LAMPIRAN

Lampiran 1. Perhitungan penyiapan agonis

Penyiapan Ca^{2+}

$$M = \frac{\text{Bobot (gram)}}{BM} \times \frac{1000}{\text{Volune (ml)}}$$

$$2 \times 10^{-1} = \frac{\text{Bobot (gram)}}{147.01} \times \frac{1000}{10\ \text{ml}}$$

$$\text{Bobot (gram)} = \frac{147.01 \times 0.2}{100}$$

$$\text{Bobot (gram)} = 0.29402$$

$$\text{Bobot (mg)} = 294.02 \text{ ad } 10 \text{ ml}$$

Stok Ca^{2+} = 294.02 ad 10 ml = 2×10^{-1}

Penyiapan piperin

$$M = \frac{\text{Bobot (gram)}}{BM} \times \frac{1000}{\text{Volune (ml)}}$$

$$2 \times 10^{-2} = \frac{\text{Bobot (gram)}}{285.34} \times \frac{1000}{5\ \text{ml}}$$

$$\text{Bobot (gram)} = \frac{285.34 \times 0.02}{200}$$

$$\text{Bobot (gram)} = 0.028534$$

$$\text{Bobot (mg)} = 28.534 \text{ ad } 5 \text{ ml}$$

Stok piperin = 28.354 ad 5 ml = 2×10^{-2}

Lampiran 2. Data pengaruh *nicardipine* terhadap Ca^{2+} *Channel* pada otot polos aorta.

Data respon kontraksi seri agonis Ca^{2+} praperlakuan Antagonis *Nicardipine*.

Log	Respon Kontraksi										Mean	SEM
	1	2	3	4	5	6	7	8	9	10		
-10.0	28.57	33.33	18.75	28.00	15.00	15.91	22.73	17.65	16.92	17.19	21.40	2.03
-9.5	50.00	50.00	18.75	40.00	25.00	25.00	27.27	23.53	26.15	23.44	30.91	3.61
-9.0	53.57	58.33	18.75	40.00	50.00	36.36	36.36	29.41	30.77	46.88	40.04	3.86
-8.5	64.29	58.33	43.75	46.00	70.00	45.45	45.45	41.18	43.08	53.13	51.07	3.15
-8.0	64.29	62.50	56.25	48.00	70.00	54.55	54.55	58.82	49.23	56.25	57.44	2.13
-7.5	71.43	70.83	81.25	48.00	75.00	68.18	63.64	82.35	52.31	62.50	67.55	3.57
-7.0	85.71	83.33	84.38	48.00	80.00	77.27	68.18	88.24	58.46	62.50	73.61	4.30
-6.5	85.71	100.00	93.75	64.00	80.00	90.91	77.27	88.24	70.77	65.63	81.63	3.85
-6.0	100.00	100.00	93.75	100.00	80.00	90.91	77.27	88.24	92.31	73.44	89.59	3.09
-5.5	100.00	100.00	100.00	100.00	80.00	100.00	86.36	88.24	100.00	76.56	93.12	2.98
-5.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100	100.00	100.00	100.00	0.00

Data respon kontraksi seri Ca^{2+} pascaperlakuan *nicardipine* 10 µM.

Log	Respon kontraksi					Mean	SEM
	1	2	3	4	5		
-10.0	18.1818	13.64	11.7647	16.67	10.94	14.24	1.39
-9.5	27.2727	22.73	23.5294	16.67	14.06	20.85	2.40
-9.0	31.8182	22.73	23.5294	16.67	14.06	21.76	3.09
-8.5	36.3636	27.27	35.2941	20.83	20.31	28.02	3.42
-8.0	40.9091	27.27	35.2941	27.08	40.63	34.24	3.05
-7.5	40.9091	31.82	35.2941	37.50	46.88	38.48	2.57
-7.0	54.5455	40.91	35.2941	41.67	59.38	46.36	4.53
-6.5	59.0909	59.09	47.0588	54.17	65.63	57.01	3.08
-6.0	59.0909	68.18	58.8235	75.00	65.63	65.34	3.02
-5.5	59.0909	68.18	64.7059	75.00	65.63	66.52	2.59
-5.0	63.6364	77.27	76.4706	75.00	75.00	73.48	2.50

Data respon kontraksi seri Ca^{2+} pascaperlakuan *nicardipine* 50 µM.

Log	Respon kontraksi					Mean	SEM
	1	2	3	4	5		
-10.0	50	16.67	21.875	33.333	10	26.38	7.03
-9.5	50	25.00	25	37.5	10	29.50	6.73
-9.0	50	33.33	25	37.5	20	33.17	5.21
-8.5	57.1429	33.33	50	37.5	40	43.60	4.36
-8.0	57.1429	41.67	59.375	37.5	45	48.14	4.31
-7.5	60.7143	45.83	59.375	39.583	60	53.10	4.36
-7.0	64.2857	47.92	59.375	39.583	60	54.23	4.56
-6.5	64.2857	54.17	62.5	41.667	65	57.52	4.41
-6.0	64.2857	62.50	62.5	58.333	70	63.52	1.89
-5.5	71.4286	62.50	68.75	75	70	69.54	2.05
-5.0	71.4286	62.50	75	75	75	71.79	2.42

Data nilai pD2 *Nicardipine* 10 dan 50 µM.

No.	pD2		
	(-)Nicardipine	(+)Nicardipine 50	(+)Nicardipine 10
1	9.16	6.95	6.31
2	7.05	7.28	6.57
3	10.09	6.95	6.40
4	8.09	6.24	6.63
5	8.57	8.09	7.39
6	8.26		
7	8.26		
8	8.26		
9	9.10		
10	9.52		
Mean	8.64	7.10	6.66
SEM	0.27	0.21	0.14

Data respon kontraksi seri agonis Ca^{2+} praperlakuan Piperin.

Log	Respon Kontraksi										Mean	SEM
	1	2	3	4	5	6	7	8	9	10		
-10.0	27.59	37.50	38.60	34.38	26.32	15.57	17.86	16.92	16.92	20.69	25.23	2.84
-9.5	41.38	43.75	70.18	46.88	36.84	25.41	27.98	26.15	26.15	20.69	36.54	4.69
-9.0	48.28	75.00	70.18	46.88	42.11	35.25	33.33	30.77	30.77	27.59	44.01	5.26
-8.5	58.62	84.38	70.18	62.50	47.37	40.98	41.67	43.08	43.08	39.66	53.15	4.81
-8.0	58.62	84.38	77.19	68.75	47.37	51.64	50.60	49.23	49.23	50.00	58.70	4.22
-7.5	58.62	87.50	84.21	68.75	47.37	54.92	53.57	52.31	52.31	60.34	61.99	4.38
-7.0	62.07	87.50	84.21	81.25	78.95	53.28	70.24	58.46	58.46	60.34	69.48	3.96
-6.5	65.52	87.50	87.72	100.00	100.00	68.03	83.33	70.77	70.77	72.41	80.61	4.09
-6.0	65.52	93.75	87.72	100.00	100.00	74.59	84.52	92.31	92.31	86.21	87.69	3.43
-5.5	89.66	93.75	98.25	100.00	100.00	86.89	89.29	100.00	100.00	89.66	94.75	1.72
-5.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00

Data respon kontraksi seri Ca^{2+} pascaperlakuan piperin 10 µM.

Log	Respon kontraksi					Mean	SEM
	1	2	3	4	5		
-10.0	16.1765	18.571	13.333	6.90	11.43	13.28	2.01
-9.5	20.5882	25.714	25	20.69	21.43	22.68	1.11
-9.0	22.0588	27.143	28.333	27.59	22.86	25.60	1.30
-8.5	29.4118	37.143	30	27.59	28.57	30.54	1.70
-8.0	35.2941	37.143	30	31.03	28.57	32.41	1.63
-7.5	41.1765	41.429	33.333	39.66	32.86	37.69	1.90
-7.0	47.0588	48.571	36.667	46.55	50.00	45.77	2.35
-6.5	52.9412	52.857	46.667	53.45	52.86	51.75	1.28
-6.0	64.7059	65.714	60	58.62	57.14	61.24	1.69
-5.5	64.7059	65.714	66.667	70.69	65.71	66.70	1.04
-5.0	70.5882	74.286	73.333	74.14	68.57	72.18	1.12

Data respon kontraksi seri Ca^{2+} pascaperlakuan piperin 50 µM.

Log	Respon kontraksi					Mean	SEM
	1	2	3	4	5		
-10.0	27.59	12.50	8.77	12.50	10.5263	14.38	3.37
-9.5	34.48	12.50	8.77	31.25	10.5263	19.51	5.51
-9.0	34.48	12.50	14.04	37.50	13.1579	22.34	5.60
-8.5	55.17	18.75	14.04	37.50	15.7895	28.25	7.93
-8.0	55.17	50.00	15.79	37.50	15.7895	34.85	8.30
-7.5	55.17	56.25	28.07	43.75	21.0526	40.86	7.09
-7.0	62.07	62.50	31.58	46.88	21.0526	44.82	8.23
-6.5	62.07	62.50	49.12	46.88	57.8947	55.69	3.26
-6.0	68.97	68.75	52.63	56.25	68.4211	63.00	3.54
-5.5	75.86	75.00	98.25	68.75	73.6842	78.31	5.13
-5.0	75.86	81.25	70.18	75.00	73.6842	75.19	1.80

Data nilai pD2 piperin 10 dan 50 µM.

No.	pD2		
	(-) piperin	(+)piperin 10	(+)piprine 50
1	8.92	6.83	7.31
2	8.48	6.48	7.54
3	7.62	6.36	6.03
4	8.35	6.87	6.24
5	7.11	7.00	6.92
6	8.30		
7	8.37		
8	8.17		
9	9.32		
10	8.09		
Mean	8.27	6.71	6.81
SEM	0.19	0.09	0.21

Lampiran 4. Hasil Uji Statistik Uji Pengaruh *Nicardipine* pada Ca^{2+} Channel Otot Polos Aorta Terisolasi.

Uji Normalitas

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Perlakuan	N	Percent	N	Percent	N	Percent
pD2	Kontrol	10	100.0%	0	.0%	10	100.0%
	Dosis 10 µM	5	100.0%	0	.0%	5	100.0%
	Dosis 50 µM	5	100.0%	0	.0%	5	100.0%

Tests of Normality

		Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
pD2	Kontrol	.169	10	.200(*)	.960	10	.791
	Dosis 10 µM	.231	5	.200(*)	.957	5	.789
	Dosis 50 µM	.161	5	.200(*)	.981	5	.942

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

Uji normalitas untuk menguji apakah data terdistribusi normal atau tidak dilihat dari nilai $p > 0.05$ dengan kepercayaan 95%, dan pada hasil didapatkan sig. > 0.05 yang berarti data terdistribusi normal.

Uji Homogenitas

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
pD2	Based on Mean	.409	2	17	.671
	Based on Median	.330	2	17	.724
	Based on Median and with adjusted df	.330	2	15.390	.724
	Based on trimmed mean	.417	2	17	.666

Uji homogenitas digunakan untuk mengetahui persebaran data homogen atau tidak, dengan ditunjukkan nilai sig. > 0.05 dengan kepercayaan 95% dan didapat hasil nilai sig. > 0.05 yang berarti data tersebut homogen.

***One Way* ANOVA**

ANOVA

pD2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.229	2	8.114	13.466	.000
Within Groups	10.244	17	.603		
Total	26.473	19			

Uji anova digunakan untuk mengetahui karakteristik dari suatu data yang meiliki variabel lebih dari 2. Perbedaan ditunjukan dengan nilai sig. < 0.05 dengan tingkat kepercayaan 95%. Didapat hasil nilai sig. < 0.05 yang berarti data tersebut berbeda signifikan.

Post Hoc Test

Multiple Comparisons

Dependent Variable: pD2

	(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Kontrol	Dosis 10 µM	1.56200*	.42518	.005	.4713	2.6527
		Dosis 50 µM	1.99000*	.42518	.001	.8993	3.0807
	Dosis 10 µM	Kontrol	-1.56200*	.42518	.005	-2.6527	-.4713
		Dosis 50 µM	.42800	.49096	.665	-.8315	1.6875
	Dosis 50 µM	Kontrol	-1.99000*	.42518	.001	-3.0807	-.8993
		Dosis 10 µM	-.42800	.49096	.665	-1.6875	.8315
LSD	Kontrol	Dosis 10 µM	1.56200*	.42518	.002	.6649	2.4591
		Dosis 50 µM	1.99000*	.42518	.000	1.0929	2.8871
	Dosis 10 µM	Kontrol	-1.56200*	.42518	.002	-2.4591	-.6649
		Dosis 50 µM	.42800	.49096	.395	-.6078	1.4638
	Dosis 50 µM	Kontrol	-1.99000*	.42518	.000	-2.8871	-1.0929
		Dosis 10 µM	-.42800	.49096	.395	-1.4638	.6078

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

pD2

	Perlakuan	N	Subset for alpha = .05	
			2	1
Tukey HSD(a,b)	Dosis 50 µM	5	6.6460	
	Dosis 10 µM	5	7.0740	
	Kontrol	10		8.6360
	Sig.		.614	1.000

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 6.000.

b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Lampiran 5. Hasil Uji Statistik Uji Pengaruh Piperin pada Ca^{2+} *Channel* Otot Polos Aorta Terisolasi.

Uji Normalitas

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Perlakuan	N	Percent	N	Percent	N	Percent
pD2	Kontrol	10	100.0%	0	.0%	10	100.0%
	Dosis 10 µM	5	100.0%	0	.0%	5	100.0%
	Dosis 50 µM	5	100.0%	0	.0%	5	100.0%

Tests of Normality

		Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
pD2	Kontrol	.183	10	.200(*)	.960	10	.785
	Dosis 10 µM	.272	5	.200(*)	.901	5	.416
	Dosis 50 µM	.206	5	.200(*)	.921	5	.538

* This is a lower bound of the true significance.
a Lilliefors Significance Correction

Uji normalitas untuk menguji apakah data terdistribusi normal atau tidak dilihat dari nilai $p > 0.05$ dengan kepercayaan 95%, dan pada hasil didapatkan sig. > 0.05 yang berarti data terdistribusi normal.

Uji Homogenitas

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
pD2	Based on Mean	1.066	2	17	.366
	Based on Median	.932	2	17	.413
	Based on Median and with adjusted df	.932	2	14.161	.416
	Based on trimmed mean	1.057	2	17	.369

Uji homogenitas digunakan untuk mengetahui persebaran data homogen atau tidak, dengan ditunjukkan nilai sig. > 0.05 dengan kepercayaan 95% dan didapat hasil nilai sig. > 0.05 yang berarti data tersebut homogen.

One Way ANOVA

ANOVA

pD2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.501	2	5.751	18.022	.000
Within Groups	5.425	17	.319		
Total	16.926	19			

Uji anova digunakan untuk mengetahui karakteristik dari suatu data yang meiliki variabel lebih dari 2. Perbedaan ditunjukan dengan nilai sig. < 0.05 dengan tingkat kepercayaan 95%. Didapat hasil nilai sig. < 0.05 yang berarti data tersebut berbeda signifikan.

Post Hoc Test

Multiple Comparisons

Dependent Variable: pD2

	(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Kontrol	Dosis 10 µM	1.56500*	.30940	.000	.7713	2.3587
		Dosis 50 µM	1.46500*	.30940	.001	.6713	2.2587
	Dosis 10 µM	Kontrol	-1.56500*	.30940	.000	-2.3587	-.7713
		Dosis 50 µM	-.10000	.35726	.958	-1.0165	.8165
	Dosis 50 µM	Kontrol	-1.46500*	.30940	.001	-2.2587	-.6713
		Dosis 10 µM	.10000	.35726	.958	-.8165	1.0165
LSD	Kontrol	Dosis 10 µM	1.56500*	.30940	.000	.9122	2.2178
		Dosis 50 µM	1.46500*	.30940	.000	.8122	2.1178
	Dosis 10 µM	Kontrol	-1.56500*	.30940	.000	-2.2178	-.9122
		Dosis 50 µM	-.10000	.35726	.783	-.8538	.6538
	Dosis 50 µM	Kontrol	-1.46500*	.30940	.000	-2.1178	-.8122
		Dosis 10 µM	.10000	.35726	.783	-.6538	.8538

*. The mean difference is significant at the .05 level.

pD2

Homogeneous Subsets

pD2

	Perlakuan	N	Subset for alpha = .05	
			1	2
Tukey HSD[a,b]	Dosis 10 µM	5	6.7080	
	Dosis 50 µM	5	6.8080	
	Kontrol	10		8.2730
	Sig.		.950	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Multiple Comparisons

Dependent Variable: pD2

	(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Kontrol	Piperin 10 µM	1.74650*	.32993	.000	.7979	2.6951
		Piperin 50 µM	1.64650*	.32993	.000	.6979	2.5951
		Nicardipine 10 µM	1.79450*	.32993	.000	.8459	2.7431
		Nicardipine 50 µM	1.35250*	.32993	.002	.4039	2.3011
	Piperin 10 µM	Kontrol	-1.74650*	.32993	.000	-2.6951	-.7979
		Piperin 50 µM	-.10000	.41734	.999	-1.2999	1.0999
		Nicardipine 10 µM	.04800	.41734	1.000	-1.1519	1.2479
		Nicardipine 50 µM	-.39400	.41734	.878	-1.5939	.8059
	Piperin 50 µM	Kontrol	-1.64650*	.32993	.000	-2.5951	-.6979
		Piperin 10 µM	.10000	.41734	.999	-1.0999	1.2999
		Nicardipine 10 µM	.14800	.41734	.996	-1.0519	1.3479
		Nicardipine 50 µM	-.29400	.41734	.954	-1.4939	.9059
	Nicardipine 10 µM	Kontrol	-1.79450*	.32993	.000	-2.7431	-.8459
		Piperin 10 µM	-.04800	.41734	1.000	-1.2479	1.1519
		Piperin 50 µM	-.14800	.41734	.996	-1.3479	1.0519
		Nicardipine 50 µM	-.44200	.41734	.826	-1.6419	.7579
	Nicardipine 50 µM	Kontrol	-1.35250*	.32993	.002	-2.3011	-.4039
		Piperin 10 µM	.39400	.41734	.878	-.8059	1.5939
		Piperin 50 µM	.29400	.41734	.954	-.9059	1.4939
		Nicardipine 10 µM	.44200	.41734	.826	-.7579	1.6419
LSD	Kontrol	Piperin 10 µM	1.74650*	.32993	.000	1.0767	2.4163
		Piperin 50 µM	1.64650*	.32993	.000	.9767	2.3163
		Nicardipine 10 µM	1.79450*	.32993	.000	1.1247	2.4643
		Nicardipine 50 µM	1.35250*	.32993	.000	.6827	2.0223
	Piperin 10 µM	Kontrol	-1.74650*	.32993	.000	-2.4163	-1.0767
		Piperin 50 µM	-.10000	.41734	.812	-.9472	.7472
		Nicardipine 10 µM	.04800	.41734	.909	-.7992	.8952
		Nicardipine 50 µM	-.39400	.41734	.352	-1.2412	.4532
	Piperin 50 µM	Kontrol	-1.64650*	.32993	.000	-2.3163	-.9767
		Piperin 10 µM	.10000	.41734	.812	-.7472	.9472
		Nicardipine 10 µM	.14800	.41734	.725	-.6992	.9952
		Nicardipine 50 µM	-.29400	.41734	.486	-1.1412	.5532
	Nicardipine 10 µM	Kontrol	-1.79450*	.32993	.000	-2.4643	-1.1247
		Piperin 10 µM	-.04800	.41734	.909	-.8952	.7992
		Piperin 50 µM	-.14800	.41734	.725	-.9952	.6992
		Nicardipine 50 µM	-.44200	.41734	.297	-1.2892	.4052
	Nicardipine 50 µM	Kontrol	-1.35250*	.32993	.000	-2.0223	-.6827
		Piperin 10 µM	.39400	.41734	.352	-.4532	1.2412
		Piperin 50 µM	.29400	.41734	.486	-.5532	1.1412
		Nicardipine 10 µM	.44200	.41734	.297	-.4052	1.2892

*. The mean difference is significant at the .05 level.

Hasil uji LSD menunjukkan bahwa piperin dan n*icardipine* tidak berbeda signifikan.

Lampiran 7. Hasil *Molecular Docking*.

Hasil konformasi *Molecular Docking Native Ligand 1,2-Dimyristoyl-Sn-Glycero-3 Phosphocholine.*

```
Detected 4 CPUs
Reading input ... done.
Setting up the scoring function ... done.
Analyzing the binding site ... done.
Using random seed: 230896552
Performing search ... done.
Refining results ... done.

mode |   affinity | dist from best mode
     | (kcal/mol) | rmsd l.b.| rmsd u.b.
-----+------------+----------+----------
   1         -5.0      0.000      0.000
   2         -4.8      6.233      9.449
   3         -4.8      1.435      1.719
   4         -4.7      2.549      3.195
   5         -4.7      1.793      2.837
   6         -4.7      3.801      5.602
   7         -4.6      6.155      9.351
   8         -4.5      2.314      3.147
   9         -4.4      6.145      8.904
Writing output ... done.
```

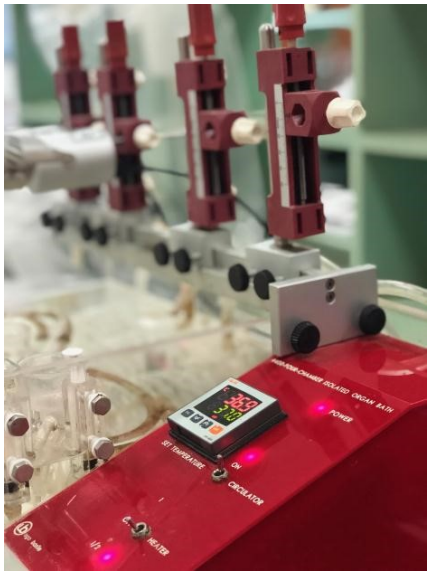
Hasil konformasi *Molecular Docking Nicardipine.*

```
Detected 4 CPUs
Reading input ... done.
Setting up the scoring function ... done.
Analyzing the binding site ... done.
Using random seed: -105160520
Performing search ... done.
Refining results ... done.

mode |   affinity | dist from best mode
     | (kcal/mol) | rmsd l.b.| rmsd u.b.
-----+------------+----------+----------
   1         -7.2      0.000      0.000
   2         -7.1      1.442      1.755
   3         -7.1      2.642      9.139
   4         -7.1      2.954      9.115
   5         -6.8      7.346      8.814
   6         -6.8      5.884      9.862
   7         -6.4      6.136      9.185
   8         -6.4      6.646     10.359
   9         -6.3      4.908      6.480
Writing output ... done.
```

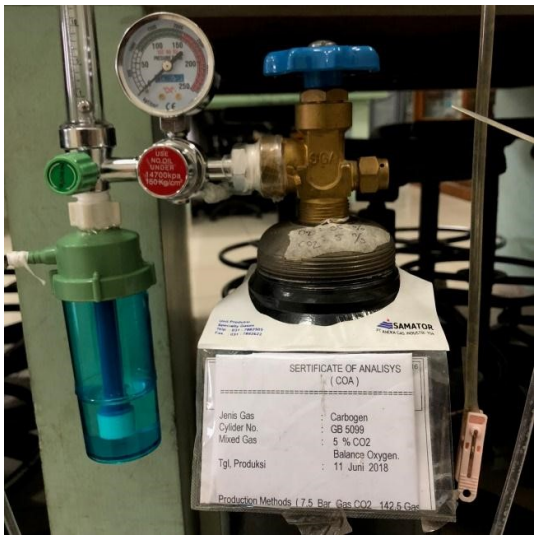
Hasil konformasi *Molecular Docking* Piperin.

```
Detected 4 CPUs
Reading input ... done.
Setting up the scoring function ... done.
Analyzing the binding site ... done.
Using random seed: -105160520
Performing search ... done.
Refining results ... done.

mode |   affinity | dist from best mode
     | (kcal/mol) | rmsd l.b.| rmsd u.b.
-----+------------+----------+----------
   1         -7.2      0.000      0.000
   2         -7.1      1.442      1.755
   3         -7.1      2.642      9.139
   4         -7.1      2.954      9.115
   5         -6.8      7.346      8.814
   6         -6.8      5.884      9.862
   7         -6.4      6.136      9.185
   8         -6.4      6.646     10.359
   9         -6.3      4.908      6.480
Writing output ... done.
```

Lampiran 8. Alat dan Bahan penelitian



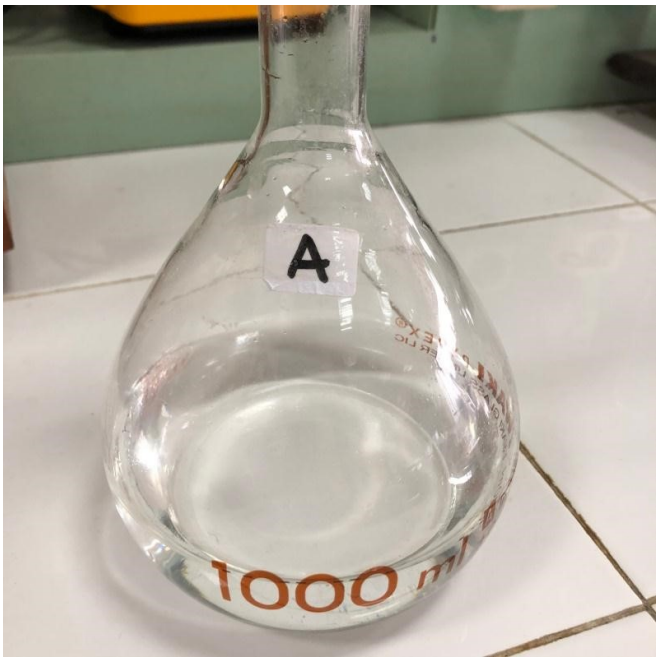
Organ Bath



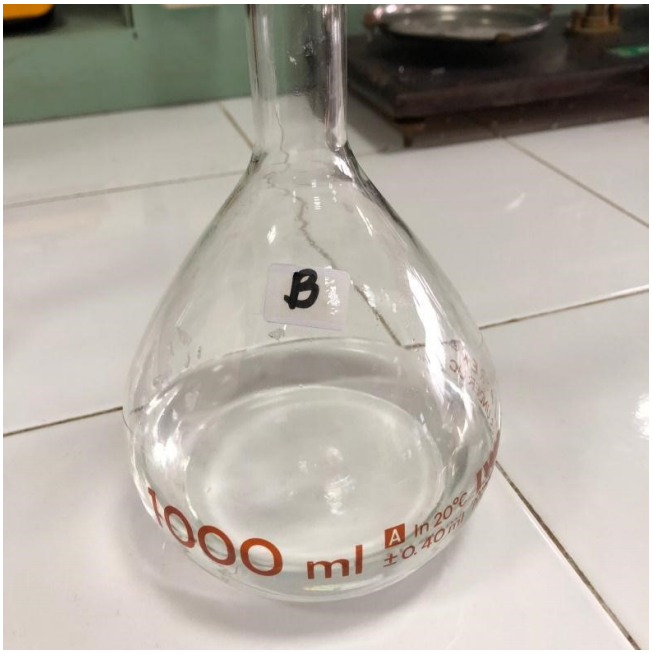
Gas Karbogen

Nicardipine Inj.

Micro pippet



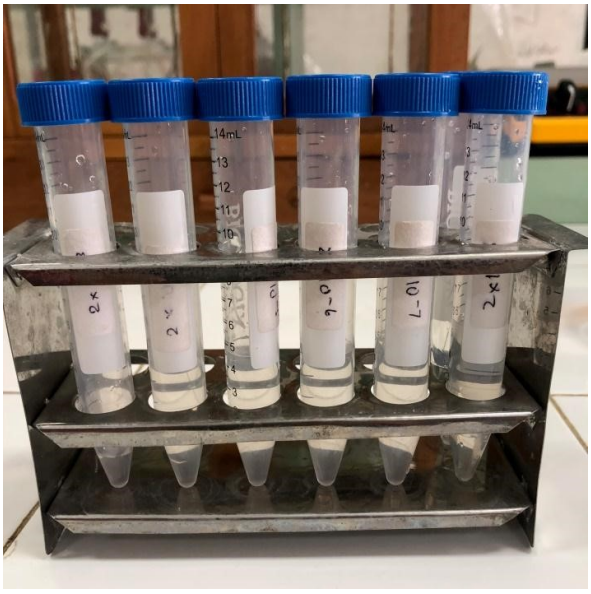
Larutan *stock* A



Larutan *stock* B

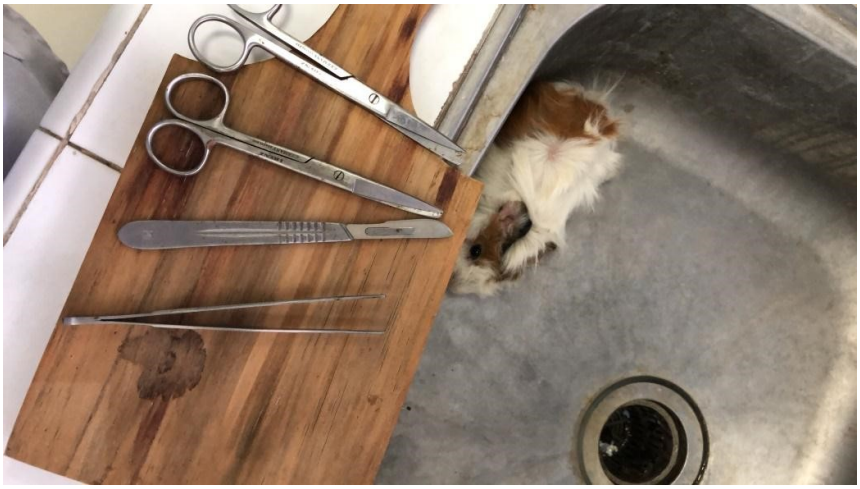
*Nicardipin*e yang sudah diencerkan

Piperine yang sudah diencerkan.

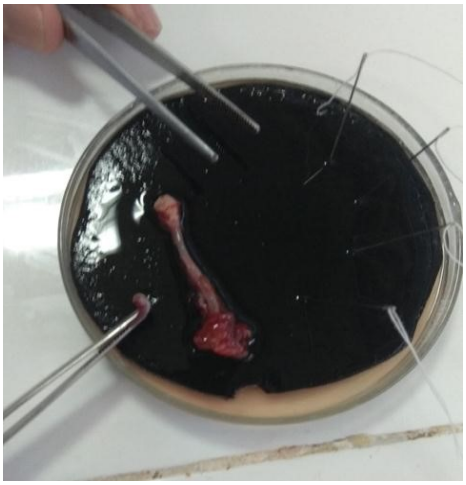


Larutan seri Ca^{2+}

Lampiran 9. Dokumentasi preparasi organ.

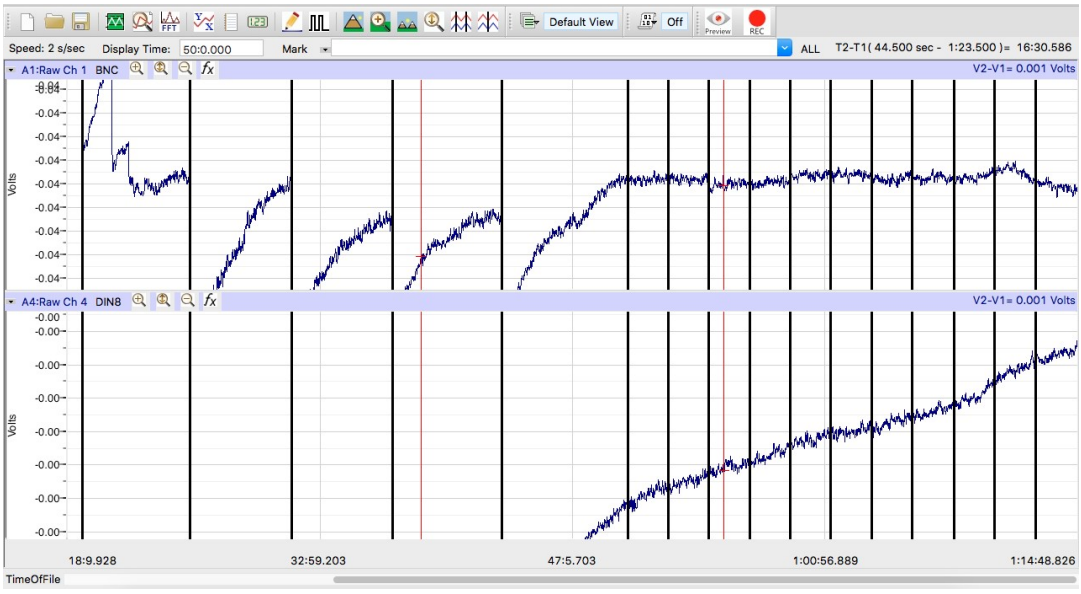


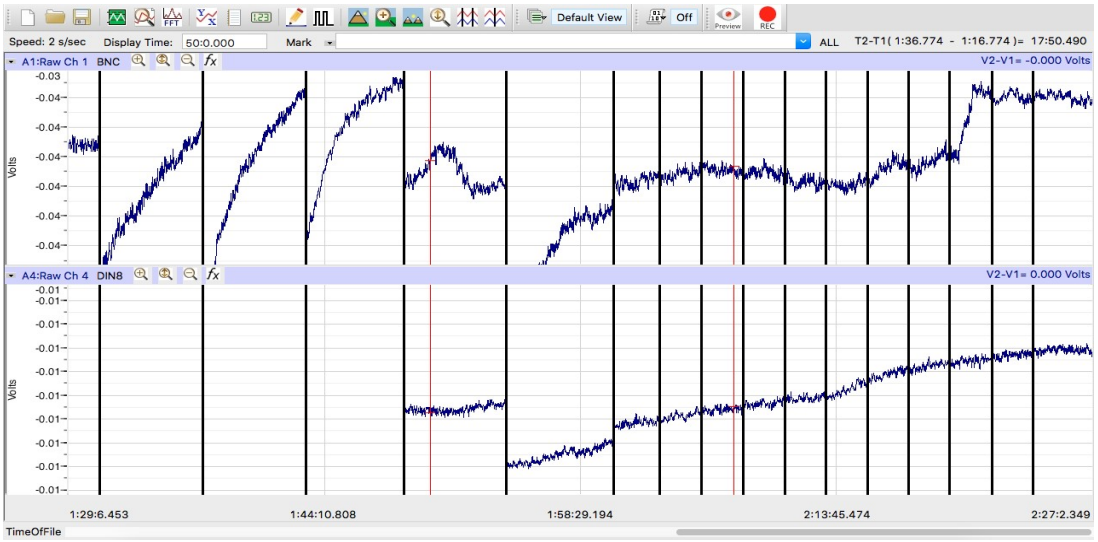
Seperangkat preparat eksekusi marmut

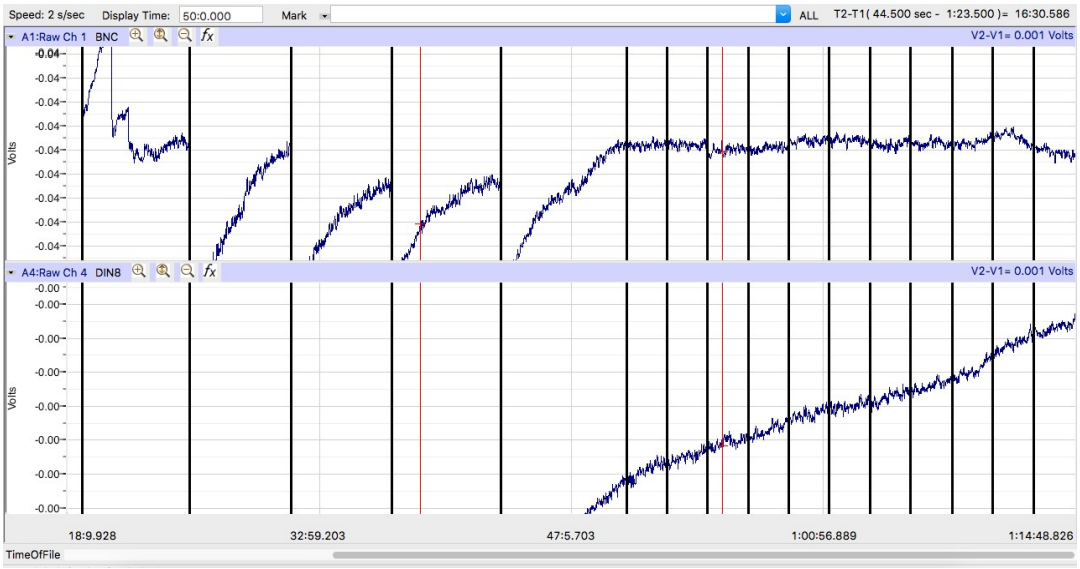


Aorta marmut terisolasi dalam *free* Ca^{2+} *buffer krebs*

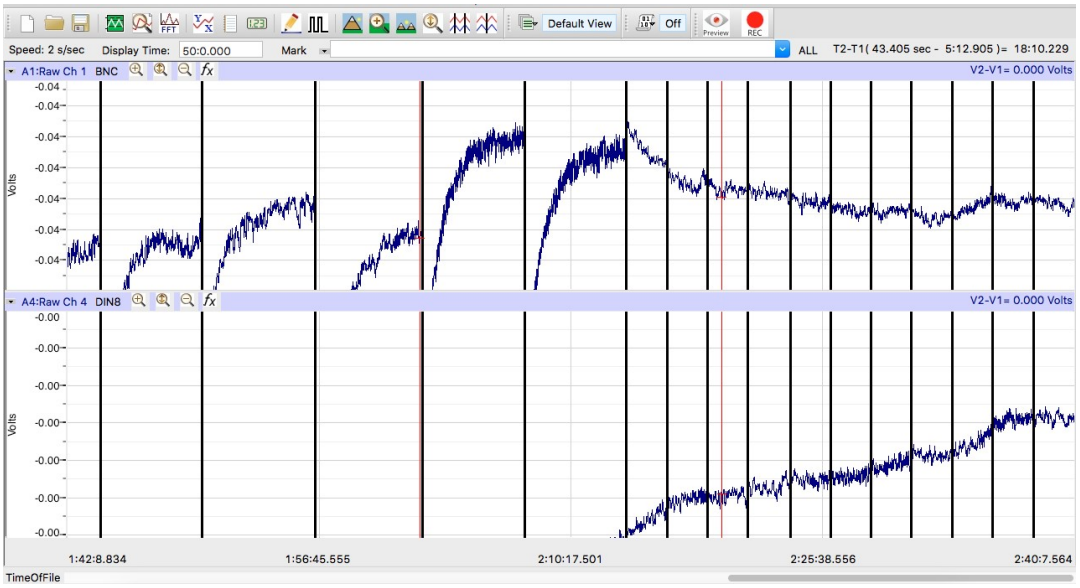
Lampiran 10. Hasil respon kontraksi otot polos aorta

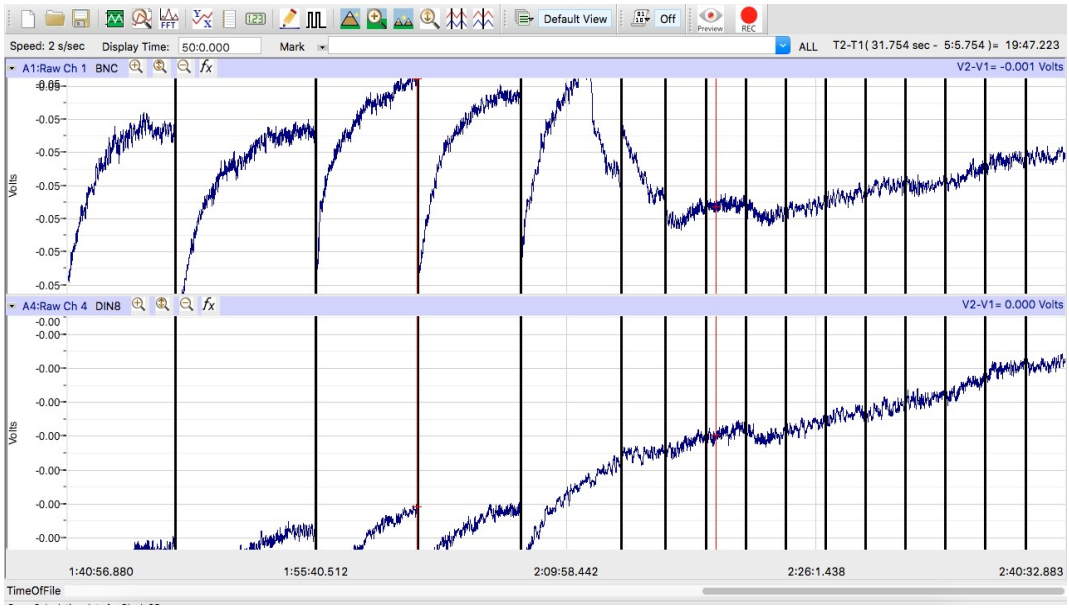


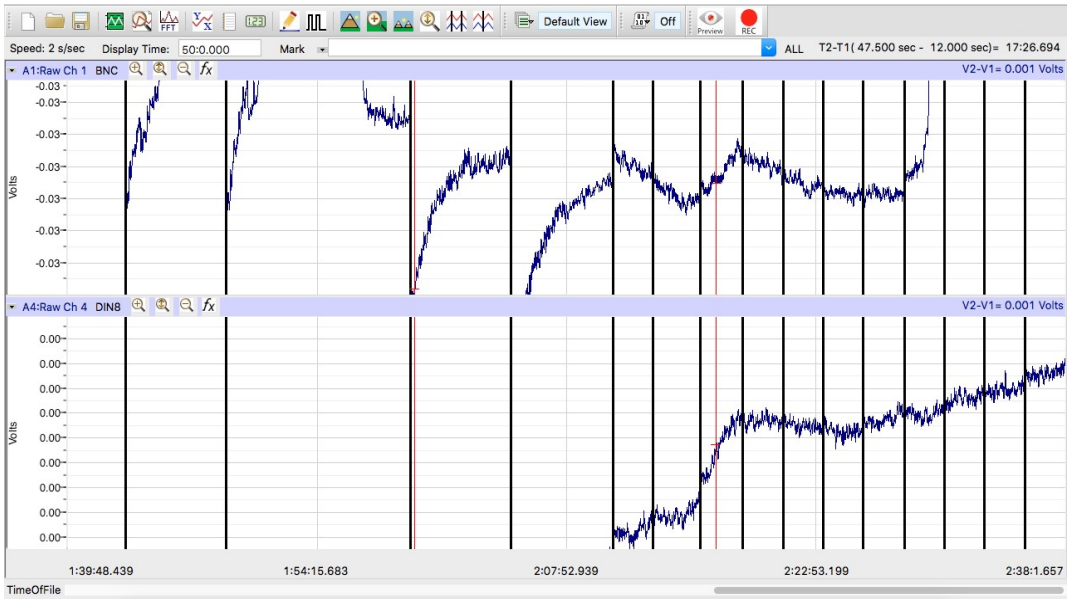


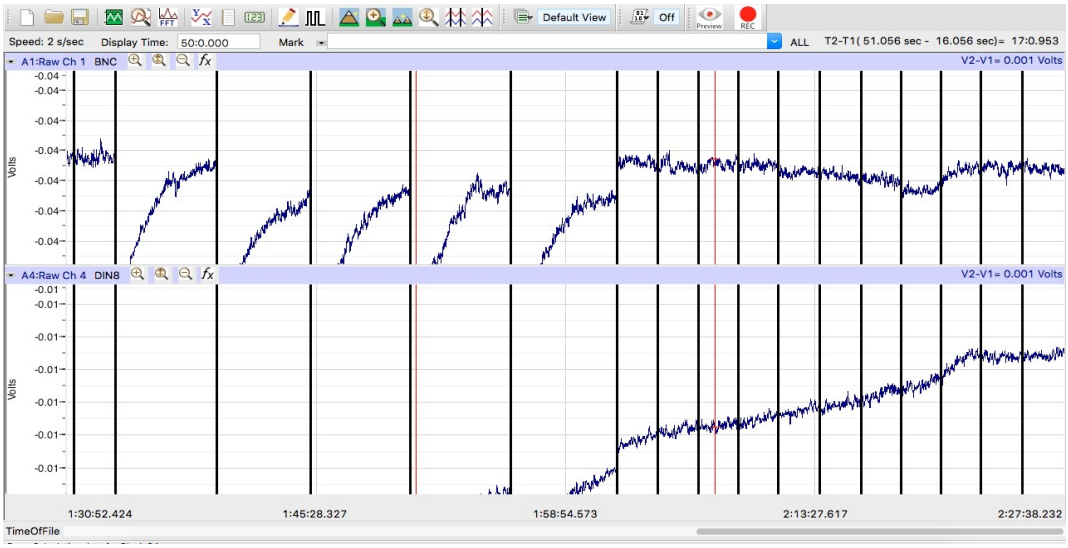


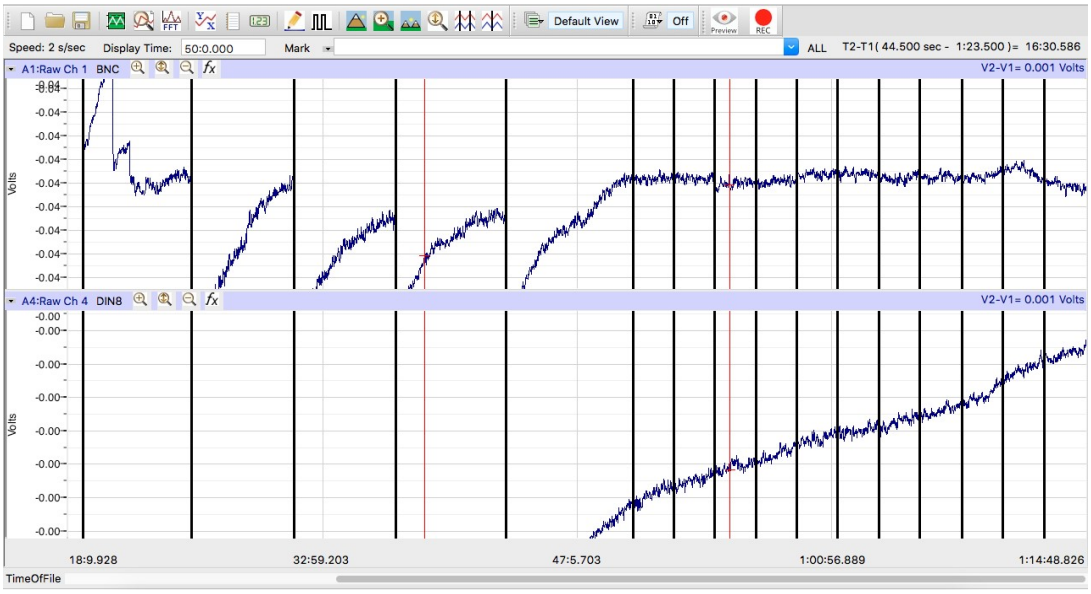
Hasil respon kontraksi yang diinduksi seri agonis Ca^{2+} dalam *software* LabScribe3.



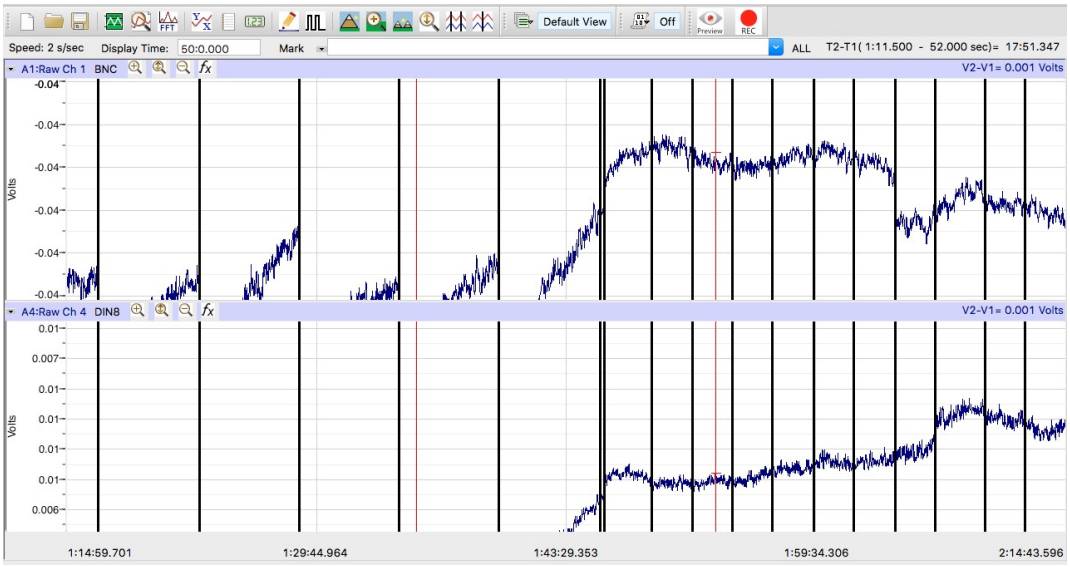

Default View
Off
Speed: 2 s/sec
Display Time: 50:0.000
Mark
ALL
T2-T1(31.754 sec - 5:5.754)= 19:47.223
A1:Raw Ch 1 BNC
V2-V1= -0.001 Volts
Volts
A4:Raw Ch 4 DIN8
V2-V1= 0.000 Volts
1:40:56.880
1:55:40.512
2:09:58.442
2:26:1.438
2:40:32.883
TimeOfFile

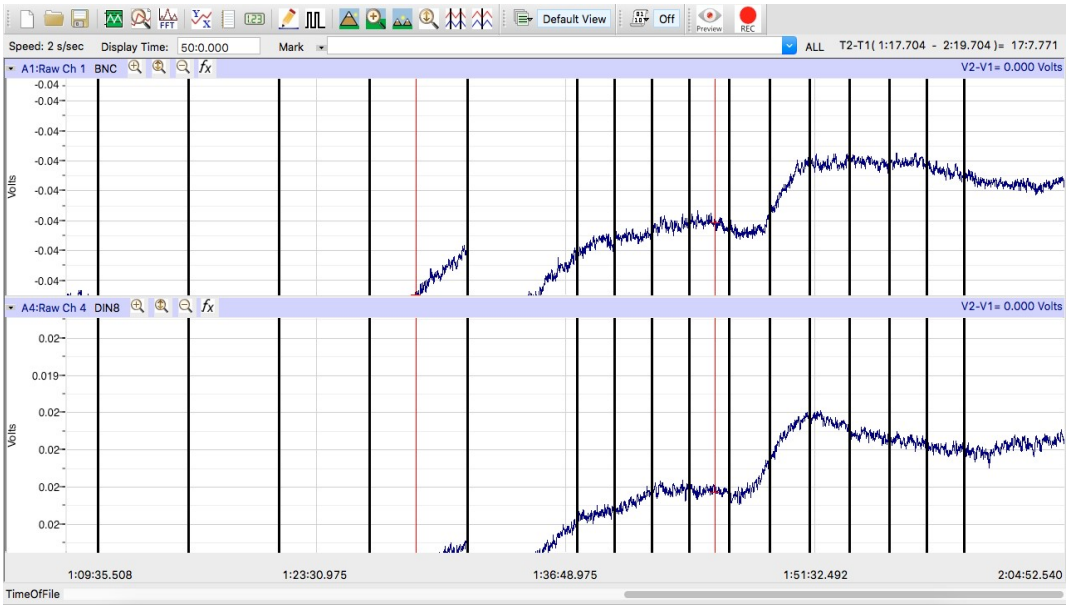

Default View
Off
Speed: 2 s/sec
Display Time: 50:0.000
Mark
ALL
T2-T1(47.500 sec - 12.000 sec)= 17:26.694
A1:Raw Ch 1 BNC
V2-V1= 0.001 Volts
Volts
A4:Raw Ch 4 DIN8
V2-V1= 0.001 Volts
1:39:48.439
1:54:15.683
2:07:52.939
2:22:53.199
2:38:1.657
TimeOfFile

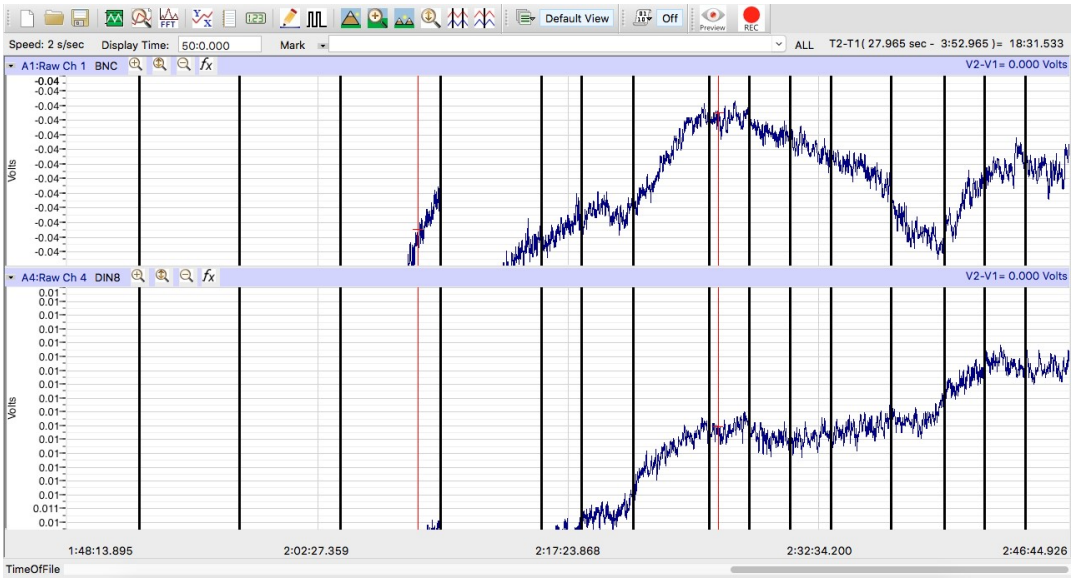


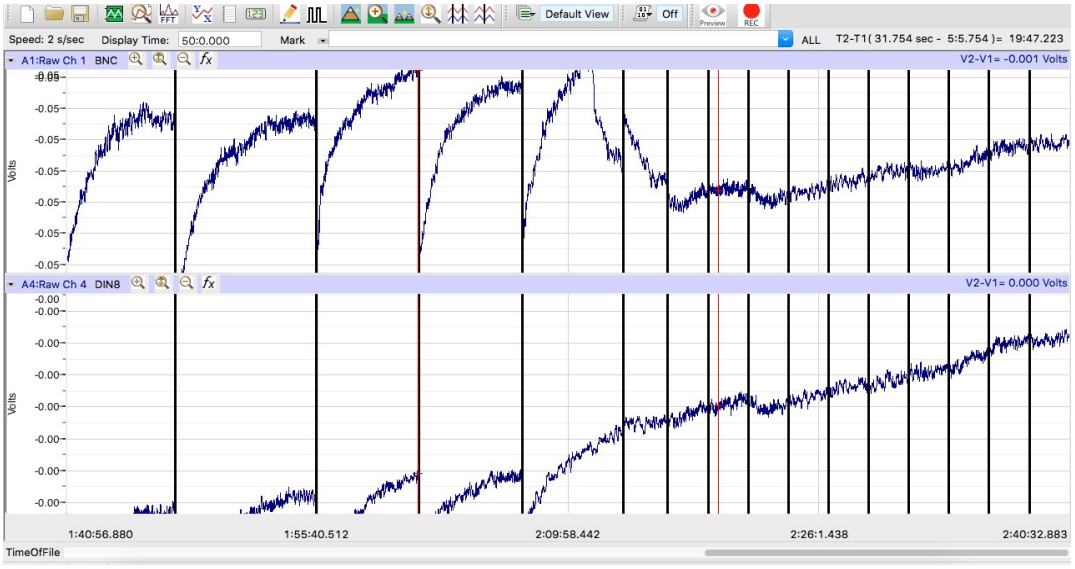


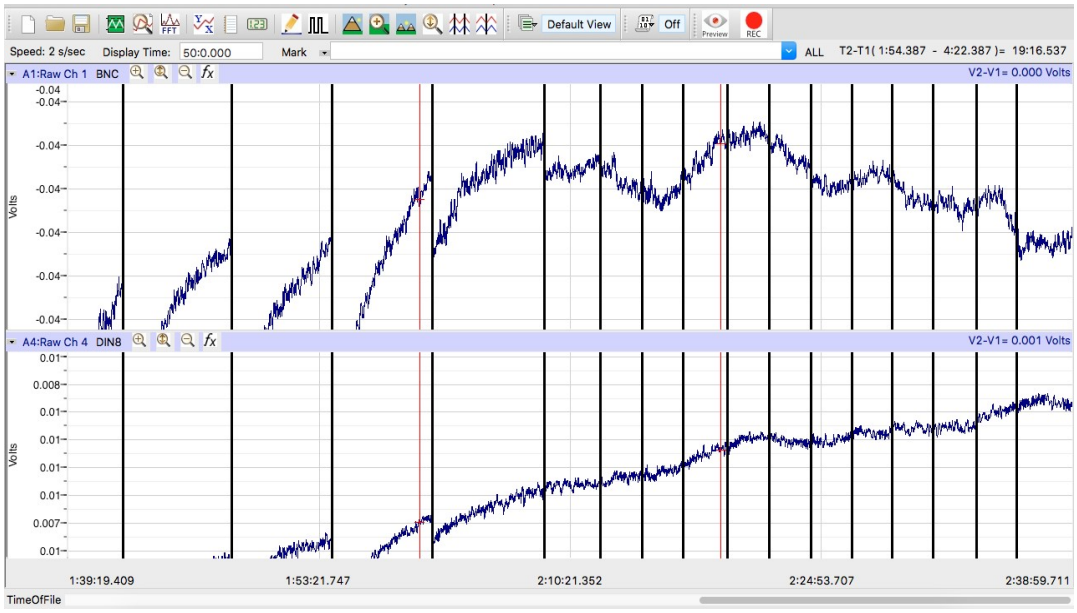
Hasil respon kontraksi yang diinduksi seri agonis Ca^{2+} terhadap piperin dalam *software* LabScribe3.


Default View
Off
Speed: 2 s/sec
Display Time: 50:0.000
Mark
ALL
T2-T1(1:11.500 - 52.000 sec)= 17:51.347
A1:Raw Ch 1 BNC
V2-V1= 0.001 Volts
-0.04
-0.04
-0.04
-0.04
-0.04
-0.04
Volts
A4:Raw Ch 4 DIN8
V2-V1= 0.001 Volts
0.01
0.007
0.01
0.01
0.01
0.01
0.006
Volts
1:14:59.701
1:29:44.964
1:43:29.353
1:59:34.306
2:14:43.596


Default View
Off
Speed: 2 s/sec
Display Time: 50:0.000
Mark
ALL
T2-T1(1:17.704 - 2:19.704)= 17:7.771
A1:Raw Ch 1 BNC
V2-V1= 0.000 Volts
-0.04
-0.04
-0.04
-0.04
-0.04
-0.04
-0.04
-0.04
Volts
A4:Raw Ch 4 DIN8
V2-V1= 0.000 Volts
0.02
0.019
0.02
0.02
0.02
0.02
Volts
1:09:35.508
1:23:30.975
1:36:48.975
1:51:32.492
2:04:52.540
TimeOfFile


Default View
Off
Speed: 2 s/sec
Display Time: 50:0.000
Mark
ALL
T2-T1(27.965 sec - 3:52.965)= 18:31.533
A1:Raw Ch 1 BNC
V2-V1= 0.000 Volts
Volts
A4:Raw Ch 4 DIN8
V2-V1= 0.000 Volts
1:48:13.895
2:02:27.359
2:17:23.868
2:32:34.200
2:46:44.926
TimeOfFile


Default View
Off
Speed: 2 s/sec
Display Time: 50:0.000
Mark
ALL
T2-T1(31.754 sec - 5:5.754)= 19:47.223
A1:Raw Ch 1 BNC
V2-V1= -0.001 Volts
Volts
A4:Raw Ch 4 DIN8
V2-V1= 0.000 Volts
1:40:56.880
1:55:40.512
2:09:58.442
2:26:1.438
2:40:32.883
TimeOfFile



Hasil respon kontraksi yang diinduksi seri agonis Ca^{2+} terhadap *nicardipine* dalam *software* LabScribe3.

Lampiran 11. Ethical Clearance

UMY UNIVERSITAS MUHAMMADIYAH YOGYAKARTA
Unggul & Islami
FAKULTAS KEDOKTERAN DAN ILMU KESEHATAN

Nomor : 120/EP-FKIK-UMY/II/2018

KETERANGAN LOLOS UJI ETIK
ETHICAL APPROVAL

Komite Etik Penelitian Fakultas Kedokteran dan Ilmu Kesehatan Universitas Muhammadiyah Yogyakarta dalam upaya melindungi hak asasi dan kesejahteraan responden/subyek penelitian, telah mengkaji dengan teliti protokol berjudul :

The Ethics Committee of the Faculty of Medicine and Health Sciences, University of Muhammadiyah Yogyakarta, with regards of the protection of human rights and welfare in research, has carefully reviewed the research protocol entitled :

"Pengaruh Piperin (Senyawa Aktif *Piper Ningrum Linn.*)
pada Kanal Ca^{2+} Otot Polos Aorta Marmut Terisolasi Studi *In Vitro* dan *In Silico*"

Peneliti Utama / *Principal Investigator* : Ananta Marabet

Nama Institusi / *Name of the Institution* : Program Studi Farmasi FKIK UMY

Negara / *Country* : Indonesia

Dan telah menyetujui protokol tersebut diatas.
And approved the above-mentioned protocol.

Yogyakarta, 28 Februari 2018
Ketua
Chairperson

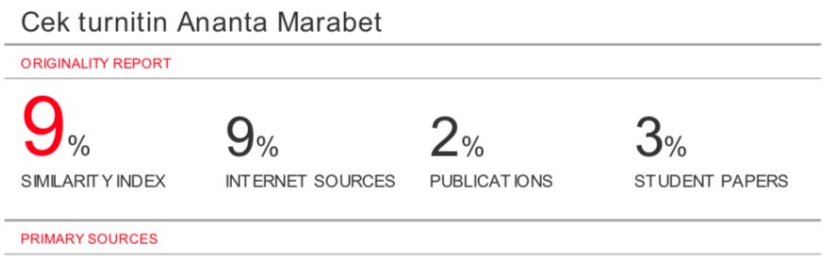
Dr. dr. Titiek Hidayati, M.Kes., FISPH., FISCM.

*Peneliti Berkewajiban :
1. Menjaga kerahasiaan identitas subyek penelitian
2. Memberitahukan status penelitian apabila :
   a. Setelah masa berlakunya keterangan lolos uji etik (1 tahun sejak tanggal terbit), penelitian masih belum selesai, dalam hal ini *ethical clearance* harus diperpanjang
   b. Penelitian berhenti di tengah jalan
3. Melaporkan kejadian serius yang tidak diinginkan (*serious adverse events*)
4. Peneliti tidak boleh melakukan tindakan apapun pada responden/subyek sebelum penelitian lolos uji etik

ADDRESS
Kampus Terpadu UMY Gd. Siti Walidah LT.3
Jl. Brawijaya (Lingkar Selatan)
Tamantirto • Kasihan • Bantul
D.I.Yogyakarta 55183

CONTACT
Phone : (0274) 387656 ext. 213
Fax : (0274) 387658
Email : fkik@umy.ac.id
www.fkik.umy.ac.id

Lampiran 12. Hasil Turnitin



Cek turnitin Ananta Marabet

ORIGINALITY REPORT

9%	9%	2%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES