3mg}{100g} = \frac{x}{250g}$$

$$x = \frac{250g \cdot 6,3mg}{100}$$

$$= 15,75 \text{ mg per tikus dengan BB } 250g$$

Metformin yang telah ditimbang kemudian dicampurkan dengan akuades. Metformin yang dibuat dengan berat 500 mg dan akuades sebanyak 50 mL, maka untuk satu ekor tikus dengan berat 250 g, dibutuhkan jumlah mL metformin yang telah dicampur akuades sebanyak :

$$\frac{500mg}{50mL} = \frac{15,75mg}{x}$$

$$x = \frac{50mL \cdot 15,75mg}{500mg}$$

$$= 1,575 \text{ mL}$$

Sebanyak 1,575 mL campuran metformin dan akuades disondekan ke tikus dengan berat 250 g.

Lampiran 12. Cara Pembuatan Buffer Phosphat

Buffer phosphat dibuat dengan campuran larutan A yaitu larutan Na-phosphat monobasis dan larutan B yaitu Na-phosphat dibasis, adapun ketentuan larutan yang digunakan :

Larutan A : 0,2 M larutan Na-phosphat monobasis (27,8 g dalam 1000 mL)

Larutan B : 0,2 M larutan Na-phosphat dibasis (52,65 g $\text{Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$ atau 71,7 g $\text{Na}_2\text{HPO}_4 \cdot 12\text{H}_2\text{O}$ dalam 1000 mL).

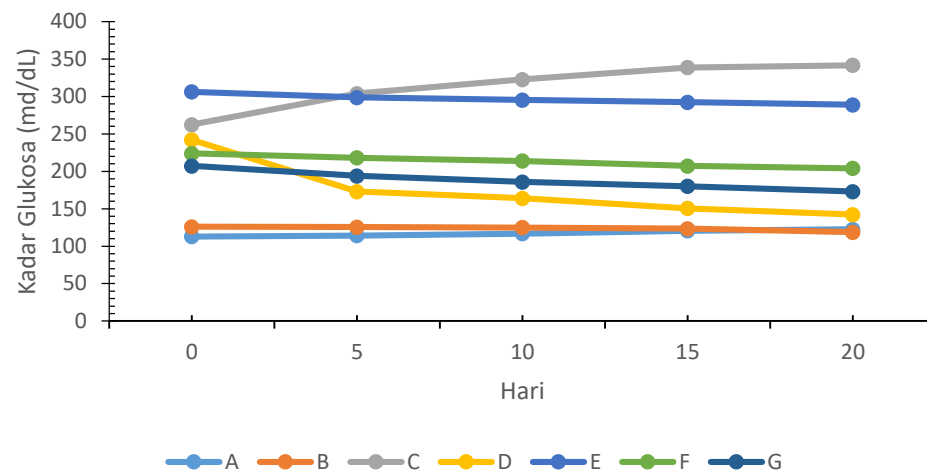
X mL larutan A + Y mL larutan B, kemudian diencerkan hingga 200 mL

Untuk mendapatkan pH 7,4 maka campuran yang dibuat yaitu 19,0 larutan A dan 81,0 larutan B kemudian ditambahkan akuades hingga volume 200 mL, sehingga didapatkan pH 7,5.

Lampiran 13. Analisa Glukosa Darah Tikus Uji

PERLAKUAN		ULANGAN					JUMLA H	RATA - RATA mg/dL	STANDA R DEVISIAS I	
		1	2	3	4	5				
A	WAKTU PENGAMATAN	0	116	113	111	113	112	565	113	1,67332
		5	115	113	115	114	114	571	114,2	0,748331
		10	116	119	115	117, 5	117	584,5	116,9	1,356466
		15	123	118	122	120, 5	120	603,5	120,7	1,720465
		20	128	118	123	123	121	613	122,6	3,261901
B	WAKTU PENGAMATAN	0	127	124	130	125, 5	124	630,5	126,1	2,244994
		5	125	125	127	125	126	628	125,6	0,8
		10	122	124	127	125	126, 5	624,5	124,9	1,8
		15	122	122	126	123, 5	124	617,5	123,5	1,48324
		20	122	115	120	119	118	594	118,8	2,315167
C	WAKTU PENGAMATAN	0	260	268	260	259	264	1311	262,2	3,37046
		5	300	303	309	301, 5	306	1519,5	303,9	3,231099
		10	322	321	325	326	320	1614	322,8	2,315167
		15	342	335	340	338, 5	338	1693,5	338,7	2,315167
		20	349	337	341	343	339	1709	341,8	4,118252
D	WAKTU PENGAMATAN	0	245	235	243	244	244	1211	242,2	3,655133
		5	175	170	178	172, 5	170	865,5	173,1	3,072458
		10	167	161	163	164	165	820	164	2
		15	148	150	149	156, 5	150	753,5	150,7	2,993326
		20	139	146	140	143	143	711	142,2	2,481935
E	WAKTU PENGAMATAN	0	311	306	302	308, 5	304	1531,5	306,3	3,187475
		5	304	301	293	300, 5	296	1494,5	298,9	3,903844
		10	302	297	288	297	293	1477	295,4	4,673329
		15	299	293	285	295	290	1462	292,4	4,71593
		20	297	291	278	294	285	1445	289	6,78233
F	WAKTU PENGAMATAN	0	224	230	216	227	223	1120	224	4,690416
		5	220	224	210	221	216	1091	218,2	4,833218
		10	214	220	206	217	213	1070	214	4,690416
		15	207	214	200	209	206	1036	207,2	4,534314
		20	204	210	196	207	203	1020	204	4,690416
G	WAKTU PENGAMATAN	0	210	203	204	207	212	1036	207,2	3,429286
		5	200	191	192	196	191, 5	970,5	194,1	3,44093
		10	192	183	184	188	182	929	185,8	3,709447
		15	186	177	178	182	177, 5	900,5	180,1	3,44093
		20	179	170	171	175	171	866	173,2	3,37046

Grafik Kadar Glukosa Darah Tiap Perlakuan Hari ke 0 - 20



Tabel Kadar Glukosa Tiap Perlakuan Hari ke - 20

PERLAKUAN	ULANGAN					TOTAL	Rerata	SD
	1	2	3	4	5			
A	128	118	123	123	121	613	122,5	3,71
B	122	115	120	119	118	593	118,6	2,63
C	349	337	341	343	339	1709	341,8	4,60
D	139	146	140	143	143	711	142,1	2,75
E	297	291	278	294	285	1445	288,9	7,65
F	204	210	196	207	203	1020	204,0	5,24
G	179	170	171	175	171	865	173,0	3,79

Descriptive

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					A	5		
B	5	118,8000	2,58844	1,15758	115,5860	122,0140	115,00	122,00
C	5	341,8000	4,60435	2,05913	336,0829	347,5171	337,00	349,00
D	5	142,2000	2,77489	1,24097	138,7545	145,6455	139,00	146,00
E	5	289,0000	7,58288	3,39116	279,5846	298,4154	278,00	297,00
F	5	204,0000	5,24404	2,34521	197,4887	210,5113	196,00	210,00
G	5	173,2000	3,76829	1,68523	168,5211	177,8789	170,00	179,00
Total	35	198,8000	81,16425	13,71926	170,9191	226,6809	115,00	349,00

Test Homogeneity of Variance

Levene Statistic	df1	df2	Sig.
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	1,543	6	28	,201
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ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	223387,200	6	37231,200	1759,746	,000
Within Groups	592,400	28	21,157		
Total	223979,600	34			

Duncan

perlakuan	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
B	5	118,8000					
A	5	122,6000					
D	5		142,2000				
G	5			173,2000			
F	5				204,0000		
E	5					289,0000	
C	5						341,8000
Sig.		,202	1,000	1,000	1,000	1,000	1,000

Lampiran 14. Data OGTT pada Tikus Uji

	Waktu	Ulangan					Total
		1	2	3	4	5	
A	0	88	98	103	76	81	446
	30	140	155	146	152	140	733
	60	175	200	183	192	203	953
	90	135	155	131	142	138	701
	120	103	115	120	110	124	572
B	0	119	100	111	120	104	554
	30	160	169	145	156	158	788
	60	212	234	210	222	217	1095
	90	140	152	150	160	148	750
	120	123	115	110	119	102	569
C	0	116	105	109	123	110	563
	30	442	449	421	432	451	2195
	60	521	496	476	489	531	2513
	90	365	386	395	405	388	1939
	120	276	295	284	312	297	1464
D	0	117	105	114	121	98	555
	30	189	190	206	193	179	957
	60	240	257	241	253	249	1240
	90	159	177	162	173	181	852
	120	121	115	136	120	118	610
E	0	103	122	122	108	112	567
	30	365	331	357	334	346	1733
	60	454	438	402	416	433	2143
	90	304	323	344	329	334	1634
	120	214	243	224	232	226	1139
F	0	120	102	114	117	123	576
	30	279	253	267	263	277	1339
	60	313	318	342	320	338	1631
	90	251	234	317	221	221	1244
	120	208	187	187	192	190	964
G	0	118	125	112	114	121	590
	30	243	237	220	235	231	1166
	60	270	269	308	276	271	1394
	90	196	235	208	198	209	1046
	120	157	145	155	154	157	768

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
Menit 0	A	5	89,2	11,3	5,05	75,17	103,23	76	103
	B	5	110,8	8,87	3,97	99,78	121,82	100	120
	C	5	112,6	7,02	3,14	103,88	121,32	105	123
	D	5	111	9,35	4,18	99,39	122,61	98	121
	E	5	113,4	8,47	3,79	102,88	123,92	103	122
	F	5	115,2	8,11	3,62	105,14	125,26	102	123
	G	5	118	5,24	2,35	111,49	124,51	112	125
	Total	35	110,03	11,82	2	105,97	114,09	76	125
Menit 30	A	5	146,6	6,84	3,06	138,11	155,09	140	155
	B	5	157,6	8,62	3,85	146,9	168,3	145	169
	C	5	439	12,51	5,59	423,47	454,53	421	451
	D	5	191,4	9,71	4,34	179,34	203,46	179	206
	E	5	346,6	14,57	6,52	328,51	364,69	331	365
	F	5	267,8	10,64	4,76	254,59	281,01	253	279
	G	5	233,2	8,56	3,83	222,58	243,82	220	243
	Total	35	254,6	100,57	17	220,05	289,15	140	451
Menit 60	A	5	190,6	11,67	5,22	176,1	205,1	175	203
	B	5	219	9,59	4,29	207,09	230,91	210	234
	C	5	502,6	22,81	10,2	474,28	530,92	476	531
	D	5	248	7,42	3,32	238,79	257,21	240	257
	E	5	428,6	20,12	9	403,62	453,58	402	454
	F	5	326,2	12,93	5,78	310,14	342,26	313	342
	G	5	278,8	16,54	7,4	258,26	299,34	269	308
	Total	35	313,4	108,48	18,34	276,14	350,66	175	531
Menit 90	A	5	140,2	9,2	4,12	128,77	151,63	131	155
	B	5	150	7,21	3,22	141,05	158,95	140	160
	C	5	387,8	14,75	6,6	369,48	406,12	365	405
	D	5	170,4	9,53	4,26	158,57	182,23	159	181
	E	5	326,8	14,89	6,66	308,31	345,29	304	344
	F	5	248,8	40,06	17,92	199,05	298,55	221	317
	G	5	209,2	15,55	6,95	189,9	228,5	196	235
	Total	35	233,31	89,94	15,2	202,42	264,21	131	405
Menit 120	A	5	114,4	8,26	3,7	104,14	124,66	103	124
	B	5	113,8	8,17	3,65	103,66	123,94	102	123
	C	5	292,8	13,7	6,13	275,79	309,81	276	312

D	5	122	8,15	3,65	111,87	132,13	115	136
E	5	227,8	10,69	4,78	214,53	241,07	214	243
F	5	192,8	8,76	3,92	181,93	203,67	187	208
G	5	153,6	4,98	2,23	147,42	159,78	145	157
Total	35	173,89	64,33	10,87	151,79	195,98	102	312

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Menit_0	,816	6	28	,57
Menit_30	,876	6	28	,53
Menit_60	1,980	6	28	,10
Menit_90	2,196	6	28	,07
Menit_120	,760	6	28	,61

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Menit 0	Between Groups	2718,17	6	453,03	6,24	,00
	Within Groups	2032,8	28	72,6		
	Total	4750,97	34			
Menit 30	Between Groups	340834,	6	56805,67	516,01	,00
	Within Groups	3082,4	28	110,07		
	Total	343916,4	34			
Menit 60	Between Groups	393485,2	6	65580,87	278,34	,00
	Within Groups	6597,2	28	235,61		
	Total	400082,4	34			
Menit 90	Between Groups	264982,34	6	44163,72	122,98	,00
	Within Groups	10055,2	28	359,11		
	Total	275037,54	34			
Menit 120	Between Groups	138287,94	6	23047,99	266,72	,00
	Within Groups	2419,6	28	86,41		
	Total	140707,54	34			

Menit 0
DUNCAN

OGTT	N	Subset for alpha = 0.05	
		1	2
A	5	89,2	
B	5		110,8
D	5		111
C	5		112,6
E	5		113,4
F	5		115,2
G	5		118
Sig.		1,00	,25

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,00.

Menit 30
DUNCAN

OGTT	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A	5	146,6					
B	5	157,6					
D	5		191,4				
G	5			233,2			
F	5				267,8		
E	5					346,6	
C	5						439
Sig.		,11	1,00	1,00	1,00	1,00	1,00

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,00.

Menit 60**DUNCAN**

OGTT	N	Subset for alpha = 0.05						
		1	2	3	4	5	6	7
A	5	190,6						
B	5		219					
D	5			248				
G	5				278,8			
F	5					326,2		
E	5						428,6	
C	5							502,6
Sig.		1,00	1,00	1,00	1,00	1,00	1,00	1,00

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,00.

Menit 90**DUNCAN**

OGTT	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A	5	140,2					
B	5	150	150				
D	5		170,4				
G	5			209,2			
F	5				248,8		
E	5					326,8	
C	5						387,8
Sig.		,42	,10	1,00	1,00	1,00	1,00

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,00.

Menit 120**DUNCAN**

OGTT	N	Subset for alpha = 0.05				
		1	2	3	4	5
B	5	113,8				
A	5	114,4				
D	5	122				
G	5		153,6			
F	5			192,8		
E	5				227,8	
C	5					292,8
Sig.		,20	1,00	1,00	1,00	1,00

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,00.

Lampiran 15. Analisa Kadar Insulin

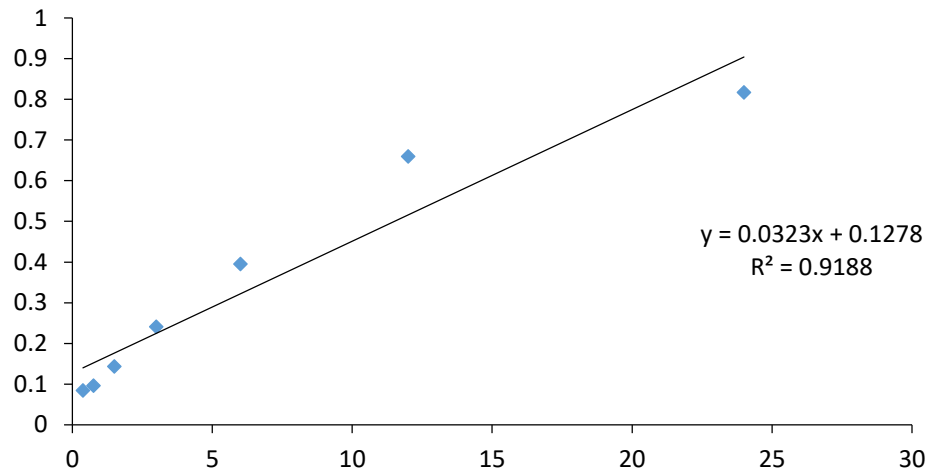
Kurva Standar Insulin

Data pengamatan absorbansi insulin

Absorbansi Kurva Data Standart Insulin

Kadar (mIU/L)	abs
24	0,817
12	0,659
6	0,395
3	0,241
1,5	0,143
0,75	0,096
0,375	0,084

Sampel	Ulangan	Absorbansi	Kadar
A	1	0,262	4,15
	2	0,263	4,2
	3	0,262	4,15
	4	0,263	4,18
	5	0,263	4,18
B	1	0,262	4,17
	2	0,262	4,15
	3	0,260	4,1
	4	0,262	4,16
	5	0,261	4,13
C	1	0,377	7,71
	2	0,374	7,63
	3	0,365	7,34
	4	0,376	7,67
	5	0,370	7,49
D	1	0,273	4,51
	2	0,268	4,35
	3	0,264	4,22
	4	0,271	4,43
	5	0,266	4,29
E	1	0,349	6,84
	2	0,358	7,13
	3	0,358	7,13
	4	0,354	6,99
	5	0,358	7,13
F	1	0,327	6,16
	2	0,332	6,33
	3	0,316	5,83
	4	0,330	6,25
	5	0,324	6,08
G	1	0,293	5,12
	2	0,290	5,03
	3	0,290	5,02
	4	0,292	5,08
	5	0,290	5,03



	N					Total	Mean	SD
	1	2	3	4	5			
A	4,15	4,2	4,15	4,18	4,18	20,85	4,17	0,02
B	4,17	4,15	4,10	4,16	4,13	20,71	4,14	0,03
C	7,71	7,63	7,34	7,67	7,49	37,84	7,57	0,15
D	4,51	4,35	4,22	4,43	4,29	21,80	4,36	0,11
E	6,84	7,13	7,12	6,99	7,13	35,20	7,04	0,13
F	6,16	6,33	5,83	6,25	6,08	30,65	6,13	0,19
G	5,12	5,03	5,02	5,08	5,03	25,27	5,05	0,04

Descriptives

N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
				Lower Bound	Upper Bound			
				A	5			4,1720
B	5	4,1420	,02775	,01241	4,1075	4,1765	4,10	4,17
C	5	7,5680	,15205	,06800	7,3792	7,7568	7,34	7,71
D	5	4,3600	,11402	,05099	4,2184	4,5016	4,22	4,51
E	5	7,0420	,12755	,05704	6,8836	7,2004	6,84	7,13
F	5	6,1300	,19222	,08597	5,8913	6,3687	5,83	6,33
G	5	5,0560	,04278	,01913	5,0029	5,1091	5,02	5,12
Total	35	5,4957	1,34107	,22668	5,0350	5,9564	4,10	7,71

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
3,653	6	28	,008

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	60,778	6	10,130	767,319	,000
Within Groups	,370	28	,013		
Total	61,148	34			

DUNCAN

	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
B	5	4,1420					
A	5	4,1720					
D	5		4,3600				
G	5			5,0560			
F	5				6,1300		
E	5					7,0420	
C	5						7,5680
Sig.		,683	1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Lampiran 16. Data Analisa Berat Badan Tikus Antar Perlakuan

	N					Total	Mean	SD
	1	2	3	4	5			
A	226	228	235	227	231,5	1147,5	229,50	3,7081
B	236	221	237	228,5	229	1151,5	230,30	6,49615
C	160	153	145	156,5	149	763,5	152,70	5,93296
D	205	210	210	207,5	210	1042,5	208,50	2,23607
E	173	170	167	171,5	168,5	850	170,00	2,37171
F	179	178	181	178,5	179,5	896	179,20	1,15109
G	190	193	185	191,5	189	948,5	189,70	3,03315

Descriptives

N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
				Lower Bound	Upper Bound			
				A	5			229,5000
B	5	230,3000	6,49615	2,90517	222,2340	238,3660	221,00	237,00
C	5	152,7000	5,93296	2,65330	145,3333	160,0667	145,00	160,00
D	5	208,5000	2,23607	1,00000	205,7236	211,2764	205,00	210,00
E	5	170,0000	2,37171	1,06066	167,0551	172,9449	167,00	173,00
F	5	179,2000	1,15109	,51478	177,7707	180,6293	178,00	181,00
G	5	189,7000	3,03315	1,35647	185,9338	193,4662	185,00	193,00
Total	35	194,2714	28,17157	4,76186	184,5942	203,9487	145,00	237,00

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
2,773	6	28	,030

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	26534,471	6	4422,412	275,662	,000
Within Groups	449,200	28	16,043		
Total	26983,671	34			

DUNCAN

	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
C	5	152,7000					
E	5		170,0000				
F	5			179,2000			
G	5				189,7000		
D	5					208,5000	
A	5						229,5000
B	5						230,3000
Sig.		1,000	1,000	1,000	1,000	1,000	,754

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Lampiran 17. Data Analisa Polifagia Tikus Antar Perlakuan

	N					Total	Mean	SD
	1	2	3	4	5			
A	16	17	16	17	17	83	16,6	0,54772
B	17	16	15	17	16	81	16,2	0,83666
C	25	24	25	25	25	124	24,8	0,44721
D	18	19	18	19	19	93	18,6	0,54772
E	24	24	25	24	25	122	24,4	0,54772
F	23	22	22	23	22	112	22,4	0,54772
G	20	20	21	20	21	102	20,4	0,54772

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	5	16,6000	,54772	,24495	15,9199	17,2801	16,00	17,00
B	5	16,2000	,83666	,37417	15,1611	17,2389	15,00	17,00
C	5	24,8000	,44721	,20000	24,2447	25,3553	24,00	25,00
D	5	18,6000	,54772	,24495	17,9199	19,2801	18,00	19,00
E	5	24,4000	,54772	,24495	23,7199	25,0801	24,00	25,00
F	5	22,4000	,54772	,24495	21,7199	23,0801	22,00	23,00
G	5	20,4000	,54772	,24495	19,7199	21,0801	20,00	21,00
Total	35	20,4857	3,35517	,56713	19,3332	21,6383	15,00	25,00

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
,933	6	28	,487

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	373,143	6	62,190	181,389	,000
Within Groups	9,600	28	,343		
Total	382,743	34			

DUNCAN

	N	Subset for alpha = 0.05				
		1	2	3	4	5
B	5	16,2000				
A	5	16,6000				
D	5		18,6000			
G	5			20,4000		
F	5				22,4000	
E	5					24,4000
C	5					24,8000
Sig.		,289	1,000	1,000	1,000	,289

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Lampiran 18. Data Analisa Polidipsia Tikus Antar Perlakuan

	N					Total	Mean	SD
	1	2	3	4	5			
A	13	13	14	13	13,5	66,5	13,30	0,447214
B	10	14	12	12	13	61	12,20	1,48324
C	47	49	47	48	48	239	47,80	0,83666
D	17	18	20	17,5	19	91,5	18,30	1,204159
E	45	46	43	45,5	44,5	224	44,80	1,151086
F	37	38	40	37,5	39	191,5	38,30	1,204159
G	30	30	33	30	31,5	154,5	30,90	1,341641

Descriptives

N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
				Lower Bound	Upper Bound			
				A	5			13,3000
B	5	12,2000	1,48324	,66332	10,3583	14,0417	10,00	14,00
C	5	47,8000	,83666	,37417	46,7611	48,8389	47,00	49,00
D	5	18,3000	1,20416	,53852	16,8048	19,7952	17,00	20,00
E	5	44,8000	1,15109	,51478	43,3707	46,2293	43,00	46,00
F	5	38,3000	1,20416	,53852	36,8048	39,7952	37,00	40,00
G	5	30,9000	1,34164	,60000	29,2341	32,5659	30,00	33,00
Total	35	29,3714	14,05208	2,37523	24,5444	34,1985	10,00	49,00

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
,943	6	28	,481

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6677,171	6	1112,862	853,702	,000
Within Groups	36,500	28	1,304		
Total	6713,671	34			

DUNCAN

		Subset for alpha = 0.05					
		1	2	3	4	5	6
B	5	12,2000					
A	5	13,3000					
D	5		18,3000				
G	5			30,9000			
F	5				38,3000		
E	5					44,8000	
C	5						47,8000
Sig.		,139	1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Lampiran 19. Data Analisa Poliuria Tikus Antar Perlakuan

	N					Total	Mean	SD
	1	2	3	4	5			
A	9	9	8	9	9	44	8,8	0,44721
B	8	9	8	9	9	43	8,6	0,54772
C	22	21	24	22	23	112	22,4	1,14018
D	12	11	11	12	11	57	11,4	0,54772
E	22	20	21	21	21	105	21	0,70711
F	17	20	19	19	20	95	19	1,22474
G	16	20	17	18	19	90	18	1,58114

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					A	5		
B	5	8,6000	,54772	,24495	7,9199	9,2801	8,00	9,00
C	5	22,4000	1,14018	,50990	20,9843	23,8157	21,00	24,00
D	5	11,4000	,54772	,24495	10,7199	12,0801	11,00	12,00
E	5	21,0000	,70711	,31623	20,1220	21,8780	20,00	22,00
F	5	19,0000	1,22474	,54772	17,4793	20,5207	17,00	20,00
G	5	18,0000	1,58114	,70711	16,0368	19,9632	16,00	20,00
Total	35	15,6000	5,56882	,94130	13,6870	17,5130	8,00	24,00

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1,664	6	28	,167

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1028,000	6	171,333	181,717	,000
Within Groups	26,400	28	,943		
Total	1054,400	34			

DUNCAN

	N	Subset for alpha = 0.05				
		1	2	3	4	5
B	5	8,6000				
A	5	8,8000				
D	5		11,4000			
G	5			18,0000		
F	5			19,0000		
E	5				21,0000	
C	5					22,4000
Sig.		,747	1,000	,115	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Perlakuan	Waktu	Ulangan					Total	Rata-rata
		1	2	3	4	5		
A	0	88	98	103	93	100,5	482,5	96,5
	30	140	155	146	147,5	150,5	739	147,8
	60	175	200	183	187,5	191,5	937	187,4
	90	135	155	131	145	143	709	141,8
	120	103	115	120	109	117,5	564,5	112,9
B	0	119	100	111	120	104	554	110,8
	30	160	169	145	156	158	788	157,6
	60	212	234	210	222	217	1095	219
	90	140	152	150	160	148	750	150
	120	123	115	110	119	102	569	113,8
C	0	116	105	109	110,5	107	547,5	109,5
	30	442	449	421	445,5	435	2192,5	438,5
	60	521	496	476	508,5	486	2487,5	497,5
	90	365	386	395	375,5	390,5	1912	382,4
	120	276	295	284	285,5	289,5	1430	286
D	0	117	105	114	111	109,5	556,5	111,3
	30	189	190	206	189,5	198	972,5	194,5
	60	240	257	241	248,5	249	1235,5	247,1
	90	159	177	162	168	169,5	835,5	167,1
	120	121	115	136	118	125,5	615,5	123,1
E	0	103	122	122	108	112	567	113,4
	30	365	331	357	334	346	1733	346,6
	60	454	438	402	416	433	2143	428,6
	90	304	323	344	329	334	1634	326,8
	120	214	243	224	232	226	1139	227,8
F	0	120	102	114	117	123	576	115,2
	30	279	253	267	263	277	1339	267,8
	60	313	318	342	320	338	1631	326,2
	90	251	234	317	221	221	1244	248,8
	120	208	187	187	192	190	964	192,8
G	0	118	125	112	114	121	590	118
	30	243	237	220	235	231	1166	233,2
	60	270	269	308	276	271	1394	278,8
	90	196	235	208	198	209	1046	209,2
	120	157	145	155	154	157	768	153,6

Perlakuan	Ulangan	% Kadar glukosa darah (mg/dL) pada menit ke-			
		30	60	90	120
A	1	159,091	198,864	153,409	117,045
	2	158,163	204,082	158,163	117,347
	3	141,748	177,670	127,184	116,505
	4	158,602	201,613	155,914	117,204
	5	149,751	190,547	142,289	116,915
	Rata-rata	153,471	194,555	147,392	117,003
B	1	134,454	178,151	117,647	103,361
	2	169,000	234,000	152,000	115,000
	3	130,631	189,189	135,135	99,099
	4	130,000	185,000	133,333	99,167
	5	151,923	208,654	142,308	98,077
	Rata-rata	143,201	198,999	136,085	102,941
C	1	381,034	449,138	314,655	237,931
	2	427,619	472,381	367,619	280,952
	3	386,239	436,697	362,385	260,550
	4	403,167	460,181	339,819	258,371
	5	406,542	454,206	364,953	270,561
	Rata-rata	400,920	454,521	349,886	261,673
D	1	161,538	205,128	135,897	103,419
	2	180,952	244,762	168,571	109,524
	3	180,702	211,404	142,105	119,298
	4	170,721	223,874	151,351	106,306
	5	180,822	227,397	154,795	114,612
	Rata-rata	174,947	222,513	150,544	110,632
E	1	354,369	440,777	295,146	207,767
	2	271,311	359,016	264,754	199,180
	3	292,623	329,508	281,967	183,607
	4	309,259	385,185	304,630	214,815
	5	308,929	386,607	298,214	201,786
	Rata-rata	307,298	380,219	288,942	201,431
F	1	232,500	260,833	209,167	173,333
	2	248,039	311,765	229,412	183,333

	3	234,211	300,000	278,070	164,035
	4	224,786	273,504	188,889	164,103
	5	225,203	274,797	179,675	154,472
	Rata-rata	232,948	284,180	217,042	167,855
G	1	205,932	228,814	166,102	133,051
	2	189,600	215,200	188,000	116,000
	3	196,429	275,000	185,714	138,393
	4	206,140	242,105	173,684	135,088
	5	190,909	223,967	172,727	129,752
	Rata-rata	197,802	237,017	177,245	130,457

Lampiran 20. Data dan Perhitungan AUC

Perlakuan	Ulangan	AUC (mg.min/dL)			Total AUC
		30-60	60-90	90-120	
A	1	5369,32	5284,09	4056,82	14710,23
	2	5433,67	5433,67	4132,65	15000,00
	3	4791,26	4572,82	3655,34	13019,42
	4	5403,23	5362,90	4096,77	14862,90
	5	5104,48	4992,54	3888,06	13985,07
	Rata-rata	5220,39	5129,20	3965,93	14315,52
B	1	4689,08	4436,97	3315,13	12441,18
	2	6045,00	5790,00	4005,00	15840,00
	3	4797,30	4864,86	3513,51	13175,68
	4	4725,00	4775,00	3487,50	12987,50
	5	5408,65	5264,42	3605,77	14278,85
	Rata-rata	5133,01	5026,25	3585,38	13744,64
C	1	12452,59	11456,90	8288,79	32198,28
	2	13500,00	12600,00	9728,57	35828,57
	3	12344,04	11986,24	9344,04	33674,31
	4	12950,23	12000,00	8972,85	33923,08
	5	12911,21	12287,38	9532,71	34731,31
	Rata-rata	12831,61	12066,10	9173,39	34071,11
D	1	5500,00	5115,38	3589,74	14205,13
	2	6385,71	6200,00	4171,43	16757,14
	3	5881,58	5302,63	3921,05	15105,26
	4	5918,92	5628,38	3864,86	15412,16
	5	6123,29	5732,88	4041,10	15897,26
	Rata-rata	5961,90	5595,85	3917,64	15475,39
E	1	11927,18	11038,83	7543,69	30509,71
	2	9454,92	9356,56	6959,02	25770,49
	3	9331,97	9172,13	6983,61	25487,70
	4	10416,67	10347,22	7791,67	28555,56
	5	10433,04	10272,32	7500,00	28205,36
	Rata-rata	10312,75	10037,41	7355,60	27705,76

F	1	7400,00	7050,00	5737,50	20187,50
	2	8397,06	8117,65	6191,18	22705,88
	3	8013,16	8671,05	6631,58	23315,79
	4	7474,36	6935,90	5294,87	19705,13
	5	7500,00	6817,07	5012,20	19329,27
	Rata-rata	7756,92	7518,33	5773,46	21048,71
G	1	6521,19	5923,73	4487,29	16932,20
	2	6072,00	6048,00	4560,00	16680,00
	3	7071,43	6910,71	4861,61	18843,75
	4	6723,68	6236,84	4631,58	17592,11
	5	6223,14	5950,41	4537,19	16710,74
	Rata-rata	6522,29	6213,94	4615,53	17351,76

- Contoh perhitungan persentase kadar glukosa darah terhadap kadar awal

$$\text{Rumus: } P_n = \frac{C_n}{C_0} \times 100\%$$

Keterangan:

C_n = kadar gula darah pada waktu tertentu

C₀ = kadar gula darah awal

P_n = persentase kadar glukosa darah pada waktu tertentu terhadap kadar glukosa awal

Diketahui : data kelompok A menit ke-30

C_n = 140 mg/dL

C₀ = 88 mg/dL

Ditanya P_n = ?

$$\text{Jawab: } P_n = \frac{140}{88} \times 100\% = 159,01\%$$

- Contoh perhitungan AUC dilakukan dengan rumus trapesium untuk masing masing perlakuan

$$\text{Rumus: } AUC = \frac{P_1 + P_n}{2} \times t_n - t_1$$

Keterangan:

t₁ = waktu penelitian, tindakan sebelum n (menit)

t_n = waktu penelitian, tindakan n (menit)

P₁ = persentase kadar glukosa darah pada waktu tertentu terhadap kadar glukosa awal, tindakan sebelum n

P_n = persentase kadar glukosa darah pada waktu tertentu terhadap kadar glukosa awal, tindakan n

AUC = *Area Under Curve* atau daerah dibawah kurva

Diketahui: data kelompok A menit ke- 0 dan 30

t1 = 0 menit

tn = 30 menit

P1 = 159,091

Pn = 198,864

Ditanya: Pn =?

$$\text{Jawab: AUC 30-60} = \frac{159,091 + 198,864}{2} \times 60 - 30 = 5369,325 \text{mg/dL}$$

Descriptives

AUC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
					A	5		
B	5	13744,642	1348,322	602,988	12070,478	15418,806	12441,18	15840,00
C	5	34071,109	1342,703	600,475	32403,923	35738,295	32198,28	35828,57
D	5	15475,391	945,439	422,813	14301,473	16649,309	14205,13	16757,14
E	5	27705,764	2091,588	935,386	25108,715	30302,813	25487,70	30509,71
F	5	21048,714	1829,565	818,206	18777,009	23320,419	19329,27	23315,79
G	5	17351,760	911,318	407,554	16220,209	18483,311	16680,00	18843,75
Total	35	20530,415	7340,758	1240,814	18008,776	23052,053	12441,18	35828,57

Test of Homogeneity of Variances

AUC	Levene Statistic	df1	df2	Sig.
	2,118	6	28	,083

ANOVA

AUC					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1777166747,2	6	296194457,9	150,8	,00
Within Groups	54981918,6	28	1963639,9		
Total	1832148665,8	34			

AUC

Duncan						
Perlakuan	N	Subset for alpha = 0.05				
		1	2	3	4	5
B	5	13744,642				
A	5	14315,524				
D	5	15475,391				
G	5		17351,760			
F	5			21048,714		
E	5				27705,764	
C	5					34071,109
Sig.		,074	1,00	1,000	1,000	1,000

Lampiran 21. Data dan Analisis Ekspresi *TNF- α* Mata Tikus

Data *TNF- α* pada Mata Tikus

perlakuan	ulangan					total	rata-rata	SD
	1	2	3	4	5			
A	980	1050	1130	1015	1090	5265.00	1053.00	59.33
B	950	1000	1040	975	1020	4985.00	997.00	35.64
C	2500	2710	2810	2605	2760	13385.00	2677.00	124.68
D	1350	1250	1160	1300	1205	6265.00	1253.00	75.13
E	2290	2300	2010	2295	2155	11050.00	2210.00	127.23
F	1970	1670	1690	1820	1680	8830.00	1766.00	129.34
G	1330	1520	1370	1425	1445	7090.00	1418.00	72.85

Descriptive

TNF- α pada Mata Tikus

Descriptives								
mata								
N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
				Lower Bound	Upper Bound			
				A	5			1039.0000
B	5	997.0000	35.63706	15.93738	952.7507	1041.2493	950.00	1040.00
C	5	2677.0000	124.67959	55.75841	2522.1898	2831.8102	2500.00	2810.00
D	5	1253.0000	75.13322	33.60060	1159.7098	1346.2902	1160.00	1350.00
E	5	2210.0000	127.23011	56.89903	2052.0230	2367.9770	2010.00	2300.00
F	5	1766.0000	129.34450	57.84462	1605.3976	1926.6024	1670.00	1970.00
G	5	1418.0000	72.85259	32.58067	1327.5416	1508.4584	1330.00	1520.00
Total	35	1622.8571	598.88412	101.22989	1417.1333	1828.5810	950.00	2810.00

Test of Homogeneity of Variances

mata			
Levene Statistic	df1	df2	Sig.
2.468	6	28	.048

ANOVA

mata					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11938954.286	6	1989825.714	218.012	.000
Within Groups	255560.000	28	9127.143		
Total	12194514.286	34			

mata

Duncan

perlakuan	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
B	5	997.0000					
A	5	1039.0000					
D	5		1253.0000				
G	5			1418.0000			
F	5				1766.0000		
E	5					2210.0000	
C	5						2677.0000
Sig.		.493	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5.000.

Lampiran 22. Data dan Analisis Ekspresi *TNF- α* Otak Tikus

Data *TNF- α* pada Otak Tikus

perlakuan	ulangan					total	rata-rata	SD
	1	2	3	4	5			
A	945	970	940	957.5	955	4767.5	953.50	11.67
B	890	855	800	872.5	827.5	4245	849.00	35.82
C	2435	2253	2574	2344	2413.5	12019.5	2403.90	118.69
D	1110	1225	1160	1167.5	1192.5	5855	1171.00	42.52
E	2100	2020	2470	2060	2245	10895	2179.00	183.52
F	1630	1770	1875	1700	1822.5	8797.5	1759.50	97.12
G	1425	1315	1170	1370	1242.5	6522.5	1304.50	101.06

Descriptives Otak

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower	Upper		
					Bound	Bound		
A	5	953.5000	11.67262	5.22015	939.0065	967.9935	940.00	970.00
B	5	849.0000	35.82073	16.01952	804.5227	893.4773	800.00	890.00
C	5	2403.9000	118.69309	53.08116	2256.5231	2551.2769	2253.00	2574.00
D	5	1171.0000	42.52205	19.01644	1118.2019	1223.7981	1110.00	1225.00
E	5	2179.0000	183.52112	82.07314	1951.1284	2406.8716	2020.00	2470.00
F	5	1759.4000	97.04020	43.39770	1638.9087	1879.8913	1630.00	1875.00
G	5	1304.5000	101.06310	45.19679	1179.0136	1429.9864	1170.00	1425.00
Total	35	1517.1857	577.61204	97.63425	1318.7690	1715.6024	800.00	2574.00

Test of Homogeneity of Variances

Otak			
Levene Statistic	df1	df2	Sig.
3.786	6	28	.007

ANOVA

Otak					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11061108.143	6	1843518.024	182.718	.000
Within Groups	282504.400	28	10089.443		
Total	11343612.543	34			

Otak











Duncan

perlakuan	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
B	5	849.0000					
A	5	953.5000					
D	5		1171.0000				
G	5			1304.5000			
F	5				1759.4000		
E	5					2179.0000	
C	5						2403.9000
Sig.		.111	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5.000.

Lampiran 23. Hasil Uji Fitokimia Segar dan Jus

Senyawa	Segar	Jus
Tanin		
Alkaloid		
Saponin		
Steroid		
Flavonoid		
Polifenol	