

LAMPIRAN

Lampiran 1. Surat Keterangan Determinasi Tanaman



Yogyakarta, 10 Februari 2025

No. : 174/LH/02/25
Hal : Hasil Determinasi

Kepada Yth.
Melinda Cindyani Likondo
NIM : 211FF03121
Fakultas Farmasi Universitas Bhakti Kencana Bandung

Dengan hormat,
Bersama ini disampaikan hasil determinasi tumbuhan sesuai permintaan sebagai berikut:

No.	Nama jenis	Nama Lokal
1.	<i>Pluchea indica</i> (L.) Less	Beluntas

Kunci Determinasi:

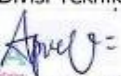
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1a_2b_3b_4b_5a_6b_8b_9b_10a___*Pluchea indica* L. Less.

Klasifikasi :

Kingdom : Plantae
Subkingdom : Tracheobionta
Super Divisi : Spermatophyta
Divisi : Magnoliophyta
Classis : Magnoliopsida
Sub Classis : Asteridae
Ordo : Asterales
Famili : Asteraceae
Genus : *Pluchea*
Species : *Pluchea indica* (L.) Less

Demikian semoga berguna bagi saudara.

Divisi Teknik Galenika


Apriyani Susilowati, S.Si.

Lampiran 2. Sertifikat Bakteri *Streptococcus pyogenes*, *Staphylococcus Epidermidis* dan *Staphylococcus Aureus*



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Signed



Dawn Baker
QA Manager
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Certificate of Analysis - Certified Reference Material 

Thermo Scientific™ Trademark™
Product Number: RA407000
Product Name: *S. pyogenes* ATCC 19615 PK/S
Lot Number: 168891
Usage Decision: Accepted (OK)
Expiration Date: 2026-03-19

This product has been manufactured, processed and packaged in accordance with Quality Systems Regulation, 21 CFR Part 820. The results were derived from a representative sample of the batch and were obtained at the time of release. Refer to the enclosed product insert for instructions, intended use, hazard/safety requirements, and storage conditions.

Product Char Results

Purity	Demonstrates pure growth on applicable media
Viability	Recovered at acceptable level within test period
Passage	3 (Current preserved state)




Thermo Fisher Scientific is accredited by A2LA as a registered reference material producer certificate number 6559.01 in accordance with ISO 17034[1].

[1] ISO 17034 First Edition 2016-11-01 General requirements for the competence of reference material producers

Version 1.0

Microbiological testing	Results	Specification
>95% Identification on MicroSEQ	100	95 - 100
Microscopic Features	Pass	
>85% Identification on Rapid STR	Pass	

These tests are performed in accordance with ISO 17025 guidelines.
Thermo Fisher Scientific has determined each loop of this reference material to be sufficiently homogeneous for its intended use.
Individual products are traceable to a recognized culture collection.
Although the Vittek(TM) panel uses many conventional tests, the unique environment of the card, combined with the short incubation period, may produce results that differ from published results obtained by other methods.



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Signed



Dawn Baker
QA Manager
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Certificate of Analysis - Certified Reference Material 

Thermo Scientific™ Trademark™
Product Number: RA406500
Product Name: *S. epidermidis* ATCC 12228 PK/S
Lot Number: 157400
Usage Decision: Accepted (OK)
Expiration Date: 2026-03-18

This product has been manufactured, processed and packaged in accordance with Quality Systems Regulation, 21 CFR Part 820. The results were derived from a representative sample of the batch and were obtained at the time of release. Refer to the enclosed product insert for instructions, intended use, hazard/safety requirements, and storage conditions.

Product Char Results

Purity	Demonstrates pure growth on applicable media
Viability	Recovered at acceptable level within test period
Passage	3 (Current preserved state)




Thermo Fisher Scientific is accredited by A2LA as a registered reference material producer certificate number 6559.01 in accordance with ISO 17034[1].

[1] ISO 17034 First Edition 2016-11-01 General requirements for the competence of reference material producers

Version 1.0

Microbiological testing	Results	Specification
>85% Identification on Vittek 2C GP	100	85 - 100
>95% Identification on MicroSEQ	100	95 - 100
Microscopic Features	Pass	

These tests are performed in accordance with ISO 17025 guidelines.
Thermo Fisher Scientific has determined each loop of this reference material to be sufficiently homogeneous for its intended use.
Individual products are traceable to a recognized culture collection.
Although the Vittek(TM) panel uses many conventional tests, the unique environment of the card, combined with the short incubation period, may produce results that differ from published results obtained by other methods.

Lampiran 2 (Lanjutan)



LABORATORIUM MIKROBIOLOGI-BIOTEKNOLOGI FARMASI
FAKULTAS FARMASI
UNIVERSITAS PADJADJARAN
 Gedung Laboratorium 2, Lantai 2 Fakultas Farmasi UNPAD
 Jl. Raya Bandung - Sumedang KM 21, Jatinangor-Sumedang 45363



SERTIFIKAT UJI BAKTERI

STAPHYLOCOCCUS AUREUS Atcc.29213



REFERENCE

DATE

COMMENT

GOOD IDENTIFICATION			
Strip	API STAPH V5.0		
Profile	6 7 3 ****		
Note			
Significant taxa	% ID	T	Tests against
Staphylococcus aureus	97.7	1.0	

Mengetahui,
 Kepala Laboratorium Mikrobiologi-
 Bioteknologi Farmasi,

 Dr. Tena Rostinawati, M.Si., Apt.
 NIP. 197301032006042001

Lampiran 3. Sertifikat Pelarut DMSO



Certificate of Analysis

1.02952.2500 Dimethyl sulfoxide for analysis EMSURE® ACS
Batch K55549852

	Spec. Values		Batch Values	
Purity (GC)	≥ 99.9	%	99.9	%
Identity (IR)	conforms		conforms	
Appearance	clear		clear	
Color	≤ 10	Hazen	7	Hazen
Titration acid	≤ 0.0002	meq/g	0.0001	meq/g
Density (d 20 °C/20 °C)	1.101 - 1.103		1.102	
Refractive index (n 20/D)	1.478 - 1.481		1.480	
Melting point	≥ 18.0	°C	18.2	°C
Heavy metals (as Pb)	≤ 0.0001	%	≤ 0.0001	%
Fe (Iron)	≤ 0.0001	%	≤ 0.0001	%
Related substances (GC)	conforms		conforms	
Readily carbonizable substances	conforms		conforms	
Evaporation residue	≤ 0.001	%	< 0.001	%
Water	≤ 0.1	%	< 0.1	%

Date of release (DD.MM.YYYY) 20.10.2023
Minimum shelf life (DD.MM.YYYY) 31.10.2026

Jeannette David
Responsible laboratory manager quality control

This document has been produced electronically and is valid without a signature.

Merck KGaA
Corporation with General Partners
Frankfurter Straße 250
64293 Darmstadt, Germany

The life science business of Merck KGaA, Darmstadt,
Germany operates as MilliporeSigma in the U.S. and
Canada

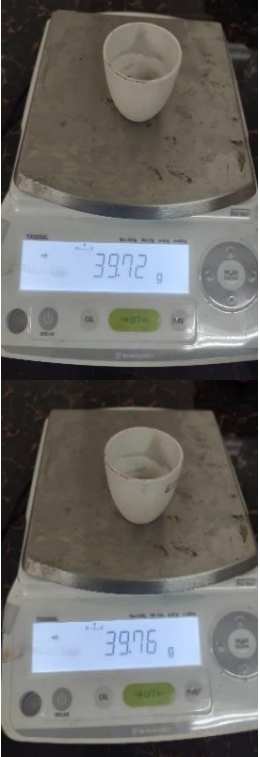
Page 1 of 1

SALSA Version 1348296/990001056513/ Date: 20.10.2023

Lampiran 4. Simplisia dan Ekstrak Daun Beluntas

 Penjemuran daun segar beluntas	 Simplisia
 Serbuk simplisia	 Ekstrak kental beluntas
Perhitungan : $\text{Rendeman ekstrak (\%)} = \frac{\text{Bobot ekstrak kental (g)}}{\text{Bobot serbuk simplisia (g)}} \times 100\%$ $\text{Rendeman ekstrak (\%)} = \frac{69,3 \text{ gram}}{529 \text{ gram}} \times 100\%$ $= 13,100\% \text{ (memenuhi syarat } > 10\%)$	

Lampiran 5. Hasil Karakterisasi Simplisia

Karakterisasi	Gambar	Perhitungan Hasil
Susut pengeringan		3,106 %
Kadar abu total		Berat simplisia = 2 gram krus kosong = 39,72 gram Krus + abu = 39,76 gram Rumus = $\frac{(\text{Bobot krus} + \text{abu}) - (\text{Bobot krus kosong})}{\text{Bobot sampel}} \times 100\%$ $= \frac{39,76 \text{ gram} - 39,72 \text{ gram}}{2 \text{ gram}} \times 100\%$ $= 2\%$

Kadar abu tidak larut asam	 	Berat simplisia = 2 g krus kosong = 39,72 g Krus + abu = 39,73 g Rumus = $\frac{(\text{Bobot krus} + \text{abu}) - (\text{Bobot krus kosong})}{\text{Bobot sampel}} \times 100\%$ $= \frac{39,76 \text{ gram} - 39,72 \text{ gram}}{2 \text{ gram}} \times 100\%$ $= 0,5\%$
Kadar sari larut air	 	Berat simplisia = 5 gram Volume pelarut = 100 mL / Volume filtrat = 20 mL = 5 mL Cawan kosong = 33,62 gram Cawan isi = 33,73 gram Rumus = $\frac{\text{Cawan isi} - \text{Cawan kosong}}{\text{Berat simplisia}} \times 5 \times 100\%$ $= \frac{33,73 \text{ gram} - 33,62 \text{ gram}}{5 \text{ gram}} \times 5 \times 100\%$ $= 11\%$

Kadar sari larut
etanol



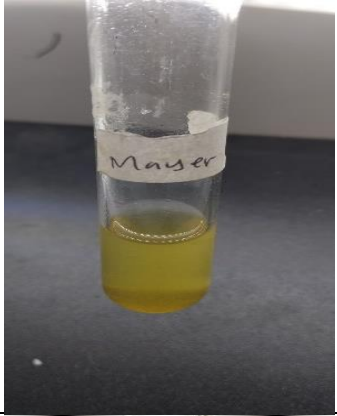
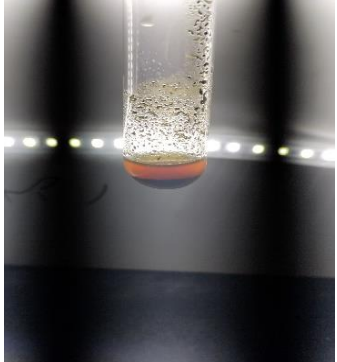
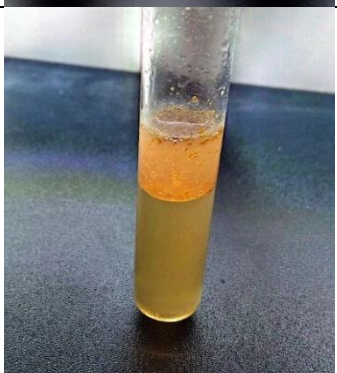
Berat simplisia = 5 gram
 Volume pelarut = 100 mL /
 Volume filtrat = 20 mL
 = 5 mL
 Cawan kosong = 52,29 gram
 Cawan isi = 52,45 gram
 Rumus =

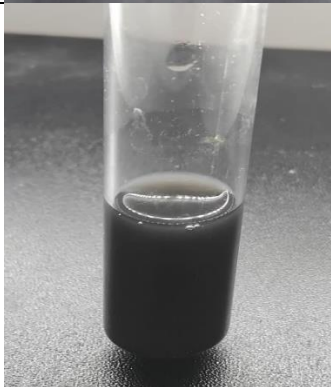
$$\frac{\text{Cawan isi} - \text{Cawan kosong}}{\text{Berat simplisia}} \times 5 \times 100\%$$

$$= \frac{52,45 \text{ gram} - 52,29 \text{ gram}}{5 \text{ gram}} \times 5 \times 100\%$$

$$= 16\%$$

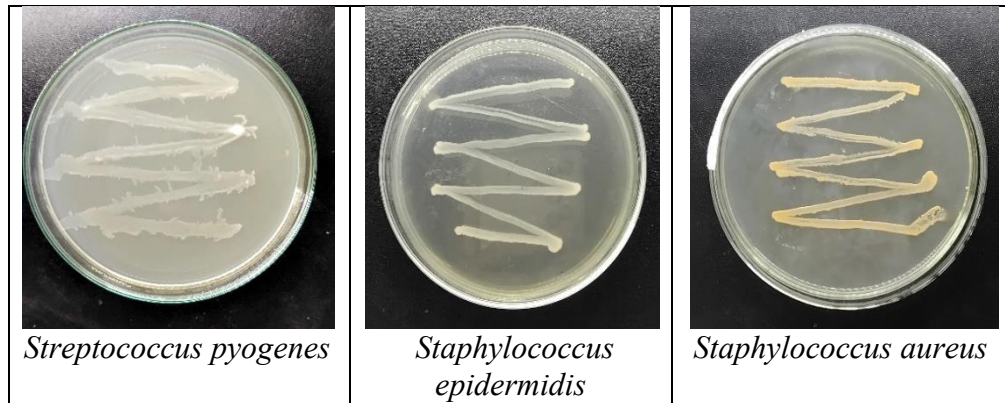
Lampiran 6. Hasil Penapisan Fitokimia

Pengujian	Reagen	Reaksi	Hasil		Gambar
			+	-	
Alkaloid	Wagner	Tidak terbentuk endapan coklat	-		
	Mayer	Terbentuk endapan kuning	+		
	Dragendorff	Terbentuk endapan merah jingga	+		
Flavonoid	Serbuk Mg + HCl pekat + amil alkohol	Terbentuk warna kuning pada lapisan amil alkohol	+		

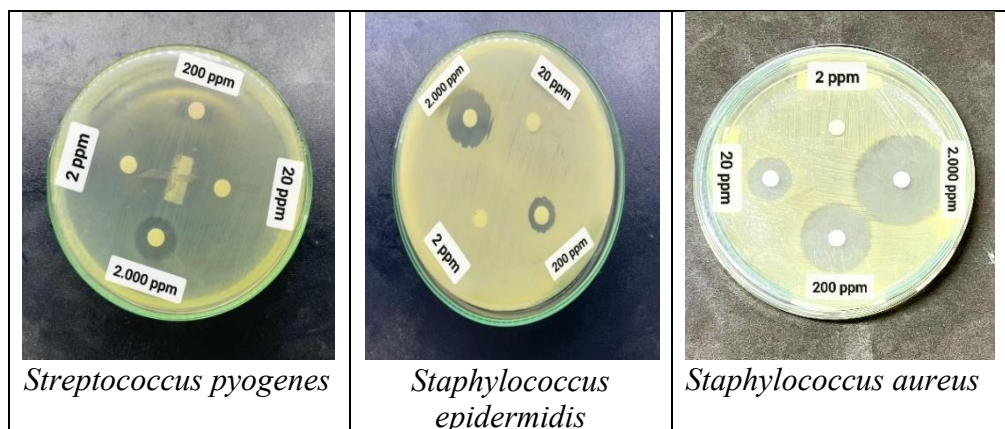
Saponin	HCl 2N	Terbentuk busa	+	
Tanin	FeCl ₃ 1%	Terbentuk warna hijau gelap	+	
Kuinon	NaOH 1N	Terbentuk warna merah	+	
Steroid/ Triterpenoid	Lieberman burchad	• Triterpenoid terbentuk cincin kecoklatan • Steroid tidak terbentuk cincin biru kehijaun	+ -	

Lampiran 7. Hasil Peremajaan Bakteri, Optimasi Antibiotik, Optimasi DMSO

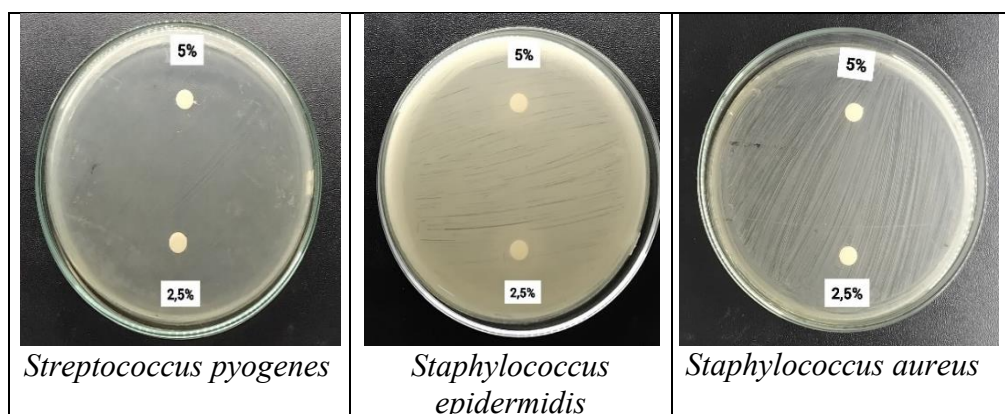
➤ Peremajaan Bakteri



➤ Optimasi Antibiotik Ciprofloxacin



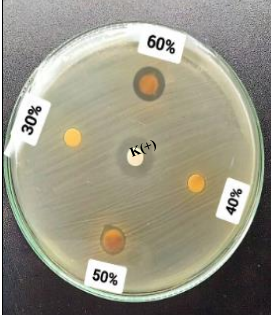
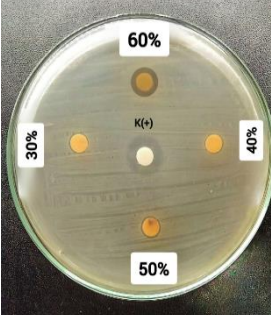
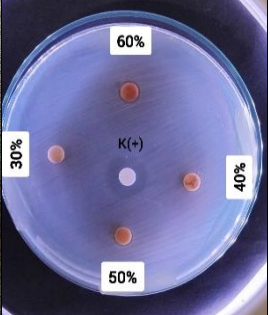
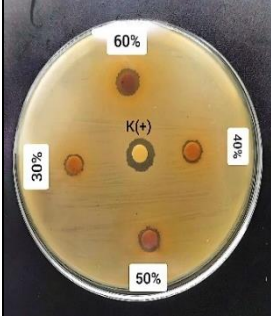
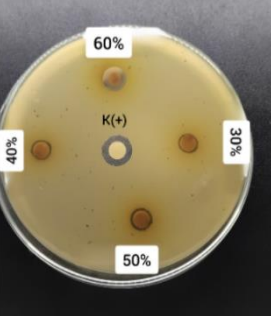
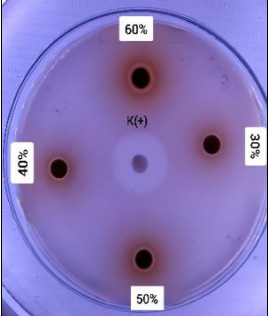
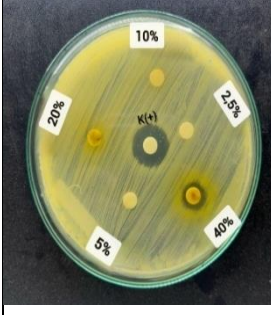
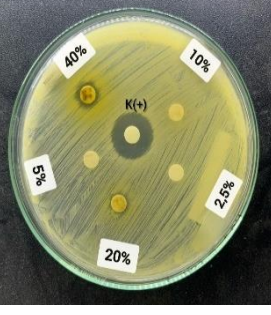
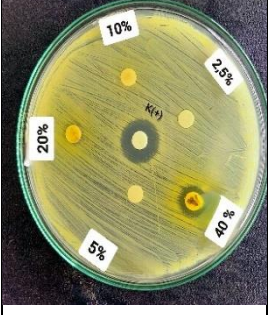
➤ Optimasi DMSO



Lampiran 8. Perhitungan Pengenceran Konsentrasi Antibiotik dan Ekstrak uji

Konsentrasi Antibiotik	Konsentrasi Ekstrak
Antibiotik ciprofloxacin infus 200 mg/100 ml Pelarut : Aquadest Steril ➤ Konsentrasi 2.000 ppm $= 2 \text{ mg/mL} = 2 \times 1000$ $= 2000 \text{ } \mu\text{g/mL}$ $= 2000 \text{ ppm}$ ➤ Konsentrasi 1.000 ppm $V_1 \times N_1 = V_2 \times N_2$ $V_1 \times 2.000 \text{ ppm} = 10 \text{ mL} \times 1000 \text{ ppm}$ $V_1 = \frac{10.000}{2.000} = 5 \text{ mL}$ ➤ Konsentrasi 200 $V_1 \times N_1 = V_2 \times N_2$ $V_1 \times 1000 \text{ ppm} = 10 \text{ mL} \times 200 \text{ ppm}$ $V_1 = \frac{2000}{1.000} = 2 \text{ mL}$ ➤ Konsentrasi 20 ppm $V_1 \times N_1 = V_2 \times N_2$ $V_1 \times 200 \text{ ppm} = 10 \text{ mL} \times 20 \text{ ppm}$ $V_1 = \frac{200}{200} = 1 \text{ mL}$ ➤ Konsentrasi 2 ppm $V_1 \times N_1 = V_2 \times N_2$ $V_1 \times 20 \text{ ppm} = 10 \text{ mL} \times 2 \text{ ppm}$ $V_1 = \frac{20}{20} = 1 \text{ mL}$	Larutan induk = 1.000.000 ppm (10 gram ekstrak dilarutkan dalam 10 mL DMSO 5%) Pelarut : DMSO 5% ➤ Konsentrasi 600.000 ppm $V_1 \times N_1 = V_2 \times N_2$ $V_1 \times 1.000.000 \text{ ppm} = 10 \text{ mL} \times 600.000 \text{ ppm}$ $V_1 = \frac{6.000.000}{1.000.000} = 6 \text{ mL}$ ➤ Konsentrasi 500.000 ppm $V_1 \times N_1 = V_2 \times N_2$ $V_1 \times 600.000 \text{ ppm} = 10 \text{ mL} \times 500.000 \text{ ppm}$ $V_1 = \frac{5.000.000}{600.000} = 8,3 \text{ mL}$ ➤ Konsentrasi 400.000 ppm $V_1 \times N_1 = V_2 \times N_2$ $V_1 \times 500.000 \text{ ppm} = 10 \text{ mL} \times 400.000 \text{ ppm}$ $V_1 = \frac{4.000.000}{500.000} = 8 \text{ mL}$ ➤ Konsentrasi 300.000 ppm $V_1 \times N_1 = V_2 \times N_2$ $V_1 \times 400.000 \text{ ppm} = 10 \text{ mL} \times 300.000 \text{ ppm}$ $V_1 = \frac{3.000.000}{400.000} = 7,5 \text{ mL}$
	

Lampiran 9. Hasil Uji Aktivitas Antibakteri Metode Cakram Kertas

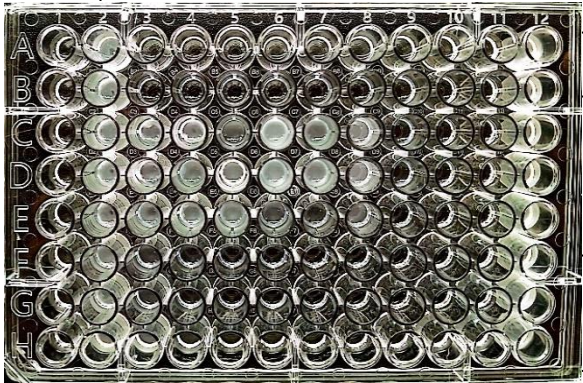
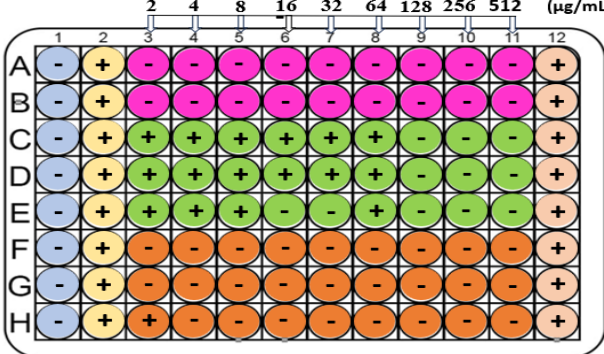
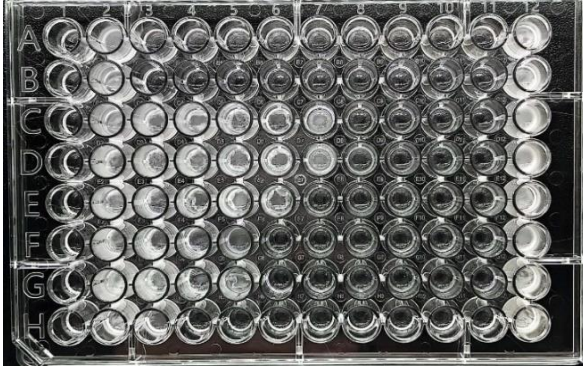
Bakteri uji	Pengujian 1	Pengujian 2	Pengujian 3
<i>Streptococcus pyogenes</i>			
<i>Staphylococcus epidermidis</i>			
<i>Staphylococcus aureus</i>			

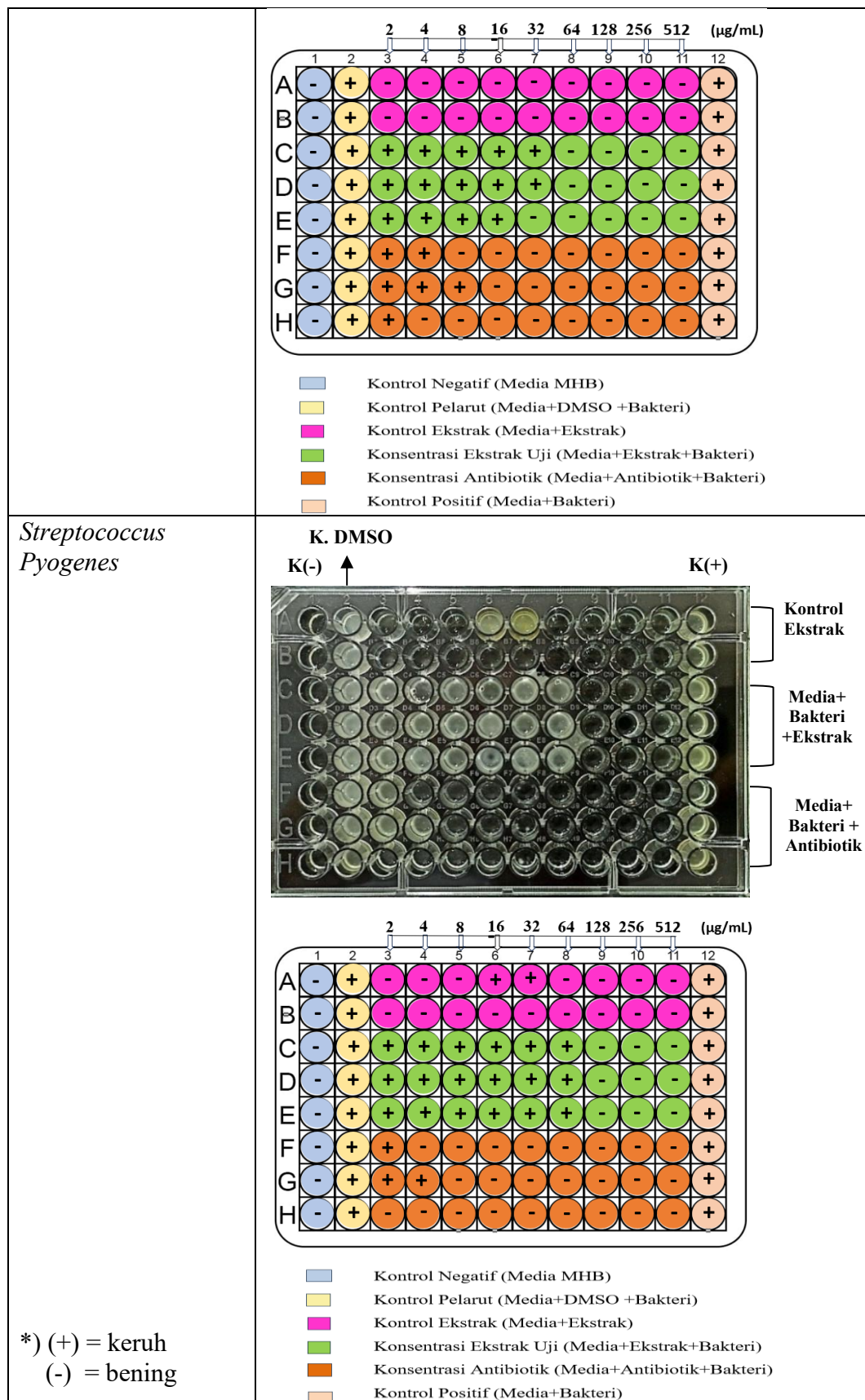
Lampiran 9 (lanjutan)

Bakteri uji	Konsentrasi (µg/mL)	Diameter zona hambat (mm)			Rata-rata (mm)
		1	2	3	
<i>Staphylococcus aureus</i>	400.000	11	9	11	10,3
	200.000	7	7	7	7,3
	100.000	6	6	7	7
	50.000	6,5	6,5	7	6,8
	25.000	6,5	6,2	6	6,5
	Ciprofloxacin 20	15	16	15	15,3
<i>Staphylococcus epidermidis</i>	600.000	10	12,5	11	11
	500.000	9	9	10	9,3
	400.000	8	8	9	8,3
	300.000	7,6	8	8	7,8
	Ciprofloxacin 200	14	13	20	15,6
<i>Staphylococcus pyogenes</i>	600.000	12	11	9	10,6
	500.000	9	8	8	8,3
	400.000	7	7	7	7
	300.000	7	7	7	7
	Ciprofloxacin 2000	15	14	15	14,6

Lampiran 10. Uji KHM dan KBM

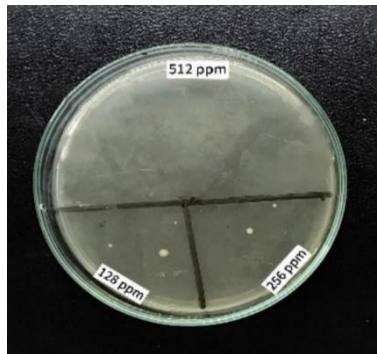
➤ Konsentrasi Hambat Minimum Metode Mikrodilusi

Bakteri Uji	Konsentrasi hambat minimum
<i>Staphylococcus Aureus</i>	K. DMSO K(-) ↑ K(+)  Kontrol Ekstrak Media+ Bakteri +Ekstrak Media+ Bakteri + Antibiotik  2 4 8 16 32 64 128 256 512 (µg/mL) A B C D E F G H 1 2 3 4 5 6 7 8 9 10 11 12  Kontrol Negatif (Media MHB)  Kontrol Pelarut (Media+DMSO +Bakteri)  Kontrol Ekstrak (Media+Ekstrak)  Konsentrasi Ekstrak Uji (Media+Ekstrak+Bakteri)  Konsentrasi Antibiotik (Media+Antibiotik+Bakteri)  Kontrol Positif (Media+Bakteri)
<i>Staphylococcus Epidermidis</i>	K. DMSO K(-) ↑ K(+)  Kontrol Ekstrak Media+ Bakteri +Ekstrak Media+ Bakteri + Antibiotik

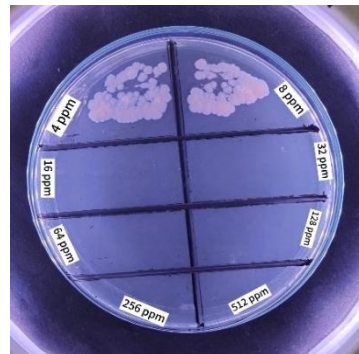


➤ **Konsentrasi Bunuh Minimum**

Staphylococcus aureus

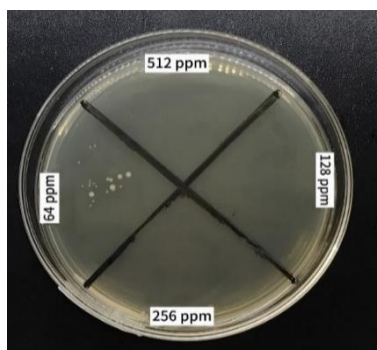


Ekstrak etanol daun beluntas

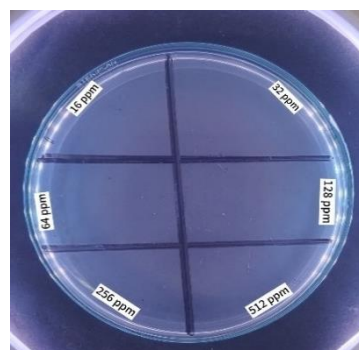


Antibiotik ciprofloxacin

Staphylococcus epidermidis

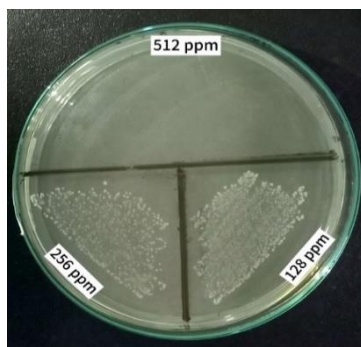


Ekstrak etanol daun beluntas

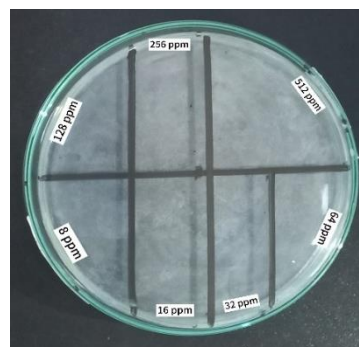


Antibiotik ciprofloxacin

Streptococcus pyogenes



Ekstrak etanol daun beluntas



Antibiotik ciprofloxacin

*) Tidak ada pertumbuhan bakteri= KBM

Lampiran 10 (lanjutan)

- Absorbansi dan perhitungan % inhibisi

$$\text{Rumus} = 1 - \frac{\text{konsentrasi larutan uji-kontrol ekstrak}}{\text{kontrol positif-kontrol negatif}} \times 100\%$$

$\bar{x}$ = Rata-rata

1. Staphylococcus aureus

Kontrol (-)	Kontrol DMSO	Konsentrasi (µg/mL)									Kontrol (+)
0,0452 0,0453 0,0476 0,0426 0,0450 0,0441 0,0515 0,0470 x̄=0,04604	0,3579 0,4443 0,4794 0,4213 0,3477 0,4864 0,4529 0,4459 x̄=0,4295	2	4	8	16	32	64	128	256	512	0,5103 0,4384 0,4713 0,5338 0,3945 0,4347 0,5581 0,4337 x̄ 0,47185
		Kontrol ekstrak									
		0,0925	0,0435	0,0445	0,0439	0,0896	0,0639	0,0599	0,0470	0,0471	
		0,0441	0,0411	0,0439	0,0424	0,0419	0,0426	0,0689	0,0450	0,0452	
		Konsentrasi larutan uji									
		0,5560	0,2657	0,3350	0,3759	0,2971	0,0463	0,0714	0,0485	0,0452	
		0,5080	0,4378	0,3958	0,4087	0,4023	0,0469	0,0735	0,0471	0,0440	
		0,2606	0,4469	0,3883	0,2964	0,1380	0,0447	0,0456	0,0486	0,0443	
		Konsentrasi antibiotik									
		0,2413	0,0940	0,0456	0,0425	0,0487	0,0461	0,0438	0,0437	0,0416	
		0,2567	0,0989	0,0453	0,0551	0,0541	0,0472	0,0446	0,0423	0,0414	
0,3918	0,1206	0,0465	0,0421	0,0518	0,0488	0,0434	0,0422	0,0422			

Konsentrasi ekstrak (µg/mL)	$\bar{x}$ absorban ekstrak uji	$\bar{x}$ absorban antibiotik	$\bar{x}$ absorbansi kontrol ekstrak	$\bar{x}$ (ekstrak uji – kontrol ekstrak)	$\bar{x}$ (absorban antibiotik – kontrol ekstrak)	$\bar{x}$ (+) – (-)
512	0,0445	0,04173	0,04615	-0,00165	-0,02402	0,4258
256	0,04807	0,04273	0,0460	0,00207	-0,01052	
128	0,0635	0,04393	0,0644	-0,0009	-0,02047	
64	0,04597	0,0474	0,05325	-0,00728	0,0014	
32	0,2791	0,05153	0,06575	0,21335	0,00538	
16	0,3603	0,0466	0,04315	0,31715	0,00345	
8	0,3730	0,0458	0,0442	0,3288	0,0016	
4	0,3835	0,1045	0,0423	0,3412	0,0622	
2	0,4415	0,2966	0,0683	0,3732	0,2283	

Konsentrasi (µg/mL)	Perhitungan % inhibisi ekstrak uji	Perhitungan % inhibisi antibiotik
512	$1 - \frac{-0,00165}{0,4258} \times 100\% = 100$	$1 - \frac{-0,02402}{0,4258} \times 100\% = 100$
256	$1 - \frac{0,00207}{0,4258} \times 100\% = 99,51$	$1 - \frac{-0,01052}{0,4258} \times 100\% = 100$
128	$1 - \frac{0,0009}{0,4258} \times 100\% = 99,78$	$1 - \frac{-0,02047}{0,4258} \times 100\% = 100$
64	$1 - \frac{-0,00728}{0,4258} \times 100\% = 98,29$	$1 - \frac{0,0014}{0,4258} \times 100\% = 99,67$
32	$1 - \frac{0,21335}{0,4258} \times 100\% = 49,89$	$1 - \frac{0,00538}{0,4258} \times 100\% = 98,74$
16	$1 - \frac{0,31715}{0,4258} \times 100\% = 25,51$	$1 - \frac{0,00345}{0,4258} \times 100\% = 99,19$
8	$1 - \frac{0,3288}{0,4258} \times 100\% = 22,78$	$1 - \frac{0,0016}{0,4258} \times 100\% = 99,62$
4	$1 - \frac{0,3412}{0,4258} \times 100\% = 19,87$	$1 - \frac{0,0622}{0,4258} \times 100\% = 85,39$
2	$1 - \frac{0,3732}{0,4258} \times 100\% = 12,35$	$1 - \frac{0,2283}{0,4258} \times 100\% = 46,41$

2. Staphylococcus epidermidis

Kontrol (-)	Kontrol DMSO	Konsentrasi (µg/mL)									Kontrol (+)
		2	4	8	16	32	64	128	256	512	
		Kontrol ekstrak									
0,0461	0,5259	0,0924	0,0872	0,1157	0,1235	0,1105	0,0521	0,0709	0,0481	0,0455	0,5798
0,0401	0,8351	0,0451	0,0639	0,0733	0,0776	0,0790	0,0433	0,0704	0,0511	0,0496	0,8302
0,0452	0,7365	Konsentrasi larutan uji									0,7201
0,0425	0,5119	0,4796	0,4337	0,3778	0,3729	0,3401	0,0509	0,0688	0,0456	0,0467	0,8040
0,0413	0,5651	0,6173	0,3841	0,5738	0,4296	0,4453	0,0564	0,0805	0,0552	0,0431	0,8830
0,0414	0,4959	Konsentrasi Antibiotik									0,7058
0,0436	1,0161	0,3163	0,3170	0,3878	0,0462	0,0488	0,0486	0,0489	0,0442	0,0448	0,7696
0,0430	0,6190	0,6404	0,2339	0,4235	0,0414	0,0472	0,0505	0,0454	0,0431	0,0442	0,7743
̄x=0,47185	̄x=0,6632	0,4486	0,0420	0,0478	0,0424	0,0555	0,0584	0,0451	0,0466	0,0409	̄x =0,04604

Konsentrasi (µg/mL)	$\bar{x}$ absorban ekstrak uji	$\bar{x}$ absorban antibiotik	$\bar{x}$ absorbansi kontrol ekstrak	$\bar{x}$ (ekstrak uji – kontrol ekstrak)	$\bar{x}$ (Konsentrasi antibiotik – kontrol ekstrak)	$\bar{x}$ (+) – (-)
512	0,0456	0,0433	0,04755	-0,0195	-0,0044	0,7155
256	0,0492	0,0446	0,0496	-0,0004	-0,05015	
128	0,0710	0,0465	0,07065	0,00035	-0,02415	
64	0,0551	0,0525	0,0477	0,0074	0,00495	
32	0,2854	0,0505	0,09475	0,19065	0,0009	
16	0,4362	0,0433	0,10055	0,33565	-0,05725	
8	0,4430	0,2864	0,0945	0,3485	0,1919	
4	0,4629	0,1977	0,07825	0,38465	0,11945	
2	0,5185	0,4684	0,0687	0,4498	0,3997	

Konsentrasi (µg/mL)	Perhitungan % inhibisi ekstrak uji	Perhitungan % inhibisi antibiotik
512	$1 - \frac{-0,0195}{0,7155} \times 100\% = 100$	$1 - \frac{-0,0044}{0,7155} \times 100\% = 100$
256	$1 - \frac{-0,0004}{0,7155} \times 100\% = 100$	$1 - \frac{-0,05015}{0,7155} \times 100\% = 100$
128	$1 - \frac{0,00035}{0,7155} \times 100\% = 99,95$	$1 - \frac{-0,02415}{0,7155} \times 100\% = 100$
64	$1 - \frac{0,0074}{0,7155} \times 100\% = 99$	$1 - \frac{0,00495}{0,7155} \times 100\% = 99,31$
32	$1 - \frac{0,19065}{0,7155} \times 100\% = 73,35$	$1 - \frac{0,0009}{0,7155} \times 100\% = 99,87$
16	$1 - \frac{0,33565}{0,7155} \times 100\% = 53,08$	$1 - \frac{-0,05725}{0,7155} \times 100\% = 100$
8	$1 - \frac{0,3485}{0,7155} \times 100\% = 51,29$	$1 - \frac{0,1919}{0,7155} \times 100\% = 73,17$
4	$1 - \frac{0,38465}{0,7155} \times 100\% = 46,24$	$1 - \frac{0,11945}{0,7155} \times 100\% = 83,31$
2	$1 - \frac{0,4498}{0,7155} \times 100\% = 37,13$	$1 - \frac{0,3997}{0,7155} \times 100\% = 44,13$

3. Streptococcus pyogenes

Kontrol (-)	Kontrol DMSO	Konsentrasi (µg/mL)									Kontrol (+)
0,2770 0,1552 0,1338 0,1448 0,1898 0,1110 0,1588 0,0827 ̄x=0,1566	1,4139 0,2769 0,8346 0,9385 0,8766 0,8600 0,8677 1,0517 ̄x=0,8899	2	4	8	16	32	64	128	256	512	0,7422 0,6966 0,9447 0,6434 0,9094 0,8759 0,8804 1,0419 ̄x=0,8418
		Kontrol ekstrak									
		0,1248	0,1474	0,1537	0,2122	0,1987	0,1757	0,3757	0,1396	0,1697	
		0,5381	0,1236	0,2317	0,1060	0,1096	0,1667	0,1567	0,0891	0,0653	
		Konsentrasi larutan uji									
		0,6947	0,8668	0,7121	0,2082	0,2115	0,2861	0,1536	0,1536	0,1158	
		0,6580	0,6399	0,6456	0,4694	0,2051	0,2817	0,2511	0,0506	0,0799	
		1,4449	0,7361	0,7715	0,3648	0,2888	0,2516	0,1486	0,1486	0,1241	
		Konsentrasi antibiotik									
		0,4928	0,1521	0,1881	0,1613	0,0669	0,0524	0,0528	0,0535	0,0537	
		0,9363	0,6355	0,1186	0,1894	0,0527	0,0702	0,0496	0,0534	0,0555	
0,1544	0,1603	0,1958	0,1493	0,0657	0,0459	0,1688	0,0617	0,0651			

Konsentrasi ekstrak	$\bar{x}$ absorban ekstrak uji	$\bar{x}$ absorban antibiotik	$\bar{x}$ absorbansi kontrol ekstrak	$\bar{x}$ (ekstrak uji – kontrol ekstrak)	$\bar{x}$ (antibiotik – kontrol ekstrak)	$\bar{x}$ (+) – (-)
512	0,1066	0,0581	0,1175	-0,0109	-0,0594	0,6852
256	0,1176	0,0562	0,1144	0,00325	-0,0582	
128	0,2761	0,0904	0,1091	0,00693	-0,0187	
64	0,2691	0,0562	0,1712	0,0979	-0,1150	
32	0,2351	0,0618	0,1241	0,111	-0,0623	
16	0,3474	0,1667	0,1591	0,1883	0,0076	
8	0,7097	0,1675	0,1927	0,5170	-0,0252	
4	0,7476	0,3160	0,1355	0,6121	0,1805	
2	0,9325	0,5278	0,3315	0,6010	0,1963	

Konsentrasi ($\mu\text{g/mL}$)	Perhitungan % inhibisi ekstrak uji	Perhitungan % inhibisi antibiotik
512	$1 - \frac{-0,0109}{0,6852} \times 100\% = 100$	$1 - \frac{-0,0594}{0,6852} \times 100\% = 100$
256	$1 - \frac{0,00325}{0,6852} \times 100\% = 98,75$	$1 - \frac{-0,0582}{0,6852} \times 100\% = 100$
128	$1 - \frac{0,00693}{0,6852} \times 100\% = 98,98$	$1 - \frac{-0,0187}{0,6852} \times 100\% = 100$
64	$1 - \frac{0,0979}{0,6852} \times 100\% = 85,71$	$1 - \frac{-0,1150}{0,6852} \times 100\% = 100$
32	$1 - \frac{0,111}{0,6852} \times 100\% = 83,80$	$1 - \frac{-0,0623}{0,6852} \times 100\% = 100$
16	$1 - \frac{0,1883}{0,6852} \times 100\% = 72,51$	$1 - \frac{0,0076}{0,6852} \times 100\% = 98,89$
8	$1 - \frac{0,5170}{0,6852} \times 100\% = 24,54$	$1 - \frac{-0,0252}{0,6852} \times 100\% = 100$
4	$1 - \frac{0,6121}{0,6852} \times 100\% = 10,66$	$1 - \frac{0,1805}{0,6852} \times 100\% = 73,66$
2	$1 - \frac{0,6010}{0,6852} \times 100\% = 12,28$	$1 - \frac{0,1963}{0,6852} \times 100\% = 71,36$

Lampiran 11. Kartu Bimbingan

No	Tanggal	Dosen Pembimbing	Topik	Disetujui	Aksi
1	19 Februari 2025	IDAR, M.Si	Konfirmasi memulai penelitian	✓	 
1	24 Mei 2025	IKA KURNIA SUKMAWATI	Bimbingan hasil optimasi antibiotik	✓	 
2	13 Maret 2025	IKA KURNIA SUKMAWATI	konfirmasi pengujian ulang uji aktivitas	✓	 
2	30 April 2025	IDAR, M.Si	bimbingan hasil penelitian	✓	 
3	1 Mei 2025	IDAR, M.Si	Kemajuan 1 dan konfirmasi mengenai pengujian SEM	✓	 
3	2 Mei 2025	IKA KURNIA SUKMAWATI	Hasil mikrodilusi sekaligus kemajuan 1	✓	 
4	5 Mei 2025	IDAR, M.Si	Konfirmasi preparasi SEM	✓	 
4	5 Mei 2025	IKA KURNIA SUKMAWATI	Konfirmasi preparasi SEM	✓	 
5	21 Mei 2025	IKA KURNIA SUKMAWATI	Konfirmasi hasil SEM	✓	 
5	22 Mei 2025	IDAR, M.Si	Konfirmasi hasil SEM	✓	 
6	7 Juni 2025	IDAR, M.Si	Kemajuan 2	✓	 
6	7 Juni 2025	IKA KURNIA SUKMAWATI	Kemajuan 2	✓	 
7	9 Juli 2025	IDAR, M.Si	bimbingan pembahasan	✓	 
7	10 Juli 2025	IKA KURNIA SUKMAWATI	bimbingan draf skripsi	✓	 
8	11 Juli 2025	IDAR, M.Si	Konfirmasi revisian dan ACC	✓	 
8	11 Juli 2025	IKA KURNIA SUKMAWATI	Konfirmasi revisian dan ACC	✓	 

Lampiran 12. Hasil Plagiarisme

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