

**LAMPIRAN****Lampiran 1. Pernyataan Keaslian Tulisan****PERNYATAAN KEASLIAN TULISAN**

Saya yang bertanda tangan di bawah ini

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menyatakan dengan sebenarnya bahwa Tugas Akhir yang saya tulis ini benar-benar hasil karya sendiri, bukan merupakan pengambilalihan tulisan atau pikiran orang lain yang saya akui sebagai tulisan atau pikiran saya sendiri. Apabila di kemudian hari dapat dibuktikan bahwa Tugas Akhir ini adalah hasil jiplakan, maka saya bersedia menerima sanksi atas perbuatan tersebut.

Malang, Kamis 6 Februari 2014

Irsyad Robani Wihardi  
NIM. 105070106111007

## Lampiran 2. Dokumentasi Penelitian



**Gambar 1.** Pemeliharaan tikus



**Gambar 2.** Ekstraksi kacang tunggak



**Gambar 3.** Alat pengasapan



**Gambar 4.** Ruangan pemaparan asap



**Gambar 5.** Proses pemaparan tikus



**Gambar 6.** Proses penyondean ekstrak

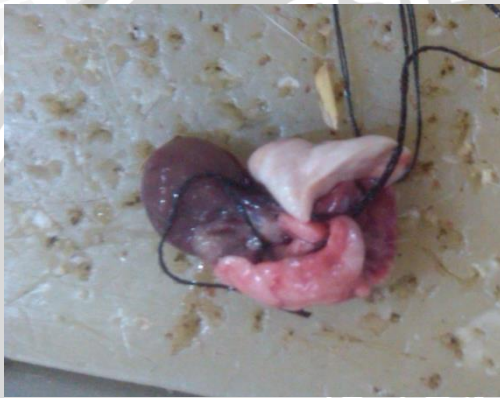




**Gambar 7.** Proses anestesi tikus



**Gambar 8.** Proses pembedahan tikus



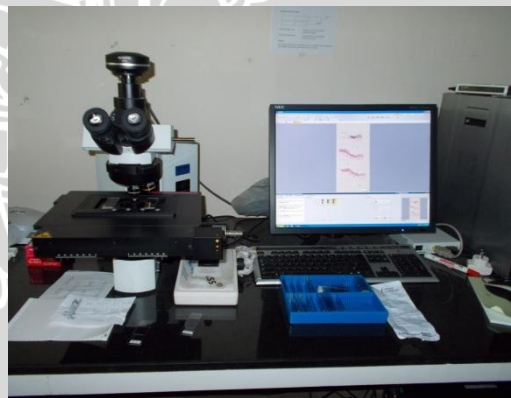
**Gambar 9.** Pengambilan Organ Trakea Tikus



**Gambar 10.** Pengawetan organ (formalin)

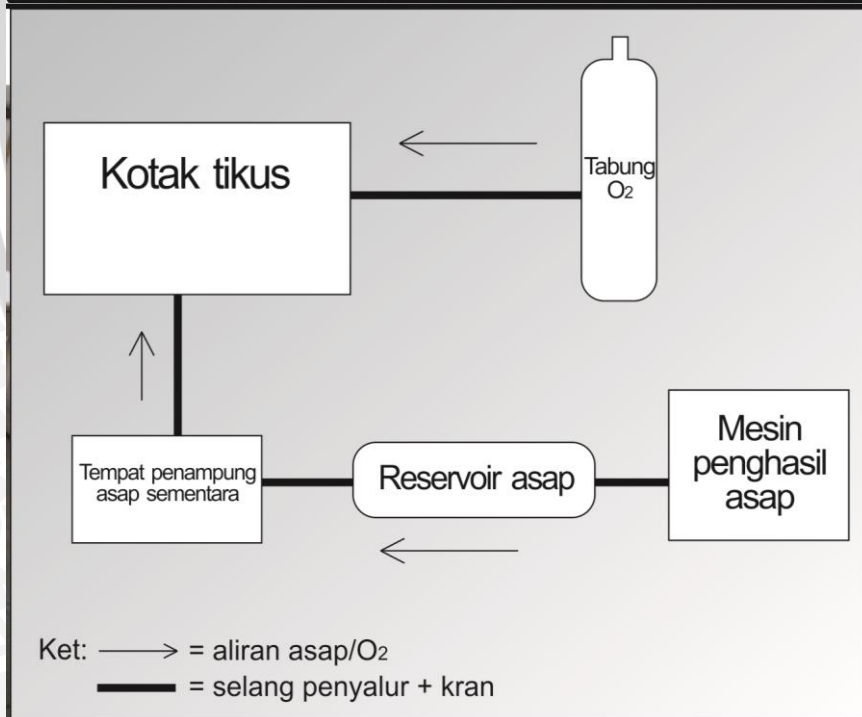
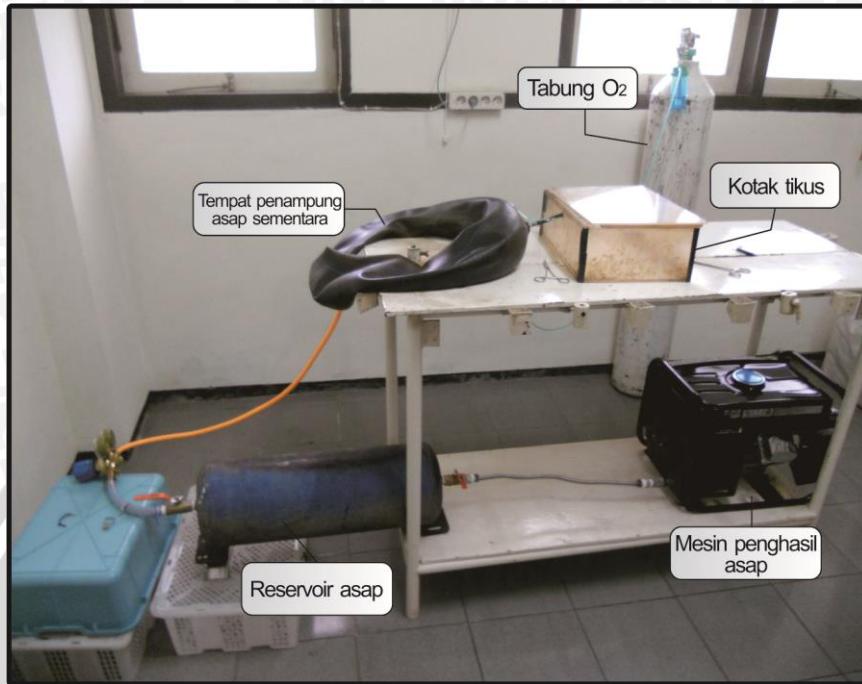


**Gambar 11.** Microtome pembuatan slide HistoPA



**Gambar 12.** Mikroskop pengamatan slide

Lampiran 3. Alat Mesin Penghasil Asap Kendaraan Bermotor





Lampiran 4. Hasil Pengukuran LCMSMS Ekstrak Kacang Tunggak

KONDISI OPERASI

AUTOSAMPLER

MERK = THERMO SCIENTIFIC

TYPE = ACCELA,

SET SUHU = 15°C

VOLUME INJECTION 10 MIKROLITER

UHPLC DENGAN GRADIENT

MERK = THERMO SCIENTIFIC

TYPE = ACCELA TYPE 1250

MOBILE PHASE (A = AIR, B = METANOL)

FLOW = 250 MIKROLITER/MENIT

KOLOM = HYPERSIL GOLD (50 X 2,1 X 1,9µM)

Pump 1

	Time	A%	B%	C%	D%	µl/min	P2
0	0.00	100.0	0.0	0.0	0.0	250.0	
1	3.00	10.0	0.0	0.0	90.0	250.0	
2	4.00	10.0	0.0	0.0	90.0	250.0	
3	6.00	10.0	0.0	0.0	90.0	250.0	
4	6.10	100.0	0.0	0.0	0.0	250.0	
5	7.00	100.0	0.0	0.0	0.0	250.0	
6		100.0	0.0	0.0	0.0	250.0	

KONDISIS MSMS

MERK = TSQ QUANTUM ACCES MAX (TRIPLE QUADRUPOLE)

Scan Editor | Syringe Pump | Dwell Valve | Method Summary |

Run Settings  
MS Acquire Time (min): 7.00  
Segments: 1  
Current Segment: 1

To display a chromatogram here, use QuantumV on Raw File...

Segment 1  
Retention Time (min): 0.0 to 7.0

Segment 1 Settings:  
Segment Time (min):  
Scan Events: 1  
Current Scan Event: 1

Tune Method: [E.KALIAWAN Winksi Vlab 2012] generate\TUNE\_TSQ Tune  
Chrom Filter Peak Width (s):  
Collision Gas Pressure (mTorr):

Scan Event 1  
Scan Type: SIM  
Scan Modes: MS Mode: Q1MS Q3MS  
MS/MS Mode: Parent Product Neutral Loss  
Same value for all SIMs:  
Scan Width (m/z): 0.010  
Scan Time (s): 0.100  
Set Mass (m/z):  
Coll. Energy (V):  
Energy Ramp (V):  
Peak Width Q1 (FWHM):

Center Mass  
271.000  
271.000

Use tuned tube lens val.

Polarity:  Positive  Negative  
Data Type:  Centroid  Profile  
Skimmer Offset: Skimmer Offset (V):  
Micro Scan: 1  
Copy Scan Event: Paste Scan Event:  
Heb: Tune

BAHAN YANG DIGUNAKAN

1. STANDARD GENESTEIN 300 PPM
2. METHANOL GRADIENT GRADE
3. AQUABIDEST



**Lampiran 5. Hasil Penghitungan Sel Radang Trakea Tikus**

Kelompok	Jumlah Sel Radang Trakea	Rata-rata Kelompok	Standar Deviasi
Normal (-) 1	114,65	113.48	41,78
Normal (-) 2	113,2		
Normal (-) 3	112,7		
Normal (-) 4	113,4		
Normal+O <sub>4</sub> 1	117,25	114.96	38,12
Normal+O <sub>4</sub> 2	114		
Normal+O <sub>4</sub> 3	114,05		
Normal+O <sub>4</sub> 4	114,55		
Normal+G 1	116,55	115.50	44,13
Normal+G 2	113,7		
Normal+G 3	115,95		
Normal+G 4	115,8		
A <sub>2</sub> O <sub>4</sub> (-)G 1	221,7	239.93	82,14
A <sub>2</sub> O <sub>4</sub> (-)G 2	274,2		
A <sub>2</sub> O <sub>4</sub> (-)G 3	243,7		
A <sub>2</sub> O <sub>4</sub> (-)G 4	220,15		
A <sub>2</sub> O <sub>4</sub> (+)G 1	117,85	148.68	34,39
A <sub>2</sub> O <sub>4</sub> (+)G 2	113,8		
A <sub>2</sub> O <sub>4</sub> (+)G 3	113,8		
A <sub>2</sub> O <sub>4</sub> (+)G 4	113,35		
A <sub>3</sub> O <sub>4</sub> (-)G 1	256,1	308.90	131,41
A <sub>3</sub> O <sub>4</sub> (-)G 2	353,2		
A <sub>3</sub> O <sub>4</sub> (-)G 3	307,2		
A <sub>3</sub> O <sub>4</sub> (-)G 4	319,1		
A <sub>3</sub> O <sub>4</sub> (+)G 1	116,1	156.46	28,04
A <sub>3</sub> O <sub>4</sub> (+)G 2	115,45		
A <sub>3</sub> O <sub>4</sub> (+)G 3	114,4		
A <sub>3</sub> O <sub>4</sub> (+)G 4	114,7		
A <sub>4</sub> O <sub>4</sub> (-)G 1	348,25	395.57	175,70
A <sub>4</sub> O <sub>4</sub> (-)G 2	419,35		
A <sub>4</sub> O <sub>4</sub> (-)G 3	404,05		
A <sub>4</sub> O <sub>4</sub> (-)G 4	410,65		
A <sub>4</sub> O <sub>4</sub> (+)G 1	117,75	160.38	41,75
A <sub>4</sub> O <sub>4</sub> (+)G 2	118,7		
A <sub>4</sub> O <sub>4</sub> (+)G 3	114,85		
A <sub>4</sub> O <sub>4</sub> (+)G 4	115,25		

**Lampiran 6. Hasil uji normalitas Kolmogorov-Smirnov**

**6.1 Hasil sebelum transformasi data**

**One-Sample Kolmogorov-Smirnov Test**

		Sel.Radang
N		720
Normal Parameters <sup>a,b</sup>	Mean	194.8778
	Std. Deviation	125.86227
Most Extreme Differences	Absolute	.223
	Positive	.223
	Negative	-.099
Kolmogorov-Smirnov Z		5.995
Asymp. Sig. (2-tailed)		.000

a. Test distribution is Normal.

b. Calculated from data.

**6.2 Hasil setelah transformasi data**

**One-Sample Kolmogorov-Smirnov Test**

		transform
N		720
Normal Parameters <sup>a,b</sup>	Mean	5.1110
	Std. Deviation	.57143
Most Extreme Differences	Absolute	.108
	Positive	.108
	Negative	-.094
Kolmogorov-Smirnov Z		2.904
Asymp. Sig. (2-tailed)		.000

a. Test distribution is Normal.

b. Calculated from data.

**Lampiran 7. Hasil uji homogenitas Lavenne test**





**7.1 Hasil sebelum transformasi data**

**Test of Homogeneity of Variance**

		Levene Statistic	df1	df2	Sig.
Sel.Radang	Based on Mean	55.735	8	711	.000
	Based on Median	51.639	8	711	.000
	Based on Median and with adjusted df	51.639	8	255.184	.000
	Based on trimmed mean	54.640	8	711	.000

**7.2 Hasil setelah transformasi data**

**Test of Homogeneity of Variance**

		Levene Statistic	df1	df2	Sig.
transform	Based on Mean	12.214	8	711	.000
	Based on Median	7.851	8	711	.000
	Based on Median and with adjusted df	7.851	8	538.755	.000
	Based on trimmed mean	11.455	8	711	.000





**Lampiran 8. Hasil Uji Non-parametrik Kruskal-Wallis Ranks**

**Report**

Perlakuan	Mean	N	Std. Deviation
Normal	113.4875	80	41.78516
Normal + O4	114.9625	80	38.12453
Normal + G	115.5000	80	44.13787
A2O4 + G	148.6875	80	34.39959
A2O4 - G	239.9375	80	82.14025
A3O4 + G	156.4625	80	28.04740
A3O4 - G	308.9000	80	131.41389
A4O4 + G	160.3875	80	41.75956
A4O4 - G	395.5750	80	175.70205
Total	194.8778	720	125.86227

**Test Statistics<sup>a,b</sup>**

	Sel.Radang
Chi-Square	382.235
df	8
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable:  
Perlakuan

**Lampiran 9. Hasil Uji Multikomparasi Mann-Whitney**

**9.1 Perbandingan Normal dengan Normal+O<sub>4</sub>**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal	80	79.49	6359.50
	Normal + O4	80	81.51	6520.50
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	3119.500
Wilcoxon W	6359.500
Z	-.275
Asymp. Sig. (2-tailed)	.784

a. Grouping Variable: Perlakuan

### 9.2 Perbandingan Normal dengan Normal+G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal	80	79.04	6323.50
	Normal + G	80	81.96	6556.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	3083.500
Wilcoxon W	6323.500
Z	-.398
Asymp. Sig. (2-tailed)	.691

a. Grouping Variable: Perlakuan

### 9.3 Perbandingan Normal dengan A<sub>2</sub>O<sub>4</sub>(+)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal	80	61.13	4890.50
	A2O4 + G	80	99.87	7989.50
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1650.500
Wilcoxon W	4890.500
Z	-5.288
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

#### 9.4 Perbandingan Normal dengan A<sub>2</sub>O<sub>4</sub>(-)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal	80	46.32	3705.50
	A2O4 - G	80	114.68	9174.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	465.500
Wilcoxon W	3705.500
Z	-9.332
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

#### 9.5 Perbandingan Normal dengan A<sub>3</sub>O<sub>4</sub>(+)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal	80	56.59	4527.50
	A3O4 + G	80	104.41	8352.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1287.500
Wilcoxon W	4527.500
Z	-6.527
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.6 Perbandingan Normal dengan A<sub>3</sub>O<sub>4</sub>(-)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal	80	45.48	3638.50
	A3O4 - G	80	115.52	9241.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	398.500
Wilcoxon W	3638.500
Z	-9.561
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.7 Perbandingan Normal dengan A<sub>4</sub>O<sub>4</sub>(+)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal	80	58.10	4648.00
	A4O4 + G	80	102.90	8232.00
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1408.000
Wilcoxon W	4648.000
Z	-6.116
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.8 Perbandingan Normal dengan A<sub>4</sub>O<sub>4</sub>(-)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal	80	43.41	3472.50
	A4O4 - G	80	117.59	9407.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	232.500
Wilcoxon W	3472.500
Z	-10.127
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.9 Perbandingan Normal+O<sub>4</sub> dengan Normal+G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + O4	80	79.72	6377.50
	Normal + G	80	81.28	6502.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	3137.500
Wilcoxon W	6377.500
Z	-.213
Asymp. Sig. (2-tailed)	.831

a. Grouping Variable: Perlakuan

### 9.10 Perbandingan Normal+O<sub>4</sub> dengan A<sub>4</sub>O<sub>4</sub>(-)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + O <sub>4</sub>	80	43.45	3476.00
	A <sub>4</sub> O <sub>4</sub> - G	80	117.55	9404.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	236.000
Wilcoxon W	3476.000
Z	-10.116
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.11 Perbandingan Normal+O<sub>4</sub> dengan A<sub>4</sub>O<sub>4</sub>(+)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + O <sub>4</sub>	80	60.47	4837.50
	A <sub>4</sub> O <sub>4</sub> + G	80	100.53	8042.50
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1597.500
Wilcoxon W	4837.500
Z	-5.469
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.12 Perbandingan Normal+O<sub>4</sub> dengan A<sub>3</sub>O<sub>4</sub>(-)G**

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + O4	80	45.67	3653.50
	A3O4 - G	80	115.33	9226.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	413.500
Wilcoxon W	3653.500
Z	-9.510
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.13 Perbandingan Normal+O<sub>4</sub> dengan A<sub>3</sub>O<sub>4</sub>(+)G**

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + O4	80	56.48	4518.00
	A3O4 + G	80	104.53	8362.00
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1278.000
Wilcoxon W	4518.000
Z	-6.560
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.14 Perbandingan Normal+O<sub>4</sub> dengan A<sub>2</sub>O<sub>4</sub>(-)G

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + O4	80	46.33	3706.50
	A2O4 - G	80	114.67	9173.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	466.500
Wilcoxon W	3706.500
Z	-9.329
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.15 Perbandingan Normal+O<sub>4</sub> dengan A<sub>2</sub>O<sub>4</sub>(+)G

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + O4	80	60.89	4871.00
	A2O4 + G	80	100.11	8009.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1631.000
Wilcoxon W	4871.000
Z	-5.355
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.16 Perbandingan Normal+G dengan A<sub>2</sub>O<sub>4</sub>(+)**G**

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + G	80	63.14	5051.00
	A2O4 + G	80	97.86	7829.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1811.000
Wilcoxon W	5051.000
Z	-4.741
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.17 Perbandingan Normal+G dengan A<sub>2</sub>O<sub>4</sub>(-)**G**

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + G	80	47.00	3760.00
	A2O4 - G	80	114.00	9120.00
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	520.000
Wilcoxon W	3760.000
Z	-9.147
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.18 Perbandingan Normal+G dengan A<sub>3</sub>O<sub>4</sub>(+)G**

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + G	80	59.19	4735.50
	A3O4 + G	80	101.81	8144.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1495.500
Wilcoxon W	4735.500
Z	-5.818
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.19 Perbandingan Normal+G dengan A<sub>3</sub>O<sub>4</sub>(-)G**

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + G	80	45.96	3676.50
	A3O4 - G	80	115.04	9203.50
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	436.500
Wilcoxon W	3676.500
Z	-9.431
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.20 Perbandingan Normal+G dengan A<sub>4</sub>O<sub>4</sub>(+)**G****

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + G	80	61.14	4891.00
	A4O4 + G	80	99.86	7989.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1651.000
Wilcoxon W	4891.000
Z	-5.287
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.21 Perbandingan Normal+G dengan A<sub>4</sub>O<sub>4</sub>(-)**G****

**Ranks**

Perlakuan		N	Mean Rank	Sum of Ranks
Sel.Radang	Normal + G	80	43.86	3508.50
	A4O4 - G	80	117.14	9371.50
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	268.500
Wilcoxon W	3508.500
Z	-10.005
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.22 Perbandingan A<sub>2</sub>O<sub>4</sub>(+)G dengan A<sub>2</sub>O<sub>4</sub>(-)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A2O4 + G	80	53.37	4269.50
	A2O4 - G	80	107.63	8610.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1029.500
Wilcoxon W	4269.500
Z	-7.408
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.23 Perbandingan A<sub>2</sub>O<sub>4</sub>(+)G dengan A<sub>3</sub>O<sub>4</sub>(+)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A2O4 + G	80	74.99	5999.00
	A3O4 + G	80	86.01	6881.00
	Total	160		





**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	2759.000
Wilcoxon W	5999.000
Z	-1.505
Asymp. Sig. (2-tailed)	.132

a. Grouping Variable: Perlakuan

### 9.24 Perbandingan A<sub>2</sub>O<sub>4</sub>(+)G dengan A<sub>3</sub>O<sub>4</sub>(-)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A2O4 + G	80	48.50	3880.00
	A3O4 - G	80	112.50	9000.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	640.000
Wilcoxon W	3880.000
Z	-8.737
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

### 9.25 Perbandingan A<sub>2</sub>O<sub>4</sub>(+)G dengan A<sub>4</sub>O<sub>4</sub>(+)G

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A2O4 + G	80	75.76	6061.00
	A4O4 + G	80	85.24	6819.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	2821.000
Wilcoxon W	6061.000
Z	-1.294
Asymp. Sig. (2-tailed)	.196

a. Grouping Variable: Perlakuan

**9.26 Perbandingan A<sub>2</sub>O<sub>4</sub>(+)G dengan A<sub>4</sub>O<sub>4</sub>(-)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A2O4 + G	80	46.79	3743.50
	A4O4 - G	80	114.21	9136.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	503.500
Wilcoxon W	3743.500
Z	-9.203
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.27 Perbandingan A<sub>2</sub>O<sub>4</sub>(-)G dengan A<sub>3</sub>O<sub>4</sub>(+)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A2O4 - G	80	105.70	8456.00
	A3O4 + G	80	55.30	4424.00
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1184.000
Wilcoxon W	4424.000
Z	-6.880
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.28 Perbandingan A<sub>2</sub>O<sub>4</sub>(-)G dengan A<sub>3</sub>O<sub>4</sub>(-)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A2O4 - G	80	66.75	5340.00
	A3O4 - G	80	94.25	7540.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	2100.000
Wilcoxon W	5340.000
Z	-3.754
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.29 Perbandingan A<sub>2</sub>O<sub>4</sub>(-)G dengan A<sub>4</sub>O<sub>4</sub>(+)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A2O4 - G	80	103.91	8313.00
	A4O4 + G	80	57.09	4567.00
	Total	160		





**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1327.000
Wilcoxon W	4567.000
Z	-6.392
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.30 Perbandingan A<sub>2</sub>O<sub>4</sub>(-)G dengan A<sub>4</sub>O<sub>4</sub>(-)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A2O4 - G	80	58.49	4679.00
	A4O4 - G	80	102.51	8201.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	1439.000
Wilcoxon W	4679.000
Z	-6.010
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.31 Perbandingan A<sub>3</sub>O<sub>4</sub>(+)G dengan A<sub>3</sub>O<sub>4</sub>(-)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A3O4 + G	80	48.97	3917.50
	A3O4 - G	80	112.03	8962.50
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	677.500
Wilcoxon W	3917.500
Z	-8.609
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.32 Perbandingan A<sub>3</sub>O<sub>4</sub>(+)G dengan A<sub>4</sub>O<sub>4</sub>(+)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A3O4 + G	80	79.64	6371.00
	A4O4 + G	80	81.36	6509.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	3131.000
Wilcoxon W	6371.000
Z	-.236
Asymp. Sig. (2-tailed)	.814

a. Grouping Variable: Perlakuan

**9.33 Perbandingan A<sub>3</sub>O<sub>4</sub>(+)G dengan A<sub>4</sub>O<sub>4</sub>(-)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A3O4 + G	80	47.72	3817.50
	A4O4 - G	80	113.28	9062.50
	Total	160		



**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	577.500
Wilcoxon W	3817.500
Z	-8.950
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.34 Perbandingan A<sub>3</sub>O<sub>4</sub>(-)G dengan A<sub>4</sub>O<sub>4</sub>(+)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A3O4 - G	80	110.43	8834.50
	A4O4 + G	80	50.57	4045.50
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	805.500
Wilcoxon W	4045.500
Z	-8.172
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan

**9.35 Perbandingan A<sub>3</sub>O<sub>4</sub>(-)G dengan A<sub>4</sub>O<sub>4</sub>(-)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A3O4 - G	80	68.82	5505.50
	A4O4 - G	80	92.18	7374.50
	Total	160		





**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	2265.500
Wilcoxon W	5505.500
Z	-3.189
Asymp. Sig. (2-tailed)	.001

a. Grouping Variable: Perlakuan

**9.36 Perbandingan A<sub>4</sub>O<sub>4</sub>(+)G dengan A<sub>4</sub>O<sub>4</sub>(-)G**

**Ranks**

	Perlakuan	N	Mean Rank	Sum of Ranks
Sel.Radang	A4O4 + G	80	48.69	3895.00
	A4O4 - G	80	112.31	8985.00
	Total	160		

**Test Statistics<sup>a</sup>**

	Sel.Radang
Mann-Whitney U	655.000
Wilcoxon W	3895.000
Z	-8.686
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Perlakuan



Lampiran 10. Hasil uji korelasi non-parametrik Spearman's rho

Correlations

			Perlakuan	Sel.Radang
Spearman's rho	Perlakuan	Correlation Coefficient	1.000	.409**
		Sig. (2-tailed)	.	.000
		N	240	240
	Sel.Radang	Correlation Coefficient	.409**	1.000
		Sig. (2-tailed)	.000	.
		N	240	240

\*\* . Correlation is significant at the 0.01 level (2-tailed).



Lampiran 11

