

## LAMPIRAN

### Lampiran 1. Surat izin penelitian



Jl. Soekarno Hatta No 754 Bandung  
☎ 022 7830 760, 022 7830 768  
✉ ubk.ac.id contact@ubk.ac.id

Bandung, 09 Mei 2025

Nomor : 0434/03.S1-FF/UBK/V/2025  
Lampiran : -  
Perihal : Permohonan Izin Penelitian

Kepada Yth.  
Bapak/Ibu Direktur Rumah Sakit Mata CiCendo  
Di Tempat

Dengan Hormat,  
Sehubungan dengan akan diselenggarakannya Penelitian Tugas Akhir bagi mahasiswa Program Studi S1, Fakultas Farmasi, Universitas Bhakti Kencana, T.A 2024/2025, dengan ini kami mengajukan Permohonan Izin Penelitian di tempat yang Bapak/Ibu pimpin.

Adapun nama mahasiswa tersebut adalah :

Nama : Putri Dismar Okto Raina Rizgit  
NPM : 211FF03115  
No. Telp/Hp : 089633000348  
Judul Penelitian : Uji Sterilitas Obat Tetes Mata Atropin Sulfat 0,01%

Dosen Pembimbing Utama : apt. Yanni Dhiani Mardhiani, M. Bsc

Dosen Pembimbing Serta : apt. Pujani Utami, M. Farm

Besar harapan kami, kiranya Bapak/Ibu berkenan mengijinkan permohonan ini. Atas perhatian dan kerjasamanya kami ucapkan terima kasih.

Mengetahui,  
Dean, Fakultas Farmasi  
Universitas Bhakti Kencana  
  
**Dr. apt. Agus Sulaeman, M.Si**  
NIK. 02014010070

Ketua Prodi Strata 1 (S1) Farmasi  
Universitas Bhakti Kencana

  
**apt. Lia Marliani, M.Si,**  
NIK.02005010039

## Lampiran 2. Surat izin MBKM penelitian di RS Mata Cicendo



Bandung, 7 Oktober 2024

Nomor : 0641/03.FF-03/UBK/X/2024  
Lampiran : 1  
Perihal : Pengantar MBKM Penelitian

Kepada Yth.  
**Direktur Utama**  
**RS Mata Cicendo**  
di  
Tempat

Dengan Hormat,

Dalam rangka mengikuti program dan kebijakan Kemendikbud, Prodi Sarjana Farmasi-Fakultas Farmasi Universitas Bhakti Kencana menyelenggarakan program Merdeka Belajar-Kampus Merdeka (MBKM) mandiri pada T.A 2024/2025 Gasal. Kegiatan MBKM ini dilakukan dengan tujuan untuk meningkatkan kompetensi lulusan, baik soft skills maupun hard skills, agar lebih siap dan relevan dengan kebutuhan zaman dan dunia kerja. Salah satu kanal MBKM yang dibuka adalah kanal Penelitian.

Sehubungan dengan hal tersebut, kami mohon bantuannya untuk dapat memberikan tempat bagi mahasiswa kami untuk dapat melaksanakan Penelitian periode "**7 Oktober 2024 - 31 Januari 2025**" di lembaga yang Bapak/Ibu pimpin. Untuk nama calon peserta MBKM Penelitian kami cantumkan dalam lampiran

Demikian permohonan ini kami ajukan, atas perhatian dan kerjasamanya kami ucapkan terima kasih.

Mengetahui,  
Dekan Fakultas Farmasi  
  
(Dr. Apt. Agus Sulseman, M.Si.)  
NIK: 02014010070

Ka. Prodi S1 Farmasi  
  
(Apt. Lis Marlioni, M.Si.)  
NIK.

Narahubung : Diki Zaelani (087825021940)

Jl. Soekarno-Hatta No 754 Bandung  
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Lampiran No: 0641/03.S1-FF/UBK/X/2024

No	NPM	Nama	Periode
1	2111FF03115	Putri Dismar Okto Raina Rizgit	7 Oktober 2024 – 31 Januari 2025

Lampiran 3. CoA Bacillus subtilis



Thermo Fisher Scientific  
Microbiology  
12076 Santa Fe Trail Drive  
Lenexa, KS 66215  
800.255.6730  
800.447.5761 fax  
www.thermofisher.com

Certificate of Analysis - Certified Reference Material



Thermo Scientific™ Trademark™  
Product Number R4601221  
Product Name B. subtilis ATCC 6633 PK/5  
Lot Number 157507  
Usage Decision Accepted (OK)  
Expiration Date 2026-02-12

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)

Microbiological Testing	Results	Specification
>85% Identification on Vitek 2C BCL		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 Vitek(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

Signed

Dawn Baker  
QA Manager

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Remel Inc. is licensed to use these trademarks and to sell products derived from ATCC® culture.



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

## Lampiran 4. CoA Pseudomonas aeruginosa

thermo**scientific**

**Thermo Fisher Scientific**  
Microbiology  
12076 Santa Fe Trail Drive  
12230 Santa Fe Trail Drive  
Lenexa, KS 66215  
800.255.6730  
800.447.5761 fax  
www.thermofisher.com

### Certificate of Analysis

**Product Name:** P. aeruginosa ATCC 15442 PK/5  
**Lot Number:** 480321

**Product Number:** R4607210  
**Expiration Date:** 2023-10-19  
(YYYY-MM-DD)

This product has been manufactured, processed and packaged in accordance with Quality Systems Regulation, 21 CFR Part 820. Representative samples were tested per Remel Inc., a part of Thermo Fisher Scientific Quality Control specifications and were found to meet performance criteria for this product.

**Purity:**

Standardized aliquots of the rehydrated product are inoculated onto nonselective media and examined for pure growth following the appropriate incubation. Selective and Differential media are also tested where applicable.

**Viability And Quantification:**

Each organism is recovered from the preserved state within the required time frame and at an acceptable level. Passage number is stated as the current preserved state.

**Macroscopic And Microscopic Morphology:**

Colony morphology is consistent with documented referenced description. Traditional staining is performed.

**Characterization:**

Organism exhibits characteristic biochemical, enzymatic, genotypical and/or biochemical reactions. Automated and/or conventional testing was performed and results were within established limits. Antimicrobial testing performed where applicable. Results within expected ranges.

CFU/loop: >10(4)

Passage: 3

Gram Reaction: Gram Negative Rod

Identification Profile: MicroSEQ® or Vitek® 2

Appearance: Preserved Gel Matrix suspended in inoculating loop

pH: N/A

Signed



Quality Assurance Manager

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Lampiran 5. CoA Candida albicans



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Microbiology  
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Certificate of Analysis - Certified Reference Material

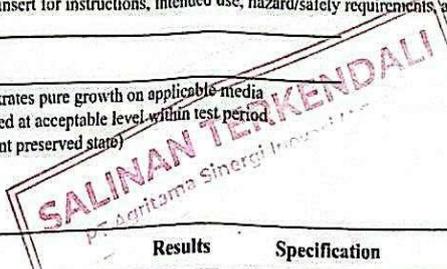
thermoscientific

Thermo Scientific™ Trademark™  
Product Number R4601501  
Product Name C. albicans ATCC 14053 PK/5  
Lot Number 174162  
Usage Decision Accepted (OK)  
Expiration Date 2026-03-26

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)



Microbiological testing	Results	Specification
>85% Identification on Vitek 2C System	100	85 - 100
>95% Identification on MicroSEQ	Pass	95 - 100
Microscopic Features	Pass	
>85% Identification on RapID YST	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 Vitek(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 6. CoA media FTM



Certified : ISO 9001:2015, ISO 13485:2016 , WHO GMP

**HIMEDIA Laboratories Private Limited**  
23, Vadhani Industrial Estate, L.B.S. Marg,  
Mumbai - 400086 , Website : www.himedialabs.com,  
Email : info@himedialabs.com

### Certificate of Analysis, Quality and Conformity

Material Code : M009	Material Name : Fluid Thioglycollate Medium (Thioglycollate Medium, Fluid)	Lot No : 0000453559
Report No.: 40001062535	Date of Release & Report : 2020-10-21	Expiry Date : 2025-09

#### Appearance

Cream to yellow homogeneous free flowing powder . Observed : Light yellow

#### Colour and Clarity of prepared medium

Light straw coloured, clear to slightly opalescent solution with upper 10% or less medium pink on standing.

#### Reaction

Reaction of 2.97% w/v aqueous solution at 25°C.

#### pH

pH Range :6.90-7.30 Observed : 7.22

#### Growth Promotion Test

In accordance with the harmonized method of USP/EP/BP.

#### Cultural Response

Cultural characteristics observed after an incubation at 30-35°C for not more than 3 days.

Organism	Inoculum (CFU)	Growth
<b>Growth at 30-35°C for ≤ 3 days incubated anaerobically</b>		
<i>Clostridium sporogenes</i> ATCC 19404 (WDCM 00008)	84	luxuriant
<i>Clostridium sporogenes</i> ATCC 11437	85	luxuriant
<i>Clostridium perfringens</i> ATCC 13124 (WDCM 00007)	82	luxuriant
<i>Bacteroides fragilis</i> ATCC 23745	80	luxuriant
<i>Bacteroides vulgatus</i> ATCC 8482	80	luxuriant
<b>Growth at 30-35°C for ≤ 3 days incubated aerobically</b>		
<i>Staphylococcus aureus</i> ATCC 25923 (WDCM 00034)	81	luxuriant
<i>Staphylococcus aureus</i> ATCC 6538 (WDCM 00032)	86	luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 27853 (WDCM 00025)	87	luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 9027 (WDCM 00026)	89	luxuriant
<i>Kocuria rhizophila</i> ATCC 9341	82	luxuriant
<i>Streptococcus pneumoniae</i> ATCC 6305	84	luxuriant
<i>Escherichia coli</i> ATCC 25922 (WDCM 00013)	83	luxuriant

<i>Escherichia coli</i> ATCC 8739 (WDCM 00012)	84	luxuriant
<i>Escherichia coli</i> NCTC 9002	85	luxuriant
<i>Salmonella enterica</i> serovar Typhimurium ATCC 14028 (WDCM 00031)	87	luxuriant
<i>Salmonella enterica</i> serovar Abony NCTC 6017 (WDCM 00029)	81	luxuriant
<i>Bacillus spizizenii</i> ATCC 6633 (WDCM 00003)	82	luxuriant

- ATCC is a registered trade mark of the American Type Culture Collection
- NCTC and National Collection of Type Culture are registered trade mark of the Health Protection Agency

- All ISO 11133 : 2014(Amd.1:2016( E ) control strains are included in the Quality parameter
- Himedia Laboratories Pvt Ltd is Certified for ISO 9001:2015, ISO 13485:2016 , WHO GMP

Information for BSE/TSE Risk The material was subjected to pH ≤ 7.0 and/or a temperature in excess of 75°C for no less than 2 hours during the manufacturing process. The bovine raw material for this product was collected entirely from Indian Origin animals in a licensed based establishment. The animals are inspected under a Govt. approved veterinarian's supervision and were apparently free from infectious and contagious diseases. BSE (Bovine Spongiform Encephalopathy)/ TSE (Transmissible Spongiform Encephalopathy) and dioxine are not known to exist in India. This material does not contain, nor is derived from the specific risks material as defined in The Maharashtra Animal Preservation Act Govt. of Maharashtra, India.

#### STATUS OF THE MATERIAL : APPROVED

This is to certify that this lot passes and it conforms to the above mentioned tests and specifications . The information given here is believed to be correct and accurate, however, both the information and products are offered without warranty for any particulars use, other than that specified in the current HIMEDIA manual or product sheets. The results reported were obtained at the time of release.

This document has been produced electronically and is valid

Maye Surasane  
Microbiologist/Sr.Executive  
Microbiologist

Upendra M. Nikate  
Asst./Dy./QC Manager

Dr. Santosh Kaul  
Dy./QA Manager

2020-10-21

## Lampiran 7. CoA media TSB (SCDM)

**HIMEDIA**<sup>®</sup>

Certified : ISO 9001:2015, ISO 13485:2016 , WHO GMP

Himedia Laboratories Private Limited  
C-40, Road No 21Y, MIDC, Wagle Industrial Area,  
Thane(W) - 400604 , Website : www.himedialabs.com,  
Email : info@himedialabs.com

### Certificate of Analysis, Quality and Conformity

Material Code : M011	Material Name : Tryptone Soya Broth	Lot No : E00031660
Report No.: 40001445208	Date of Release & Report : 2024-02-27	Expiry Date : 2029-01

**Appearance**  
Cream to yellow homogeneous free flowing powder. Observed : Light yellow

**Colour and Clarity of prepared medium**  
Light yellow coloured clear solution without any precipitate.

**Reaction**  
pH of 3.0% w/v aqueous solution at 25°C (after sterilization).

**pH**  
pH Range :7.10-7.50 Observed : 7.48

**Stability test**  
Light yellow coloured clear solution without any precipitation or sedimentation at room temperature for 7 days

**Growth promoting properties**  
Clearly visible growth of microorganism comparable to that previously obtained with previously tested and approved lot of medium occurs at the specified temperature for not more than the shortest period of time specified inoculating not more than 100 cfu (at 30-35°C for 18-24 hours for bacteria and 5days for fungal) Growth promotion is carried out as per USP/EP/BP/JP.

Organism	Inoculum (CFU)	Growth	Incubation temperature	Incubation period
<b>Growth promoting</b>				
<i>Staphylococcus aureus</i> ATCC 6538 (WDCM 00032)	84	luxuriant	35°C	18Hours
<i>Staphylococcus aureus</i> ATCC 25923 (WDCM 00034)	88	luxuriant	35°C	18Hours
<i>Escherichia coli</i> ATCC 8739 (WDCM 00012)	81	luxuriant	35°C	18Hours
<i>Escherichia coli</i> ATCC 25922 (WDCM 00013)	82	luxuriant	35°C	18Hours
<i>Escherichia coli</i> NCTC 9002	78	luxuriant	35°C	18Hours
<i>Pseudomonas aeruginosa</i> ATCC 9027 (WDCM 00026)	87	luxuriant	35°C	18Hours
<i>Pseudomonas aeruginosa</i> ATCC 27853 (WDCM 00025)	80	luxuriant	35°C	18Hours
<i>Bacillus spizizenii</i> ATCC 6633 (WDCM 00003)	75	luxuriant	35°C	18Hours
<i>Kocuria rhizophila</i> ATCC 9341	84	luxuriant	35°C	18Hours
<i>Salmonella enterica</i> serovar	77	luxuriant	35°C	18Hours

<i>Candida albicans</i> ATCC 2091 (WDCM 00055)	73	luxuriant	25°C	2Days
<i>Aspergillus brasiliensis</i> ATCC 16404 (WDCM 00053)	76	luxuriant	25°C	5Days

- ATCC is a registered trade mark of the American Type Culture Collection
- NCTC and National Collection of Type Culture are registered trade mark of the Health Protection Agency

- All ISO 11133 : 2014/Amd.1:2018 (E) control strains are included in the Quality parameter
- Himedia Laboratories Pvt Ltd is Certified for ISO 9001:2015, ISO 13485:2016 , WHO GMP

**Information for BSE/TSE Risk:** The material was subjected to pH <= 7.0 and/or a temperature in excess of 75°C for no less than 2 hours during the manufacturing process. The bovine raw material for this product was collected entirely from Indian Origin animals in a licensed based establishment. The animals are inspected under a Govt. approved veterinarian's supervision and were apparently free from Infectious and contagious diseases. BSE (Bovine Spongiform Encephalopathy)/ TSE (Transmissible Spongiform Encephalopathy) and dioxine are not known to exist in India. This material does not contain, nor is derived from the specific risks material as defined in The Maharashtra Animal Preservation Act Govt. of Maharashtra, India.

**STATUS OF THE MATERIAL : APPROVED**

This is to certify that this lot passes and it confirms to the above mentioned tests and specifications . The information given here is believed to be correct and accurate, however, both the information and products are offered without warranty for any particulars use, other than that specified in the current Himedia manual or product sheets. The results reported were obtained at the time of release.

This document has been produced electronically and is valid

  
Pratik Patil  
Microbiologist/Sr.Executive  
Microbiologist

  
Ushala M. Kulkarni  
Asst./Dy/QC Manager

  
Dr. Gaurav Kulkarni  
Dy/QA Manager

2024-02-27

## Lampiran 8. CoA media NA



**HiMedia Laboratories Private Limited**  
C-40, Road No.21Y, MIDC, Wagle Industrial Area,  
Thane(W) - 400604 . Website : www.himedialabs.com,  
Email : info@himedialabs.com

Certified : ISO 9001:2015, ISO 13485:2016 , WHO GMP

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**Certificate of Analysis, Quality and Conformity**

<b>Material Code :</b> M001	<b>Material Name :</b> Nutrient Agar	<b>Lot No :</b> 0000649144
<b>Report No.:</b> 40001479730	<b>Date of Release &amp; Report :</b> 2024-06-07	<b>Expiry Date :</b> 2029-05

**Appearance**  
Cream to yellow homogeneous free flowing powder. Observed : Light yellow

**Gelling**  
Firm, comparable with 1.5% Agar gel

**Colour and Clarity of prepared medium**  
Light yellow coloured clear to slightly opalescent gel forms in Petri plates

**Reaction**  
Reaction of 2.8% w/v aqueous solution at 25°C.

**pH**  
pH Range :7.20-7.60 Observed : 7.58

**Cultural Response**  
Cultural characteristics observed after an incubation at 35-37°C for 18- 48 hours.

Organism	Inoculum (CFU)	Growth	Lot value (CFU)	Recovery
<b>Cultural Response</b>				
<i>Escherichia coli</i> ATCC 25922 (WDCM 00013)	88	Good-luxuriant	72	81%
<i>Pseudomonas aeruginosa</i> ATCC 27853 (WDCM 00025)	84	Good-luxuriant	76	90%
<i>Salmonella enterica</i> serovar Typhi ATCC 6539	85	Good-luxuriant	71	83%
<i>Staphylococcus aureus</i> ATCC 25923 (WDCM 00034)	87	Good-luxuriant	73	83%
<i>Streptococcus pyogenes</i> ATCC 19613	84	Good-luxuriant	71	84%
<i>Salmonella</i> Enteritidis ATCC 13076 (WDCM 00030)	86	Good-luxuriant	74	86%
<i>Salmonella</i> Typhimurium ATCC 14028 (WDCM 00031)	84	Good-luxuriant	73	86%
<i>Yersinia enterocolitica</i> ATCC 2610 (WDCM 00038)	83	Good-luxuriant	71	85%
<i>Yersinia enterocolitica</i> ATCC 23715 (WDCM 00160)	89	Good-luxuriant	73	82%

. ATCC is a registered trade mark of the American Type Culture Collection  
 . NCTC and National Collection of Type Culture are registered trade mark of the Health Protection Agency

**Control Media :**

- For Bacteria : Soyabean Casein Digest Agar / Columbia Blood Agar base enriched with 5% v/v Sheep/Horse blood.
- For Yeast & Mold : Sabouraud Dextrose Agar.

. All ISO 11133 : 2014/Amd.1:2018( E ) control strains are included in the Quality parameter  
 . HiMedia Laboratories Pvt Ltd is Certified for ISO 9001:2015, ISO 13485:2016 , WHO GMP

. Information for BSE/TSE Risk: The material was subjected to pH <= 7.0 and/or a temperature in excess of 75°C for no less than 2 hours during the manufacturing process. The bovine raw material for this product was collected entirely from Indian Origin animals in a licensed based establishment. The animals are inspected under a Govt. approved veterinarian's supervision and were apparently free from infectious and contagious diseases. BSE (Bovine Spongiform Encephalopathy)/ TSE (Transmissible Spongiform Encephalopathy) and dioxine are not known to exist in India. This material does not contain, nor is derived from the specific risks material as defined in The Maharashtra Animal Preservation Act Govt. of Maharashtra, India.

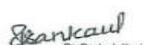
**STATUS OF THE MATERIAL : APPROVED**

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This document has been produced electronically and is valid

  
 Megha Girwarde  
 Microbiologist/Sr.Executive  
 Microbiologist

  
 Upasika M. Kolate  
 Asst./Dy/QC Manager

  
 Dr. Santosh Kaul  
 Dy/QA Manager

2024-06-07

Lampiran 9. CoA media MHA





Page 1 of 3

## CERTIFICATE OF ANALYSIS

**PRODUCT** CM0337B  
MUELLER HINTON AGAR 500g

**LOT NUMBER** 6126394

**EXPIRY DATE** 2029.05.23

**DATE OF MANUFACTURE** 2024.05.28

**Delivery/ Customer information**

Date Printed  
2025.02.15

Delivery No.

Customer  
Customer Order Number

Physical Characteristics	Results	Specification
Appearance	Straw powder	Straw powder
Color on reconstitution	Straw 2-3	Straw 2-3
pH (25°C)	7.2	7.2 - 7.4
Clarity	Clear	Clear

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**Microbiological Performance**

Antibiotic susceptibility tests are performed in accordance with, and meet the acceptance limits of, the current ISO/TS 14782. Performance is assessed using EUCAST methodology.

*Staphylococcus aureus* ATCC®25923 WDCM00034  
Incubation at 35 ± 1°C for 16-20 hours in ambient air

	Zone Size (mm)	Limits (mm)
Erythromycin E15	29	22 - 30
Tetracycline TE30	28	24 - 30
Ciprofloxacin CIP5	26	22 - 30
Amoxicillin-clavulanate AMC30	34	28 - 36
Ampicillin-sulbactam SAM20	33	29 - 37
Linezolid LZD30	29	23 - 29
Cefoxitin FOX30	24	19 - 27
Gentamicin CN10	36	26 - 37
Penicillin P10		

*Staphylococcus aureus* ATCC®29213 WDCM00131  
Incubation at 35 ± 1°C for 16-20 hours in ambient air

	Zone Size (mm)	Limits (mm)
Penicillin P1	15	12 - 18
Cefoxitin FOX30	29	24 - 30
Ciprofloxacin CIP5	23	21 - 27
Erythromycin E15	27	23 - 29
Gentamicin CN10	22	19 - 25
Linezolid LZD10	22	21 - 27
Tetracycline TE30	26	23 - 31

**OXOID LIMITED**  
Wade Road, Basingstoke, Hampshire RG24 8PW, England  
www.ThermoFisher.com

Lampiran 10. CoA media PDA





Page 1 of 2

## CERTIFICATE OF ANALYSIS

**PRODUCT** CM0139B  
POTATO DEXTROSE AGAR 500g

**LOT NUMBER** 3705160

**EXPIRY DATE** 2028.08.31

**DATE OF MANUFACTURE** 2023.07.20

**Delivery/Customer information**

Date Printed  
2024.08.04

Delivery No

Customer  
Customer Order Number

Physical Characteristics	Results	Specification
Appearance	Off white powder	Off white powder
Colour on reconstitution	Straw 1	Straw 1
pH (25°C)	5.6	5.4 - 5.8
pH of acidified medium (25°C)	3.6	3.4 - 3.6
Clarity	Clear	Clear

Microbiological Performance	Control cfu	Test cfu	Recovery Test %	Description
<b>Tested using acidified medium</b>				
<b>Aerobic incubation at 25°C for 5 days</b>				
<i>Candida krusei</i> ATCC®6258	56	52	93	Cream coils
<i>Candida albicans</i> ATCC®10231	66	60	91	Cream coils
<i>Bacillus subtilis</i> ATCC®6633	>1E+04	0	-	No growth
<i>Escherichia coli</i> ATCC®8739	>1E+04	0	-	No growth
<i>Staphylococcus aureus</i> ATCC®6538	>1E+04	0	-	No growth
<b>Inoculation using stab technique</b>				
<i>Aspergillus fumigatus</i> ATCC®9197	>1E+04	-	-	Creams mycelia, blue/green spores
<i>Aspergillus brasiliensis</i> ATCC®16404	>1E+04	-	-	White mycelia, black spores
<i>Fusarium culmorum</i> FMH-2407W	>1E+04	-	-	White mycelia, orange/red spores
<i>Fusarium oxysporum</i> FYH-2386W	>1E+04	-	-	White mycelia, pink/red spores
<b>Tested in accordance with USP/EP/JP</b>				
<b>Aerobic incubation at 25°C for 5 to 7 days</b>				
<i>Aspergillus brasiliensis</i> ATCC®16404	39	41	105	White mycelia, black spores

Control Medium: Potato Dextrose Agar

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium from an inoculum of 10-100 colony-forming units (cfu). Negative strains are inhibited from an inoculum of 1E+04 to 1E+06 cfu. For mould species, a satisfactory result is represented by typical colonial morphology as described in the product specification. Refer to product specification for full details.

**OXOID LIMITED**  
 Wade Road, Basingstoke, Hampshire RG24 8PW, England  
[www.ThermoFisher.com](http://www.ThermoFisher.com)

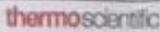
Lampiran 11. CoA bakteri Staphylococcus aureus



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### Certificate of Analysis - Certified Reference Material

Thermo Scientific™ Trademark™  
**Product Number** R4609002  
**Product Name** S. aureus ssp. aureus ATCC 6538P PK5  
**Lot Number** 155718  
**Usage Decision** Accepted (OK)  
**Expiration Date** 2026-02-03

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.

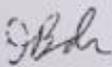
Product Char	Results
Purity	Demonstrates pure growth on applicable media
Viability	Recovered at acceptable level within test period
Passage	3 (Current preserved state)

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

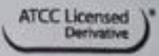
These tests are performed in accordance with ISO 17025 guidelines. Thermo Fisher Scientific has determined each loop of this reference material to be sufficiently homogeneous for its intended use. Individual products are traceable to a recognized culture collection. Although the Vitek(TM) panel uses 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.

Signed



**Dawn Baker**  
QA Manager

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**ACCREDITED**  
CERT #6559.01

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

**Lampiran 12. Hasil peremajaan bakteri dan jamur**

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**Hasil peremajaan bakteri uji**

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*Staphylococcus aureus*



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*Pseudomonas aeruginosa*



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*Bacillus Subtilis*

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**Peremajaan jamur uji**

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*Candida albicans*

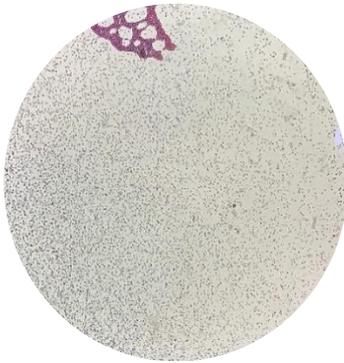
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**Lampiran 13.** Hasil pewarnaan bakteri uji

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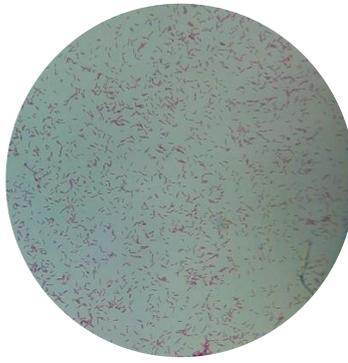
**Hasil pewarnaan bakteri uji**

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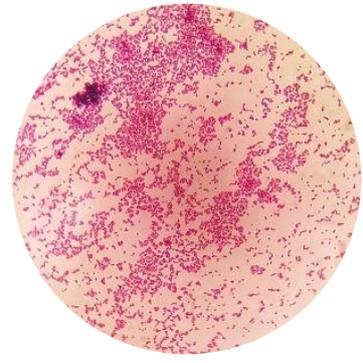
---

*Staphylococcus aureus*



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*Pseudomonas aeruginosa*



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*Bacillus subtilis*

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**Lampiran 14.** Hasil uji fertilitas media

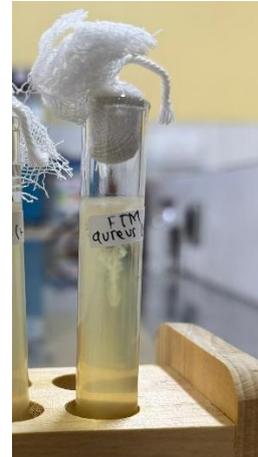
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**FTM (*Fluid Thiglycollate Medium*)**

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*Pseudomonas aeruginosa*



*Staphylococcus aureus*

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**SCDM (*Soybean Casein Digest Medium*)**

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*Bacillus subtilis*



*Candida albicans*

**Lampiran 15.** Hasil uji efektivitas

---

**FTM (*Fluid Thiglycollate Medium*)**

---

**SCDM (*Soybean Casein Digest Medium*)**

---



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Bacillus subtilis+sediaan

---



---

Candida albicans+sediaan

---

## Lampiran 16. Kontrol pengujian

### Kontrol positif bakteri



### Kontrol positif jamur



### Kontrol negatif (media tanpa inokulasi mikroorganisme)



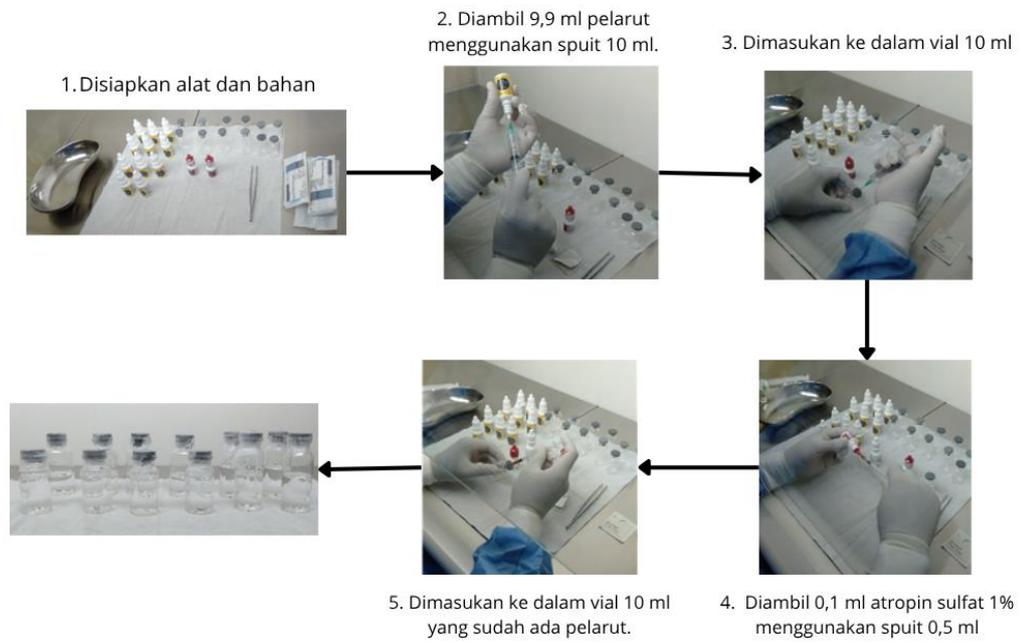
FTM+atropin sulfat

SCDM+atropin sulfat

FTM+lyteers

SCDM+lyteers

## Lampiran 17. Hasil pengumpulan sampel

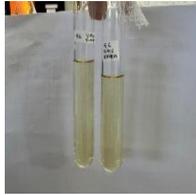


**Lampiran 18.** Hasil uji sterilitas obat tetes mata atropin sulfat 0,01%

**Media SCDM (*Soybean Casein Digest Medium*)**

Hari ke-	Suhu	Sampel awal	Sampel 28 hari penggunaan	Sampel 56 hari penggunaan	Sampel 3 bulan penyimpanan tanpa dibuka
3	25°C				
	4°C				
7	25°C				
	4°C				
11	25°C				

**Media SCDM (*Soybean Casein Digest Medium*)**

14	4°C				
					
					
					

**Media FTM (*Fluid Thioglycollate Medium*)**

Hari ke-	Suhu	Sampel awal	Sampel 28 hari penggunaan	Sampel 56 hari penggunaan	Sampel 3 bulan penyimpanan tanpa dibuka
3	25°C				
	4°C				

**Media FTM (Fluid Thioglycollate Medium)**



**Lampiran 19.** Hasil uji organoleptis obat tetes mata atropin sulfat 0,01%

Suhu	Sampel awal	Sampel 28 hari setelah penggunaan	Sampel 56 hari setelah penggunaan	Sampel 3 bulan tanpa di buka
25°C				
4°C				

**Lampiran 20.** Hasil uji pH obat tetes mata atropin sulfat 0,01%

Waktu	Suhu	1	2	3	Rata-rata ±
					(SD)
SA	25°C	6,81	6,8	6,74	6,79 ± 0,04
	4°C	6,98	6,93	6,94	6,95 ± 0,03
SB	25°C	6,43	6,39	6,42	6,41 ± 0,02
	4°C	6,51	6,53	6,52	6,52 ± 0,01
SC	25°C	6,08	6,07	6,01	6,05 ± 0,04
	4°C	6,13	6,12	6,14	6,13 ± 0,01
SD	25°C	6,62	6,58	6,55	6,58 ± 0,04
	4°C	6,74	6,69	6,68	6,7 ± 0,03

Keterangan :

SA: sediaan awal

SB: sediaan simulasi penggunaan selama 28 hari

SC: sediaan simulasi penggunaan selama 56 hari

SD: sediaan disimpan selama 3 bulan

(SD): Standar Deviasi

	Suhu	1	2	3
Sampel awal	25°C			

	Suhu	1	2	3
	4°C			
Sampel 28 hari setelah penggunaan	25°C			
	4°C			
Sampel 56 hari setelah penggunaan	25°C			
	4°C			
Sampel 3 bulan tanpa di buka	25°C			

	Suhu	1	2	3
	4°C			

**Lampiran 21.** Perhitungan tonisitas

Diketahui :

Volume lyteers = 9,9 mL

E-NaCl lyteers = 0,9

Volume atropin = 0,1 mL

E-NaCl atropin = 0,13

E-NaCl dari lyteers =  $0,9 \times 9,9 \text{ mL} = 8,91\%$

E-NaCl dari atropine =  $0,13 \times 0,1 \text{ mL} = 0,013\%$

Total keseluruhan NaCl ekivalen =  $\frac{(8,91 + 0,013)}{10 \text{ ml}} = 0,8923\% \sim 0,9\%$

**Lampiran 22.** Perhitungan osmolaritas

Diketahui :

Tonisas lyeers setara dengan NaCl = 0,9%

Tonisas atropin = 0,6%

Volume total campuran 10 mL

Total E-NaCl = 0,8923% ~ 0,9%

BM NaCl = 58,44 g/mol

Konsentrasi NaCl = 0,8923 g/100 mL = 8,923 g/L

Molaritas NaCl =  $8,923/58,44 = 0,1526$  mol/L

NaCl terdisosiasi menjadi 2 partikel (Na<sup>+</sup> dan Cl<sup>-</sup>)

Osmolaritas =  $0,1526 \times 2 \times 1000$

= 304 mOsm/L

**Lampiran 23.** Hasil statistik pH sampel awal

Tests of Normality						
WAKTU	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SAMPEL_AWAL 4	.314	3	.	.893	3	.363
25	.343	3	.	.842	3	.220

a. Lilliefors Significance Correction

Test of Homogeneity of Variances			
SAMPEL_AWAL			
Levene Statistic	df1	df2	Sig.
1.600	1	4	.275

**T-Test**

[DataSet1] D:\Documents\KULIAH SEMESTER 7 & 8\STERILITAS\punya putri.sav

Group Statistics				
WAKTU	N	Mean	Std. Deviation	Std. Error Mean
SAMPEL_AWAL 25	3	6.7833	.03786	.02186
4	3	6.9500	.02646	.01528

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SAMPEL_AWAL	Equal variances assumed	.842	.411	-6.250	4	.003	-.16667	.02667	-.24071	-.09263
	Equal variances not assumed			-6.250	3.577	.005	-.16667	.02667	-.24429	-.08905

**Lampiran 24.** Hasil statistik pH sampel 28 hari simulasi penggunaan

**Tests of Normality**

	WAKTU	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
SAMPEL_28_HARI	4	.175	3	.	1.000	3	1.000
	25	.292	3	.	.923	3	.463

a. Lilliefors Significance Correction

**Test of Homogeneity of Variances**

SAMPEL\_28\_HARI

Levene Statistic	df1	df2	Sig.
2.286	1	4	.205

**T-Test**

[DataSet1] D:\Documents\KULIAH SEMESTER 7 & 8\STERILITAS\punya putri.sav

**Group Statistics**

	WAKTU	N	Mean	Std. Deviation	Std. Error Mean
SAMPEL_28_HARI	25	3	6.4133	.02082	.01202
	4	3	6.5200	.01000	.00577

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-Test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SAMPEL_28_HARI	Equal variances assumed	2.286	.205	-8.000	4	.001	-.10667	.01333	-.14369	-.06965
	Equal variances not assumed			-8.000	2.876	.005	-.10667	.01333	-.15015	-.06318

**Lampiran 25.** Hasil statistik pH sampel 56 hari simulasi penggunaan

**Tests of Normality**

WAKTU	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
sampel_56_hari 4	.175	3	.	1.000	3	1.000
25	.337	3	.	.855	3	.253

a. Lilliefors Significance Correction

**Test of Homogeneity of Variances**

sampel\_56\_hari

Levene Statistic	df1	df2	Sig.
6.897	1	4	.058

**T-Test**

[DataSet1] D:\Documents\KULIAH SEMESTER 7 & 8\STERILITAS\punya putri.sav

**Group Statistics**

	WAKTU	N	Mean	Std. Deviation	Std. Error Mean
SAMPEL_56_HARI	25	3	6.0533	.03786	.02186
	4	3	6.1300	.01000	.00577

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SAMPEL_56_HARI	Equal variances assumed	6.897	.058	-3.391	4	.028	-.07667	.02261	-.13944	-.01390
	Equal variances not assumed			-3.391	2.278	.064	-.07667	.02261	-.16341	.01008

**Lampiran 26.** Hasil statistik pH sampel 3 bulan penyimpanan tanpa dibuka

**Tests of Normality**

	WAKTU	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
sampel_3_bulan	4	.328	3	.	.871	3	.298
	25	.204	3	.	.993	3	.843

a. Lilliefors Significance Correction

**Test of Homogeneity of Variances**

sampel\_3\_bulan

Levene Statistic	df1	df2	Sig.
.000	1	4	1.000

**T-Test**

[DataSet1] D:\Documents\KULIAH SEMESTER 7 & 8\STERILITAS\punya putri.sav

**Group Statistics**

	WAKTU	N	Mean	Std. Deviation	Std. Error Mean
SAMPEL_3_BULAN	25	3	6.5833	.03512	.02028
	4	3	6.7033	.03215	.01856

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SAMPEL_3_BULAN	Equal variances assumed	.000	1.000	-4.366	4	.012	-.12000	.02749	-.19632	-.04368
	Equal variances not assumed			-4.366	3.969	.012	-.12000	.02749	-.19655	-.04345

**Lampiran 27.** Hasil statistik pH terhadap keseluruhan waktu penyimpanan

**Tests of Normality**

	SUHU	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
WAKTU	4.00	.166	12	.200*	.876	12	.078
	25.00	.166	12	.200*	.876	12	.078

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

**Test of Homogeneity of Variances**

	Levene Statistic	df1	df2	Sig.
pH	.150	1	22	.702
WAKTU	.000	1	22	1.000

**T-Test**

**Group Statistics**

	SUHU	N	Mean	Std. Deviation	Std. Error Mean
pH	25.00	12	6.4583	.28139	.08123
	4.00	12	6.5758	.31309	.09038

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
pH	Equal variances assumed	.150	.702	-.967	22	.344	-.11750	.12152	-.36952	.13452
	Equal variances not assumed			-.967	21.754	.344	-.11750	.12152	-.36968	.13468

## Lampiran 28. Hasil Turnitin

UJI\_STERILITAS\_ATROPIN\_SULFAT\_001\_Putri\_Dismar-  
1757374831000

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Submitted to UIN Syarif Hidayatullah Jakarta

## Lampiran 29. Kartu Bimbingan

NIM	211FF03115	Nama Mahasiswa	PUTRI DISMAR OKTO RAINA RIZGIT
Program Studi	S1 Farmasi	Jenis TA	Skripsi
Periode Mulai	2024 Ganjil	SKS Lulus	<b>143 SKS</b>
Tgl. Mulai	4 Maret 2025	Judul Tugas Akhir	Uji Stabilitas Obat Tetes Mata Atropin Sulfat 0,01%
Tahap		Status	Aktif

No	Tanggal	Dosen Pembimbing	Topik	Disetujui	Aksi
1	3 Maret 2025	apt. YANNI DHIANI MARDHIANI, M.BSc.	Konfirmasi untuk penelitian	✓	 
2	5 Mei 2025	apt. YANNI DHIANI MARDHIANI, M.BSc.	Kemajuan 1 TA 2	✓	 
3	28 Mei 2025	apt. YANNI DHIANI MARDHIANI, M.BSc.	Bimbingan Progres	✓	 
4	18 Juni 2025	apt. YANNI DHIANI MARDHIANI, M.BSc.	Progres hasil	✓	 
5	4 Juli 2025	apt. YANNI DHIANI MARDHIANI, M.BSc.	Progres hasil	✓	 
6	8 Juli 2025	apt. YANNI DHIANI MARDHIANI, M.BSc.	Progres hasil	✓	 
7	9 Juli 2025	apt. YANNI DHIANI MARDHIANI, M.BSc.	Progres hasil	✓	 
8	10 Juli 2025	apt. YANNI DHIANI MARDHIANI, M.BSc.	Progres hasil	✓	 

No	Tanggal	Dosen Pembimbing	Topik	Disetujui
1	17 April 2025	apt. PUJANI UTAMI, M.Farm.	Bimbingan 1	
2	9 Mei 2025	apt. PUJANI UTAMI, M.Farm.	Bimbingan 2	
3	30 Mei 2025	apt. PUJANI UTAMI, M.Farm.	Bimbingan 3	
4	20 Juni 2025	apt. PUJANI UTAMI, M.Farm.	Bimbingan 4	
5	25 Juni 2025	apt. PUJANI UTAMI, M.Farm.	Bimbingan 5	
6	28 Juni 2025	apt. PUJANI UTAMI, M.Farm.	Bimbingan 6	
7	29 Juni 2025	apt. PUJANI UTAMI, M.Farm.	Bimbingan 7	
8	8 Juli 2025	apt. PUJANI UTAMI, M.Farm.	Bimbingan 8	
9	10 Juli 2025	apt. PUJANI UTAMI, M.Farm.	Bimbingan 9	

### Lampiran 30. Daftar Riwayat Hidup Penulis

#### RIWAYAT HIDUP



**Nama** : Putri Dismar Oktoraina Rizgit  
**NIM** : 211FF03115  
**Tempat/Tanggal Lahir** : Sumedang, 7 Oktober 2002  
**Agama** : Islam  
**Jenis kelamin** : Perempuan  
**Jurusan** : S1 Farmasi  
**Fakultas** : Farmasi  
**Kebangsaan** : Indonesia  
**Alamat** : Dusun Cikopo RT 02 RW 03 Desa Cipacing Kec.  
Jatinagor Kab. Sumedang Jawa Barat 45363

#### **Pendidikan :**

1. SDN Cikopo 1 : Tahun 2008-2014
2. SMPN 1 Jatinagor : Tahun 2014-2017
3. SMAN Jatinagor (IPA) : Tahun 2017-2020
4. Universitas Bhakti Kencana Bandung : Tahun 2021-2025