

## LAMPIRAN

### Lampiran 1

#### Ringkasan Penelitian Pendahuluan

Telah dilakukan suatu penelitian pendahuluan untuk mempersiapkan mencit obes yang berikutnya akan diberi perlakuan latihan fisik intensitas durasi panjang dan sedang seperti dalam alur penelitian diatas.

Enam puluh (60) ekor mencit putih berusia  $\pm 2$  bulan, ditimbang berat badannya dan dimasukkan ke dalam kandangnya masing-masing, berikutnya ditimbang secara berkala seminggu sekali. Mencit-mencit tersebut dikelompokkan menjadi dua kelompok. Kelompok I : diberi pakan pellet untuk ternak dengan komposisi protein total :  $(29,4 \pm 0,01)\%$ , karbohidrat total :  $(51,4 \pm 0,5)\%$  dan lemak total :  $5,76 \pm 0,1\%$  Kelompok II : diberi pakan pellet tinggi lemak dengan komposisi protein total :  $(31,1 \pm 0,3)\%$ , karbohidrat total :  $(42,4 \pm 0,2)\%$ , dan lemak total :  $(15,38 \pm 0,1)\%$ . Cara pemberian pakan dibebaskan, bila pakan habis diisi kembali ke dalam piring yg telah disediakan.

Setelah 22 minggu dilakukan terminasi terhadap kelompok I (pakan normal) sejumlah lima ekor mencit, dan kelompok II pakan tinggi lemak dengan jumlah yang sama, 5 ekor sebelum diambil darahnya, dilakukan penimbangan terlebih dahulu, baru kemudian masing-masing diambil darah intra cardialnya dan selanjutnya dilakukan pemeriksaan ELISA.

## Hasil penimbangan dan konsentrasi leptin

kelompok	Berat badan awal	Berat badan sesudah	(leptin)
K2	36	34	22.879
K4	29	36	22,831
K7	27	31	21,984
K8	23	45	22,688
K9	27	35	21,347
P20	27	42	98,288
P24	30	43	104,023
P30	27	38	109,172
P38	33	41	104,023
P43	23	44	98,288

P = Perlakuan (pakan tinggi lemak)

K = Kontrol (pakan normal)

N = nomor urut mencit

Uji Normalitas Data

$P > \alpha \rightarrow$  dist normal

	BBawal	BBsesudah	Konsentrasi leptin
Perlakuan	0,984(N)	0,990 (N)	0,945(N)
Kontrol	0,913(N)	0,703(N)	0,771(N)

$P > 0,05$

Karena semua data distribusi normal, maka dipakai statistik parametrik

1. Uji beda BB awal antara kelompok K dan P (Uji t 2 sampel bebas)

Lihat hasil Levene's test

Karena  $p > \alpha$  ( $0,778 > 0,05$ ) berarti varian kedua kelompok sama, sehingga pada bagian uji t, yang dibaca baris atas.

	Rata2 ± simp baku	P (sig)
perlakuan	28,00 ± 3,742	0,886
kontrol	28,40 ± 4,775	

Karena  $p > \alpha$  berarti tidak ada perbedaan yang signifikan antara BB awal

Kelompok K dan P

2. Uji beda BB setelah 5 bulan antara kelompok K dan P

p Levene's test : 0,303 ( $p > \alpha$ ) → varian sama → baca baris atas

p t test : 0,069 ( $p > \alpha$ ) → tidak ada beda BB 5 bl antara K dan P

	Rata2 ± sd	p
Perlakuan	41,60 ± 2,302	0,069
Kontrol	36,20 ± 5,263 ±	

3. Uji Beda BB awal dan BB 5 bulan pada masing-masing kelompok

	BB	Rata2 ± sd	p
Perlakuan	Awal	28,00 ± 3,742	0,003

	Setelah 5 bl	41,60 ± 2,302	(ada beda)
	Awal	28,40 ± 4,775	0,120
	Setelah 5 bl	36,20 ± 5,263	(tidak ada beda)

#### 4. Uji Beda Konsentrasi Leptin antara Kelompok K dan P

	Rata2 ± sd	p
Perlakuan	102,758 ± 4,591	0,000
Kontrol	22,346 ± 0,664	(ada beda)

Kesimpulan :

Tidak ada perbedaan signifikan antara berat badan mencit awal pada kelompok Kontrol maupun Perlakuan

Uji statistik tidak menunjukkan perbedaan signifikan setelah perlakuan 5 bulan antara kelompok Kontrol maupun Perlakuan

Ada perbedaan signifikan antara kelompok perlakuan diawal dan setelah 5 bulan perlakuan

Tidak ada perbedaan signifikan antara kelompok kontrol di awal dan setelah 5 bulan perlakuan

Ada perbedaan signifikan konsentrasi leptin Kelompok Perlakuan dan Kontrol

**Lampiran 2****Keterangan Laik Etik**

**KOMISI ETIK PENELITIAN  
FAKULTAS KEDOKTERAN HEWAN UNIVERSITAS AIRLANGGA  
*Animal Care and Use Committee (ACUC)***

**KETERANGAN KELAIKAN ETIK  
" ETHICAL CLEARANCE "**

**No : 234-KE**

**KOMISI ETIK PENELITIAN (ANIMAL CARE AND USE COMMITTEE)  
FAKULTAS KEDOKTERAN HEWAN UNIVERSITAS AIRLANGGA SURABAYA,  
TELAH MENPELAJARI SECARA SEKSAMA RANCANGAN PENELITIAN YANG  
DIUSULKAN, MAKA DENGAN INI MENYATAKAN BAHWA :**

**PENELITIAN BERJUDUL** : Peningkatan HSP72 di Hipotalamus Pada Mencit  
Obes Yang Diberi Perlakuan Latihan Fisik Intensitas  
Sedang Durasi Panjang Dapat Mencegah Efek Yoyo  
Pada Program Penurunan Berat Badan

**PENELITI UTAMA** : Rita Vivera Pane

**UNIT/LEMBAGA/TEMPAT  
PENELITIAN** : Program Studi Ilmu Kedokteran  
Pascasarjana Universitas Airlangga

**DINYATAKAN** : LAIK ETIK

Surabaya, 9 Januari 2013

Mengetahui,  
Dekan FKH-Unair,  
  
Prof. Romziah Sidik, Ph.D., drh.  
NIP. 130687305

Ketua,  
  
Dr. E. Bimo Aksono, M.Kes., Drh.  
NIP. 132014464

### Lampiran 3

#### Sertifikat Pengujian pakan Tinggi Lemak



Jl. Dharmawangsa Dalam, Surabaya 60286, Indonesia. Telp./Fax: +62 31 5036779; email: ulpfua@yahoo.com

### SERTIFIKAT PENGUJIAN

No. 1336/SA/VIII/2012\*

1. No. Surat Permohonan : -
2. Tanggal Surat Permohonan : 19 Juli 2012
3. Tanggal sampel dikerjakan : 19 Juli 2012
4. Nama Pemilik Sampel : RITA V PANE
5. Jenis>Nama Sampel/Kode : PAKAN TERNAK HIGH FAT DIET
6. Keperluan Uji : -
7. Parameter yang diuji : Analisis Protein, Lemak, Karbohidrat
8. Hasil

Jenis pemeriksaan	Metode	Hasil
Protein Total	AOAC Vol II, 17 <sup>th</sup> Ed 2000, ch. 39, p.7	(31,1 ± 0,3) % b/b
Karbohidrat Total	SNI 01 - 2891 - 1992	(42,4 ± 0,2) % b/b
Lemak Total	AOAC Vol I, 16 <sup>th</sup> Ed 1995, ch 4, p 17	(15,38 ± 0,1) % b/b

Surabaya, 30 Juli 2012

Direktur,

Dr. rer. nat. M. Yuwono, MS.

## Lampiran 4

## Sertifikat Pengujian Pakan Ternak Normal

**SERTIFIKAT PENGUJIAN**

No. 1330/SA/VII/2012\*

1. No. Surat Permohonan : -
2. Tanggal Surat Permohonan : 19 Juli 2012
3. Tanggal sampel dikerjakan : 19 Juli 2012
4. Nama Pemilik Sampel : RITA V PANE
5. Jenis>Nama Sampel/Kode : PAKAN TERNAK NORMAL
6. Keperluan Uji : -
7. Parameter yang diuji : Analisis Protein, Lemak, Karbohidrat
8. Hasil :

Jenis pemeriksaan	Metode	Hasil
Protein Total	AOAC, Vol II, 17 <sup>th</sup> Ed 2000, ch. 39, p.7	(29,4 ± 0,01) % b/b
Karbohidrat Total	SNI 01 - 2891 - 1992	(51,4 ± 0,5) % b/b
Lemak Total	AOAC Vol I, 16 <sup>th</sup> Ed 1995, ch 4, p 17	(5,76 ± 0,1) % b/b

Surabaya, 30 Juli 2012

Direktur

Dr. rer. nat. M. Yuwono, MS.

**Lampiran 5**

## Data Berat Badan Mencit

## Kelompok I

KI	Tanggal penimbangan								
	16/12	17/12	18/12	19/12	20/12	21/12	22/12	23/12	24/12
Pg	43	45	45	44	44	43	42	42	41
Ek	40	42	42	42	43	44	44	44	43
Kdk	40	42	42	40	42	42	40	41	40
Kdr	39	41	42	41	43	43	40	41	40
Kbr	41	40	40	40	42	41	41	40	39
O	40	41	41	40	39	39	39	40	40
Kp	46	45	47	46	47	48	48	47	46
K I	Tanggal penimbangan								
	25/12	26/12	27/12	28/12	29/12	30/12	31/12	1/1	2/1
Pg	41	40	40	40	39	40	36	38	34
Ek	43	42	42	42	41	40	37	38	40
Kdk	40	40	41	40	39	39	35	36	41
Kdr	40	40	38	38	37	37	32	32	38
Kbr	38	38	39	40	39	39	35	37	42
O	40	39	38	40	38	38	34	34	41
Kp	46	43	45	47	46	46	43	43	43



K I	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1
Pg	43	43	41	42	43	44	45	44	44
Ek	43	41	42	45	47	47	47	47	47
Kdk	42	40	38	42	42	42	42	42	42
Kdr	37	36	35	36	38	38	39	39	40
Kbr	42	40	40	39	38	38	43	42	41
0	40	38	37	38	38	36	36	35	35
Kp	43	41	41	47	50	50	51	52	50

K I	Tanggal penimbangan							
	12/1	13/1	14/1					
Pg	43	42	42					
Ek	45	43	44					
Kdk	40	39	40					
Kdr	38	38	39					
Kbr	40	40	41					
0	34	34	34					
Kp	50	50	48					

## Kelompok II

KII	Tanggal penimbangan								
	16/12	17/12	18/12	19/12	20/12	21/12	22/12	23/12	24/12
Ej	41	42	42	42	43	43	43	42	42
Kdk	42	42	44	43	45	45	44	44	43
Kbk	31	32	33	32	32	34	33	33	32
Kdr	45	46	47	43	47	48	48	47	46
Kbr	38	38	39	38	39	40	39	39	38
0	39	39	41	39	40	41	40	40	39
Pg	43	43	44	43	43	43	42	43	42
Ed	33	34	35	36	36	37	36	37	36
Tanggal penimbangan									
K II	25/12	26/12	27/12	28/12	29/12	30/12	31/12	1/1	2/1
Ej	42	40	41	41	40	41	38	36	36
Kdk	43	41	40	40	41	40	38	36	37
Kbk	32	30	30	31	30	31	28	28	27
Kdr	45	42	43	45	44	44	41	39	38
Kbr	38	36	38	38	37	37	34	34	34
O	39	37	38	38	37	38	34	34	34
Pg	42	40	38	38	37	38	37	35	33

Ed	36	34	34	33	32	36	33	30	28
K II	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1
Ej	36	36	36	37	41	43	44	43	43
Kdk	36	35	35	33	42	42	43	41	40
Kbk	28	27	26	28	31	33	33	32	32
Kdr	38	36	37	37	43	46	48	47	46
Kbr	34	34	34	34	37	39	39	38	38
0	33	33	33	38	39	42	42	36	37
Pg	35	34	36	37	38	38	38	39	38
Ed	31	28	31	34	36	34	33	33	33

K II	Tanggal penimbangan								
	12/1	13/1	14/1						
Ej	42	42	43						
Kdk	41	43	43						
Kbk	32	31	31						
Kdr	43	44	44						
Kbr	38	38	39						
0	37	39	40						
Pg	38	38	39						

Ed	33	33	34						
----	----	----	----	--	--	--	--	--	--

## Kelompok III

KIII	Tanggal penimbangan								
	16/12	17/12	18/12	19/12	20/12	21/12	22/12	23/12	24/12
Kbr	43	45	45	44	44	43	42	42	41
Kp	40	42	42	42	43	44	44	44	43
Pg	40	42	42	40	42	42	40	41	40
Ek	39	41	42	41	43	43	40	41	40
Kdk	41	40	40	40	42	41	41	40	39
KE	40	41	41	40	39	39	39	40	40
0	40	42	42	41	43	43	43	43	43
K III	Tanggal penimbangan								
	25/12	26/12	27/12	28/12	29/12	30/12	31/12	1/1	2/1
Kbr	41	40	40	40	39	40	36	38	34
Kp	43	42	42	42	41	40	37	38	40
Pg	40	40	41	40	39	39	35	36	41
Ek	40	40	38	38	37	37	32	32	38

Kdk	38	38	39	40	39	39	35	37	42
KE	40	39	38	40	38	38	34	34	41
0	43	43	43	42	41	44	42	41	42
K III	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1
Kbr	43	43	41	42	43	44	45	44	44
Kp	43	41	42	45	47	47	47	47	47
Pg	42	40	38	42	42	42	42	42	42
Ek	37	36	35	36	38	38	39	39	40
Kdk	42	40	40	39	38	38	43	42	41
KE	40	38	37	38	38	36	36	35	35
0	40	39	38	39	40	41	40	40	40

K III	Tanggal penimbangan								
	12/1	13/1	14/1						
Kbr	43	42	42						
Kp	45	43	44						
Pg	40	39	40						
Ek	38	38	39						
Kdk	40	40	41						
KE	34	34	34						
0	40	40	40						

**Lampiran 6**

Hasil Pemeriksaan Elisa Leptin, IL-6 dan MDA

Pemeriksaan Elisa leptin

Kelompok		Konsentrasi
Kelompok I	Ej	371,534
	Kdk	459,359
	Kbk	390,908
	Kdr	441,278
	Kbr	562,683
	0	449,458
	Pg	418,030
	Ed	490,356
Kelompok II	Kp	102,032
	Pg	96,435
	Ek	102,463
	Kdk	182,108
	KE	100,310
	Kbr	112,795
	0	118,822

**Pemeriksaan IL-6**

Kelompok	Konsentrasi	
Kelompok I	Ej	3,102
	Kdk	3,065
	Kbk	3,689
	Kdr	3,007
	Kbr	2,743
	0	4,099
	Pg	1,328
	Ed	1,563
Kelompok II	Kp	3,783
	Pg	0,057
	Ek	1,950
	Kdk	1,844
	KE	2,155
	Kbr	1,909
	0	2,982

## Pemeriksaan Elisa MDA

Kelompok		Konsentrasi
Kelompok I	Ej	0,672
	Kdk	0,624
	Kbk	0,683
	Kdr	0,567
	Kbr	0,436
	0	0,715
	Pg	0,098
	Ed	0,179
Kelompok II	Kp	0,157
	Pg	0,595
	Ek	0,222
	Kdk	0,087
	KE	0,802
	Kbr	0,493
	0	0,692



**Lampiran 7**

Pemeriksaan IHK

Pemeriksaan IHK HSP72

Kelompok		IHK HSP72	
Kelompok I	Ej	10	8
	Kdk	13	3
	Kbk	6	8
	Kdr	4	4
	Kbr	8	6
	0	4	13
	Pg	9	8
	Ed	2	4
Kelompok II	Kp	14	12
	Pg	18	10
	Ek	13	17
	Kdk	14	14
	KE	17	11
	Kbr	20	13
	0	12	14

## Pemeriksaan IHK pSTAT3

Kelompok		IHK pSTAT3	
Kelompok I	Ej	5	8
	Kdk	6	3
	Kbk	3	5
	Kdr	2	4
	Kbr	6	6
	0	3	6
	Pg	4	3
	Ed	8	8
Kelompok II	Kp	20	18
	Pg	23	15
	Ek	21	16
	Kdk	18	17
	KE	13	20
	Kbr	14	23
	0	20	13

**Lampiran 8**

## Uji Normalitas Data Berat Badan

**NPar Tests****One-Sample Kolmogorov-Smirnov Test**

Kelompok			Penimbangan berat badan awal	Penimbangan berat badan minggu I	Penimbangan berat badan minggu II
KI	N		7	7	7
	Normal Parameters <sup>a,b</sup>	Mean	41.29	42.14	39.86
		Std. Deviation	2.430	2.545	2.911
	Most Extreme Differences	Absolute	.273	.245	.338
		Positive	.273	.245	.338
		Negative	-.173	-.200	-.163
	Kolmogorov-Smirnov Z		.722	.648	.893
	Asymp. Sig. (2-tailed)		.674	.796	.402
	KII	N		8	8
Normal Parameters <sup>a,b</sup>		Mean	39.00	40.63	38.13
		Std. Deviation	4.870	4.373	3.834
Most Extreme Differences		Absolute	.169	.123	.165
		Positive	.141	.095	.138
		Negative	-.169	-.123	-.165
Kolmogorov-Smirnov Z			.477	.349	.466
Asymp. Sig. (2-tailed)			.977	1.000	.982
KIII		N		7	7
	Normal Parameters <sup>a,b</sup>	Mean	40.43	41.57	39.57
		Std. Deviation	1.272	1.512	2.225
	Most Extreme Differences	Absolute	.346	.219	.281
		Positive	.346	.219	.281
		Negative	-.225	-.149	-.124
	Kolmogorov-Smirnov Z		.916	.579	.743
	Asymp. Sig. (2-tailed)		.371	.891	.639

a. Test distribution is Normal.

b. Calculated from data.

## NPar Tests

### One-Sample Kolmogorov-Smirnov Test

Kelompok			Penimbangan berat badan minggu III	Penimbangan berat badan akhir
KI	N		7	7
	Normal Parameters <sup>a,b</sup>	Mean	41.29	41.14
		Std. Deviation	3.904	4.337
	Most Extreme Differences	Absolute	.149	.168
		Positive	.149	.136
		Negative	-.144	-.168
	Kolmogorov-Smirnov Z		.395	.444
	Asymp. Sig. (2-tailed)		.998	.989
KII	N		8	8
	Normal Parameters <sup>a,b</sup>	Mean	34.75	39.13
		Std. Deviation	3.284	4.581
	Most Extreme Differences	Absolute	.253	.239
		Positive	.161	.144
		Negative	-.253	-.239
	Kolmogorov-Smirnov Z		.717	.676
	Asymp. Sig. (2-tailed)		.683	.750
KIII	N		7	7
	Normal Parameters <sup>a,b</sup>	Mean	40.14	40.00
		Std. Deviation	3.024	3.109
	Most Extreme Differences	Absolute	.219	.231
		Positive	.219	.117
		Negative	-.159	-.231
	Kolmogorov-Smirnov Z		.579	.611
	Asymp. Sig. (2-tailed)		.891	.849

a. Test distribution is Normal.

b. Calculated from data.

**Lampiran 9****Uji Normalitas Data Leptin, IL-6 dan MDA****NPar Tests****One-Sample Kolmogorov-Smirnov Test**

Kelompok			Konsentrasi Elisa Leptin	Konsentrasi IL-6	Konsentrasi Elisa MDA
KI	N		7	7	7
	Normal Parameters <sup>a,b</sup>	Mean	98.83043	1.84274	.43386
		Std. Deviation	9.180033	1.221695	.247530
	Most Extreme Differences	Absolute	.179	.196	.274
		Positive	.139	.196	.220
		Negative	-.179	-.146	-.274
	Kolmogorov-Smirnov Z		.475	.518	.725
	Asymp. Sig. (2-tailed)		.978	.951	.669
KII	N		8	8	8
	Normal Parameters <sup>a,b</sup>	Mean	447.95075	2.82450	.49675
		Std. Deviation	59.913374	.954493	.238393
	Most Extreme Differences	Absolute	.174	.216	.241
		Positive	.174	.157	.180
		Negative	-.101	-.216	-.241
	Kolmogorov-Smirnov Z		.494	.611	.681
	Asymp. Sig. (2-tailed)		.968	.850	.742
KIII	N		7	7	7
	Normal Parameters <sup>a,b</sup>	Mean	116.42357	2.09714	.43543
		Std. Deviation	29.984908	1.148314	.280909
	Most Extreme Differences	Absolute	.325	.270	.205
		Positive	.325	.194	.205
		Negative	-.253	-.270	-.153
	Kolmogorov-Smirnov Z		.861	.714	.542
	Asymp. Sig. (2-tailed)		.449	.688	.931

a. Test distribution is Normal.

b. Calculated from data.

## Lampiran 10

### Uji Normalitas Data HSP72 dan pSTAT3

#### NPar Tests

#### One-Sample Kolmogorov-Smirnov Test

Kelompok			Hasil IHC HSP 72	Hasil IHC pStat-3
KI	N		7	7
	Normal Parameters <sup>a,b</sup>	Mean	3.2857	2.1429
		Std. Deviation	1.46791	.47559
	Most Extreme Differences	Absolute	.280	.332
		Positive	.149	.332
		Negative	-.280	-.239
	Kolmogorov-Smirnov Z		.741	.879
	Asymp. Sig. (2-tailed)		.643	.422
KII	N		8	8
	Normal Parameters <sup>a,b</sup>	Mean	6.8750	5.0000
		Std. Deviation	2.21601	1.69031
	Most Extreme Differences	Absolute	.272	.241
		Positive	.169	.241
		Negative	-.272	-.118
	Kolmogorov-Smirnov Z		.771	.683
	Asymp. Sig. (2-tailed)		.592	.740
KIII	N		7	7
	Normal Parameters <sup>a,b</sup>	Mean	14.2143	17.9286
		Std. Deviation	1.21988	1.09653
	Most Extreme Differences	Absolute	.284	.270
		Positive	.284	.189
		Negative	-.160	-.270
	Kolmogorov-Smirnov Z		.751	.715
	Asymp. Sig. (2-tailed)		.625	.686

a. Test distribution is Normal.

b. Calculated from data.

## Lampiran 11

### Uji Homogenitas, ANOVA dan LSD (Leptin, IL-6, MDA)

#### Oneway

##### Descriptives

Konsentrasi Elisa Leptin

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
KI	7	98.83043	9.180033	3.469726	90.34031	107.32054	84.811	108.920
KII	8	447.95075	59.913374	21.182576	397.86192	498.03958	371.534	562.683
KIII	7	116.42357	29.984908	11.333230	88.69216	144.15499	96.435	182.108
Total	22	231.38109	172.066044	36.684604	155.09128	307.67090	84.811	562.683

##### Test of Homogeneity of Variances

Konsentrasi Elisa Leptin

Levene Statistic	df1	df2	Sig.
3.360	2	19	.056

##### ANOVA

Konsentrasi Elisa Leptin

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	590713.704	2	295356.852	180.865	.000
Within Groups	31027.493	19	1633.026		
Total	621741.196	21			

#### Post Hoc Tests

##### Multiple Comparisons

Konsentrasi Elisa Leptin

LSD

(I) Kelomp ok	(J) Kelomp ok	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KI	KII	-349.120321 <sup>*</sup>	20.914532	.000	-392.89494	-305.34570
	KIII	-17.593143	21.600436	.425	-62.80337	27.61709
KII	KI	349.120321 <sup>*</sup>	20.914532	.000	305.34570	392.89494
	KIII	331.527179 <sup>*</sup>	20.914532	.000	287.75256	375.30180
KIII	KI	17.593143	21.600436	.425	-27.61709	62.80337
	KII	-331.527179 <sup>*</sup>	20.914532	.000	-375.30180	-287.75256

**Multiple Comparisons**

Konsentrasi Elisa Leptin  
LSD

(I) Kelompok	(J) Kelompok	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KI	KII	-349.120321*	20.914532	.000	-392.89494	-305.34570
	KIII	-17.593143	21.600436	.425	-62.80337	27.61709
KII	KI	349.120321*	20.914532	.000	305.34570	392.89494
	KIII	331.527179*	20.914532	.000	287.75256	375.30180
KIII	KI	17.593143	21.600436	.425	-27.61709	62.80337
	KII	-331.527179*	20.914532	.000	-375.30180	-287.75256

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

**Oneway**

**Descriptives**

Konsentrasi IL-6

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
KI	7	1.84274	1.221695	.461757	.71286	2.97262	.354	3.385
KII	8	2.82450	.954493	.337464	2.02652	3.62248	1.328	4.099
KIII	7	2.09714	1.148314	.434022	1.03513	3.15916	.057	3.783
Total	22	2.28069	1.137847	.242590	1.77620	2.78518	.057	4.099

**Test of Homogeneity of Variances**

Konsentrasi IL-6

Levene Statistic	df1	df2	Sig.
.589	2	19	.565

**ANOVA**

Konsentrasi IL-6

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.944	2	1.972	1.612	.226
Within Groups	23.244	19	1.223		
Total	27.189	21			



## Oneway

### Descriptives

Konsentrasi Elisa MDA

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
KI	7	.43386	.247530	.093558	.20493	.66278	.002	.845
KII	8	.49675	.238393	.084285	.29745	.69605	.098	.715
KIII	7	.43543	.280909	.106173	.17563	.69523	.087	.802
Total	22	.45723	.244808	.052193	.34869	.56577	.002	.845

### Test of Homogeneity of Variances

Konsentrasi Elisa MDA

Levene Statistic	df1	df2	Sig.
.710	2	19	.504

### ANOVA

Konsentrasi Elisa MDA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.020	2	.010	.151	.861
Within Groups	1.239	19	.065		
Total	1.259	21			

**Lampiran 12****Uji Homogenitas, ANOVA dan LSD (HSP72 dan pSAT3)****Oneway****Descriptives**

Hasil IHC HSP 72

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
KI	7	3.2857	1.46791	.55482	1.9281	4.6433	.50	5.00
KII	8	6.8750	2.21601	.78348	5.0224	8.7276	3.00	9.00
KIII	7	14.2143	1.21988	.46107	13.0861	15.3425	13.00	16.50
Total	22	8.0682	4.84103	1.03211	5.9218	10.2146	.50	16.50

**Test of Homogeneity of Variances**

Hasil IHC HSP 72

Levene Statistic	df1	df2	Sig.
1.296	2	19	.297

**ANOVA**

Hasil IHC HSP 72

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	435.916	2	217.958	73.645	.000
Within Groups	56.232	19	2.960		
Total	492.148	21			

**Post Hoc Tests****Multiple Comparisons**

Hasil IHC HSP 72

LSD

(I) Kelompok	(J) Kelompok	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KI	KII	-3.58929*	.89036	.001	-5.4528	-1.7257
	KIII	-10.92857*	.91956	.000	-12.8532	-9.0039
KII	KI	3.58929*	.89036	.001	1.7257	5.4528
	KIII	-7.33929*	.89036	.000	-9.2028	-5.4757
KIII	KI	10.92857*	.91956	.000	9.0039	12.8532
	KII	7.33929*	.89036	.000	5.4757	9.2028

**Multiple Comparisons**

Hasil IHC HSP 72  
LSD

(I) Kelompok	(J) Kelompok	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KI	KII	-3.58929*	.89036	.001	-5.4528	-1.7257
	KIII	-10.92857*	.91956	.000	-12.8532	-9.0039
KII	KI	3.58929*	.89036	.001	1.7257	5.4528
	KIII	-7.33929*	.89036	.000	-9.2028	-5.4757
KIII	KI	10.92857*	.91956	.000	9.0039	12.8532
	KII	7.33929*	.89036	.000	5.4757	9.2028

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

**Oneway****Descriptives**

Hasil IHC pStat-3

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
KI	7	2.1429	.47559	.17976	1.7030	2.5827	1.50	3.00
KII	8	5.0000	1.69031	.59761	3.5869	6.4131	3.00	8.00
KIII	7	17.9286	1.09653	.41445	16.9144	18.9427	16.50	19.00
Total	22	8.2045	7.00282	1.49301	5.0997	11.3094	1.50	19.00

**Test of Homogeneity of Variances**

Hasil IHC pStat-3

Levene Statistic	df1	df2	Sig.
5.839	2	19	.011

**ANOVA**

Hasil IHC pStat-3

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1001.258	2	500.629	332.918	.000
Within Groups	28.571	19	1.504		
Total	1029.830	21			

**Robust Tests of Equality of Means**

Hasil IHC pStat-3

	Statistic <sup>a</sup>	df1	df2	Sig.
Brown-Forsythe	358.590	2	13.254	.000

a. Asymptotically F distributed.

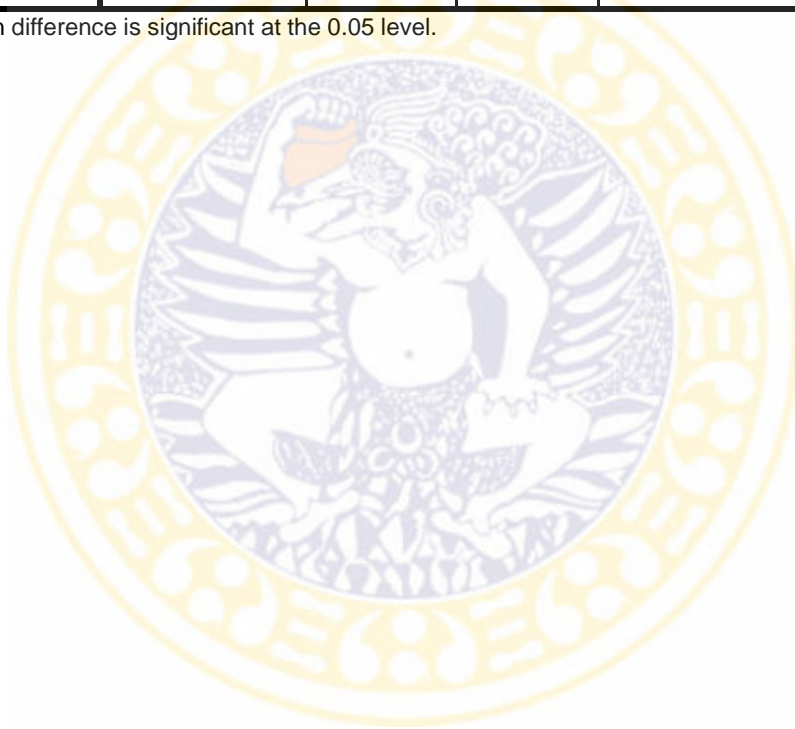
## Post Hoc Tests

### Multiple Comparisons

Hasil IHC pStat-3  
Dunnett T3

(I) Kelompok	(J) Kelompok	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KI	KII	-2.85714*	.62406	.005	-4.6908	-1.0235
	KIII	-15.78571*	.45175	.000	-17.1154	-14.4560
KII	KI	2.85714*	.62406	.005	1.0235	4.6908
	KIII	-12.92857*	.72726	.000	-14.9244	-10.9328
KIII	KI	15.78571*	.45175	.000	14.4560	17.1154
	KII	12.92857*	.72726	.000	10.9328	14.9244

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



**Lampiran 13****Analisis Jalur****Uji Regression (Durasi latihan – IL-6)****Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Durasi Latihan Fisik <sup>a</sup>		Enter

a. All requested variables entered.

b. Dependent Variable: Konsentrasi IL-6

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.091 <sup>a</sup>	.008	-.041	1.161079

a. Predictors: (Constant), Durasi Latihan Fisik

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.227	1	.227	.168	.686 <sup>a</sup>
	Residual	26.962	20	1.348		
	Total	27.189	21			

a. Predictors: (Constant), Durasi Latihan Fisik

b. Dependent Variable: Konsentrasi IL-6

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.153	.397		5.425	.000
	Durasi Latihan Fisik	.008	.021	.091	.410	.686

a. Dependent Variable: Konsentrasi IL-6

## Regression (Durasi latihan – MDA)

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Durasi Latihan Fisik <sup>a</sup>		Enter

- a. All requested variables entered.  
b. Dependent Variable: Konsentrasi Elisa MDA

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.003 <sup>a</sup>	.000	-.050	.250853

- a. Predictors: (Constant), Durasi Latihan Fisik

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	.000	.991 <sup>a</sup>
	Residual	1.259	20	.063		
	Total	1.259	21			

- a. Predictors: (Constant), Durasi Latihan Fisik  
b. Dependent Variable: Konsentrasi Elisa MDA

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.456	.086		5.322	.000
	Durasi Latihan Fisik	5.238E-5	.004	.003	.012	.991

- a. Dependent Variable: Konsentrasi Elisa MDA

**Regression (Durasi latihan – pSTAT3)****Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Durasi Latihan Fisik <sup>a</sup>		Enter

a. All requested variables entered.

b. Dependent Variable: Hasil IHC pSTAT3

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.920 <sup>a</sup>	.847	.839	2.80775

a. Predictors: (Constant), Durasi Latihan Fisik

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	872.161	1	872.161	110.632	.000 <sup>a</sup>
	Residual	157.669	20	7.883		
	Total	1029.830	21			

a. Predictors: (Constant), Durasi Latihan Fisik

b. Dependent Variable: Hasil IHC pStat-3

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.312	.960		.325	.749
	Durasi Latihan Fisik	.526	.050	.920	10.518	.000

a. Dependent Variable: Hasil IHC pStat-3

**Regression (Durasi latihan – HSP72)****Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Durasi Latihan Fisik <sup>a</sup>		Enter

- a. All requested variables entered.  
b. Dependent Variable: Hasil IHC HSP 72

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.922 <sup>a</sup>	.849	.842	1.92523

a. Predictors: (Constant), Durasi Latihan Fisik

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	418.018	1	418.018	112.780	.000 <sup>a</sup>
	Residual	74.130	20	3.706		
	Total	492.148	21			

- a. Predictors: (Constant), Durasi Latihan Fisik  
b. Dependent Variable: Hasil IHC HSP 72

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.604	.658		3.956	.001
	Durasi Latihan Fisik	.364	.034	.922	10.620	.000

a. Dependent Variable: Hasil IHC HSP 72

**Regression (MDA/IL6 – HSP72)****Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Konsentrasi Elisa MDA, Konsentrasi IL-6 <sup>a</sup>		Enter
2		Konsentrasi IL-6	Backward (criterion: Probability of F-to-remove >= ,100).
3		Konsentrasi Elisa MDA	Backward (criterion: Probability of F-to-remove >= ,100).

a. All requested variables entered.



**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Konsentrasi Elisa MDA, Konsentrasi IL-6 <sup>a</sup>		Enter
2		Konsentrasi IL-6	Backward (criterion: Probability of F-to-remove >= ,100).
3		Konsentrasi Elisa MDA	Backward (criterion: Probability of F-to-remove >= ,100).

a. All requested variables entered.

b. Dependent Variable: Hasil IHC HSP 72

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.056 <sup>a</sup>	.003	-.102	5.08148
2	.053 <sup>b</sup>	.003	-.047	4.95367
3	.000 <sup>c</sup>	.000	.000	4.84103

a. Predictors: (Constant), Konsentrasi Elisa MDA, Konsentrasi IL-6

b. Predictors: (Constant), Konsentrasi Elisa MDA

c. Predictor: (constant)

**ANOVA<sup>d</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.541	2	.771	.030	.971 <sup>a</sup>
	Residual	490.607	19	25.821		
	Total	492.148	21			
2	Regression	1.370	1	1.370	.056	.816 <sup>b</sup>
	Residual	490.778	20	24.539		
	Total	492.148	21			
3	Regression	.000	0	.000	.	. <sup>c</sup>
	Residual	492.148	21	23.436		
	Total	492.148	21			

a. Predictors: (Constant), Konsentrasi Elisa MDA, Konsentrasi IL-6

b. Predictors: (Constant), Konsentrasi Elisa MDA

c. Predictor: (constant)

d. Dependent Variable: Hasil IHC HSP 72

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.751	3.056		2.536	.020
	Konsentrasi IL-6	-.080	.983	-.019	-.081	.936
	Konsentrasi Elisa MDA	1.092	4.569	.055	.239	.814
2	(Constant)	7.591	2.278		3.332	.003
	Konsentrasi Elisa MDA	1.043	4.416	.053	.236	.816
3	(Constant)	8.068	1.032		7.817	.000

a. Dependent Variable: Hasil IHC HSP 72

**Excluded Variables<sup>c</sup>**

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
2	Konsentrasi IL-6	-.019 <sup>a</sup>	-.081	.936	-.019	.983
3	Konsentrasi IL-6	-.012 <sup>b</sup>	-.052	.959	-.012	1.000
	Konsentrasi Elisa MDA	.053 <sup>b</sup>	.236	.816	.053	1.000

a. Predictors in the Model: (Constant), Konsentrasi Elisa MDA

b. Predictor: (constant)

c. Dependent Variable: Hasil IHC HSP 72

### Regression (HSP72 – pSTAT3)

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Hasil IHC HSP 72 <sup>a</sup>		Enter

a. All requested variables entered.

b. Dependent Variable: Hasil IHC pStat-3

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.912 <sup>a</sup>	.832	.824	2.93954

a. Predictors: (Constant), Hasil IHC HSP 72

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	857.012	1	857.012	99.181	.000 <sup>a</sup>
	Residual	172.818	20	8.641		
	Total	1029.830	21			

a. Predictors: (Constant), Hasil IHC HSP 72

b. Dependent Variable: Hasil IHC pStat-3

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.442	1.239		-1.971	.063
	Hasil IHC HSP 72	1.320	.133	.912	9.959	.000

a. Dependent Variable: Hasil IHC pStat-3

**Regression (pSTAT3 – Leptin)****Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Hasil IHC pStat-3 <sup>a</sup>		Enter
2		Hasil IHC pStat-3	Backward (criterion: Probability of F-to-remove >= ,100).

a. All requested variables entered.

b. Dependent Variable: Konsentrasi Elisa Leptin

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.300 <sup>a</sup>	.090	.044	168.205397
2	.000 <sup>b</sup>	.000	.000	172.066044

a. Predictors: (Constant), Hasil IHC pStat-3

b. Predictor: (constant)

ANOVA<sup>c</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55880.085	1	55880.085	1.975	.175 <sup>a</sup>
	Residual	565861.111	20	28293.056		
	Total	621741.196	21			
2	Regression	.000	0	.000		. <sup>b</sup>
	Residual	621741.196	21	29606.724		
	Total	621741.196	21			

a. Predictors: (Constant), Hasil IHC pStat-3

b. Predictor: (constant)

c. Dependent Variable: Konsentrasi Elisa Leptin

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	291.818	55.995		5.212	.000
	Hasil IHC pStat-3	-7.366	5.242	-.300	-1.405	.175
2	(Constant)	231.381	36.685		6.307	.000

a. Dependent Variable: Konsentrasi Elisa Leptin

Excluded Variables<sup>b</sup>

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
2	Hasil IHC pStat-3	-.300 <sup>a</sup>	-1.405	.175	-.300	1.000

a. Predictor: (constant)

b. Dependent Variable: Konsentrasi Elisa Leptin

## Regression (leptin – Berat badan)

Variables Entered/Removed<sup>b</sup>

Model	Variables Entered	Variables Removed	Method
1	Konsentrasi Elisa Leptin <sup>a</sup>		Enter
2		Konsentrasi Elisa Leptin	Backward (criterion: Probability of F-to-remove >= ,100).

a. All requested variables entered.

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Konsentrasi Elisa Leptin <sup>a</sup>		Enter
2		Konsentrasi Elisa Leptin	Backward (criterion: Probability of F-to-remove >= ,100).

a. All requested variables entered.

b. Dependent Variable: Penimbangan berat badan akhir

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.200 <sup>a</sup>	.040	-.008	3.998
2	.000 <sup>b</sup>	.000	.000	3.982

a. Predictors: (Constant), Konsentrasi Elisa Leptin

b. Predictor: (constant)

**ANOVA<sup>c</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.312	1	13.312	.833	.372 <sup>a</sup>
	Residual	319.643	20	15.982		
	Total	332.955	21			
2	Regression	.000	0	.000	.	. <sup>b</sup>
	Residual	332.955	21	15.855		
	Total	332.955	21			

a. Predictors: (Constant), Konsentrasi Elisa Leptin

b. Predictor: (constant)

c. Dependent Variable: Penimbangan berat badan akhir

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	41.116	1.450		28.355	.000
	Konsentrasi Elisa Leptin	-.005	.005	-.200	-.913	.372
2	(Constant)	40.045	.849		47.172	.000

a. Dependent Variable: Penimbangan berat badan akhir

**Excluded Variables<sup>b</sup>**

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	
2	Konsentrasi Elisa Leptin	-.200 <sup>a</sup>	-.913	.372	-.200	1.000

a. Predictor: (constant)

b. Dependent Variable: Penimbangan berat badan akhir

**Regresi (pStat3 terhadap Rasio pStat3-Leptin)****Regression****Descriptive Statistics**

	Mean	Std. Deviation	N
Rasio pStat3 - Leptin	.0623	.07166	22
Hasil IHC pStat-3	8.2045	7.00282	22

**Correlations**

		Rasio pStat3 - Leptin	Hasil IHC pStat-3
Pearson Correlation	Rasio pStat3 - Leptin	1.000	.942
	Hasil IHC pStat-3	.942	1.000
Sig. (1-tailed)	Rasio pStat3 - Leptin	.	.000
	Hasil IHC pStat-3	.000	.
N	Rasio pStat3 - Leptin	22	22
	Hasil IHC pStat-3	22	22

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Hasil IHC pStat-3 <sup>a</sup>	.	Enter

a. All requested variables entered.

b. Dependent Variable: Rasio pStat3 - Leptin

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.942 <sup>a</sup>	.887	.882	.02464

a. Predictors: (Constant), Hasil IHC pStat-3

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.096	1	.096	157.668	.000 <sup>a</sup>
	Residual	.012	20	.001		
	Total	.108	21			

a. Predictors: (Constant), Hasil IHC pStat-3

b. Dependent Variable: Rasio pStat3 - Leptin

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients		95,0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	-.017	.008		-2.043	.054	-.034	.000
	Hasil IHC pStat-3	.010	.001	.942	12.557	.000	.008	.011

a. Dependent Variable: Rasio pStat3 - Leptin

Regresi (pStat3 terhadap Rasio pStat3-Leptin) per Kelompok

Rangkuman hasil regresi

Variabel Bebas	Variabel Terikat	n	R <sup>2</sup>	Koefisien Regresi (B)	P
pStat3	Rasio pStat3 - Leptin	22	0,887	0,010	0,000

**Lampiran 14****Analisis Data Rasio pSTAT3 Terhadap Leptin****Case Processing Summary**

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Hasil IHC pStat-3 * Kelompok	22	100.0%	0	.0%	22	100.0%
Konsentrasi Elisa Leptin * Kelompok	22	100.0%	0	.0%	22	100.0%
Rasio pStat3 - Leptin * Kelompok	22	100.0%	0	.0%	22	100.0%

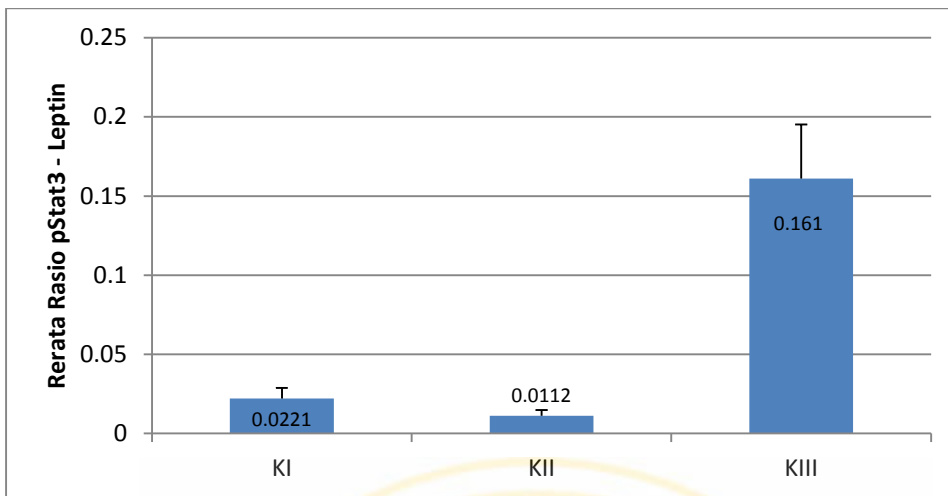
**Case Summaries**

Kelompok	Hasil IHC pStat-3	Konsentrasi Elisa Leptin	Rasio pStat3 - Leptin
KI	N	7	7
	Mean	2.1429	98.83043
	Std. Deviation	.47559	9.180033
	Median	2.0000	97.27200
	Minimum	1.50	84.811
	Maximum	3.00	108.920
KII	N	8	8
	Mean	5.0000	447.95075
	Std. Deviation	1.69031	59.913374
	Median	4.5000	445.36800
	Minimum	3.00	371.534
	Maximum	8.00	562.683
KIII	N	7	7
	Mean	17.9286	116.42357
	Std. Deviation	1.09653	29.984908
	Median	18.5000	102.46300
	Minimum	16.50	96.435
	Maximum	19.00	182.108
Total	N	22	22
	Mean	8.2045	231.38109
	Std. Deviation	7.00282	172.066044
	Median	4.5000	110.85750
	Minimum	1.50	84.811



**Case Summaries**

Kelompok		Hasil IHC pStat-3	Konsentrasi Elisa Leptin	Rasio pStat3 - Leptin
KI	N	7	7	7
	Mean	2.1429	98.83043	.0221
	Std. Deviation	.47559	9.180033	.00657
	Median	2.0000	97.27200	.0210
	Minimum	1.50	84.811	.01
	Maximum	3.00	108.920	.04
KII	N	8	8	8
	Mean	5.0000	447.95075	.0112
	Std. Deviation	1.69031	59.913374	.00374
	Median	4.5000	445.36800	.0101
	Minimum	3.00	371.534	.01
	Maximum	8.00	562.683	.02
KIII	N	7	7	7
	Mean	17.9286	116.42357	.1610
	Std. Deviation	1.09653	29.984908	.03425
	Median	18.5000	102.46300	.1645
	Minimum	16.50	96.435	.10
	Maximum	19.00	182.108	.20
Total	N	22	22	22
	Mean	8.2045	231.38109	.0623
	Std. Deviation	7.00282	172.066044	.07166
	Median	4.5000	110.85750	.0208
	Minimum	1.50	84.811	.01
	Maximum	19.00	562.683	.20



**NPar Tests**

**One-Sample Kolmogorov-Smirnov Test**

Kelompok		Rasio pStat3 - Leptin	
KI	N	7	
	Normal Parameters <sup>a,b</sup>	Mean	.0221
		Std. Deviation	.00657
	Most Extreme Differences	Absolute	.304
		Positive	.304
		Negative	-.179
	Kolmogorov-Smirnov Z	.804	
Asymp. Sig. (2-tailed)	.537		
KII	N	8	
	Normal Parameters <sup>a,b</sup>	Mean	.0112
		Std. Deviation	.00374
	Most Extreme Differences	Absolute	.308
		Positive	.308
		Negative	-.164
	Kolmogorov-Smirnov Z	.872	
Asymp. Sig. (2-tailed)	.433		
KIII	N	7	
	Normal Parameters <sup>a,b</sup>	Mean	.1610
		Std. Deviation	.03425
	Most Extreme Differences	Absolute	.249
		Positive	.147
		Negative	-.249
	Kolmogorov-Smirnov Z	.659	
Asymp. Sig. (2-tailed)	.779		

- a. Test distribution is Normal.  
b. Calculated from data.

### Oneway

#### Descriptives

Rasio pStat3 - Leptin

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
KI	7	.0221	.00657	.00248	.0160	.0282	.01	.04
KII	8	.0112	.00374	.00132	.0081	.0143	.01	.02
KIII	7	.1610	.03425	.01295	.1294	.1927	.10	.20
Total	22	.0623	.07166	.01528	.0306	.0941	.01	.20

#### Test of Homogeneity of Variances

Rasio pStat3 - Leptin

Levene Statistic	df1	df2	Sig.
7.281	2	19	.004

#### ANOVA

Rasio pStat3 - Leptin

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.100	2	.050	129.015	.000
Within Groups	.007	19	.000		
Total	.108	21			

#### Robust Tests of Equality of Means

Rasio pStat3 - Leptin

	Statistic <sup>a</sup>	df1	df2	Sig.
Brown-Forsythe	119.825	2	6.579	.000

a. Asymptotically F distributed.

**Post Hoc Tests****Multiple Comparisons**

Rasio pStat3 - Leptin  
Games-Howell

(I) Kelompok	(J) Kelompok	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KI	KII	.01086*	.00281	.009	.0030	.0187
	KIII	-.13896*	.01318	.000	-.1786	-.0993
KII	KI	-.01086*	.00281	.009	-.0187	-.0030
	KIII	-.14983*	.01301	.000	-.1895	-.1101
KIII	KI	.13896*	.01318	.000	.0993	.1786
	KII	.14983*	.01301	.000	.1101	.1895

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

## Lampiran 15

## Leaflet pSTAT3 dan HSP70

**SANTA CRUZ BIOTECHNOLOGY, INC.**

**p-Stat3 (B-7): sc-8059**



The Power of Detection

---

**BACKGROUND**

Membrane receptor signaling by various ligands, including interferons and growth hormones such as EGF, induces activation of JAK kinases which then leads to tyrosine phosphorylation of the various Stat transcription factors. Stat5 and Stat3 are induced by IFN- $\alpha$  and form a heterodimer which is part of the ISGF3 transcription factor complex. Although early reports indicate Stat2 activation by EGF and IL-6, it has been shown that Stat3 appears to be activated by both while Stat5 is activated by EGF, but not by IL-6. Highest expression of Stat4 is seen in testis and myeloid cells. IL-12 has been identified as an activator of Stat4. Stat5 has been shown to be activated by prolactin and by IL-3. Stat3 is involved in IL-4 activated signaling pathway.

**CHROMOSOMAL LOCATION**

Genes: locus: STAT3 [human] mapping to 17q21.2, Stat3 [mouse] mapping to 11 D1

**SOURCE**

p-Stat3 (B-7) is a mouse monoclonal antibody raised against a recombinant containing Tyr 705 phosphorylated Stat3 of human origin.

**PRODUCT**

Each vial contains 200  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies: sc-6278 R (100  $\mu$ g per vial) in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA.

Available as PE (sc-8059 PE) or FITC-Cy5.5 (sc-8059 FITC) conjugates for flow cytometry, 100 tests; as agarose conjugate for immunoprecipitation, sc-8059 AC, 500  $\mu$ g/0.25 ml agarose in 1 ml, and as TransCruz reagent for Gel SuperShift and ChIP applications, sc-8059 K, 200  $\mu$ g/0.1 ml.

**APPLICATIONS**

p-Stat3 (B-7) is recommended for detection of Tyr 705 phosphorylated Stat3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation (1-2  $\mu$ g per 100-500  $\mu$ g of total protein (7 ml of cell lysate), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1  $\mu$ g per  $1 \times 10^6$  cells) and solid phase (ELISA) (starting dilution 1:20, dilution range 1:20-1:2000).

Suitable for use as control antibody for Stat3 siRNA (N): sc-21453, Stat3 siRNA (M): sc-29494, Stat3 siRNA Phosifit (N): sc-29493-SH, Stat3 siRNA Phosifit (M): sc-29494-SH, Stat3 siRNA (N) Lentiviral Particles: sc-29493-V and Stat3 siRNA (M) Lentiviral Particles: sc-29494-V.

p-Stat3 (B-7) X TransCruz antibody is recommended for Gel SuperShift and ChIP applications.

Molecular Weight of p-Stat3 $\alpha$  isoform: 91 kDa.


Molecular Weight of p-Stat3 $\beta$  isoform: 86 kDa.

Positive Controls: HeLa + IFN- $\gamma$  cell lysate: sc-7222, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2208.

**STORAGE**

Store at 4° C. **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

**DATA**

Western blot analysis of Stat3 phosphorylation in mouse 3T3 cells treated with EGF and IFN- $\gamma$ . Lane 1: Control; Lane 2: EGF; Lane 3: IFN- $\gamma$ ; Lane 4: EGF+IFN- $\gamma$ . p-Stat3 (B-7) antibody (sc-8059) and Stat3 (sc-29493) were used as primary antibodies. Blots were developed using ECL Western Substrate (Amersham Pharmacia Biotech) and DAPI (sc-2208).

p-Stat3 (B-7) (sc-8059) immunofluorescence staining of mouse 3T3 cells treated with EGF and IFN- $\gamma$ . Cells were stained for p-Stat3 (B-7) (sc-8059) and DAPI (sc-2208). Staining was detected using a confocal microscope.

**SELECT PRODUCT CITATIONS**

- Melnick, M., et al. 1988. Insulin-like growth factor II receptor, transforming growth factor- $\beta$ , and C-myc expression and the developmental epigenetics of mouse palate morphogenesis and dysmorphogenesis. *Dev. Dyn.* 211: 11-26.
- Frankel, C.J., et al. 2011. Novel role of signal transducer and activator of transcription 3 as a progesterone receptor coactivator in breast cancer. *Science* 331: 381-392.
- Frankel, C., et al. 2011. Gambogic acid inhibits STAT3 phosphorylation through activation of protein tyrosine phosphatase SHP-1: potential role in proliferation and apoptosis. *Cancer Phys. Res.* 4: 1094-1094.
- Yuan, K., et al. 2011. Elevated inflammatory response in caveolin-1-deficient mice with *Pseudomonas aeruginosa* infection is mediated by STAT3 protein and nuclear factor- $\kappa$ B (NF- $\kappa$ B). *J. Biol. Chem.* 286: 21614-21625.
- Rummel, C., et al. 2011. Circulating IL-6 contributes to peripheral LPS-induced mPGE-2 expression in the rat brain. *Brain Res. Bull.* 90: 319-325.
- Quinsido, N., et al. 2011. Interleukin-2 signaling pathway analysis by quantitative phosphoproteomics. *J. Proteomics* 75: 177-191.
- Cinica, V., et al. 2011. Dynamics of the STAT3 transcription factor: nuclear import dependent on Ran and importin  $\beta$ 1. *PLoS ONE* 6: e20189.
- Grimm, T., et al. 2012. Histone deacetylase inhibitors block IFN- $\gamma$ -induced STAT1 phosphorylation. *Cell Signal* 24: 1453-1460.
- Ighiazas, K., et al. 2012. Defining hypoxic microenvironments by non-invasive functional optical imaging. *Eur. J. Cancer* 48: 264-271.

**RESEARCH USE**

For research use only, not for use in diagnostic procedures.

---

Santa Cruz Biotechnology, Inc. 1-800-451-2853 Fax: 957-3900 Tel: 927-957-2853 Europe +49(0)9242738033 Fax: 49(0)9242738035 [www.scbt.com](http://www.scbt.com)

DISERTASI

MEKANISME PENCEGAHAN

RITA VIVERA PANE

SANTA CRUZ BIOTECHNOLOGY, INC.

**HSP 70 (F-3): sc-373867**

The Power to Discover

**BACKGROUND**

The HSP 70 family is composed of four highly conserved proteins: HSP 70, HSC 70, GRP 75 and GRP 78. These proteins serve a variety of roles: they act as molecular chaperones facilitating the assembly of multi-protein complexes, participate in the translocation of polypeptides across cell membranes and to the nucleus and aid in the proper folding of nascent polypeptide chains. All members of the family, except HSP 70, are constitutively expressed in primate cells. HSP 70 expression is strongly induced in response to heat stress. HSP 70 and HSC 70 play key roles in the cytosolic, endoplasmic reticulum and mitochondrial import machinery and are found in both the cytosol and nucleus of mammalian cells. Both HSP 70 and HSC 70 are involved in the chaperoning of nascent polypeptide chains and in protecting cells against the accumulation of improperly folded proteins. GRP 78 is localized in the endoplasmic reticulum, where it receives imported secretory proteins and is involved in the folding and translocation of nascent peptide chains. GRP 75 expression is restricted to the mitochondrial matrix and aids in the translocation and folding of nascent polypeptide chains of both nuclear and mitochondrial origin. GRP 75 and GRP 78 are unresponsive to heat stress and are induced by glucose deprivation. It has been postulated that members of the HSP 70 family act as force-generating motors, relying on the hydrolysis of ATP for their activity.

**REFERENCES**

- Martin, J., et al. 1992. Prevention of protein denaturation under heat stress by the chaperonin HSP 60. *Science* 256: 895-898.
- Hatayama, T., et al. 1992. Effects of low culture temperature on the induction of HSP 70 mRNA and the accumulation of HSP 70 and HSP 105 in mouse 3T3A cells. *J. Biochem.* 111: 484-490.
- Bhattacharyya, T., et al. 1995. Cloning and subcellular localization of human mitochondrial HSP 70. *J. Biol. Chem.* 270: 1706-1710.
- Hase, I.G. 1995. Protein-mediated protein maturation in eukaryotes. *TRENDS* Lett. 30: 72-75.
- Glick, B.S. 1995. Can HSP 70 proteins act as force-generating motors? *Cell* 82: 11-14.

**CHROMOSOMAL LOCATION**

Genetic locus: HSPA1A/HSPA1B (human) mapping to 6q21.33; Hsp70 (mouse) mapping to 17 B1.

**SOURCE**

HSP 70 (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 565-621 near the C-terminus of HSP 70 of human origin.

**PRODUCT**

Each vial contains 200 µg IgG<sub>2b</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

**STORAGE**

Store at 4° C. **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

**APPLICATIONS**

HSP 70 (F-3) is recommended for detection of HSP 70 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation (1-2 µg per 100-500 µg of total protein [1 ml of cell lysate]), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HSP 70 (F-3) is also recommended for detection of HSP 70 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for HSP 70 siRNA (H: sc-29352, HSP 70 siRNA (m): sc-35605, HSP 70 siRNA Plasmid (H): sc-29352-S1, HSP 70 siRNA Plasmid (m): sc-35605-S1, HSP 70 siRNA (h) Lentiviral Particles: sc-29352-V and HSP 70 siRNA (m) Lentiviral Particles: sc-35605-V.

Molecular Weight of HSP 70: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa + heat shock cell lysate: sc-2272 or NIH/3T3 whole cell lysate: sc-2210.

**RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:20,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2001 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2005, IBS Blotto A Blocking Reagent: sc-2203 and Western Blotting Luminal Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24041. 4) Immunohistochemistry: use ImmunoCruz™: sc-2035 or ABC: sc-2017 mouse IgG Staining Systems.

**DATA**

HSP 70 (F-3) (sc-373867) Western blot analysis of HSP 70 expression in HeLa (A) and NIH/3T3 (B) whole cell lysates.



HSP 70 (F-3) (sc-373867) Immunofluorescence staining of HeLa cell lysate, paraffin-embedded human esophagus tissue showing cytoplasmic and nuclear staining of squamous epithelial cells.

**RESEARCH USE**

For research use only, not for use in diagnostic procedures.

Santa Cruz Biotechnology, Inc. 1-800-457-3801 401-407-3800 fax 407-457-3801 Europe +00800-457-3800 401-407-3801 [www.scbt.com](http://www.scbt.com)