DAFTAR PUSTAKA

Ayoola, et al. 2008. Phytochemical Screening and Antioxidant Activities of Some Selected Medicinal Plants Used for Malaria Theraphy in Southwestern Nigeria. Tropical Journal of Pharmaceutical Research, 7(3): 1019-102

Almarahma, Sri. 2021. Efek Hepatoprotektif Ekstrak Etanol Daun Sambung Nyawa (*Gyunura Procumbens*) terhadap Kerusakan Hati Terinduksi Parasetamol Dosis Toksik. *Tesis*. Makassar: Universitas Hasanuddin.

Bodeker,G. 2000. Traditional health system: Valuing biodiversity for human health and well being. In. D. A. Posey . Cultural and spiritual values in biodiversity (pp. 261-284). Nairobi: Practical Action.

Correia, M.A. and Castagnoli, N. 1989. Farmakokinetik: Biotransformasi Obat. Dalam: Bertram G. Katzung. Farmakologi Dasar dan Klinik. Edisi III. Alih bahasa: Petrus Adrianto dkk. Jakarta: EGC, pp: 45-51.

Da'i, M., Ratnaningrum, A.D., Wahyuni, A.S., Melannisa R., and Trisharyanti, I.D.K. 2012. Radical Scavenging Activity DPPH (1,1-diphenyl-2- pikrilhidrazyl) Assay of Ethanol Extract of Elephantopus schaber L., Ocimum basillicum L. Forma citratum Back, Graptophylum pictum Griff, and Gynura procumbens Merr. Leaves and Determination of Concentration Total Phenolic. Pharmacon. 2012; 13 (12)

Fadli, M.Y.2015. Benefits of Sambung Nyawa (*Gynura procumbens*) Subtance as Anticancer. Journal Majority. 2015; Vol. 4. No. 5

Gilman,A.G., *1992*. Goodman & Gilman The Pharmacological Basis of Therapeutics. 8th edition. USA: McGraww-Hill.

Hegde K, Joshi AB. Hepatoprotective effect of Carissa carandas Linn root extract against CCl 4 and paracetamol induced hepatic oxidative stress. ncbi journal 2009; 4:32-37.

Ishak,pertiwi. 2021. Efek Nefroprotektif Ekstrak Daun Sambung Nyawa (*Gynura Procumbens*) Terhadap Tikus Putih (*Rattus Novergicus*) Terinduksi Parasetamol Dosis Toksik. *Tesis*. Makassar: Universitas Hasanuddin

Jaeschke H, McGill MR, Ramachandran A. 2012. Oxidant stress, mitochondria, and cell death mechanisms in drug-induced liver injury: lessons learned from acetaminophen hepatotoxicity. Drug Metab Rev 2012; 44: 88-106.

Jaeschke H. 2015. Acetaminophen: Dose-Dependent Drug Hepatotoxicity and Acute Liver Failure in Patients. Dig Dis. Vo. 33(4). Page 464–71. DOI: 10.1159/000374090 [PubMed: 26159260]

Khaira,Kuntum. 2010. Menangkal Radikal Bebas dengan Anti-oksidan. Jurnal Saintek Vol. II No. 2 : 183-187, Desember 2010.

Kim, J., Lee, C.W., Kim, E.K., Lee, S.J., Park, N.H., Kim, H.S., Kim, H.K., Char, K., Jang, Y.P., and Kim, J.W. 2011. Inhibition Effect of Gynura procumbens Extract on UV-B-Induced Matrix-Mettalloproteinase Expression in Human Dermal Fibrobalsts. Journal of Ethnopharmacology.

Larson AM. 2007. Acetaminophen hepatotoxicity. Clin Liver Dis. DOI: 10.1016/j.cld.2007.06.006 [PubMed: 17723918]

Mahendra,B. 2006. Panduan Meracik Herbal. Depok: Penebar Swadaya. ISBN: 979-002-023-6

McGill MR, Jaeschke H. 2013. Metabolism and disposition of acetaminophen: recent advances in relation to hepatotoxicity and diagnosis. Pharm Res 2013; 30: 2174-2187

Molyneux, P., 2004, The Use of The Stable Free Radical Diphenylpicryl-hydrazyl (DPPH) for Estimating Antioxidant Activity, Songklanakarin J. Sci. Technol. , 26(2), 211-21

Mowry JB, Spyker DA, Brooks DE, McMillan N, Schauben JL.2015. 2014 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 32nd Annual Report. Clin Toxicol 2015; 53: 962-1147.

Perry,L.,M. 1980. Medicinal plants of East and Southeast Asia: Attributed properties and uses (1st ed., p. 94). Cambridge: The MIT Press.

Prakash, A. 2001. Antioxidant Activity. Medallion Laboratories Analytical Progress, Vol. 19(2).

Purnomo,Hari. 2019. Modecular Docking Parasetamol Dan Analognya Menggunakan Plants (Protein-Ligand Ant-System). Penerbit Andi. ISBN: 9786237239390, 6237239391

Scherer,R. and Godoy,H.T. 2009. Antioxidant activity index (AAI) by the 2,2-diphenil-1-picrylgydrazyl method. Food Chem. 11, 654-658.

Sudarsono, dkk. 2002. Tumbuhan obat II. Yogyakarta: Universitas Gajah Mada Sekip Utara.

Sudoyo AW, Setyohadi B, Alwi I, Simadibrata M, Setiadi S, 2007. Buku Ajar Ilmu Penyakit Dalam Jilid I Edisi IV. Jakarta: Departemen Ilmu Penyakit Dalam FKUI.

Sulfiyana H., Elly Wahyudin, Subehan Lallo. 2018. Potensi Antioksidan Ekstrak Etanol Daun Sambung Nyawa (*Gynura procumbens*) terenkapsulasi Maltodextrin dan Pengaruhnya terhadap Kadar MDA Darah Tikus Wistar (*Rattus novergicus*) Jantan yang diinduksi CCl_4. Majalah Farmasi dan Farmakologi. MFF 2018; 22(3):93-98.

Surai, P.F. 2003. Natural Antioxidant in Avian Nutrition and Reproductions. Bookcraft,Bath,England.

Tan,Hui-Li, Kok-Gan Chaan, Priyia Pusparajah, Learn-Han Lee, and Bey-Hing Goh. 2016. Gynura procumbens: An Overview of the Biological Activities. Frontiers in Pharmacology. Vol. 7. Article 52

Winarsi,H. 2007. Antioksidan Alami dan Radikal Bebas. Yogyakarta: Penerbit Kanisius

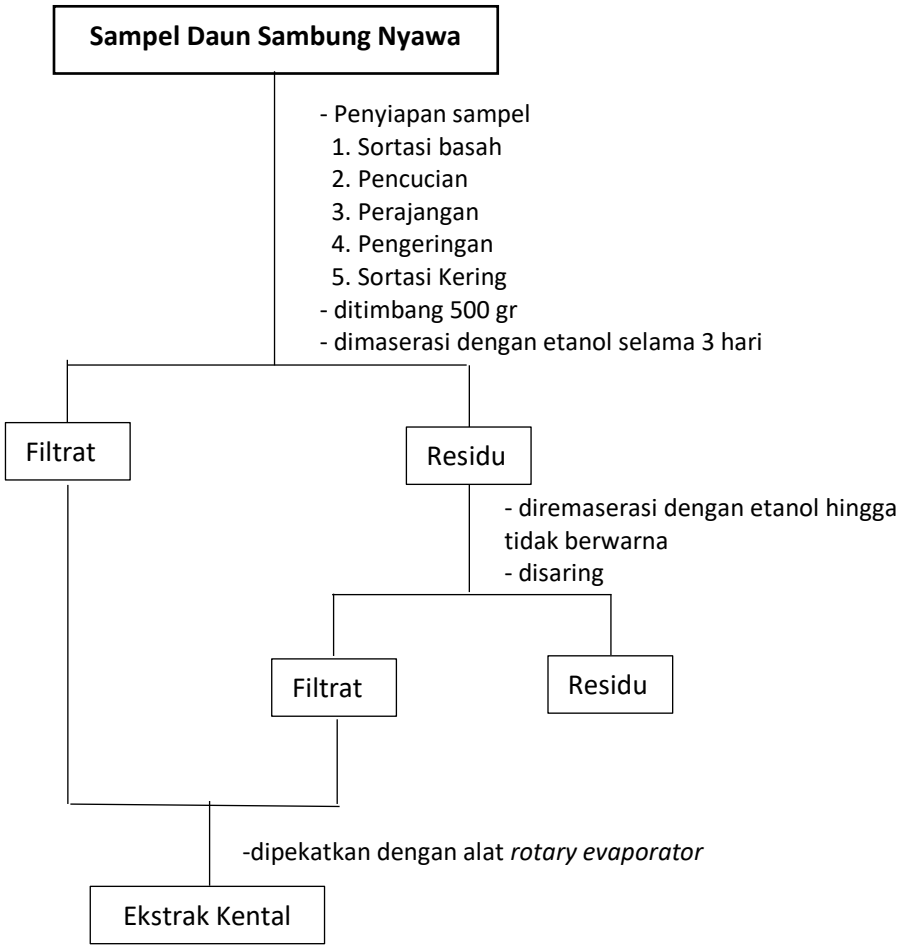
Yoon E, Babar A, Choudhary M, Kutner M, Pyrsopoulos N. 2016. Acetaminophen-induced hepatotoxicity: a comprehensive update. J Clin Transl Hepatol 2016; 28: 131-142

Yuan L, Kaplowitz N. 2013 . Mechanisms of drug-induced liver injury. Clin Liver Dis 2013; 17: 507-518.

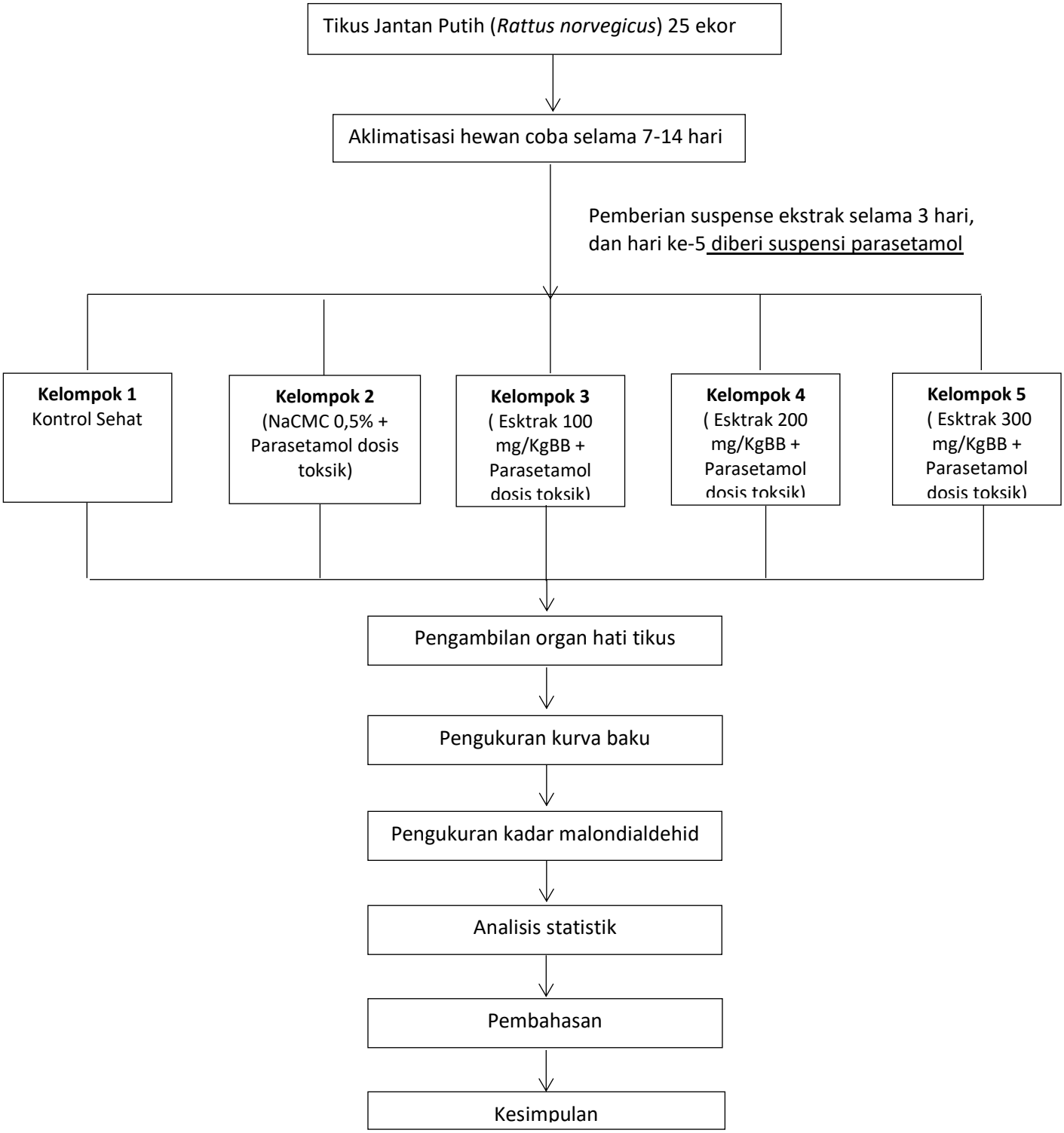
Yuslianti, Euis Reni. 2018. Pengantar Radikal Bebas dan Antioksidan. Yogyakarta: Penerbit Deepublish.

LAMPIRAN

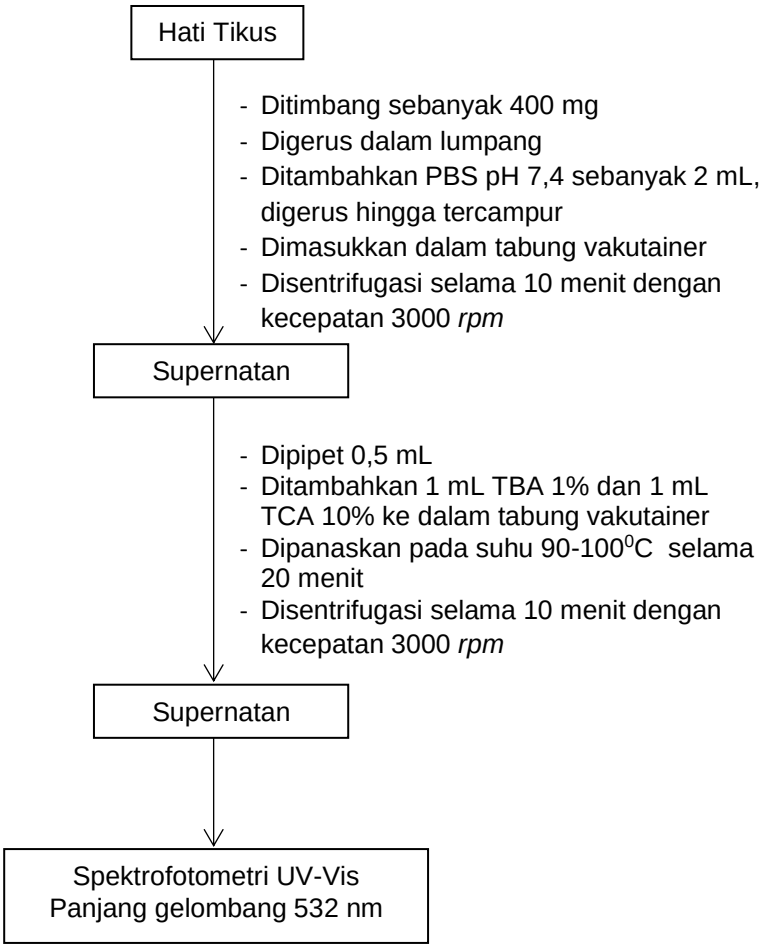
Lampiran 1. Skema Kerja Pembuatan Ekstrak



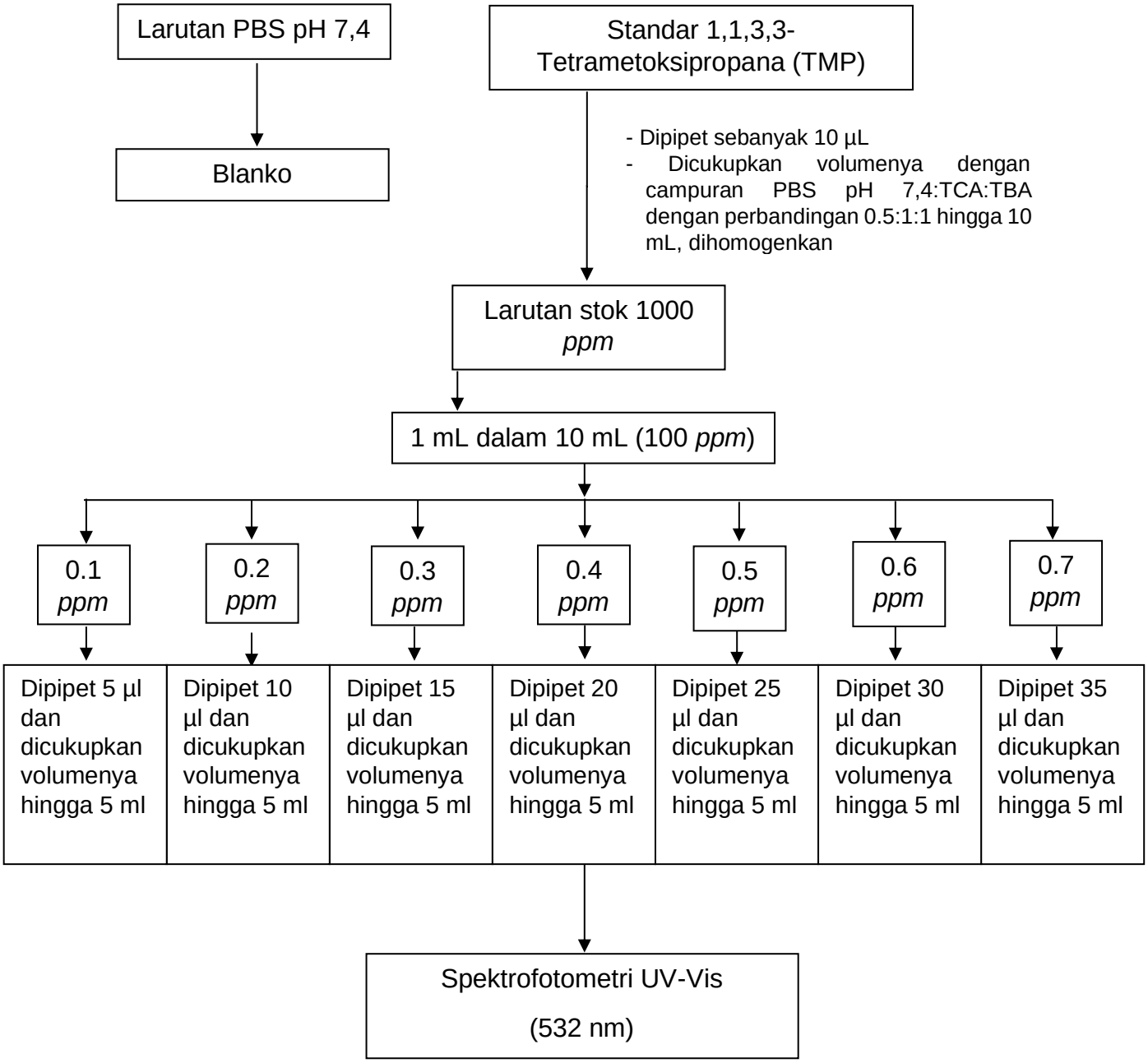
Lampiran 2. Skema Kerja Perlakuan Hewan Coba



Lampiran 3. Skema Kerja Pengukuran Kadar Malondialdehid



Lampiran 4. Skema Kerja Pengukuran Kurva Baku



Lampiran 5. Perhitungan Dosis

5.1 Parasetamol

Dosis parasetamol yang bersifat toksik pada hewan coba tikus adalah 2.400 mg/kg Berat Badan (BB) (BPOM,2006).

Untuk dosis 2.400 mg / 1000 g

Untuk BB tikus 200 g = 480 mg / 200 g /2 mL

Dibuat dalam 25 mL = 480 mg / 2 mL

= 6.000 mg / 25 mL

Jumlah serbuk tablet parasetamol yang ditimbang

$$= \frac{Jumlah\ yang\ diinginkan}{Berat\ etiket} \times berat\ rata - rata\ 20\ tablet$$

$$= \frac{6.000\ mg}{500\ mg} \times 555.56\ mg$$

= 6.666,72 mg

Ditimbang serbuk tablet sebanyak 6.666,72 mg kemudian disuspensikan dalam 25 mL NaCMC 0,5%. Dengan demikian, untuk membuat dalam volume 50 mL maka ditimbang 13.333,44 mg kemudian disuspensikan dalam 50 mL NaCMC 0,5%.

5.2 Ekstrak Daun Sambung Nyawa

Untuk dosis 100 mg/kgBB

100 mg / 1.000 g BB

25 mg / 250 g BB / 2 mL

Dibuat dalam 50 mL = 25 mg / 2 mL

= 625 mg / 50 mL

Dtitimbang ekstrak sebanyak 625 mg kemudian disuspensikan dalam 50 mL NaCMC 0,5%

Untuk dosis 200 mg/kgBB

200 mg / 1.000 g BB

50 mg / 250 g BB / 2 mL

Dibuat dalam 50 mL = 50 mg / 2 mL

= 1.250 mg / 50 mL

Dtitimbang ekstrak sebanyak 1.250 mg kemudian disuspensikan dalam 50 mL NaCMC 0,5%

Untuk dosis 300 mg/kgBB

300 mg / 1.000 g BB

75 mg / 250 g BB / 2 mL

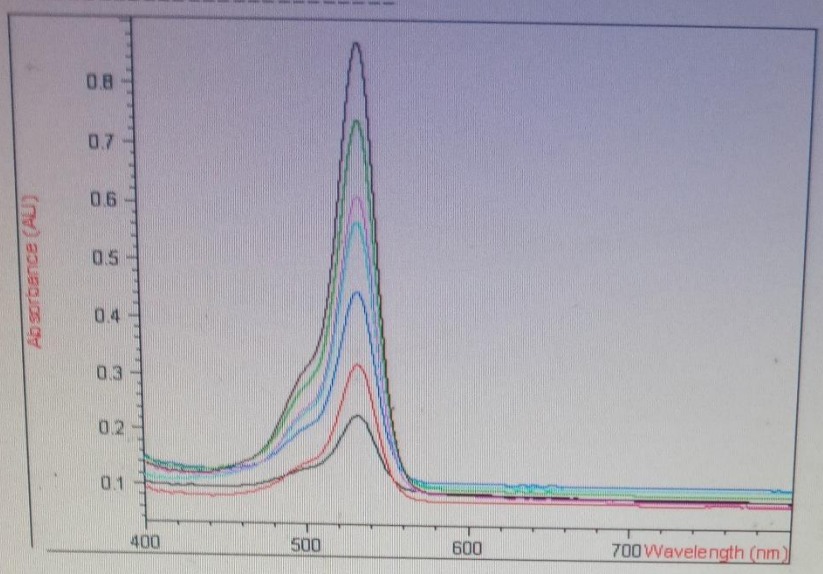
Dibuat dalam 50 mL = 75 mg / 2 mL

= 1.875 mg / 50 mL

Dtitimbang ekstrak sebanyak 1.875 mg kemudian disuspensikan dalam 50 mL NaCMC 0,5%

Lampiran 6. Hasil Pengukuran Absorbansi Kurva Baku

Processed Standard Spectra



Calibration Table (*)

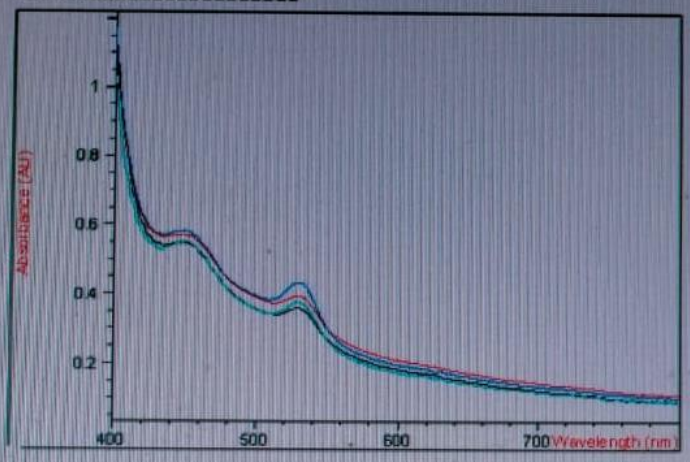
#	Standard Name	Concentration(ppm)	Abs<532nm>	%Error
1	TMP	1.00000	0.22871	15.63
2	TMP	2.00000	0.31978	65.40
3	TMP	3.00000	0.44616	77.82
4	TMP	4.00000	0.56701	86.56
5	TMP	5.00000	0.61242	115.91
6	TMP	6.00000	0.74049	114.28
7	TMP	7.00000	0.86970	112.86

*** End Hardcopy view ***

Lampiran 7. Hasil Pengukuran Absorbansi Tiap Kelompok Perlakuan

Hardcopy view Date 1/4/1980 Time 00:55:05 Page 1 of 1

Overlaid Sample Spectra



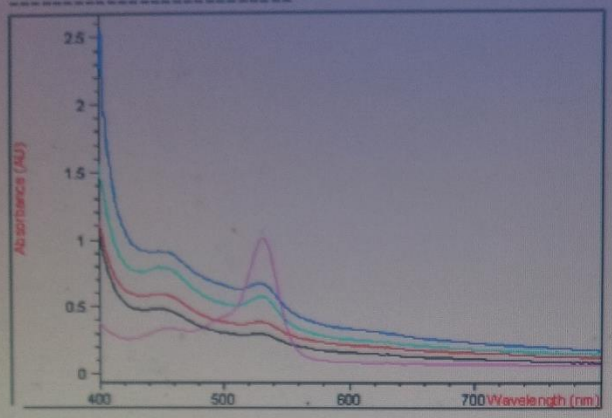
Sample/Result Table

#	Name	Dilut. Factor	(ppm)	Abs<532 nm>
1	Hati KS E II	1.00000	***	0.35790
2	Hati KS K II	1.00000	***	0.39421
3	Hati KS P II	1.00000	***	0.43443
4	Hati KS Kab II	1.00000	***	0.37652

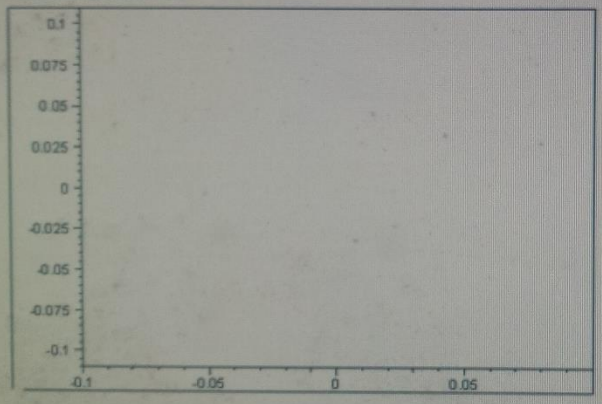
*** End Hardcopy view ***

Hardcopy view Date 1/4/1980 Time 00:42:29 Page 1 of 2

Processed Standard Spectra



Calibration Curve



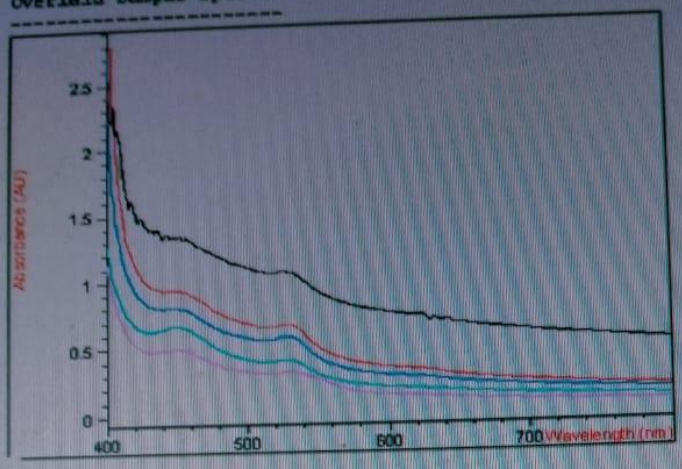
Calibration Table (*)

#	Standard Name	Concentration(ppm)	Abs<532nm>	%Error
1	Hati NaCMC E I N	0.00000	0.29314	***
2	Hati NaCMC K I N	0.00000	0.38027	***
3	Hati NaCMC Kab I	0.00000	0.66716	***
4	Hati NaCMC Kad I	0.00000	0.57466	***
5	Hati NaCMC P I N	0.00000	1.00830	***

Hardcopy view

Date 1/4/1980 Time 00:42:24 Page 1 of

Overlaid Sample Spectra



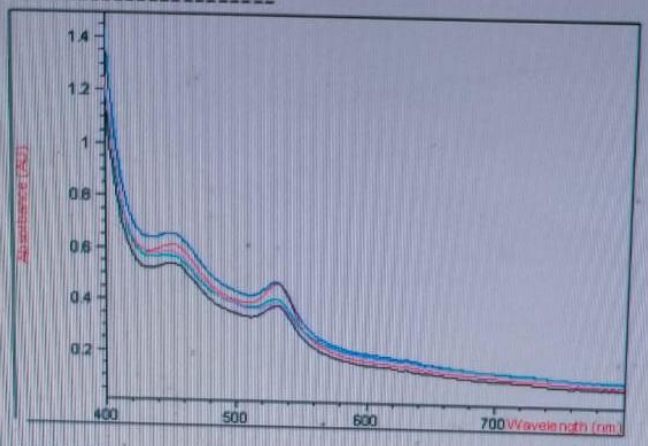
Sample/Result Table

#	Name	Dilut. Factor	(ppm)	Abs<532 nm>
1	Hati D 100 Kab I	1.00000	***	1.05180
2	Hati D 100 Kad I	1.00000	***	0.66465
3	Hati D 100 E III	1.00000	***	0.58017
4	Hati D 100 K III	1.00000	***	0.40588
5	Hati D 100 P III	1.00000	***	0.31863

*** End Hardcopy view ***

Hardcopy view Date 1/4/1980 Time 02:40:41 Page 1 of 1

Overlaid Sample Spectra

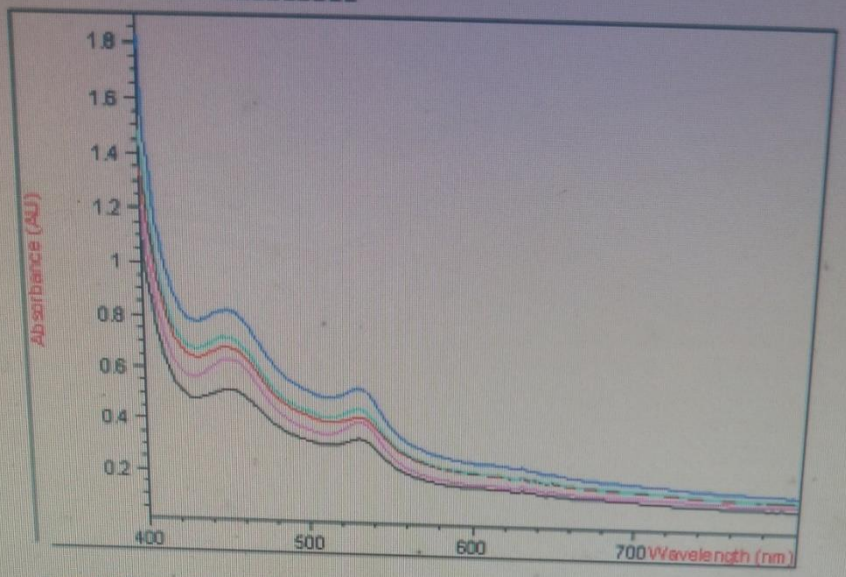


Sample/Result Table

#	Name	Dilut. Factor	(ppm)	Abs<532nm>
1	Hati D 200 Kab I	1.00000	***	0.38348
2	Hati D 200 Kad I	1.00000	***	0.46916
3	Hati D 200 P IV	1.00000	***	0.47414
4	Hati D 200 E IV	1.00000	***	0.40852
5	Hati D 200 K IV	1.00000	***	0.39272

*** End Hardcopy view ***

Overlaid Sample Spectra



Sample/Result Table

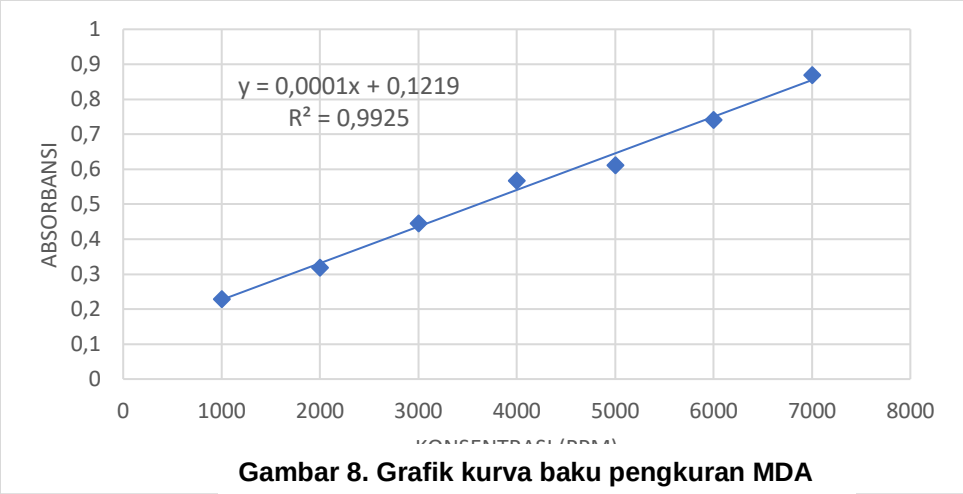
#	Name	Dilut. Factor	(ppm)	Abs<532 nm>
1	Hati D 300 K V	1.00000	***	0.33658
2	Hati D 300 P V	1.00000	***	0.42192
3	Hati D 300 Kad V	1.00000	***	0.53284
4	Hati D 300 E V	1.00000	***	0.45282
5	Hati D 300 Kab V	1.00000	***	0.40269

*** End Hardcopy view ***

Lampiran 8. Grafik Kurva Standar

Tabel 3. Absorbansi standar MDA pada konsentrasi 0.1-0.7 ppm

Konsentrasi (ppm)	Absorbansi
0,1	0,22871
0,2	0,31978
0,3	0,44616
0,4	0,56701
0,5	0,61242
0,6	0,74099
0,7	0,86970



Gambar 8. Grafik kurva baku pengkuran MDA

Lampiran 9. Perhitungan Nilai X dan Kadar MDA

1. Perhitungan Nilai X

Persamaan garis kurva baku;

Y = 0,0001x+ 0,1219

Kelompok I : Kelompok kontrol

KS E II

0,35790 = 0,0001x+ 0,1219

$$x = \frac{0,35790 - 0,1219}{0,0001}$$

x = 2.360

KS K II

0,39421 = 0,0001x+ 0,1219

$$x = \frac{0,39421 - 0,1219}{0,0001}$$

x = 2.723,1

KS P II

0,43443 = 0,0001x+ 0,1219

$$x = \frac{0,43443 - 0,1219}{0,0001}$$

x = 3.125,3

KS Kab II

0,37652 = 0,0001x+ 0,1219

$$x = \frac{0,37652 - 0,1219}{0,0001}$$

x = 2.546,2

Kelompok II : Suspensi NaCMC 0,5% + Suspensi Parasetamol

NaCMC E I N
0,29314 = 0,0001x+ 0,1219

$$x = \frac{0,29314 - 0,1219}{0,0001}$$

x = 1.713,4

NaCMC K I N
0,38027 = 0,0001x+ 0,1219

$$x = \frac{0,38027 - 0,1219}{0,0001}$$

x = 2.583,7

NaCMC P I N
1,00830 = 0,0001x+ 0,1219

$$x = \frac{1,00830 - 0,1219}{0,0001}$$

x = 8.864

NaCMC Kad I N
0,57466 = 0,0001x+ 0,1219

$$x = \frac{0,57466 - 0,1219}{0,0001}$$

x = 4.527,6

NaCMC Kab I N
0,66716 = 0,0001x+ 0,1219

$$x = \frac{0,66716 - 0,1219}{0,0001}$$

x = 5.452,6

Kelompok III : Ekstrak Daun Sambung Nyawa 100 mg/KgBB
D 100 E III
0,58017 = 0,0001x+ 0,1219

$$x = \frac{0,58017 - 0,1219}{0,0001}$$

x = 4.582,7

D 100 K III
0,40588 = 0,0001x+ 0,1219

$$x = \frac{0,40588 - 0,1219}{0,0001}$$

x = 2.839,8

D 100 P III
0,31863 = 0,0001x+ 0,1219

$$x = \frac{0,31863 - 0,1219}{0,0001}$$

x = 1.967,3

D 100 Kad III
0,66465 = 0,0001x+ 0,1219

$$x = \frac{0,66465 - 0,1219}{0,0001}$$

x = 5.427,5

D 100 Kab III
1,05180 = 0,0001x+ 0,1219

$$x = \frac{1,05180 - 0,1219}{0,0001}$$

x = 9.299

Kelompok IV : Ekstrak Daun Sambung Nyawa 200 mg/KgBB

D 200 E IV
0,40852 = 0,0001x+ 0,1219

$$x = \frac{0,40852 - 0,1219}{0,0001}$$

x = 2.866,2

D 200 K IV
0,39272 = 0,0001x+ 0,1219

$$x = \frac{0,39272 - 0,1219}{0,0001}$$

x = 2.708,2

D 200 P IV
0,47414 = 0,0001x+ 0,1219

$$x = \frac{0,47414 - 0,1219}{0,0001}$$

x = 3.522,4

D 200 Kad IV
0,46916 = 0,0001x+ 0,1219

$$x = \frac{0,46916 - 0,1219}{0,0001}$$

x = 3.472,6

D 200 Kab IV
0,38348 = 0,0001x+ 0,1219

$$x = \frac{0,38348 - 0,1219}{0,0001}$$

x = 2.615,8

Kelompok V : Ekstrak Daun Sambung Nyawa 300 mg/KgBB

D 300 E V

0,45282 = 0,0001x+ 0,1219

$$x = \frac{0,45282 - 0,1219}{0,0001}$$

x = 3.309,2

D 300 K V

0,33658 = 0,0001x+ 0,1219

$$x = \frac{0,33658 - 0,1219}{0,0001}$$

x = 2.146,8

D 300 P V

0,42192 = 0,0001x+ 0,1219

$$x = \frac{0,42192 - 0,1219}{0,0001}$$

x = 3.000,2

D 300 Kad V

0,53284 = 0,0001x+ 0,1219

$$x = \frac{0,53284 - 0,1219}{0,0001}$$

x = 4.109,4

D 300 Kab V

0,40269 = 0,0001x+ 0,1219

$$x = \frac{0,40269 - 0,1219}{0,0001}$$

x = 2.807,9

2. Perhitungan kadar MDA

Kadar MDA dihitung dengan menggunakan rumus :

Kadar MDA = (x) × D

Ket : x = Hasil perhitungan nilai absorbansi sampel dengan persamaan kurva baku

D = Faktor Pengenceran

Kelompok I : Kelompok kontrol

KS E II

Kadar MDA = 2.360 × 0,2

= 472 µg/ml

= 472.000 ng/ml

KS K II

Kadar MDA = 2.723,1 × 0,2

= 544,62 µg/ml

= 544.620 ng/ml

KS P II

Kadar MDA = 3.125,3 × 0,2

= 625,06 µg/ml

= 625.060 ng/ml

KS Kab II

Kadar MDA = 2.546 × 0,2

= 509,2 µg/ml

= 509.200 ng/ml

Kelompok II : Suspensi NaCMC 1% + Suspensi Parasetamol

NaCMC E I N

Kadar MDA = 1.713,4 × 0,2

= 342,68 µg/ml

= 342.680 ng/ml

NaCMC K I N

Kadar MDA = 2.583,7 × 0,2

= 516,74 µg/ml

= 516.740ng/ml

NaCMC P I N

Kadar MDA = 8.864 × 0,2

= 1.772,8 µg/ml

= 1.772.800 ng/ml

NaCMC Kad I N

Kadar MDA = 4.527,6 × 0,2

= 905,52 µg/ml

= 905.520 ng/ml

NaCMC Kab I N

Kadar MDA = 5.452,6 × 0,2

= 1.090,52 µg/ml

= 1.090.520 ng/ml

Kelompok III : Ekstrak Daun Sambung Nyawa 100 mg/KgBB

D 100 E III

Kadar MDA = 4.582,7 × 0,2

= 916,54 µg/ml

= 916.540 ng/ml

D 100 K III

Kadar MDA = 2.839,8 × 0,2

= 567,96 µg/ml

= 567.960 ng/ml

D 100 P III

Kadar MDA = 1.967 × 0,2

= 393,4 µg/ml

= 393.400 ng/ml

D 100 Kad III

Kadar MDA = 5.427,5 × 0,2

= 1.085,5 µg/ml

= 1.085.500 ng/ml

D 100 Kab III

Kadar MDA = 9.299 × 0,2

= 1.859,8 µg/ml

= 1.859.800 ng/ml

Kelompok IV : Ekstrak Daun Sambung Nyawa 200 mg/KgBB

D 200 E IV

Kadar MDA = 2.866,2 × 0,2

= 573,24 µg/ml

= 573.240 ng/ml

D 200 K IV

Kadar MDA = 2.708,2 × 0,2

= 541,64 µg/ml

= 541.640 ng/ml

D 200 P IV

Kadar MDA = 3.522,4 × 0,2

= 704,48 µg/ml

= 704.480 ng/ml

D 200 Kad IV

Kadar MDA = 3.472,6 × 0,2

= 694,52 µg/ml

= 694.520 ng/ml

D 200 Kab IV

Kadar MDA = 2.615,8 × 0,2

= 523,16 µg/ml

= 523.160 ng/ml

Kelompok V : Ekstrak Daun Sambung Nyawa 200 mg/KgBB

D 300 E V

Kadar MDA = 3.309,2 × 0,2

= 661,84 µg/ml

= 661.840 ng/ml

D 200 K V

Kadar MDA = 2.164,8 × 0,2

= 432,96 µg/ml

= 432.960 ng/ml

D 200 P V

Kadar MDA = 3.000,2 × 0,2

= 600,04 µg/ml

= 600.040 ng/ml

D 200 Kad V

Kadar MDA = 4.109,4 × 0,2

= 821,88 µg/ml

= 821.880 ng/ml

D 200 Kab V

Kadar MDA = 2.807,9 × 0,2

= 561,58 µg/ml

= 561.580 ng/ml

Lampiran 10. Hasil Analisis Statistik

Tabel 4. Hasil analisis statistik distribusi sampel menggunakan metode shapiro-wilk

Tests of Normality

		Shapiro-Wilk		
	Kelompol_Perlakuan	Statistic	df	Sig.
Kadar_MDA	Kelompok kontrol	,963	4	,800
	NaCMC 0,5%	,966	4	,816
	Ekstrak 100 mg/KgBB	,938	4	,645
	Ekstrak 200 mg/KgBB	,849	4	,224
	Ekstrak 300 mg/KgBB	,955	4	,749

a. Lilliefors Significance Correction

Test distribution is Normal.

Calculated from data.

Tabel 5. Hasil analisis statistik deskriptif sampel

Descriptives

Kadar_MDA

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Kelompok kontrol	4	537,7200	65,34114	32,67057	433,7477	641,6923	472,00	625,06
NaCMC 0,5%	4	1071,3950	525,19565	262,59783	235,6915	1907,0985	516,74	1772,80
Ekstrak 100mg/KgBB	4	1107,4500	545,89633	272,94817	238,8071	1976,0929	567,96	1859,80
Ekstrak 200mg/KgBB	4	583,1400	77,07867	38,53934	460,4906	705,7894	523,16	694,52
Ekstrak 300mg/KgBB	4	564,1300	96,69254	48,34627	410,2706	717,9894	432,96	661,84
Total	20	772,7670	405,48120	90,66835	582,9960	962,5380	432,96	1859,80

Tabel 6. Hasil analisis data menggunakan metode *One Way Anova*

ANOVA

Kadar_MDA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1343705,128	4	335926,282	2,831	,062
Within Groups	1780179,940	15	118678,663		
Total	3123885,068	19			

Tabel 7. Hasil analisis statistik *Post Hoc Test*

Multiple Comparisons

Dependent Variable: Kadar_MDA

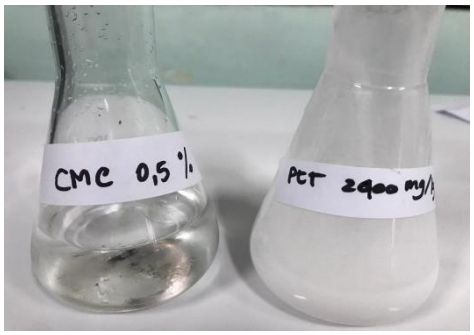
Tukey HSD

(I) Kelompol_Perlakuan	(J) Kelompol_Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kelompok kontrol	NaCMC 0,5%	-533,67500	243,59666	,235	-1285,8831	218,5331
	Ekstrak 100mg/KgBB	-569,73000	243,59666	,186	-1321,9381	182,4781
	Ekstrak 200mg/KgBB	-45,42000	243,59666	1,000	-797,6281	706,7881
	Ekstrak 300mg/KgBB	-26,41000	243,59666	1,000	-778,6181	725,7981
NaCMC 0,5%	Kelompok kontrol	533,67500	243,59666	,235	-218,5331	1285,8831
	Ekstrak 100mg/KgBB	-36,05500	243,59666	1,000	-788,2631	716,1531
	Ekstrak 200mg/KgBB	488,25500	243,59666	,310	-263,9531	1240,4631
	Ekstrak 300mg/KgBB	507,26500	243,59666	,277	-244,9431	1259,4731
Ekstrak 100mg/KgBB	Kelompok kontrol	569,73000	243,59666	,186	-182,4781	1321,9381
	NaCMC 0,5%	36,05500	243,59666	1,000	-716,1531	788,2631
	Ekstrak 200mg/KgBB	524,31000	243,59666	,250	-227,8981	1276,5181
	Ekstrak 300mg/KgBB	543,32000	243,59666	,221	-208,8881	1295,5281
Ekstrak 200mg/KgBB	Kelompok kontrol	45,42000	243,59666	1,000	-706,7881	797,6281
	NaCMC 0,5%	-488,25500	243,59666	,310	-1240,4631	263,9531

	Ekstrak 100mg/KgBB	-524,31000	243,59666	,250	-1276,5181	227,8981
	Ekstrak 300mg/KgBB	19,01000	243,59666	1,000	-733,1981	771,2181
Ekstrak 300mg/KgBB	Kelompok kontrol	26,41000	243,59666	1,000	-725,7981	778,6181
	NaCMC 0,5%	-507,26500	243,59666	,277	-1259,4731	244,9431
	Ekstrak 100mg/KgBB	-543,32000	243,59666	,221	-1295,5281	208,8881
	Ekstrak 200mg/KgBB	-19,01000	243,59666	1,000	-771,2181	733,1981

Lampiran 11. Dokumentasi Penelitian

Gambar 9. Ekstrak etanol daun sambung nyawa



Gambar 10. Suspensi NaCMC 0,5% dan Suspensi Parasetamol dosis

Gambar 11. Pemberian larutan uji secara peroral

Gambar 12. Pembedahan hewan coba tikus

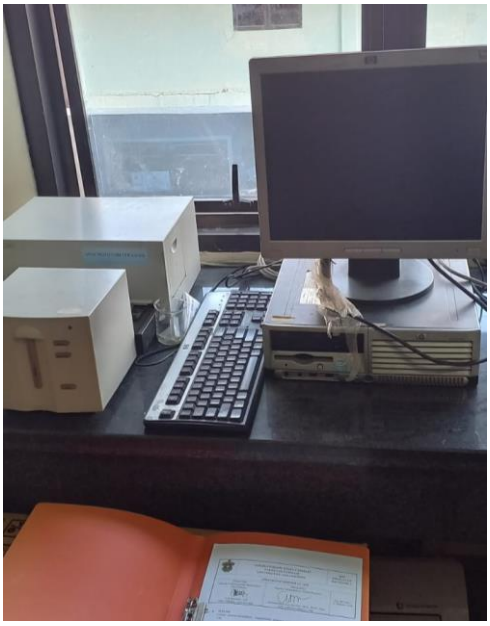
Gambar 13. Pembekuan organ hati menggunakan nitrogen cair

Gambar 14. Penimbangan organ hati

Gambar 15. Penggerusan organ hati

Gambar 16. Penambahan larutan uji

Gambar 17. Penyiapan Proses sentrifugasi



Gambar 18. Pengukuran kadar MDA menggunakan spektrofotometri UV-Vis

Lampiran 12. Persetujuan Kode Etik

KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
KOMITE ETIK PENELITIAN UNIVERSITAS HASANUDDIN
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 : 761/UN4.6.4.5.31/ PP36/ 2021

Tanggal: 2 Desember 2021

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

No Protokol	UH21100646	No Sponsor Protokol	
Peneliti Utama	**Putri Alifyani**	Sponsor	
Judul Peneliti	Uji Aktivitas Ekstrak Etanol Daun Sambung Nyawa (Gynura Procumbens) Terhadap Kadar Malondialdehid (Mda) Hati Tikus Putih (Rattus Norvegicus) Yang Diinduksi Paracetamol Dosis Toksik		
No Versi Protokol	**1**	Tanggal Versi	**19 Oktober 2021**
No Versi PSP		Tanggal Versi	
Tempat Penelitian	Laboratorium Fakultas Farmasi Universitas Hasanuddin Makassar		
Jenis Review	☐ Exempted ☒ Expedited ☐ Fullboard Tanggal	Masa Berlaku **2 Desember 2021** sampai **2 Desember 2022**	Frekuensi review lanjutan
Ketua KEP Universitas Hasanuddin	Nama **Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)**	Tanda tangan	
Sekretaris KEP Universitas Hasanuddin	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 Lapor 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 prokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan