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**Lampiran 1.** Ethical Clearance

Kementerian Kesehatan
Poltekkes Medan
Komisi Etik Penelitian Kesehatan
Jalan Jamin Ginting KM. 13,5
Medan, Sumatera Utara 20137
(061) 8368633
https://poltekkes-medan.ac.id

**KETERANGAN LAYAK ETIK**
*DESCRIPTION OF ETHICAL EXEMPTION*
"ETHICAL EXEMPTION"

No.01.26.1700/KEPK/POLTEKKES KEMENKES MEDAN 2025

Protokol penelitian versi 1 yang diusulkan oleh :
*The research protocol proposed by*

Peneliti utama : Merdu Fhebe Diparade Simanjuntak
*Principal In Investigator*

Nama Institusi : Poltekkes Kemenkes Medan
*Name of the Institution*

Dengan judul:
*Title*
**"Evaluasi Daya Koagregasi Bakteri Asam Laktat Terhadap Pseudomonas aeruginosa Sebagai Kandidat Probiotik"**

*"Evaluation of the Coaggregation Ability of Lactic Acid Bacteria Against Pseudomonas aeruginosa as a Probiotic Candidate"*

Dinyatakan layak etik sesuai 7 (tujuh) Standar WHO 2011, yaitu 1) Nilai Sosial, 2) Nilai Ilmiah, 3) Pemerataan Beban dan Manfaat, 4) Risiko, 5) Bujukan/Eksploitasi, 6) Kerahasiaan dan Privacy, dan 7) Persetujuan Setelah Penjelasan, yang merujuk pada Pedoman CIOMS 2016. Hal ini seperti yang ditunjukkan oleh terpenuhinya indikator setiap standar.

*Declared to be ethically appropriate in accordance to 7 (seven) WHO 2011 Standards, 1) Social Values, 2) Scientific Values, 3) Equitable Assessment and Benefits, 4) Risks, 5) Persuasion/Exploitation, 6) Confidentiality and Privacy, and 7) Informed Concent, referring to the 2016 CIOMS Guidelines. This is as indicated by the fulfillment of the indicators of each standard.*

Pernyataan Laik Etik ini berlaku selama kurun waktu tanggal 31 Juli 2025 sampai dengan tanggal 31 Juli 2026.

*This declaration of ethics applies during the period July 31, 2025 until July 31, 2026.*

*July 31, 2025*
*Chairperson,*

Dr. Lestari Rahmah, MKT

**Lampiran 2.** Surat Bebas Laboratorium

**Lampiran 3.** Surat Izin Penelitian

## Surat Permohonan Penelitian

Kepada :
Yth. Direktur Poltekkes Kemenkes Medan
Di tempat
Dengan Hormat,

Saya yang bertanda tangan dibawah ini :

| | |
|---|---|
| **Nama** | Merdu Fhebe Diparade Simanjuntak |
| **Institusi** | Poltekkes Kemenkes Medan |
| **NIM/NIP/NIDN** | P07534022123 |
| **Jurusan** | Teknologi Laboratorium Medis |
| **Judul Penelitian** | Evaluasi Daya Koagregasi Bakteri Asam Laktat Terhadap Pseudomonas aeruginosa Sebagai Kandidat Probiotik |

Dengan ini saya memohon izin kepada Direktur Poltekkes Kemenkes Medan untuk difasilitasi penelitian di Laboratorium Terpadu Poltekkes Kemenkes Medan dalam menyelesaikan penelitian.

Demikianlah surat Permohonan saya sampaikan, atas perhatiannya saya ucapkan terimakasih.

Mengetahui
Dosen Pembimbing

( Febri Sembiring. S.Si, M.Si )
NIP 199202102022031002

Medan, 26 Mei 2025
Mahasiswa

( Merdu Fhebe Diparade Simanjuntak )
P07534022123

**Lampiran 4.** Hasil Uji SPSS

Output Data Persentase Koagregasi 3 Jam

**Descriptives**

Persentase_koagregasi

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | |
| L1P2F301 | 3 | 19.0167 | 3.66757 | 2.11747 | 9.9059 | 28.1274 | 15.07 | 22.32 |
| L1P2F302 | 3 | 14.3967 | 6.97302 | 4.02588 | -2.9253 | 31.7186 | 6.37 | 18.96 |
| L1P2F305 | 3 | 34.1667 | 6.18725 | 3.57221 | 18.7967 | 49.5366 | 27.12 | 38.71 |
| L1P2F306 | 3 | 18.9533 | 2.77015 | 1.59935 | 12.0719 | 25.8348 | 16.20 | 21.74 |
| L1P2F308 | 3 | 21.6133 | 2.14262 | 1.23704 | 16.2908 | 26.9359 | 19.33 | 23.58 |
| Total | 15 | 21.6293 | 7.99862 | 2.06524 | 17.1998 | 26.0588 | 6.37 | 38.71 |

**Tests of Homogeneity of Variances**

| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Persentase_koagregasi | Based on Mean | 2.527 | 4 | 10 | .107 |
| | Based on Median | .301 | 4 | 10 | .870 |
| | Based on Median and with adjusted df | .301 | 4 | 4.918 | .866 |
| | Based on trimmed mean | 2.209 | 4 | 10 | .141 |

**Multiple Comparisons**

Dependent Variable: Persentase_koagregasi

| | (I) Isolat BAL | (J) Isolat BAL | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound |
| Tukey HSD | L1P2F301 | L1P2F302 | 4.62000 | 3.87506 | .756 | -8.1331 | 17.3731 |
| | | L1P2F305 | -15.15000* | 3.87506 | .019 | -27.9031 | -2.3969 |
| | | L1P2F306 | .06333 | 3.87506 | 1.000 | -12.6898 | 12.8165 |
| | | L1P2F308 | -2.59667 | 3.87506 | .959 | -15.3498 | 10.1565 |
| | L1P2F302 | L1P2F301 | -4.62000 | 3.87506 | .756 | -17.3731 | 8.1331 |
| | | L1P2F305 | -19.77000* | 3.87506 | .003 | -32.5231 | -7.0169 |
| | | L1P2F306 | -4.55667 | 3.87506 | .764 | -17.3098 | 8.1965 |
| | | L1P2F308 | -7.21667 | 3.87506 | .394 | -19.9698 | 5.5365 |
| | L1P2F305 | L1P2F301 | 15.15000* | 3.87506 | .019 | 2.3969 | 27.9031 |
| | | L1P2F302 | 19.77000* | 3.87506 | .003 | 7.0169 | 32.5231 |
| | | L1P2F306 | 15.21333* | 3.87506 | .019 | 2.4602 | 27.9665 |
| | | L1P2F308 | 12.55333 | 3.87506 | .054 | -.1998 | 25.3065 |
| | L1P2F306 | L1P2F301 | -.06333 | 3.87506 | 1.000 | -12.8165 | 12.6898 |
| | | L1P2F302 | 4.55667 | 3.87506 | .764 | -8.1965 | 17.3098 |
| | | L1P2F305 | -15.21333* | 3.87506 | .019 | -27.9665 | -2.4602 |
| | | L1P2F308 | -2.66000 | 3.87506 | .955 | -15.4131 | 10.0931 |
| | L1P2F308 | L1P2F301 | 2.59667 | 3.87506 | .959 | -10.1565 | 15.3498 |
| | | L1P2F302 | 7.21667 | 3.87506 | .394 | -5.5365 | 19.9698 |
| | | L1P2F305 | -12.55333 | 3.87506 | .054 | -25.3065 | .1998 |
| | | L1P2F306 | 2.66000 | 3.87506 | .955 | -10.0931 | 15.4131 |

*. The mean difference is significant at the 0.05 level.

1. Output Data Persentase Koagregasi 4 Jam

**Descriptives**

Persentase_Koagregasi

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | |
| L1P2F301 | 3 | 23.5633 | 1.85001 | 1.06810 | 18.9677 | 28.1590 | 22.01 | 25.61 |
| L1P2F302 | 3 | 21.6333 | 1.74024 | 1.00473 | 17.3103 | 25.9563 | 19.64 | 22.85 |
| L1P2F305 | 3 | 37.9333 | 8.13738 | 4.69812 | 17.7190 | 58.1477 | 28.60 | 43.54 |
| L1P2F306 | 3 | 20.8133 | 2.61125 | 1.50761 | 14.3266 | 27.3000 | 18.25 | 23.47 |
| L1P2F308 | 3 | 26.8200 | 5.70380 | 3.29309 | 12.6510 | 40.9890 | 22.70 | 33.33 |
| Total | 15 | 26.1527 | 7.60000 | 1.96231 | 21.9439 | 30.3614 | 18.25 | 43.54 |

**Tests of Homogeneity of Variances**

| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Persentase_Koagregasi | Based on Mean | 4.621 | 4 | 10 | .023 |
| | Based on Median | .554 | 4 | 10 | .701 |
| | Based on Median and with adjusted df | .554 | 4 | 4.091 | .709 |
| | Based on trimmed mean | 3.980 | 4 | 10 | .035 |

**Multiple Comparisons**

Dependent Variable: Persentase_Koagregasi

Tukey HSD

| (I) Isolat BAL | (J) Isolat BAL | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| L1P2F301 | L1P2F302 | 1.93000 | 3.86471 | .986 | -10.7891 | 14.6491 |
| | L1P2F305 | -14.37000* | 3.86471 | .026 | -27.0891 | -1.6509 |
| | L1P2F306 | 2.75000 | 3.86471 | .949 | -9.9691 | 15.4691 |
| | L1P2F308 | -3.25667 | 3.86471 | .911 | -15.9757 | 9.4624 |
| L1P2F302 | L1P2F301 | -1.93000 | 3.86471 | .986 | -14.6491 | 10.7891 |
| | L1P2F305 | -16.30000* | 3.86471 | .012 | -29.0191 | -3.5809 |
| | L1P2F306 | .82000 | 3.86471 | .999 | -11.8991 | 13.5391 |
| | L1P2F308 | -5.18667 | 3.86471 | .674 | -17.9057 | 7.5324 |
| L1P2F305 | L1P2F301 | 14.37000* | 3.86471 | .026 | 1.6509 | 27.0891 |
| | L1P2F302 | 16.30000* | 3.86471 | .012 | 3.5809 | 29.0191 |
| | L1P2F306 | 17.12000* | 3.86471 | .009 | 4.4009 | 29.8391 |
| | L1P2F308 | 11.11333 | 3.86471 | .095 | -1.6057 | 23.8324 |
| L1P2F306 | L1P2F301 | -2.75000 | 3.86471 | .949 | -15.4691 | 9.9691 |
| | L1P2F302 | -.82000 | 3.86471 | .999 | -13.5391 | 11.8991 |
| | L1P2F305 | -17.12000* | 3.86471 | .009 | -29.8391 | -4.4009 |
| | L1P2F308 | -6.00667 | 3.86471 | .554 | -18.7257 | 6.7124 |
| L1P2F308 | L1P2F301 | 3.25667 | 3.86471 | .911 | -9.4624 | 15.9757 |
| | L1P2F302 | 5.18667 | 3.86471 | .674 | -7.5324 | 17.9057 |
| | L1P2F305 | -11.11333 | 3.86471 | .095 | -23.8324 | 1.6057 |
| | L1P2F306 | 6.00667 | 3.86471 | .554 | -6.7124 | 18.7257 |

*. The mean difference is significant at the 0.05 level.

2. Output Data Perbandingan OD 0,3 dan 4 Jam

**Descriptives**

nilai_OD

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | |
| 0 jam | 15 | .5780 | .05583 | .01442 | .5471 | .6089 | .45 | .66 |
| 3 jam | 15 | .4507 | .03788 | .00978 | .4297 | .4716 | .38 | .50 |
| 4 jam | 15 | .4240 | .03582 | .00925 | .4042 | .4438 | .35 | .46 |
| Total | 45 | .4842 | .08047 | .01200 | .4600 | .5084 | .35 | .66 |

**Tests of Homogeneity of Variances**

| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| nilai_OD | Based on Mean | 1.554 | 2 | 42 | .223 |
| | Based on Median | .451 | 2 | 42 | .640 |
| | Based on Median and with adjusted df | .451 | 2 | 33.347 | .641 |
| | Based on trimmed mean | 1.291 | 2 | 42 | .286 |

**Multiple Comparisons**

Dependent Variable: nilai_OD

Tukey HSD

| (I) waktu_inkubasi | (J) waktu_inkubasi | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 0 jam | 3 jam | .12733* | .01610 | <,001 | .0882 | .1665 |
| | 4 jam | .15400* | .01610 | <,001 | .1149 | .1931 |
| 3 jam | 0 jam | -.12733* | .01610 | <,001 | -.1665 | -.0882 |
| | 4 jam | .02667 | .01610 | .234 | -.0125 | .0658 |
| 4 jam | 0 jam | -.15400* | .01610 | <,001 | -.1931 | -.1149 |
| | 3 jam | -.02667 | .01610 | .234 | -.0658 | .0125 |

*. The mean difference is significant at the 0.05 level.

**Lampiran 5.** Perhitungan Persentase Koagregasi

**a. Persentase Koagregasi 3 Jam**

(Ulangan 1)

L1P2F301+*P.aeruginosa* =

$\frac{(0,58+0,57)-2\times0,49}{(0,58+0,57)} \times 100$

$= \frac{1,15-0,98}{1,15} \times 100$

= 0,1478 × 100

= 14,78

(Ulangan 2)

L1P2F301+ *P. aeruginosa* =

$\frac{(0,55+0,66)-2\times0,47}{(0,55+0,66)} \times 100$

$= \frac{1,21-0,94}{1,21} \times 100$

= 0,2231 × 100

= 22,31

(Ulangan 3)

L1P2F301+ *P. aeruginosa* =

$\frac{(0,55+0,62)-2\times0,47}{(0,55+0,62)} \times 100$

$= \frac{1,17-0,94}{1,17} \times 100$

= 0,1965 × 100

= 19,65

(Ulangan 1)

L1P2F302+ *P. aeruginosa* =

$\frac{(0,49+0,57)-2\times0,50}{(0,49+0,57)} \times 100$

$= \frac{1,06-1}{1,06} \times 100$

= 0,0566 × 100

= 5,66

(Ulangan 2)

L1P2F302+ *P. aeruginosa* =

$\frac{(0,50+0,66)-2\times0,47}{(0,50+0,66)} \times 100$

$= \frac{1,16-0,94}{1,16} \times 100$

= 0,1896 × 100

= 18,96

(Ulangan 3)

L1P2F302+ *P. aeruginosa* =

$\frac{(0,50+0,62)-2\times0,46}{(0,50+0,62)} \times 100$

$= \frac{1,12-0,92}{1,12} \times 100$

= 0,1785 × 100

= 17,85

(Ulangan 1)

L1P2F305+ *P. aeruginosa* =

$\frac{(0,51+0,57)-2\times0,39}{(0,51+0,57)} \times 100$

(Ulangan 2)

L1P2F305+ *P. aeruginosa* =

$\frac{(0,58+0,66)-2\times0,38}{(0,50+0,66)} \times 100$

$= \frac{1,08-0,78}{1,08} \times 100$

= 0,2777 × 100

= 27,77

(Ulangan 3)

L1P2F305 + *P. aeruginosa* $=$

$\frac{(0,58+0,62)-2\times0,38}{(0,58+0,62)} \times 100$

$= \frac{1,2-0,76}{1,2} \times 100$

= 0,2166 × 100

= 21,66

(Ulangan 2)

L1P2F306 + *P. aeruginosa* $=$

$\frac{(0,49+0,66)-2\times0,45}{(0,49+0,66)} \times 100$

$= \frac{1,15-0,9}{1,15} \times 100$

= 0,2173 × 100

= 21,73

(Ulangan 1)

L1P2F308 + *P. aeruginosa* $=$

$\frac{(0,49+0,66)-2\times0,45}{(0,49+0,66)} \times 100$

$= \frac{1,15-0,9}{1,15} \times 100$

= 0,2173 × 100

= 21,73

(Ulangan 3)

L1P2F308 + *P. aeruginosa* $=$

$= \frac{1,24-0,76}{1,24} \times 100$

= 0,3870 × 100

= 38,70

(Ulangan 1)

L1P2F306 + *P. aeruginosa* $=$

$\frac{(0,50+0,57)-2\times0,45}{(0,50+0,57)} \times 100$

$= \frac{1,07-0,9}{1,07} \times 100$

= 0,1588 × 100

= 15,88

(Ulangan 3)

L1P2F306 + *P. aeruginosa* $=$

$\frac{(0,49+0,62)-2\times0,45}{(0,49+0,62)} \times 100$

$= \frac{1,11-0,9}{1,11} \times 100$

= 0,1891 × 100

= 18,91

(Ulangan 2)

L1P2F308 + *P. aeruginosa* $=$

$\frac{(0,57+0,66)-2\times0,47}{(0,57+0,66)} \times 100$

$= \frac{1,23-0,94}{1,23} \times 100$

= 0,2357 × 100

= 23,57

$\frac{(0,57+0,62)-2\times0,48}{(0,57+0,62)} \times 100$

$= \frac{1,19-0,96}{1,19} \times 100$

= 0,1932 × 100

= 19,32

**b. Persentase Koagregasi 4 Jam**

(Ulangan 1)

L1P2F301+ *P. aeruginosa* $=$

$\frac{(0,58+0,57)-2\times0,45}{(0,58+0,57)} \times 100$

$= \frac{1,15-0,90}{1,15} \times 100$

= 0,2173 × 100

= 21,73

(Ulangan 2)

L1P2F301+ *P. aeruginosa* $=$

$\frac{(0,55+0,66)-2\times0,45}{(0,55+0,66)} \times 100$

$= \frac{1,21-0,90}{1,21} \times 100$

= 0,2561 × 100

= 25,61

(Ulangan 3)

L1P2F301+ *P. aeruginosa* $=$

$\frac{(0,55+0,62)-2\times0,45}{(0,55+0,62)} \times 100$

$= \frac{1,17-0,90}{1,17} \times 100$

= 0,2307 × 100

= 23,07

(Ulangan 1)

L1P2F302+ *P. aeruginosa* $= 41 \times 100$

$= \frac{1,06-0,82}{1,06} \times 100$

= 0,2264 × 100

= 22,64

(Ulangan 2)

L1P2F302+ *P. aeruginosa* $=$

$\frac{(0,50+0,66)-2\times0,45}{(0,50+0,66)} \times 100$

$= \frac{1,16-0,90}{1,16} \times 100$

= 0,2241 × 100

(Ulangan 3)

L1P2F302+ *P. aeruginosa* $=$

$\frac{(0,50+0,62)-2\times0,45}{(0,50+0,62)} \times 100$

$= \frac{1,12-0,90}{1,12} \times 100$

= 0,1964 × 100

= 22,41

(Ulangan 1)

L1P2F305+ *P. aeruginosa* $=$

$\frac{(0{,}51+0{,}57)-2\times0{,}39}{(0{,}51+0{,}57)} \times 100$

$= \frac{1{,}08-0{,}78}{1{,}08} \times 100$

= 0,2777 × 100

= 27,77

(Ulangan 3)

L1P2F305 + *P. aeruginosa* $=$

$\frac{(0{,}58+0{,}62)-2\times0{,}35}{(0{,}58+0{,}62)} \times 100$

$= \frac{1{,}2-0{,}70}{1{,}2} \times 100$

= 0,4166 × 100

= 41,66

(Ulangan 2)

L1P2F306 + *P. aeruginosa* $=$

$\frac{(0{,}49+0{,}66)-2\times0{,}44}{(0{,}49+0{,}66)} \times 100$

$= \frac{1{,}15-0{,}88}{1{,}15} \times 100$

= 0,2347 × 100

= 23,47

(Ulangan 1)

L1P2F308 + *P. aeruginosa* $=$

$\frac{(0{,}49+0{,}66)-2\times0{,}42}{(0{,}49+0{,}66)} \times 100$

$= \frac{1{,}15-0{,}84}{1{,}15} \times 100$

= 19,64

(Ulangan 2)

L1P2F305+ *P. aeruginosa* $=$

$\frac{(0{,}58+0{,}66)-2\times0{,}35}{(0{,}50+0{,}66)} \times 100$

$= \frac{1{,}24-0{,}70}{1{,}24} \times 100$

= 0,4354 × 100

= 43,54

(Ulangan 1)

L1P2F306 + *P. aeruginosa* $=$

$\frac{(0{,}50+0{,}57)-2\times0{,}44}{(0{,}50+0{,}57)} \times 100$

$= \frac{1{,}07-0{,}88}{1{,}07} \times 100$

= 0,1775× 100

= 17,75

(Ulangan 3)

L1P2F306 + *P. aeruginosa* $=$

$\frac{(0{,}49+0{,}62)-2\times0{,}44}{(0{,}49+0{,}62)} \times 100$

$= \frac{1{,}11-0{,}88}{1{,}11} \times 100$

= 0,2072 × 100

= 20,72

(Ulangan 2)

L1P2F308 + *P. aeruginosa* $=$

$\frac{(0{,}57+0{,}66)-2\times0{,}41}{(0{,}57+0{,}66)} \times 100$

$= \frac{1{,}23-0{,}82}{1{,}23} \times 100$

= 0,2695 × 100

= 26,95

= 0,3333 × 100

= 33,33

(Ulangan 3)

L1P2F308 + *P. aeruginosa* =

$$\frac{(0,57+0,62)-2\times0,46}{(0,57+0,62)} \times 100$$

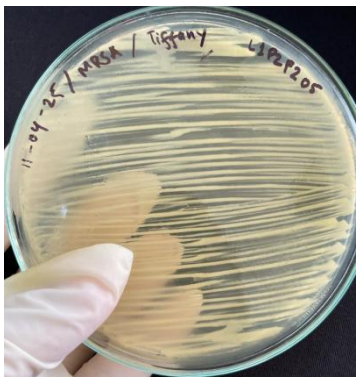
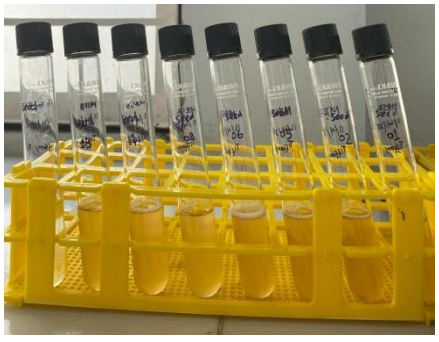
$$= \frac{1,19-0,92}{1,19} \times 100$$

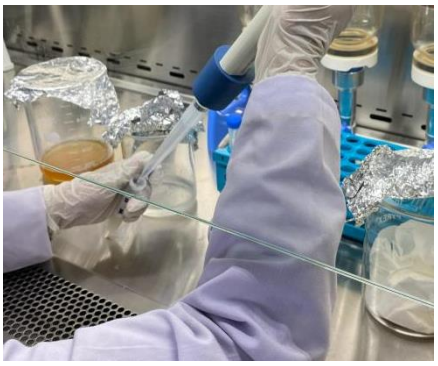
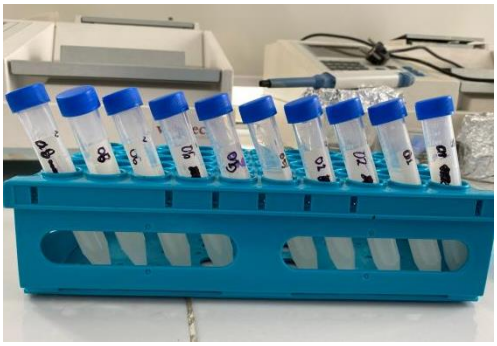
= 0,2268 × 100

= 22,68

**Lampiran 6.** Dokumentasi Penelitian

| Dokumentasi Kegiatan | Keterangan |
|---|---|
|  | Peremajaan bakteri uji (isolat BAL dan *P. aeruginosa*) ke medium padat |
|  <br>  | Peremajaan bakteri uji (isolat BAL dan *P. aeruginosa*) ke medium cair<br><br>Isolat BAL di media |

| | |
|---|---|
|      | MRSA setelah inkubasi 48 jam pada suhu 30°C dalam kondisi anaerob |
|  | Isolat BAL di media MRSB setelah inkubasi 24 jam pada suhu 30°C dalam kondisi anaerob |

| | |
|---|---|
|  <br>  <br>  | Pemisahan endapan sel bakteri dari supernatan hasil sentrifugasi dan pencucian dengan larutan PBS<br><br>Suspensi bakteri yang telah dicuci dengan larutan PBS steril |
|  | Pengukuran suspensi bakteri dengan spektrofotometer UV-Vis |

**Lampiran 7.** Kartu Bimbingan KTI

Kementerian Kesehatan
Direktorat Jenderal
Sumber Daya Kesehatan Manusia
Poltekkes Medan
Jalan Jamin Ginting KM. 13,5
Medan, Sumatera Utara 20137
(061) 8368633
https://poltekkes-medan.ac.id

**PRODI D-III JURUSAN TEKNOLOGI LABORATORIUM MEDIS**
**POLTEKKES KEMENKES MEDAN**

**KARTU BIMBINGAN KARYA TULIS ILMIAH**
**T.A. 2024/2025**

**NAMA** : **Merdu Fhebe Diparade Simanjuntak**
**NIM** : **P07534022123**
**NAMA DOSEN PEMBIMBING** : **Febri Sembiring S,Si, M.Si**
**JUDUL KTI** : **Evaluasi Daya Koagregasi Bakteri Asam Laktat Terhadap *Pseudomonas aeruginosa* Sebagai Kandidat Probiotik**

| No | Hari/Tanggal Bimbingan | Materi Bimbingan | Paraf Dosen Pembimbing |
|---|---|---|---|
| 1. | Rabu, 08 Januari 2025 | Konsultasi Judul | |
| 2. | Kamis, 16 Januari 2025 | Pengajuan Judul | |
| 3. | Kamis, 30 Januari 2025 | ACC Judul | |
| 4. | Jum'at, 07 Februari 2025 | Bimbingan Bab I | |
| 5. | Kamis, 13 Februari 2025 | Revisi Bab I-III | |
| 6. | Jum'at, 14 Februari 2025 | Revisi Bab I-III | |
| 7. | Senin, 17 Februari 2025 | Revisi Bab I-III | |
| 8. | Selasa, 18 Februari 2025 | ACC Proposal | |
| 9. | Jum'at, 25 April 2025 | Diskusi Hasil Penelitian | |
| 10. | Senin, 05 Mei 2025 | Bimbingan Bab IV | |
| 11. | Kamis, 15 Mei 2025 | Revisi Bab IV-V | |
| 12. | Senin, 02 Juni 2025 | ACC KTI | |

Medan, 03 Juni 2025
Dosen Pembimbing

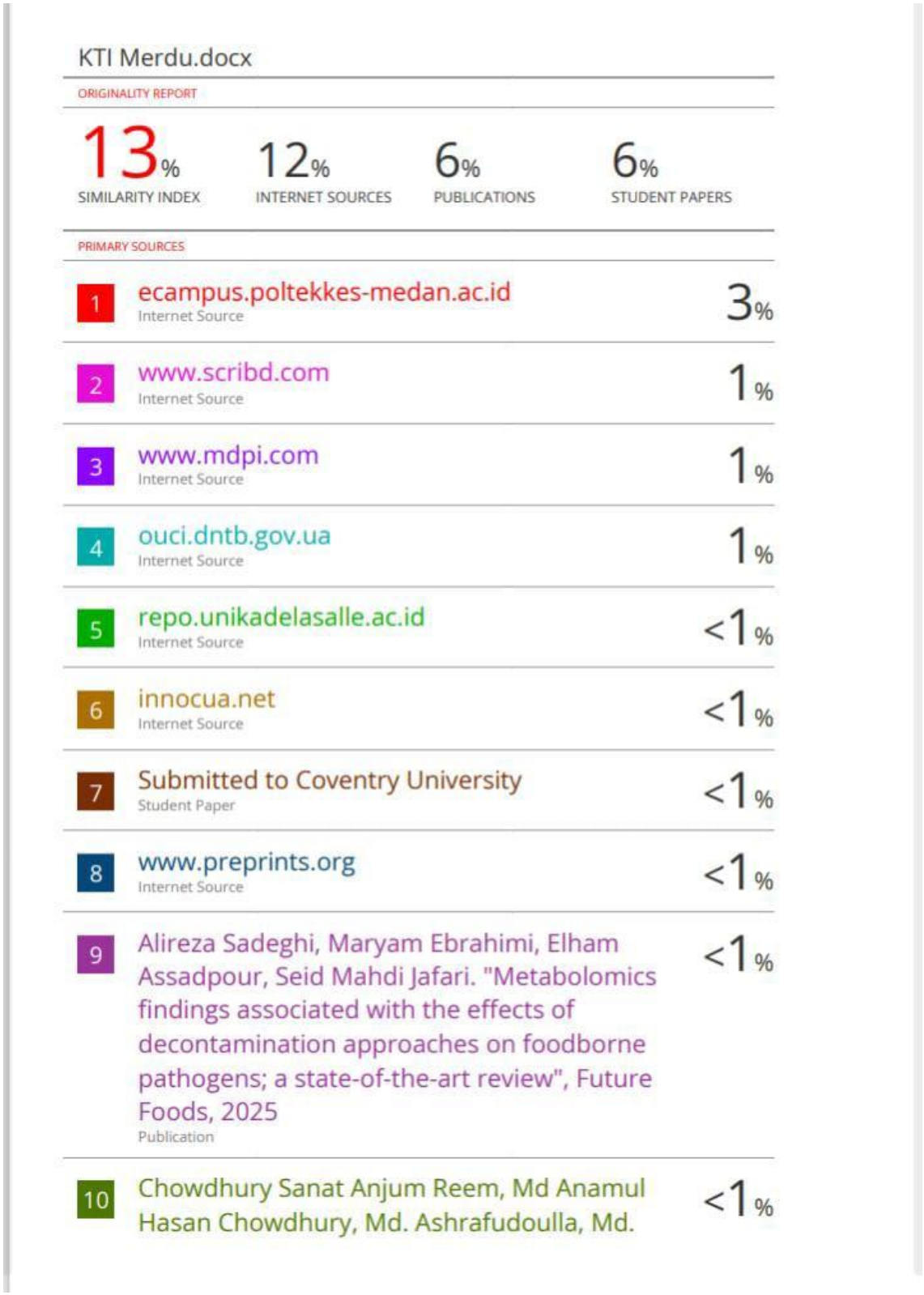
Febri Sembiring S,Si, M,Si
NIP.199202102022031002

**Lampiran 8.** Riwayat Hidup Penulis

**Merdu Fhebe Diparade Simanjuntak**

Penulis dilahirkan di Bekasi pada tanggal 2 Juli 2004, merupakan anak pertama dari Bapak Jojor Simanjuntak dan Ibu Risma Purba. Penulis memiliki seorang saudari perempuan bernama Nada Stephanie Simanjuntak serta dua orang saudara laki-laki bernama Alm. Laguna Baensangap Simanjuntak serta Morado Christiano Simanjuntak. Penulis memulai pendidikan di SDN 101880 Buntu Bedimbar dari tahun 2010-1016, lalu melanjutkan pendidikan di SMPN 4 Tanjung Morawa dari tahun 2016-2019 dan kemudian melanjutkan pendidikan menengah atas di SMAN 1 Tanjung Morawa dari tahun 2019-2022. Penulis kemudian melanjutkan pendidikan ke Perguruan Tinggi di Poltekkes Kemenkes Medan pada Jurusan Teknologi Laboratorium Medis dengan masa pendidikan tiga tahun terhitung sejak tahun 2022.

**Lampiran 9.** Persentase Turnitin



KTI Merdu.docx

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| 3 | www.mdpi.com<br>Internet Source | 1% |
| 4 | ouci.dntb.gov.ua<br>Internet Source | 1% |
| 5 | repo.unikadelasalle.ac.id<br>Internet Source | <1% |
| 6 | innocua.net<br>Internet Source | <1% |
| 7 | Submitted to Coventry University<br>Student Paper | <1% |
| 8 | www.preprints.org<br>Internet Source | <1% |
| 9 | Alireza Sadeghi, Maryam Ebrahimi, Elham Assadpour, Seid Mahdi Jafari. "Metabolomics findings associated with the effects of decontamination approaches on foodborne pathogens; a state-of-the-art review", Future Foods, 2025<br>Publication | <1% |
| 10 | Chowdhury Sanat Anjum Reem, Md Anamul Hasan Chowdhury, Md. Ashrafudoulla, Md. | <1% |