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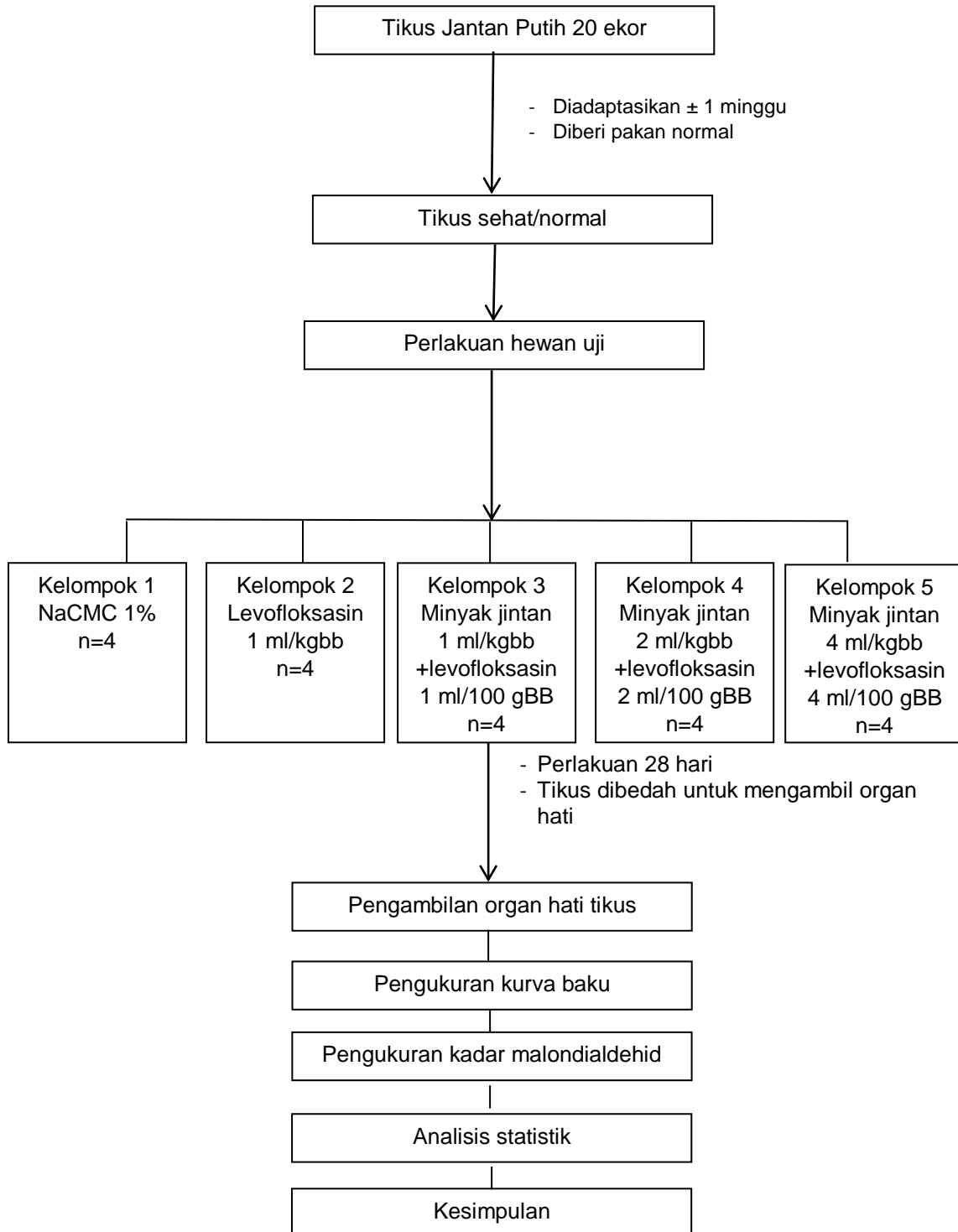
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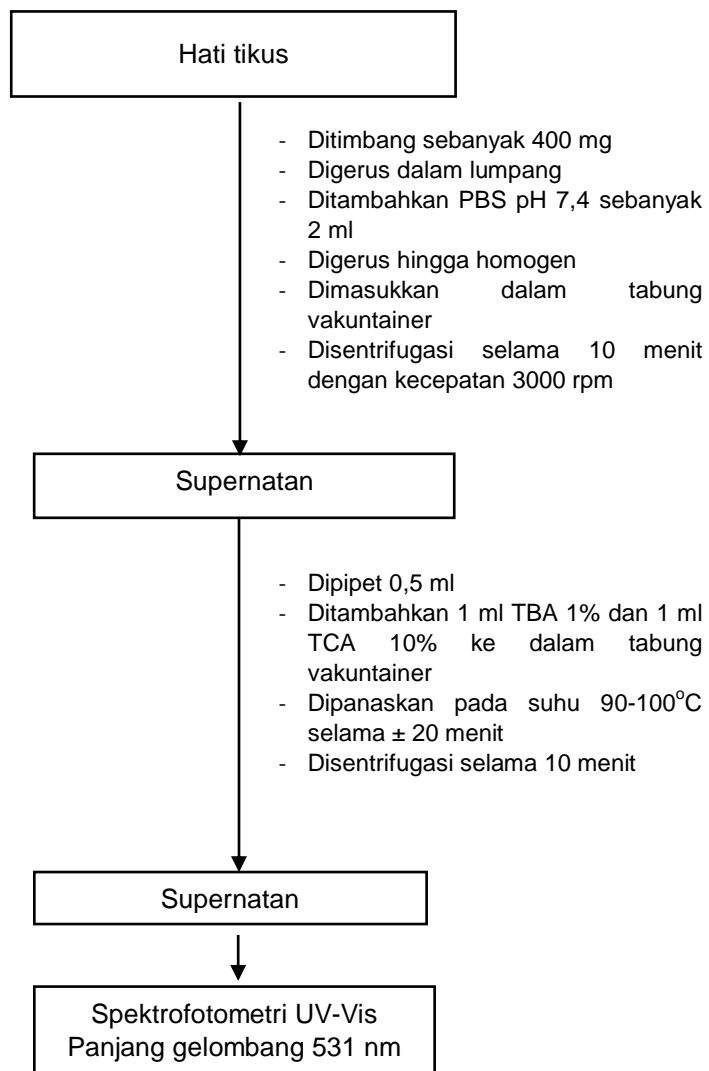
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LAMPIRAN 1
SKEMA KERJA PENELITIAN

1. Uji Pengaruh Pemberian Minyak Jintan



2. Pengukuran Kadar Malondialdehid



LAMPIRAN 2

PENGUKURAN KURVA BAKU

Larutan PBS pH 7,4



Blanko

Standar 1,1,3,3-Tetrametoksiopropana

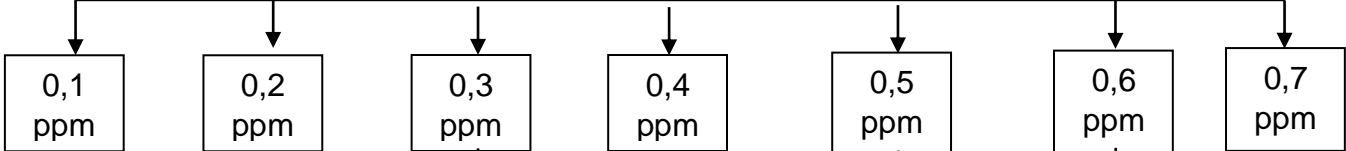
-Dipipet sebanyak 10 μ l
-Dicukupkan volumenya dengan campuran PBS pH 7,4:TCA:TBA dengan perbandingan 0.5:1:1 hingga 10 ml, dihomogenkan



Larutan stok 1000 ppm



1 ml dalam 10 ml (100 ppm)



0,1 ppm

0,2 ppm

0,3 ppm

0,4 ppm

0,5 ppm

0,6 ppm

0,7 ppm

Dipipet 5 μ l dan dicukupkan volumenya hingga 5 ml

Dipipet 10 μ l dan dicukupkan volumenya hingga 5 ml

Dipipet 15 μ l dan dicukupkan volumenya hingga 5 ml

Dipipet 20 μ l dan dicukupkan volumenya hingga 5 ml

Dipipet 25 μ l dan dicukupkan volumenya hingga 5 ml

Dipipet 30 μ l dan dicukupkan volumenya hingga 5 ml

Dipipet 35 μ l dan dicukupkan volumenya hingga 5 ml



Spektrofotometri UV-Vis

LAMPIRAN 3

PERHITUNGAN DOSIS

1. Levofloksasin

Dalam pembuatan levofloksasin dihitung dosis yang akan diberikan pada hewan uji tikus dengan rumus :

$$\begin{aligned} \text{Dosis hitung levofloksasin} &= \frac{\text{Dosis Levofloksasin}}{\text{Volume Pemberian}} \times \text{volume labu tentukur} \\ &= \frac{9,3 \text{ mg/kgBB}}{\text{ml}} \times 100 \text{ ml} \\ &= 930 \text{ mg per 100 ml} \end{aligned}$$

a. Bobot yang ditimbang = $\frac{\text{Dosis Hitung Levofloksasin}}{\text{Bobot Etiket}} \times \text{Berat rata-rata (20 tablet)}$

$$\begin{aligned} &= \frac{930 \text{ mg}}{500 \text{ mg}} \times 764,762 \text{ mg} \\ &= 14,224 \text{ mg} \\ &= 0,0142 \text{ g} \end{aligned}$$

b. Pembuatan suspensi tablet levofloksasin yang digunakan pada hewan uji

$$\begin{aligned} \text{Dosis Konversi} &= \frac{\text{Bobot Timbang Levofloksasin}}{\text{Volume Pemberian}} \times \text{Volume labu tentukur} \\ &= \frac{0,0142 \text{ g}}{\text{ml}} \times 100 \text{ ml} \\ &= 1,422 \text{ g/100 ml} \end{aligned}$$

2. Minyak Jintan Hitam

Penggunaan dosis minyak jintan hitam yang dipakai pada penelitian ini yaitu 1 ml, 2 ml, dan 4 ml/kgbb. Untuk tikus dengan berat badan 100 g (0,1 kg) dapat dihitung dengan rumus :

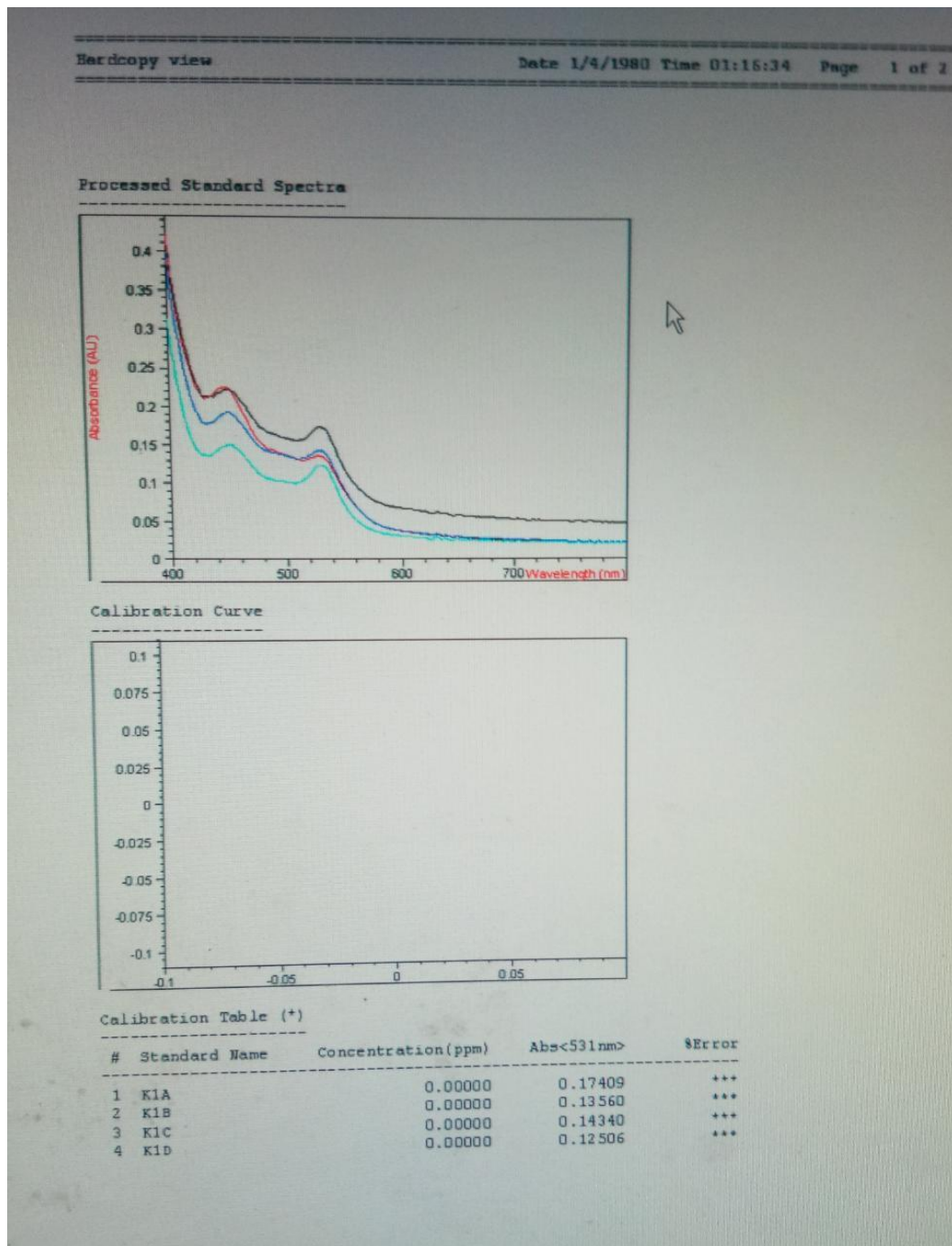
a. Dosis hitung minyak jintan hitam = Dosis pemberian ×
Berat Badan hewan uji (kg)

- Untuk dosis 1 ml/kgbb = $1 \text{ ml} \times 0,1 \text{ kg} = 0,1 \text{ ml} / 100 \text{ gbb}$
- Untuk dosis 2 ml/kgbb = $2 \text{ ml} \times 0,1 \text{ kg} = 0,2 \text{ ml} / 100 \text{ gbb}$
- Untuk dosis 4 ml/kgbb = $4 \text{ ml} \times 0,1 \text{ kg} = 0,4 \text{ ml} / 100 \text{ gbb}$

Sebelum pemberian dosis minyak jintan hitam pada hewan uji tikus terlebih dahulu minyak jintan hitam tersebut dicukupkan volumenya dengan minyak jagung sebagai pembawa hingga 1 ml sehingga volume pemberian menjadi 1 ml/100 gBB.

LAMPIRAN 4

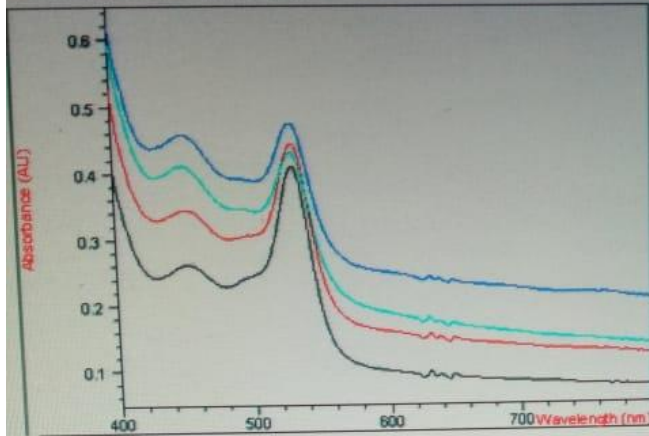
HASIL PENGUKURAN ABSORBANSI TIAP KELOMPOK PERLAKUAN



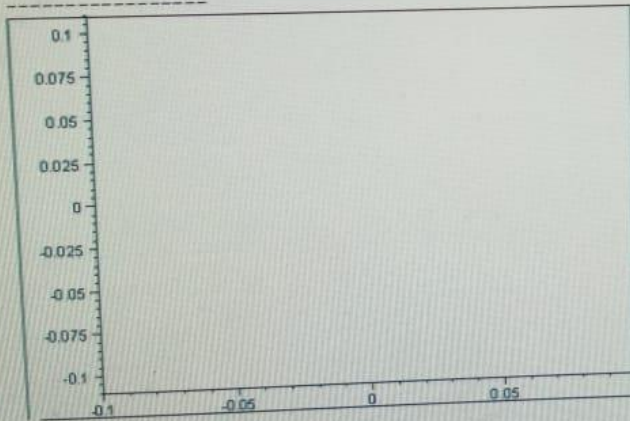
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Date 1/4/1988 Time 01:15:16 Page 1 of 2

Processed Standard Spectra



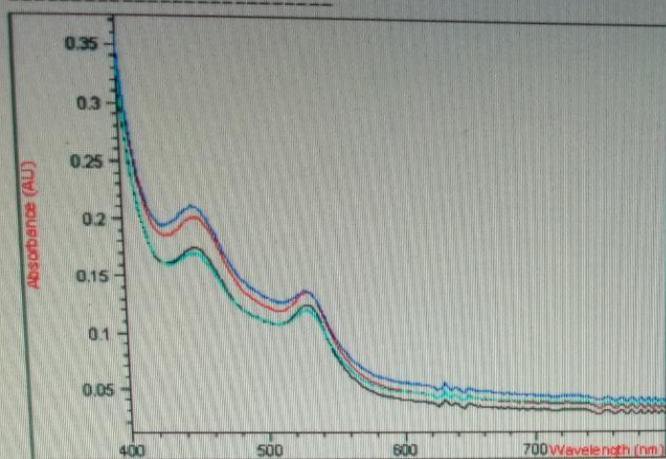
Calibration Curve



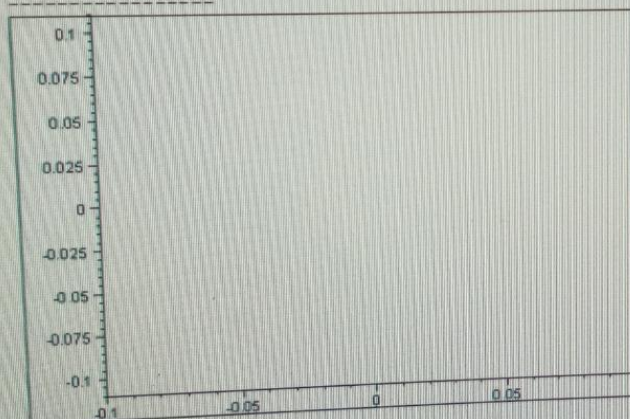
Calibration Table (*)

#	Standard Name	Concentration (ppm)	Abs<531nm>	%Error
1	K2A	0.00000	0.41123	***
2	K2B	0.00000	0.44535	***
3	K2C	0.00000	0.47670	***
4	K2D	0.00000	0.43176	***

Processed Standard Spectra



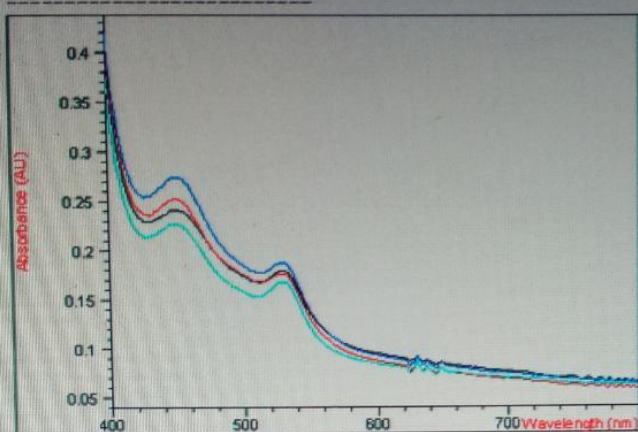
Calibration Curve



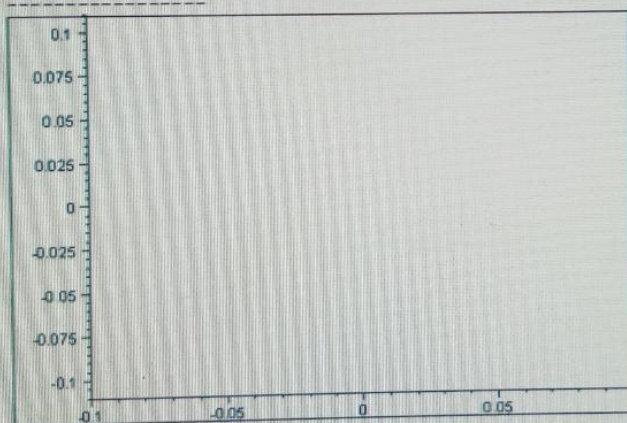
Calibration Table (*)

#	Standard Name	Concentration (ppm)	Abs<531nm>	%Error
1	K3A	0.00000	0.12598	***
2	K3B	0.00000	0.13759	***
3	K3C	0.00000	0.13796	***
4	K3D	0.00000	0.12105	***

Processed Standard Spectra



Calibration Curve



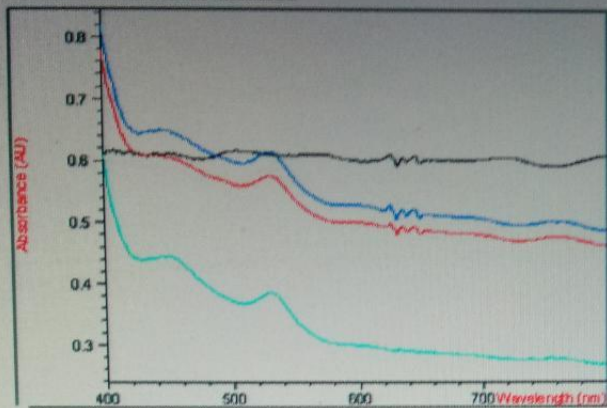
Calibration Table (*)

#	Standard Name	Concentration(ppm)	Abs<531nm>	%Error
1	K4A	0.00000	0.18073	***
2	K4B	0.00000	0.17708	***
3	K4C	0.00000	0.18838	***
4	K4D	0.00000	0.16945	***

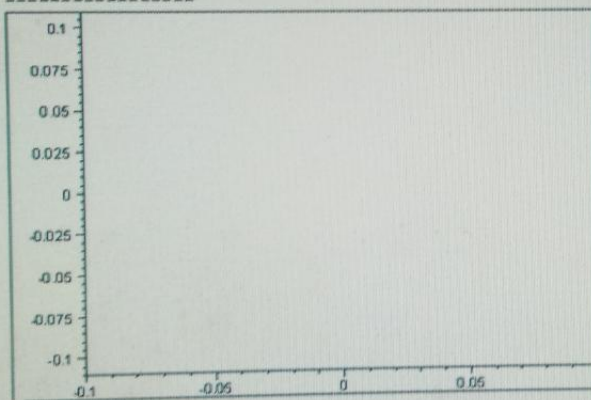
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Processed Standard Spectra



Calibration Curve



Calibration Table (*)

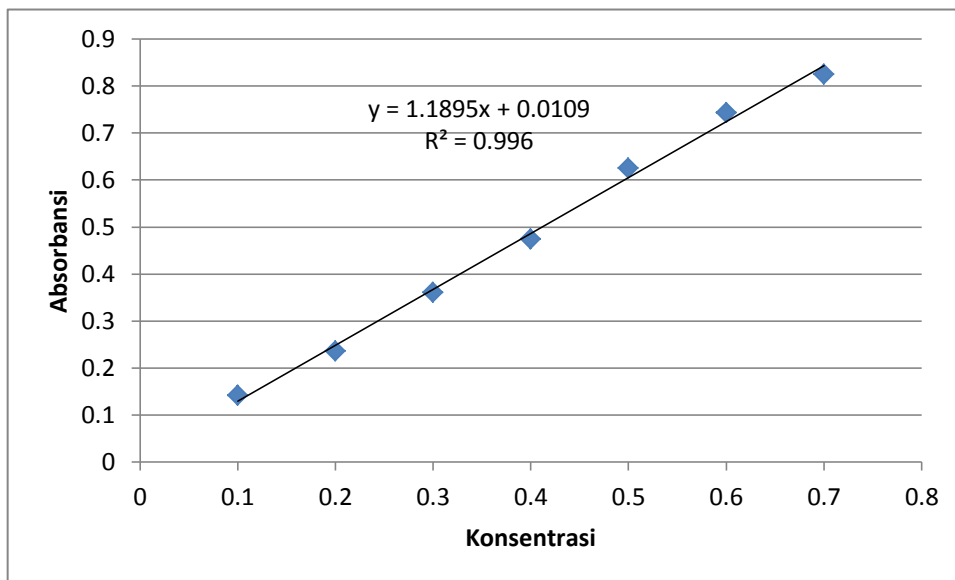
#	Standard Name	Concentration (ppm)	Abs<531nm>	%Error
1	K5A	0.00000	0.61223	***
2	K5B	0.00000	0.57775	***
3	K5C	0.00000	0.61678	***
4	K5D	0.00000	0.38655	***

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LAMPIRAN 5

GRAFIK KURVA STANDAR

Konsentrasi (ppm)	Absorbansi
0,1	0,14159
0,2	0,23585
0,3	0,36118
0,4	0,47404
0,5	0,62569
0,6	0,74335
0,7	0,82531



LAMPIRAN 6

PERHITUNGAN NILAI X DAN KADAR MDA

6.1 Perhitungan Nilai X

Persamaan garis kurva baku;

$$Y = 1,1895x + 0,0109$$

Kelompok 1

K1A

$$\begin{aligned} 0,17409 &= 1,1895x + 0,0109 \\ x &= \frac{0,17409 - 0,0109}{1,1895} \\ x &= 0,137 \end{aligned}$$

K1B

$$\begin{aligned} 0,1356 &= 1,1895x + 0,0109 \\ x &= \frac{0,1356 - 0,0109}{1,1895} \\ x &= 0,105 \end{aligned}$$

K1C

$$\begin{aligned} 0,14340 &= 1,1895x + 0,0109 \\ x &= \frac{0,14340 - 0,0109}{1,1895} \\ x &= 0,111 \end{aligned}$$

K1D

$$\begin{aligned} 0,12506 &= 1,1895x + 0,0109 \\ x &= \frac{0,12506 - 0,0109}{1,1895} \\ x &= 0,095 \end{aligned}$$

Kelompok 2

K2A

$$\begin{aligned} 0,41123 &= 1,1895x + 0,0109 \\ x &= \frac{0,41123 - 0,0109}{1,1895} \\ x &= 0,336 \end{aligned}$$

K2B

$$\begin{aligned} 0,44535 &= 1,1895x + 0,0109 \\ x &= \frac{0,44535 - 0,0109}{1,1895} \\ x &= 0,3652 \end{aligned}$$

K2C

$$\begin{aligned} 0,47670 &= 1,1895x + 0,0109 \\ x &= \frac{0,47670 - 0,0109}{1,1895} \\ x &= 0,3916 \end{aligned}$$

K2D

$$\begin{aligned} 0,43176 &= 1,1895x + 0,0109 \\ x &= \frac{0,43176 - 0,0109}{1,1895} \\ x &= 0,3538 \end{aligned}$$

Kelompok 3

K3A

$$\begin{aligned} 0,12598 &= 1,1895x + 0,0109 \\ x &= \frac{0,12598 - 0,0109}{1,1895} \\ x &= 0,0967 \end{aligned}$$

K3B

$$\begin{aligned} 0,13759 &= 1,1895x + 0,0109 \\ x &= \frac{0,13759 - 0,0109}{1,1895} \\ x &= 0,1065 \end{aligned}$$

K3C

$$\begin{aligned} 0,13796 &= 1,1895x + 0,0109 \\ x &= \frac{0,13796 - 0,0109}{1,1895} \\ x &= 0,1068 \end{aligned}$$

K3D

$$\begin{aligned} 0,12105 &= 1,1895x + 0,0109 \\ x &= \frac{0,12105 - 0,0109}{1,1895} \\ x &= 0,0926 \end{aligned}$$

Kelompok 4**K4A**

$$0,18073 = 1,1895x + 0,0109$$

$$x = \frac{0,18073-0,0109}{1,1895}$$

$$x = 0,1427$$

K4B

$$0,17708 = 1,1895x + 0,0109$$

$$x = \frac{0,17708-0,0109}{1,1895}$$

$$x = 0,1397$$

K4C

$$0,18838 = 1,1895x + 0,0109$$

$$x = \frac{0,18838-0,0109}{1,1895}$$

$$x = 0,1492$$

K4D

$$0,16945 = 1,1895x + 0,0109$$

$$x = \frac{0,16945-0,0109}{1,1895}$$

$$x = 0,1332$$

Kelompok 5**K5A**

$$0,61223 = 1,1895x + 0,0109$$

$$x = \frac{0,61223-0,0109}{1,1895}$$

$$x = 0,505$$

K5B

$$0,57775 = 1,1895x + 0,0109$$

$$x = \frac{0,57775-0,0109}{1,1895}$$

$$x = 0,4765$$

K5C

$$0,61678 = 1,1895x + 0,0109$$

$$x = \frac{0,61678-0,0109}{1,1895}$$

$$x = 0,5093$$

K5D

$$0,38655 = 1,1895x + 0,0109$$

$$x = \frac{0,38655-0,0109}{1,1895}$$

$$x = 0,3158$$

6.2 Perhitungan Kadar MDA

Kadar MDA dihitung dengan menggunakan rumus :

$$\text{Kadar MDA} = (x) \times D$$

Ket :

X = Hasil perhitungan nilai absorbansi sampel dengan persamaan kurva baku

D = Faktor Pengenceran

Kelompok 1**K1A**

$$\text{Kadar MDA} = 0,137 \times 0,2$$

$$= 0,0274 \mu\text{g/ml}$$

$$= 27,4 \text{ ng/ml}$$

K1B

$$\text{Kadar MDA} = 0,105 \times 0,2$$

$$= 0,021 \mu\text{g/ml}$$

$$= 21 \text{ ng/ml}$$

K1C

$$\text{Kadar MDA} = 0,111 \times 0,2$$

$$= 0,0222 \mu\text{g/ml}$$

$$= 22,2 \text{ ng/ml}$$

K1D	$= 0,0213 \mu\text{g/ml}$
Kadar MDA = $0,095 \times 0,2$	$= 21,3 \text{ ng/ml}$
$= 0,019 \mu\text{g/ml}$	
$= 19 \text{ ng/ml}$	
Kelompok 2	
K2A	$= 0,02136 \mu\text{g/ml}$
Kadar MDA = $0,335 \times 0,2$	$= 21,36 \text{ ng/ml}$
$= 0,067 \mu\text{g/ml}$	
$= 67 \text{ ng/ml}$	
K2B	
Kadar MDA = $0,3652 \times 0,2$	
$= 0,073 \mu\text{g/ml}$	
$= 73 \text{ ng/ml}$	
K2C	
Kadar MDA = $0,3916 \times 0,2$	
$= 0,0783 \mu\text{g/ml}$	
$= 78,3 \text{ ng/ml}$	
K2D	
Kadar MDA = $0,3538 \times 0,2$	
$= 0,0707 \mu\text{g/ml}$	
$= 70,7 \text{ ng/ml}$	
Kelompok 3	
K3A	
Kadar MDA = $0,0967 \times 0,2$	
$= 0,0193 \mu\text{g/ml}$	
K3B	
Kadar MDA = $0,1065 \times 0,2$	
$= 0,0213 \mu\text{g/ml}$	
$= 21,3 \text{ ng/ml}$	
K3C	
Kadar MDA = $0,1068 \times 0,2$	
$= 0,02136 \mu\text{g/ml}$	
$= 21,36 \text{ ng/ml}$	
K3D	
Kadar MDA = $0,0926 \times 0,2$	
$= 0,0185 \mu\text{g/ml}$	
$= 18,5 \text{ ng/ml}$	
Kelompok 4	
K4A	
Kadar MDA = $0,1427 \times 0,2$	
$= 0,0285 \mu\text{g/ml}$	
$= 28,5 \text{ ng/ml}$	
K4B	
Kadar MDA = $0,1397 \times 0,2$	
$= 0,0279 \mu\text{g/ml}$	
$= 27,9 \text{ ng/ml}$	
K4C	
Kadar MDA = $0,1492 \times 0,2$	
$= 0,0298 \mu\text{g/ml}$	
$= 29,8 \text{ ng/ml}$	
K4D	
Kadar MDA = $0,1332 \times 0,2$	
$= 0,0266 \mu\text{g/ml}$	
$= 26,6 \text{ ng/ml}$	

Kelompok 5**K5A**

$$\begin{aligned}\text{Kadar MDA} &= 0,505 \times 0,2 \\ &= 0,101 \mu\text{g/ml} \\ &= 101 \text{ ng/ml}\end{aligned}$$

K5B

$$\begin{aligned}\text{Kadar MDA} &= 0,4765 \times 0,2 \\ &= 0,0953 \mu\text{g/ml} \\ &= 95,3 \text{ ng/ml}\end{aligned}$$

K5C

$$\begin{aligned}\text{Kadar MDA} &= 0,5093 \times 0,2 \\ &= 0,1018 \mu\text{g/ml} \\ &= 101,8 \text{ ng/ml}\end{aligned}$$

K5D

$$\begin{aligned}\text{Kadar MDA} &= 0,3158 \times 0,2 \\ &= 0,0631 \mu\text{g/ml} \\ &= 63,1 \text{ ng/ml}\end{aligned}$$

LAMPIRAN 7

HASIL ANALISIS STATISTIK

Tabel 3. Hasil Analisis statistik distribusi sampel menggunakan metode Kolmogorov-Smirnov

		Kadar MDA
N		20
Normal Parameters ^{a,b}	Mean	46,6500
	Std. Deviation	30,69789
	Absolute	,308
Most Extreme Differences	Positive	,308
	Negative	-,180
Kolmogorov-Smirnov Z		1,379
Asymp. Sig. (2-tailed)		,044

a. Test distribution is Normal.

b. Calculated from data.

Tabel 4. Hasil analisis statistik menggunakan metode One Way ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16776,200	4	4194,050	55,740	,000
Within Groups	1128,650	15	75,243		
Total	17904,850	19			

Tabel 5. Hasil analisis statistik posthoc test

Tukey HSD

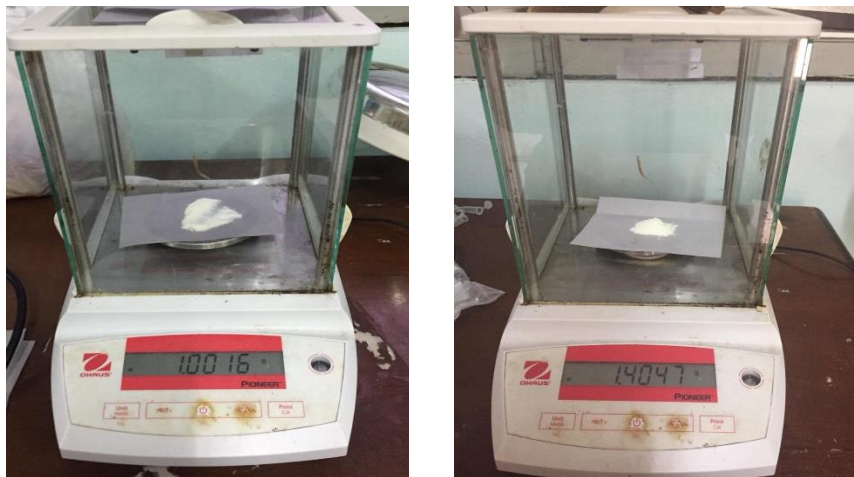
(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.
KONTROL SEHAT	SUSP.LEVO	-49,85000	6,13365	,000
	SUSP. LEVO + M.J.H 1 ml/kgBB	2,30000	6,13365	,995
	SUSP. LEVO + M.J.H 2 ml/kgBB	-5,80000	6,13365	,875
	SUSP. LEVO + M.J.H 4 ml/kgBB	-67,90000 [*]	6,13365	,000
SUSP.LEVO	KONTROL SEHAT	49,85000 [*]	6,13365	,000
	SUSP. LEVO + M.J.H 1 ml/kgBB	52,15000 [*]	6,13365	,000
	SUSP. LEVO + M.J.H 2 ml/kgBB	44,05000 [*]	6,13365	,000
	SUSP. LEVO + M.J.H 4 ml/kgBB	-18,05000	6,13365	,065
SUSP. LEVO + M.J.H 1 ml/kgBB	KONTROL SEHAT	-2,30000	6,13365	,995
	SUSP.LEVO	-52,15000 [*]	6,13365	,000
	SUSP. LEVO + M.J.H 2 ml/kgBB	-8,10000	6,13365	,683
	SUSP. LEVO + M.J.H 4 ml/kgBB	-70,20000 [*]	6,13365	,000
SUSP. LEVO + M.J.H 2 ml/kgBB	KONTROL SEHAT	5,80000	6,13365	,875
	SUSP.LEVO	-44,05000 [*]	6,13365	,000
	SUSP. LEVO + M.J.H 1 ml/kgBB	8,10000	6,13365	,683
	SUSP. LEVO + M.J.H 4 ml/kgBB	-62,10000 [*]	6,13365	,000
SUSP. LEVO + M.J.H 4 ml/kgBB	KONTROL SEHAT	67,90000 [*]	6,13365	,000
	SUSP.LEVO	18,05000	6,13365	,065
	SUSP. LEVO + M.J.H 1 ml/kgBB	70,20000 [*]	6,13365	,000
	SUSP. LEVO + M.J.H 2 ml/kgBB	62,10000 [*]	6,13365	,000

*. The mean difference is significant at the 0.05 level

LAMPIRAN 8
DOKUMENTASI PENELITIAN



Gambar 4. Proses adaptasi hewan uji



Gambar 5. Proses penimbangan Nacmc dan levofloksasin



Gambar 6. Penyiapan sampel minyak jintan hitam dan minyak jagung



Gambar 7. Pembuatan suspensi NaCMC 1%



Gambar 8. Pemberian larutan uji secara oral



Gambar 9. Proses pembedahan dan pengambilan organ



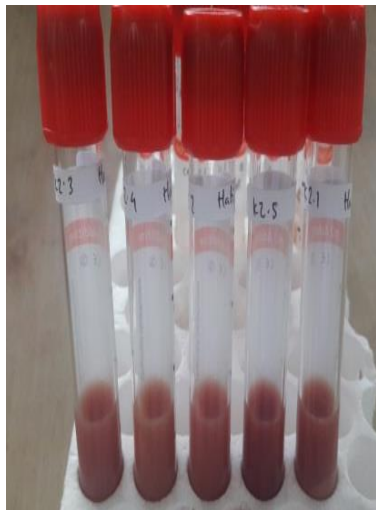
Gambar 10. Proses pembilasan organ dalam NaCl 0,9%



Gambar 11. Proses penimbangan organ hati



Gambar 12. Proses penggerusan organ hati dan penambahan PBS PH 7,4



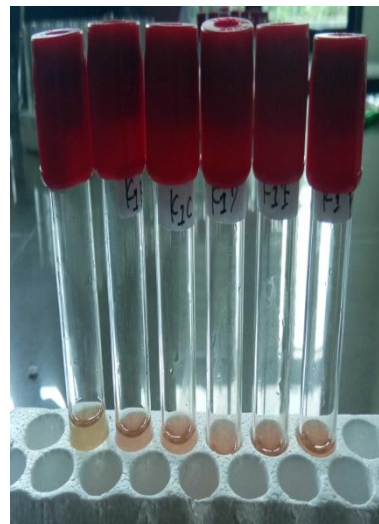
Gambar 13. Sampel organ hati yang akan di sentrifuse



Gambar 14. Proses sentrifuse organ hati



Gambar 15. Proses pemanasan organ yang telah di tambahkan TBA 1% dan TCA 10%



Gambar 16. Sampel organ hati yang akan di ukur pada spektrofotometri Uv-Vis




Gambar 17. Proses pembuatan kurva standar



Gambar 18. Alat spektrofotometri Uv-Vis

LAMPIRAN 10

KODE ETIK PENELITIAN


KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
KOMITE ETIK PENELITIAN KESEHATAN
RSPTN UNIVERSITAS HASANUDDIN
RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR
 Sekretariat : Lantai 2 Gedung Laboratorium Terpadu
 JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245.
 Contact Person: dr. Agussalim Bukhari, MMed,PhD, SpGK TELP. 081241850858, 0411 5780103, Fax : 0411-581431

REKOMENDASI PERSETUJUAN ETIK
 Nomor : 71/UN4.6.4.5.31/ PP36/ 2021

Tanggal: 11 Februari 2021

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH21010023	No Sponsor Protokol	
Peneliti Utama	Yulita Chrismensi Patimang	Sponsor	
Judul Peneliti	Uji Protektif Minyak Jintan Hitam (Nigella sativa L.) Terhadap Aktivitas Peroksidasi Lipid Hati Tikus yang Diberi Levofloksasin		
No Versi Protokol	1	Tanggal Versi	13 Januari 2021
No Versi PSP		Tanggal Versi	
Tempat Penelitian	Laboratorium Fakultas Farmasi Universitas Hasanuddin Makassar		
Jenis Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal	Masa Berlaku	Frekuensi review lanjutan
Ketua Komisi Etik Penelitian Kesehatan FKUH	Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)	Tanda tangan	11 Februari 2021 sampai 11 Februari 2022
Sekretaris Komisi Etik Penelitian Kesehatan FKUH	Nama dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K)	Tanda tangan	

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari protokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan