

LAMPIRAN

Lampiran 1. Hasil Determinasi Tanaman

HERBARIUM JATINANGOR
LABORATORIUM TAKSONOMI TUMBUHAN
JURUSAN BIOLOGI FMIPA UNPAD
 Gedung D2-212, Jl. Raya Bandung Sumedang Km 21 Jatinangor
 Telp. 022-7796412, email: phanerogamae@yahoo.com

LEMBAR IDENTIFIKASI TUMBUHAN
 No.47/HB/11/2023.

Herbarium Jatinangor, Laboratorium Taksonomi Tumbuhan, Jurusan Biologi FMIPA UNPAD, dengan ini menerangkan bahwa:

Nama : Lestari Hutasoit
 NIM/NIDN : 221FF04009
 Instansi : Universitas Bhakti Kencana.
 Telah melakukan identifikasi tumbuhan, dengan No. Koleksi: -
 Tanggal Koleksi : 22 Nopember 2023.
 Lokasi : Bandung.

Hasil Identifikasi
 Nama Ilmiah : *Limonia acidissima* Groff
 Sinonim : *Schinus limonia* L.
 Nama Lokal : Kulit Buah Kawista
 Suku/Famili : Rutaceae

Klasifikasi (Hirarki Taksonomi)
 Kingdom : Plantae
 Divisi : Magnoliophyta
 Class : Magnoliopsida
 Ordo : Sapindales
 Famili : Rutaceae
 Genus : *Limonia*
 Species : *Limonia acidissima* Groff

Referensi:

Backer, C. A. and Bakhuizen v/d Brink R. C Jr. 1963. Flora of Java. Wolter-Noordhoff NV. Groningen.
 Cronquist, Arthur. 1981. An Integrated System of Classification of Flowering Plants. Columbia University Press. New York
 The Plant List. Website Dunia Tumbuhan. <http://www.theplantlist.org/tpl1.1/record/kew-158489>.

Jatinangor, 23 Nopember 2023.

Identifikator,

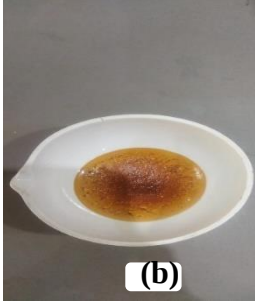
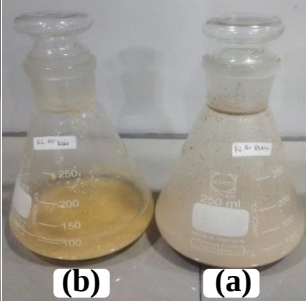
LABORATORIUM TAKSONOMI TUMBUHAN
 JURUSAN BIOLOGI FMIPA-UNPAD

Drs. Joko Kusmoro, M.P.
 NIP. 19600801 199101 1 001

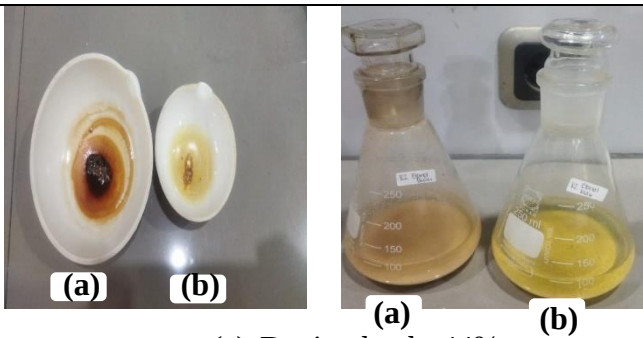
Lampiran 2. Pengolahan Bahan dan Pembuatan Simplisia

		
(1) Pengumpulan bahan baku sebanyak ± 8 kg	(2) Sortasi basah	
		
(3) Perajangan		(5) Sortasi kering
		
(4) Pengeringan		(6) Penghalusan
  Serbuk simplisia kulit dan daging buah kawista muda (1,605 kg dan 1,090 kg) (7) Pengepakan		

Lampiran 3. Penetapan Karakterisasi Simplisia

Pengujian	Hasil	
Susut pengeringan (Metode dengan <i>mouisture balance</i>)	 Daging buah: 6,49%	 Kulit buah: 8,40%
Kadar air (Metode destilasi)	 Daging buah T0 = 3,4 mL T1 = 3,7 mL } 8%	 Kulit buah T0 = 3,4 mL T1 = 3,8 mL } 6%
Kadar abu (Alat: tanur, suhu 600°C selama 30 menit)	 Daging buah: 9%	 Kulit buah: 4%
Kadar sari larut air	 (b)  (b) (a) (a) Daging buah: 39% (b) Kulit buah: 9%	

Lampiran 3. (Lanjutan)

Kadar sari larut etanol	 (a) Daging buah: 44% (b) Kulit buah: 10%
----------------------------	--

Perhitungan:**1. Kadar Air****Sampel Kulit Kawista Muda**

Bobot sampel = 5 gram

T0 = 3,4 mL

T1 = 3,8 mL

$$\begin{aligned}
 \text{Kadar Air} &= \frac{(T1 - T0)}{\text{bobot sampel}} \times 100\% \\
 &= \frac{(3,8 \text{ mL} - 3,4 \text{ mL})}{5 \text{ g}} \times 100\% \\
 &= \frac{0,4 \text{ mL}}{5 \text{ g}} \times 100\%
 \end{aligned}$$

Kadar Air = 8%

Sampel Daging Buah Kawista Muda

Bobot sampel = 5 gram

T0 = 3,4 mL

T1 = 3,7 mL

Lampiran 3. (Lanjutan)

$$\begin{aligned}
 \text{Kadar Air} &= \frac{(T_1 - T_0)}{\text{bobot sampel}} \times 100\% \\
 &= \frac{(3,7 \text{ mL} - 3,4 \text{ mL})}{5 \text{ g}} \times 100\% \\
 &= \frac{0,3 \text{ mL}}{5 \text{ g}} \times 100\%
 \end{aligned}$$

$$\text{Kadar Air} = 6\%$$

2. Kadar Abu Total**Hasil Perhitungan Penetapan Kadar Abu Total Simplisia**

Sampel	W (krus kosong) (g)	W (krus + bahan) (g)	W (krus + abu) (g)	Kadar abu (%)
Buah	32,81	32,91	32,91	9
Kulit	24,45	25,45	24,49	4

Keterangan:

W (krus kosong) = a

W (krus + bahan) = b

W (krus + abu) = c

Sampel Daging Buah Kawista Muda

$$\begin{aligned}
 \text{Kadar abu total} &= \frac{c-a}{b-a} \times 100\% \\
 &= \frac{32,91-32,81}{33,91-32,81} \times 100\% \\
 &= \frac{0,1}{1,1} \times 100\%
 \end{aligned}$$

Kadar abu total = 9% (memenuhi syarat <16,6%)

Lampiran 3. (Lanjutan)

Sampel Kulit Kawista Muda

$$\begin{aligned}\text{Kadar abu total} &= \frac{c-a}{b-a} \times 100\% \\ &= \frac{24,49-24,45}{25,45-24,45} \times 100\% \\ &= \frac{0,04}{1} \times 100\%\end{aligned}$$

Kadar abu total = 4% (memenuhi syarat <16,6%)

3. Kadar Sari Larut Air

Sampel Kulit Kawista Muda

Berat bahan awal = 5 gram

Berat cawan kosong = 37,90 gram

Berat cawan + sampel yang digunakan = 56,50 gram

Berat cawan + hasil pengeringan = 37,99 gram

$$\begin{aligned}\text{Kadar sari larut air} &= \frac{\text{Berat sari larut air}}{\text{Berat bahan awal}} \times \frac{100}{20} \times 100\% \\ &= \frac{(37,99-37,90) \text{ gram}}{5 \text{ gram}} \times \frac{100}{20} \times 100\%\end{aligned}$$

Kadar sari larut air = 9%

Sampel Daging Buah Kawista Muda

Berat bahan awal = 5 gram

Berat cawan kosong = 124,88 gram

Berat cawan + sampel yang digunakan = 143,79 gram

Berat cawan + hasil pengeringan = 125,27 gram

$$\begin{aligned}\text{Kadar sari larut air} &= \frac{\text{Berat sari larut air}}{\text{Berat bahan awal}} \times \frac{100}{20} \times 100\% \\ &= \frac{(125,27-124,88) \text{ gram}}{5 \text{ gram}} \times \frac{100}{20} \times 100\%\end{aligned}$$

Kadar sari larut air = 39%

Lampiran 3. (Lanjutan)

4. Kadar Sari Larut Etanol

Sampel Kulit Kawista Muda

Berat bahan awal = 5 gram

Berat cawan kosong = 33,20 gram

Berat cawan + sampel yang digunakan = 48,74 gram

Berat cawan + hasil pengeringan = 33,30 gram

$$\begin{aligned}\text{Kadar sari larut etanol} &= \frac{\text{Berat sari larut air}}{\text{Berat bahan awal}} \times \frac{100}{20} \times 100\% \\ &= \frac{(33,30 - 33,20) \text{ gram}}{5 \text{ gram}} \times \frac{100}{20} \times 100\%\end{aligned}$$

Kadar sari larut etanol = 10%

Sampel Daging Buah Kawista Muda

Berat bahan awal = 5 gram

Berat cawan kosong = 82,60 gram

Berat cawan + sampel yang digunakan = 98,81 gram

Berat cawan + hasil pengeringan = 83,04 gram

$$\begin{aligned}\text{Kadar sari larut etanol} &= \frac{\text{Berat sari larut air}}{\text{Berat bahan awal}} \times \frac{100}{20} \times 100\% \\ &= \frac{(83,04 - 82,60) \text{ gram}}{5 \text{ gram}} \times \frac{100}{20} \times 100\%\end{aligned}$$

Kadar sari larut etanol = 44%

Lampiran 4. Ekstraksi

		
Metode refluks (kulit buah kawista muda)	Metode sohxlet (daging buah kawista muda)	Penyaringan hasil ekstraksi
		
Proses pemisahan pelarut dan ekstrak, pemekatan	Hasil pemekatan ekstrak	
		
(a)	(b)	
Hasil ekstrak (a) kulit buah dan (b) daging buah kawista muda		

Perhitungan:

1. Metode Soxhlet (Buah Kawista Muda)

Bobot total ekstrak = 194,18 gram

Bobot bubuk simplisia total = 400 gram

Lampiran 4. (Lanjutan)

$$\begin{aligned}\text{Rendemen ekstrak} &= \frac{\text{Bobot total ekstrak}}{\text{Bobot bubuk simplisia total}} \times 100\% \\ &= \frac{194,18 \text{ gram}}{400 \text{ gram}} \times 100\%\end{aligned}$$

Rendemen ekstrak = 48,545% → 48,55% (memenuhi syarat >10%)

5. Metode Refluks (Kulit Kawista Muda)

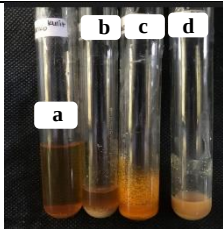
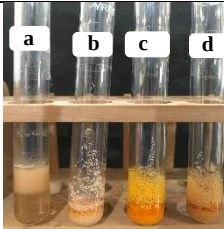
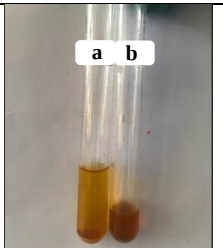
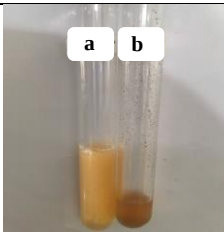
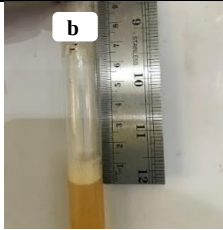
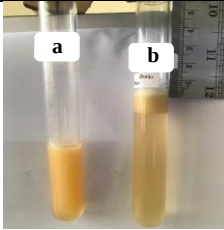
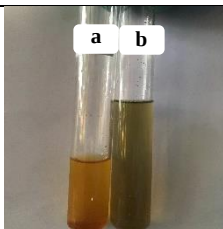
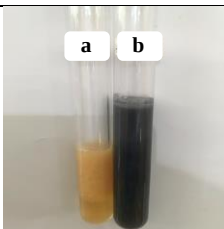
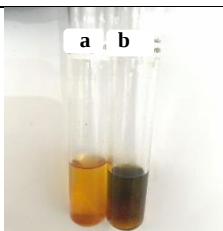
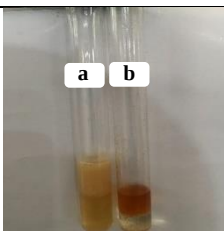
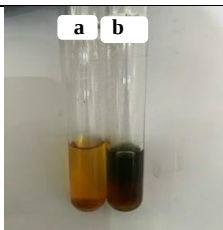
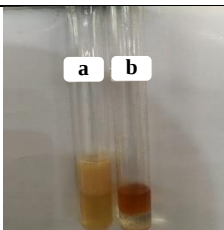
Bobot total ekstrak = 104,26 gram

Bobot bubuk simplisia total = 600 gram

$$\begin{aligned}\text{Rendemen ekstrak} &= \frac{\text{Bobot total ekstrak}}{\text{Bobot bubuk simplisia total}} \times 100\% \\ &= \frac{104,26 \text{ gram}}{600 \text{ gram}} \times 100\%\end{aligned}$$

Rendemen ekstrak = 17,376% → 17,38% (memenuhi syarat >10%)

Lampiran 5. Penapisan Fitokimia

Pengujian	EKB	EDB	Ket	Hasil
Alkaloid			a. Blanko b. Mayer c. Dragendrof d. Bouchardat	(+)
Flavonoid			a. Blanko b. Flavonoid	(+)
Saponin			a. Blanko b. Saponin	(+)
Tanin			a. Blanko b. Tanin	(+)
Steroid			a. Blanko b. Steroid	(-)
Terpenoid			a. Blanko b. Terpenoid	(+)

Lampiran 6. COA *Salmonella typhimurium* ATCC 14028



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: *S. enterica* sv Typhimurium ATCC 14028 PK/5
Lot Number: 605681

Product Number: R4606000
Expiration Date: 2024-06-26
(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

Note: *S. enterica* was formerly named as *S. choleraesuis* and *S. typhimurium*.

Lampiran 6. (Lanjutan)The logo for Thermo Scientific, with "thermo" in red and "scientific" in black.

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

Signed

A handwritten signature in black ink, appearing to be "J. B. Dr.".

Quality Assurance Manager

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Lampiran 7. COA Bakteri *Shigella flexneri* ATCC 12022

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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: S. flexneri sv 2b Gp B ATCC 12022 PK/5
Lot Number: 735593

Product Number: R4608101
Expiration Date: 2025-04-01
(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

Lampiran 7. (Lanjutan)**thermo**scientific

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Signed



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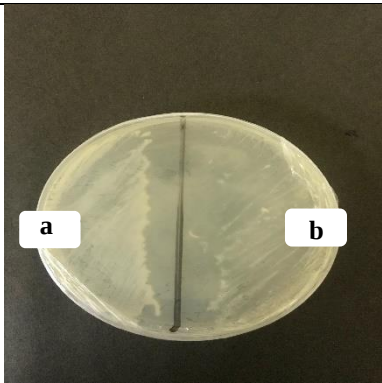
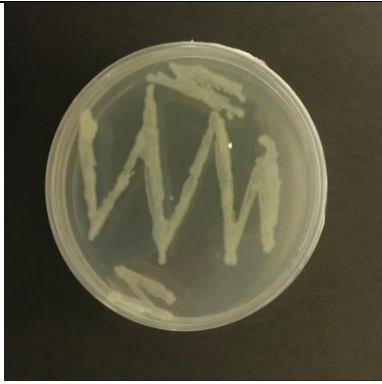
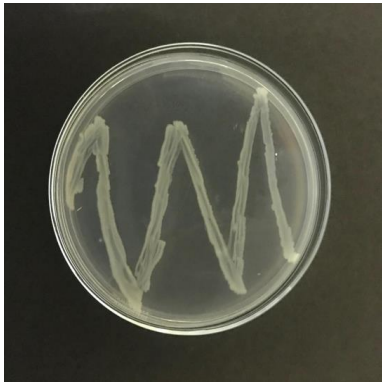
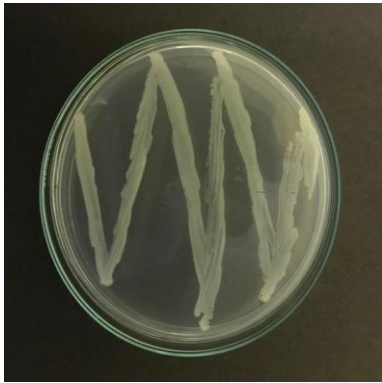


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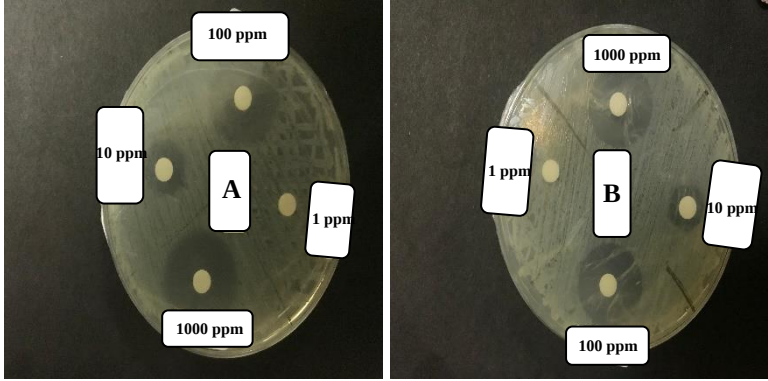
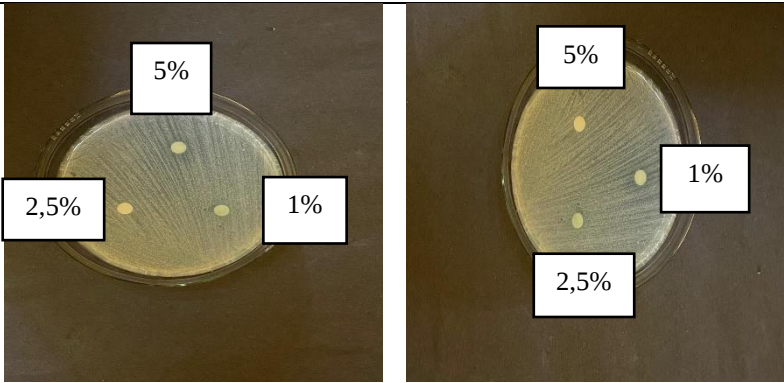
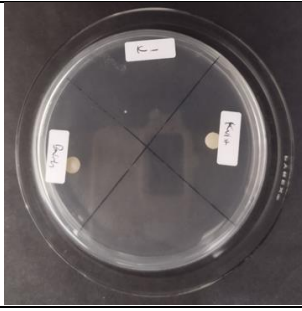


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Lampiran 8. Uji Aktivitas Antibakteri

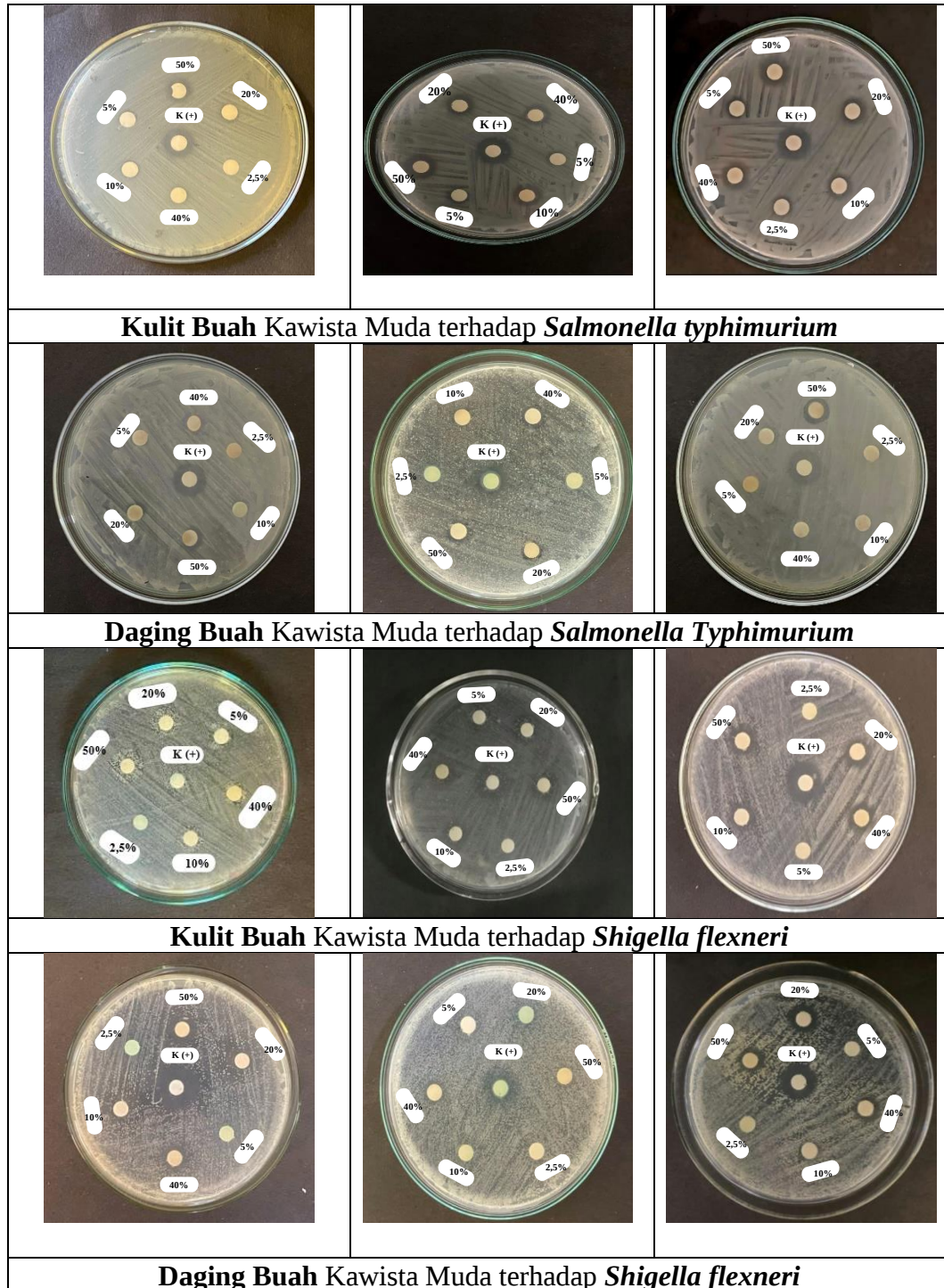
Kultur murni		a. <i>Salmonella typhimurium</i> ATCC 14028 b. <i>S. flexneri</i> ATCC 12022
Peremajaan bakteri	  <i>S. flexneri</i> ATCC 12022   <i>Salmonella typhimurium</i> ATCC 14028	

Lampiran 8. (Lanjutan)

Optimasi antibiotik ciprofloxacin infus	 A. <i>S. flexneri</i> ATCC 12022 dengan DDH ± 20 mm (aktivitas kuat) pada konsentrasi 100 ppm B. <i>Salmonella typhimurium</i> ATCC 14028 dengan DDH ± 20 mm (aktivitas kuat) pada konsentrasi 100 ppm
Optimasi larutan DMSO	 (a) (b) Optimasi larutan DMSO pada (a) <i>S. flexneri</i> ATCC 12022 dan (b) <i>Salmonella typhimurium</i> ATCC 14028 menunjukkan tidak ada DDH.
Kontrol negatif dan kontrol ekstrak	

Lampiran 8. (Lanjutan)

Hasil Uji Aktivitas Ekstrak Etanol Kulit dan Daging Buah Kawista Muda terhadap *Shigella flexneri* dan *Salmonella typhimurium*



Lampiran 8. (Lanjutan)

Perhitungan:

Optimasi antibiotik

- Antibiotik ciprofloxacin infus 200 mg/ 100 mL

$$= 2 \text{ mg / mL}$$

$$= 2000 \text{ } \mu\text{g/ mL}$$

$$= 2000 \text{ ppm}$$

- Pelarut: aquadest steril

- Konsentrasi pengenceran antibiotik:

a. 1000 ppm

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 2000 \text{ ppm} = 10 \text{ mL} \times 1000 \text{ ppm}$$

$$V_1 = 5 \text{ mL}$$

b. 100 ppm

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 1000 \text{ ppm} = 10 \text{ mL} \times 100 \text{ ppm}$$

$$V_1 = 1 \text{ mL}$$

c. 10 ppm

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 100 \text{ ppm} = 10 \text{ mL} \times 10 \text{ ppm}$$

$$V_1 = 1 \text{ mL}$$

d. 1 ppm

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 10 \text{ ppm} = 10 \text{ mL} \times 10 \text{ ppm}$$

$$V_1 = 1 \text{ mL}$$

Lampiran 8. (Lanjutan)

Konsentrasi ekstrak kulit dan daging buah kawista muda

- Pelarut DMSO 5 % = 5 mL DMSO 100% di ad Aqudest steril 100 mL
- Larutan induk: 500.000 ppm (2,5 g ekstrak kulit dan daging buah kawista muda, dilarutkan dalam 5 mL DMSO 5%)

- Konsentrasi pengenceran ekstrak:

- a. 400.000 ppm

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 500.000 \text{ ppm} = 5 \text{ mL} \times 400.000 \text{ ppm}$$

$$V_1 = 4 \text{ mL}$$

- b. 200.000 ppm

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 400.000 \text{ ppm} = 5 \text{ mL} \times 200.000 \text{ ppm}$$

$$V_1 = 2,5 \text{ mL}$$

- c. 100.000 ppm

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 200.000 \text{ ppm} = 5 \text{ mL} \times 100.000 \text{ ppm}$$

$$V_1 = 2,5 \text{ mL}$$

- d. 50.0000 ppm

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 100.000 \text{ ppm} = 5 \text{ mL} \times 50.000 \text{ ppm}$$

$$V_1 = 2,5 \text{ mL}$$

- e. 25.000 ppm

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 50.000 \text{ ppm} = 5 \text{ mL} \times 25.000 \text{ ppm}$$

$$V_1 = 2,5 \text{ mL}$$

Lampiran 9. Mikrodilusi

Perhitungan:

1. Konsentrasi ekstrak kulit dan daging buah kawista muda

Larutan induk ekstrak: 65.536 ppm

65.536 ppm = 65.536 µg/mL → Ditimbang ekstrak kulit dan daging buah kawista muda sebesar 0,328 g dilarutkan dalam 5 mL DMSO 5%

2. Suspensi bakteri

Diencerkan inokulum untuk menyesuaikan standar 0,5 McFarland ($1,5 \times 10^8$ CFU/mL) → Pengenceran pertama hasil Mc. Farland dipipet 1 mL yang memenuhi syarat pada rentang 0,08 abs-0,12 abs, lalu diencerkan dengan aquadest steril 10 mL (5×10^6 CFU/mL) → Konsentrasi akhir bakteri dalam tiap *well* menjadi $5,0 \times 10^4$ CFU/0,1 mL

3. Konsentrasi antibiotik

➤ Antibiotik ciprofloxacin infus 200 mg/ 100 mL

$$= 2 \text{ mg / mL}$$

$$= 2000 \text{ µg/ mL}$$

$$= 2000 \text{ ppm}$$

➤ Pelarut: aquadest steril

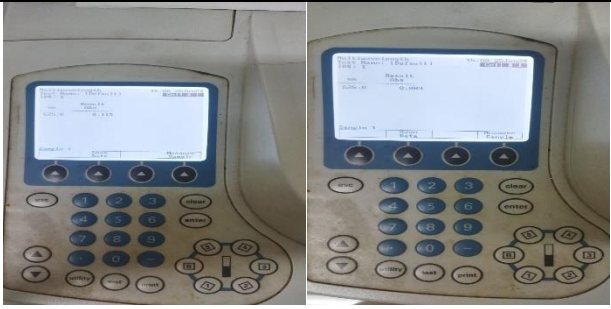
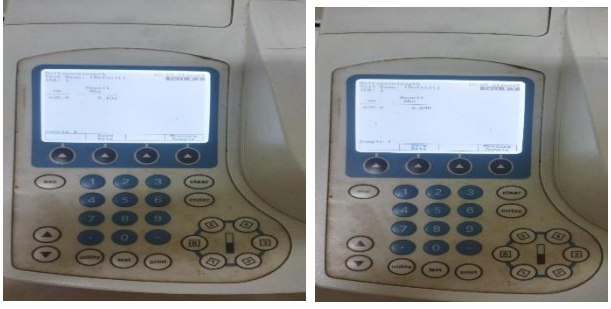
➤ Konsentrasi pengenceran antibiotik ciprofloxacin 1000 ppm:

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 2000 \text{ ppm} = 10 \text{ mL} \times 1000 \text{ ppm}$$

$$V_1 = 5 \text{ mL}$$

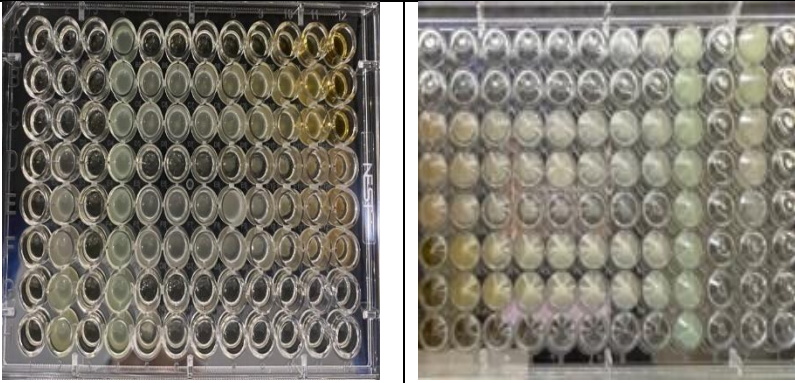
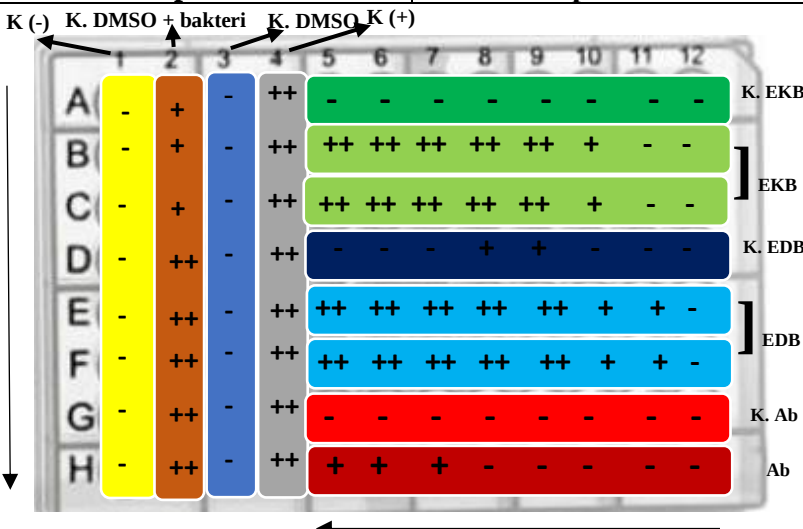
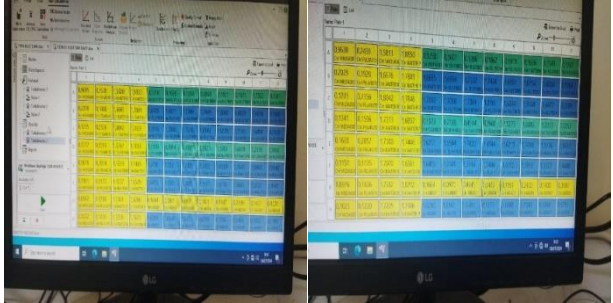
Lampiran 9. (Lanjutan)

	Absorbansi hasil inokulum <i>Shigella flexneri</i> adalah 0,113 dan <i>Salmonella typhimurium</i> adalah 0,083 abs
	Absorbansi hasil inokulum <i>Shigella flexneri</i> adalah 0,095 dan <i>Salmonella typhimurium</i> adalah 0,102 abs

Lampiran 9. (Lanjutan)

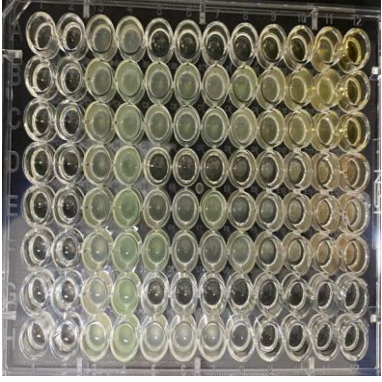
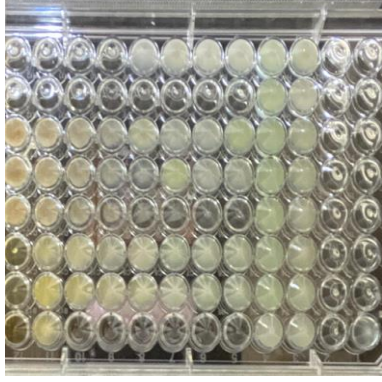
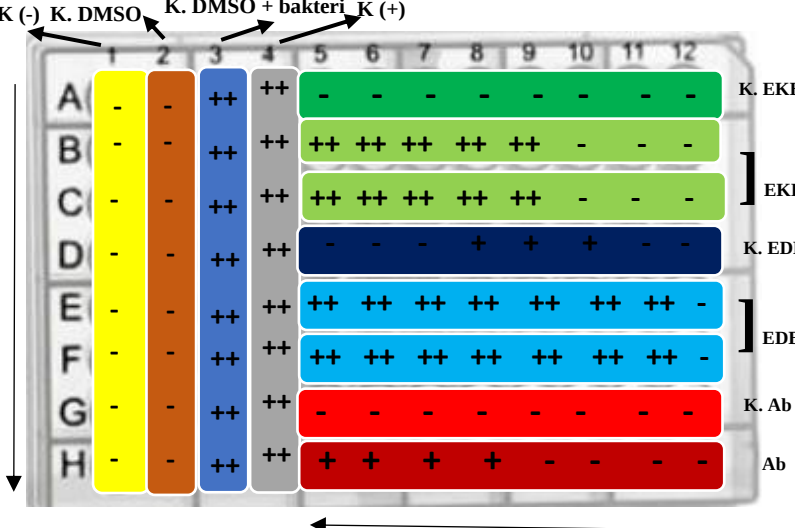
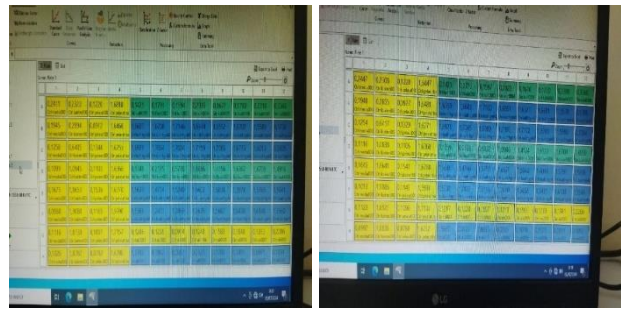
Hasil penentuan KHM metode mikrodilusi

Ekstrak etanol kulit dan daging buah kawista muda (*Shigella flexneri*)

Hasil		Keterangan
		KHM: Kulit buah= 16.384 ppm Daging buah= 32.768 ppm Ciprofloxacin= 6,25 ppm
Tampak atas	Tampak bawah	
		Interpretasi Ket: - = jernih + = keruh/ada endapan ++ = keruh dan ada endapan
		Absorbansi: Kulit buah= 0,1949;1,4494; 1,6828 Daging buah= 1,9040; 1,0981; 1,5667

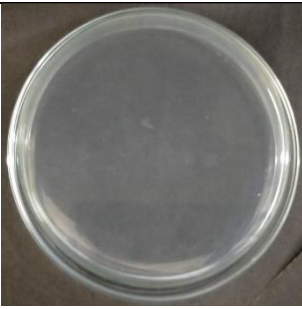
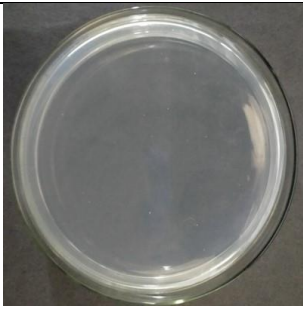
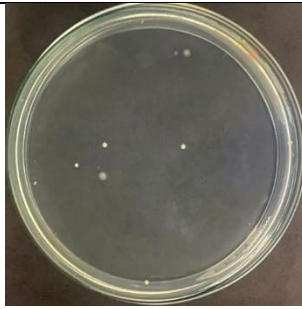
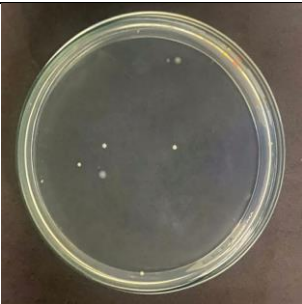
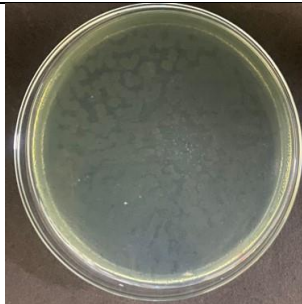
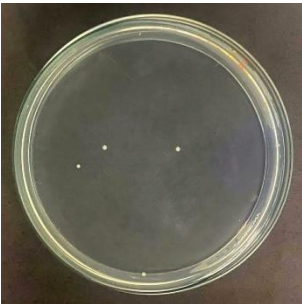
Lampiran 9. (Lanjutan)

Ekstrak etanol kulit dan daging buah kawista muda (*Salmonella typhimurium*)

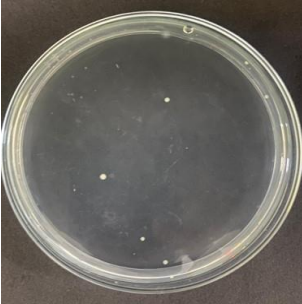
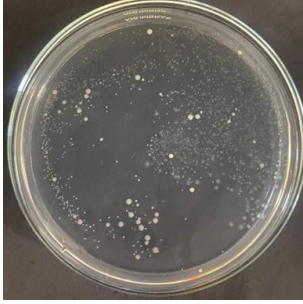
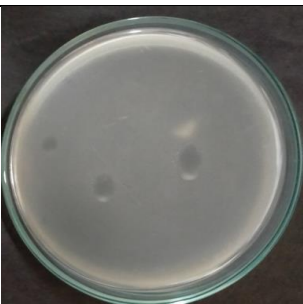
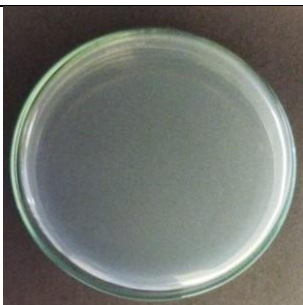
Hasil		Keterangan
 Tampak atas  Tampak bawah		KHM: Kulit buah= 8.192 ppm Daging buah = 32.768 ppm Ciprofloxacin= 12,5 ppm
 K (-) K. DMSO K. DMSO + bakteri K (+) 1 2 3 4 5 6 7 8 9 10 11 12 A - - ++ ++ - - - - - - - - K. EKB B - - ++ ++ ++ ++ ++ ++ - - - - EKB C - - ++ ++ ++ ++ ++ ++ - - - - EKB D - - ++ ++ - - - + + + - - K. EDB E - - ++ ++ ++ ++ ++ ++ ++ ++ - - EDB F - - ++ ++ ++ ++ ++ ++ ++ ++ - - EDB G - - ++ ++ - - - - - - - - K. Ab H - - ++ ++ + + + + - - - - Ab		Interpretasi Ket: - = jernih + = keruh/ada endapan ++ = keruh dan ada endapan
		Absorbansi: Kulit buah= 0,1730; 0,3305; 1,5589 Daging buah= 1,3560; 1,5941; 1,5769

Lampiran 9. (Lanjutan)

Hasil penentuan KBM metode cawan tuang

Kulit buah kawista muda konsentrasi (a) 32.768 ppm; (b) 16.384 ppm; (c) 8.192 ppm terhadap <i>Salmonella typhimurium</i>		
		
(a) 2 koloni	(b) 7 koloni	(c) 11 koloni
Kulit buah kawista muda konsentrasi (a) 32.768 ppm; (b) 16.384 ppm; (c) 8.192 ppm terhadap <i>Shigella flexneri</i>		
		
(a) 8 koloni	(b) 14 koloni	(c) ∞
Daging buah kawista muda konsentrasi (a) 32.768 ppm; (b) 16.384 ppm; (c) 8.192 ppm terhadap <i>Salmonella typhimurium</i>		
		
(a) 4 koloni	(b) ∞	(c) ∞

Lampiran 9. (Lanjutan)

Daging buah kawista muda konsentrasi (a) 32.768 ppm; (b) 16.384 ppm; (c) 8.192 ppm terhadap <i>Shigella flexneri</i>		
		
(a) 23 koloni	(b) ∞	(c) ∞
Kontrol positif (jumlah koloni bakteri tak terhitung)		
		
Kontrol negative		
		

Lampiran 9. (Lanjutan)

Perhitungan KHM dan KBM:

Jumlah koloni bakteri awal dalam 1 well = 5×10^4 CFU/0,1 ML

$$\% \text{Inhibisi} = \frac{\text{jumlah koloni bakteri awal} - \text{jumlah koloni bakteri akhir}}{\text{jumlah koloni bakteri awal}} \times 100\%$$

Ekstrak etanol kulit buah kawista muda

- a. 2 koloni bakteri *Salmonella typhimurium*

$$\begin{aligned} \% \text{Inhibisi} &= \frac{50.000 - 2}{50.000} \times 100\% \\ &= \frac{49.998}{50.000} \times 100\% \end{aligned}$$

$$\% \text{Inhibisi} = 99,996\%$$

- b. 8 koloni bakteri *Shigella flexneri*

$$\begin{aligned} \% \text{Inhibisi} &= \frac{50.000 - 8}{50.000} \times 100\% \\ &= \frac{49.992}{50.000} \times 100\% \end{aligned}$$

$$\% \text{Inhibisi} = 99,984\%$$

Ekstrak etanol daging buah kawista muda

- a. 4 koloni bakteri *Salmonella typhimurium*

$$\begin{aligned} \% \text{Inhibisi} &= \frac{50.000 - 4}{50.000} \times 100\% \\ &= \frac{49.996}{50.000} \times 100\% \end{aligned}$$

$$\% \text{Inhibisi} = 99,992\%$$

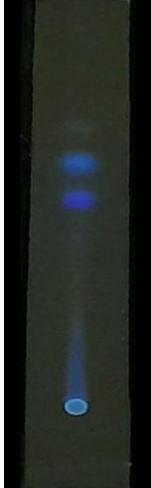
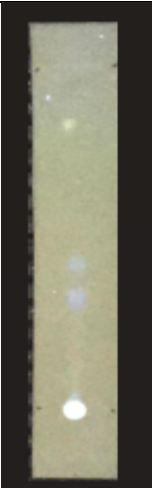
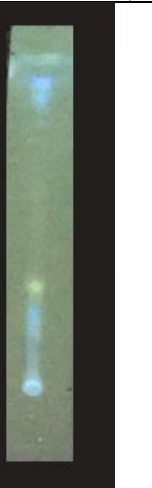
- b. 23 koloni bakteri *Shigella flexneri*

$$\begin{aligned} \% \text{Inhibisi} &= \frac{50.000 - 23}{50.000} \times 100\% \\ &= \frac{49.977}{50.000} \times 100\% \end{aligned}$$

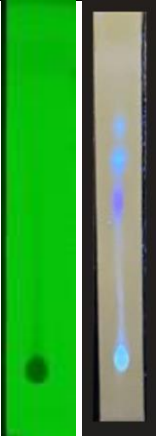
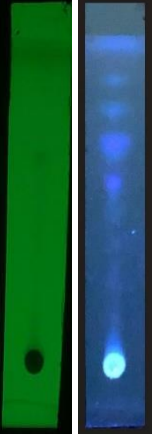
$$\% \text{Inhibisi} = 99,954\%$$

Lampiran 10. KLT Bioautografi

Hasil Optimasi Fase Gerak (Metode KLT)

Ekstrak Etanol	Senyawa Metabolit Sekunder		
	Alkaloid	Flavonoid	Saponin
Kulit buah kawista muda	 Sinar UV: $\lambda 366$ nm Pelarut: Toluene:Etil asetat (3:7)	 Sinar UV: $\lambda 366$ nm Pelarut: Asam format:Kloroform:Etil asetat (2:1:7)	 Sinar UV: $\lambda 366$ nm Pelarut: Kloroform: Asam asetat glasial:methanol:air (2:1:0,375:0,25)
Daging buah kawista muda	 Sinar UV: $\lambda 366$ nm Pelarut: Toluene:Asam Format:Etil asetat (3:0,25:1,5)	 Sinar UV: $\lambda 366$ nm Pelarut: Asam format:Etil asetat:Toluene (1:5:4)	 Sinar UV: $\lambda 366$ nm Pelarut: Kloroform: Asam asetat glasial:methanol:air (2:1:0,375:0,25)

Lampiran 10. (Lanjutan)

Ekstrak Etanol	Penampak Bercak				
	Sinar UV $\lambda 254$ nm dan $\lambda 366$ nm	H ₂ SO ₄ 10%	Sitroborat	FeCl ₃ 1%	Dragendroff
Kulit buah kawista muda	 Pelarut: Asam format:Etil asetat:Toluen (1:5:4)				
Daging buah kawista muda	 Pelarut: Asam format:Etil asetat:Toluen (1:5:4)				

Lampiran 10. (Lanjutan)**Perhitungan:****Harga Rf Ekstrak Etanol Kulit Buah Kawista Muda**

Panjang plat KLT= 6 cm

Lebar plat KLT= 1 cm

Batas atas 1 cm dan batas bawah 0,5 cm

$$R_f = \frac{\text{jarak yang ditempuh analit}}{\text{jarak yang ditempuh eluen}}$$

a) Rf1

Jarak yang ditempuh analit= 1 cm

Jarak yang ditempuh eluen= 4,5 cm

$$R_{f1} = \frac{1 \text{ cm}}{4,5 \text{ cm}}$$

$$R_{f1} = 0,222$$

b) Rf2

Jarak yang ditempuh analit= 2,4 cm

Jarak yang ditempuh eluen= 4,5 cm

$$R_{f2} = \frac{2,4 \text{ cm}}{4,5 \text{ cm}}$$

$$R_{f2} = 0,533$$

Harga Rf Ekstrak Etanol Daging Buah Kawista Muda

$$R_f = \frac{\text{jarak yang ditempuh analit}}{\text{jarak yang ditempuh eluen}}$$

a. Rf1

Jarak yang ditempuh analit= 2,0 cm

Jarak yang ditempuh eluen= 4,5 cm

$$R_{f1} = \frac{2 \text{ cm}}{4,5 \text{ cm}}$$

$$R_{f1} = 0,444$$

b. Rf2

Jarak yang ditempuh analit= 2,5 cm

Jarak yang ditempuh eluen= 4,5 cm

$$Rf2 = \frac{2,5 \text{ cm}}{4,5 \text{ cm}}$$
$$Rf2 = 0,555$$

c. Rf3

Jarak yang ditempuh analit= 3,0 cm

Jarak yang ditempuh eluen= 4,5 cm

$$Rf3 = \frac{3,0 \text{ cm}}{4,5 \text{ cm}}$$
$$Rf3 = 0,666$$

d. Rf4

Jarak yang ditempuh analit= 3,7 cm

Jarak yang ditempuh eluen= 4,5 cm

$$Rf4 = \frac{3,7 \text{ cm}}{4,5 \text{ cm}}$$
$$Rf4 = 0,822$$

e. Rf5

Jarak yang ditempuh analit= 3,8 cm

Jarak yang ditempuh eluen= 4,5 cm

$$Rf4 = \frac{3,8 \text{ cm}}{4,5 \text{ cm}}$$
$$Rf4 = 0,844$$

Lampiran 11. Hasil Turnitin

CEK PLAGIARISM_LESTARI HUTASOIT_221FF04009_ABSTRAK,
BAB 1 - BAB 5.pdf

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Lampiran 12. Kartu Bimbingan



No. Dok. 02.64.00/FRM-03/AKD-SPM

**KARTU BIMBINGAN TUGAS AKHIR II**

Pembimbing Utama	: Idar, M.Si
Nama Mahasiswa	: Lestari Hutasoit
NPM	: 221FF04009
Bidang Ilmu	: Farmakologi dan Farmasi Klinis

[illegible]

Lampiran 12. (Lanjutan)



No. Dok. 02.64.00/FRM-03/AKD-SPMI



KARTU BIMBINGAN TUGAS AKHIR II

Pembimbing Serta	: apt. Ika Kumia Sukmawati, M.Si
Nama Mahasiswa	: Lestari Hutasoit
NPM	: 221FF04009
Bidang Ilmu	: Farmakologi dan Farmasi Klinis

No	Hari/Tanggal	Waktu	Tempat	Materi	Paraf Dosen
1	Selasa, 27-02-2024	15.00	Kampus UBK	Persiapan teknis penelitian di Laboratorium	<i>[Signature]</i>
2	Selasa, 05-03-2024	13.00	Kampus UBK	Diskusi ketersediaan bahan dan persiapan alat penelitian	<i>[Signature]</i>
3	Rabu, 24-04-2024	09.57	Kampus UBK (Ruangan prodi)	Diskusi alur/prosedur kerja	<i>[Signature]</i>
4	Selasa, 30-04-2024	12.30	Zoom	Presentasi Laporan Kemajuan 1	<i>[Signature]</i>
5	Senin, 13-05-2024	08.30	Lab Mikrobiologi	Penentuan inokulum bakteri disesuaikan dengan nilai Mc. Farland (dibuat segar)	<i>[Signature]</i>
6	Selasa, 14-05-2024	08.30	Lab Mikrobiologi	Perhitungan suspensi bakteri, ekstrak maupun kontrol positif yang akan di pipet dengan mikropipet ke dalam cawan petri.	<i>[Signature]</i>
7	Rabu, 22-05-2024	10.00	Lab Mikrobiologi	Masukan untuk hasil uji aktivitas percobaan 2 dan disarankan agar dibuat kontrol DMSO dengan konsentrasi secara bertingkat mulai dari 1; 2,5%; dan 5%.	<i>[Signature]</i>
8	Sabtu, 25-05-2024	16.00	Zoom	Presentasi Laporan Kemajuan 2	<i>[Signature]</i>
9	Selasa, 11-06-2024	12-30	Kampus UBK	Mikrodilusi (alat dan bahan, prosedur kerja, perhitungan ekstrak, pelarut, dll)	<i>[Signature]</i>
10	Rabu, 12-06-2024	20.00	Zoom	Mikrodilusi, prosedur kerja (menyamakan persepsi)	<i>[Signature]</i>
11	Senin, 25-06-2024	13.30	Kampus UBK (Lab mikrobiologi)	Hasil mikrodilusi penentuan KHM, penentuan KBM metode cawan tuang dan prosedur metode bioautografi kontak	<i>[Signature]</i>
12	Senin, 01 Juli 2024	08.30	Kampus UBK (Lab mikrobiologi)	Mikrodilusi, perhitungan jumlah koloni untuk menentukan KHM dan KBM	<i>[Signature]</i>
13	Selasa, 09 Juli 2024	13.00	Kampus UBK	Draft skripsi BAB IV	<i>[Signature]</i>
14	Kamis, 11 Juli 2024	13.20	Prodi Farmasi	Revisi Draft Skripsi Cover-lampiran	<i>[Signature]</i>
15	Jumat, 12 Juli 2024	10.00	Kampus UBK	Pengesahan draft skripsi	<i>[Signature]</i>
16					
17					

Lampiran 13. Surat Persetujuan Publikasi**SURAT PERSETUJUAN PUBLIKASI TUGAS AKHIR
DALAM BENTUK ARTIKEL DI JURNAL ILMIAH**

Yang bertanda tangan di bawah ini,

Nama : Idar, M.Si

NIDN : 0402028105

Selaku pembimbing utama dari mahasiswa,

Nama : Lestari Hutasoit

NIM : 221FF04009

menyatakan bahwa demi kebaikan perkembangan ilmu pengetahuan, saya menyetujui Skripsi yang telah dibuat oleh mahasiswa tersebut dengan judul:

**AKTIVITAS ANTIBAKTERI EKSTRAK ETANOL KULIT DAN DAGING
BUAH KAWISTA MUDA (*Limonia acidissima* Groff) TERHADAP *Shigella*
flexneri dan *Salmonella typhimurium***

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Mengetahui,

Bandung, 19 September 2024



Idar, M.Si,

NIDN. 0402028105

Lampiran 14. Curriculum Vitae (CV)**BIODATA**

Nama Lengkap	: Lestari Hutasoit
Nama Panggilan	: Tari
Tempat/Tanggal Lahir	: Majalengka, 26 Oktober 1995
Jenis Kelamin	: Perempuan
Agama	: Kristen Protestan
Alamat	: Perum SDL Indah Blok AII No. 16, RT 017/RW 005, Ds. Cipeujeuh Wetan, Kec. Lemahabang, Kab. Cirebon, Jawa Barat
Email	: lestarihutasoit18@gmail.com
Nama Ayah	: Joslan Hutasoit
Nama Ibu	: Arta Br. Manulang
Anak ke-	: 2 dari 5 bersaudara
Pengalaman kerja	: RSIA. Limijati (September 2017- Desember 2018) RS. Santo Yusup (April 2019 - September 2022)