

LAMPIRAN

Lampiran 1. Time line penelitian

No	Tahapan Penelitian	Pelaksanaan Bulan / minggu ke -																	
		10 - 12		Jan				Feb				Maret				Apr			
				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Penyusunan proposal																		
2	Determinasi tanaman																		
3	Pembelian alat & bahan																		
4	Fermentasi kombucha																		
5	Pengujian Antimikroba																		
6	Formulasi & evaluasi sabun																		
7	Pengujian Antimikroba																		
8	Pengolahan data																		
9	Penyusunan Laporan																		

Lampiran 2. Hasil skrining fitokimia daun manggis

Parameter uji	Hasil	Keterangan	dokumentasi
Alkaloid			
Dragendorff	+	Terdapat endapan merah bata	
Mayer	+	Terdapat endapan putih	

Flavonoid	+	Terbentuknya warna pada lapisan amil alkohol	
Tanin			
FeCl 1%	+	Hitam kehijauan	
Gelatin 1%	+	Endapan putih	

Lampiran 3 Dokumentasi pembuatan kombucha daun manggis



Lampiran 4. Evaluasi pH sebelum fermentasi kombucha daun manggis

Batch			Rata-rata	SD	Rata-rata ± SD
1	2	3			
6.32	6.35	6.37	6.35	0.03	6.35 ± 0.03



Lampiran 5. Evaluasi pH setelah fermentasi kombucha daun manggis

Batch			Rata-rata	SD	Rata-rata ± SD
1	2	3			
3.02	3.05	3.12	3.06	0.05	3.06 ± 0.05



Lampiran 6. Evaluasi kadar asam sebelum fermentasi kombucha daun manggis

Batch			Rata-rata	SD	Rata-rata ± SD
1	2	3			
0,018	0,027	0,036	0,027	0.009	0,027 ± 0.009

Volume NaOH	Titration 1	Titration 2	Rata-rata
Batch 1	0,2 mL	0,2 mL	0,2 mL
Batch 2	0,3 mL	0,3 mL	0,3 mL
Batch 3	0,4 mL	0,4 mL	0,4 mL

- Batch 1

- Batch 2

$$\% \text{kadar} = \frac{V.\text{NaOH} \times N \times \text{BE}}{V.\text{sampel} \times 1000} \times 100$$

$$= \frac{0,2 \text{ mL} \times 0,1 \times 90}{10 \times 1000} \times 100$$

$$\% \text{kadar} = \frac{V.\text{NaOH} \times N \times \text{BE}}{V.\text{sampel} \times 1000} \times 100$$

$$= \frac{0,3 \text{ mL} \times 0,1 \times 90}{10 \times 1000} \times 100$$

$$= \frac{1,2}{10.000} \times 100 = \frac{2,7}{10.000} \times 100$$

$$= 0,018\% = 0,027\%$$

- Batch 3

$$\%kadar = \frac{V.NaOH \times N \times BE}{V.sampel \times 1000} \times 100$$

$$= \frac{0,4 \text{ mL} \times 0,1 \times 90}{10 \times 1000} \times 100$$

$$= \frac{3,6}{10.000} \times 100$$

$$= 0,036\%$$



Lampiran 7. Evaluasi kadar asam setelah fermentasi kombucha daun manggis

Batch			Rata-rata	SD	Rata-rata ± SD
1	2	3			
0,549	0,576	0,594	0,573	0.023	0,573 ± 0.023

Volume NaOH	Titration 1	Titration 2	Rata-rata
Batch 1	6,3 mL	6 mL	6,1 mL
Batch 2	6,5 mL	3,4 mL	6,4 mL
Batch 3	6,7 mL	6,6 mL	6,6 mL

- Batch 1

$$\%kadar = \frac{V.NaOH \times N \times BE \text{ asam}}{V.sampel \times 1000} \times 100$$

$$= \frac{6,1 \text{ mL} \times 0,1 \times 90}{10 \times 1000} \times 100$$

$$= \frac{54,9}{10.000} \times 100 = 0,549\%$$

- Batch 3

$$\%kadar = \frac{V.NaOH \times N \times BE}{V.sampel \times 1000} \times 100$$

$$= \frac{6,6 \text{ mL} \times 0,1 \times 90}{10 \times 1000} \times 100$$

$$= \frac{59,4}{10.000} \times 100 = 0,594\%$$

- Batch 2

$$\%kadar = \frac{V.NaOH \times N \times BE}{V.sampel \times 1000} \times 100$$

$$= \frac{6,4 \text{ mL} \times 0,1 \times 90}{10 \times 1000} \times 100$$

$$= \frac{57,6}{10.000} \times 100$$

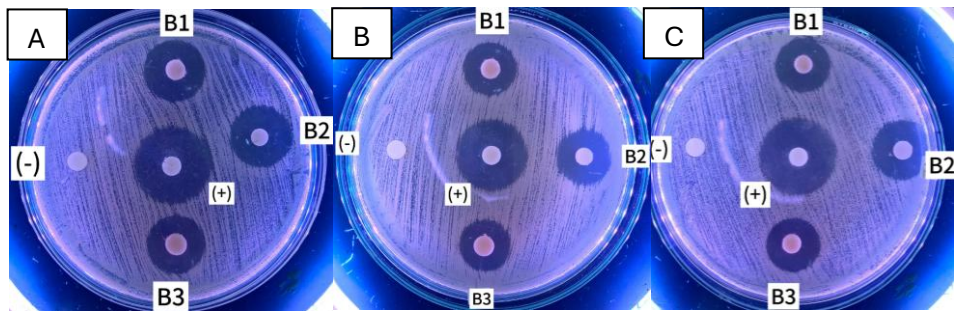
$$= 0,576\%$$



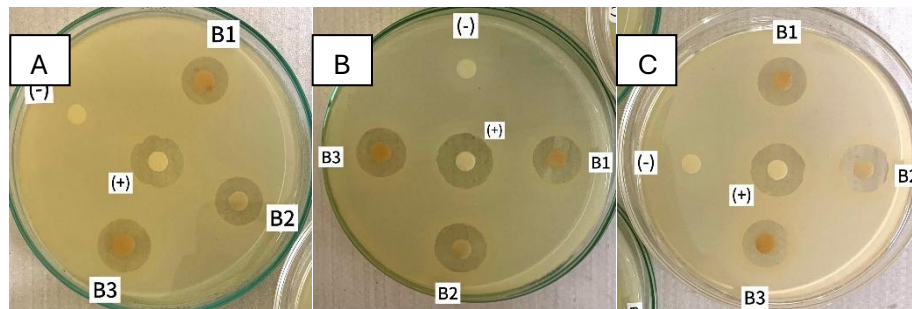
Lampiran 8. Uji aktivitas antimikroba kombucha daun manggis

Mikroba	sampel	Rep 1 (mm)	Rep 2 (mm)	Rep 3 (mm)	Rata-rata
<i>S. aureus</i>	Batch 1	12,5	12,8	12,9	12,73
	Batch 2	12,9	12,7	12,9	12,83
	Batch 3	12,1	12,9	12,6	12,53
	(+) Ciprofloxacin	17,9	17	17,5	17,47
	(-) akuades	-	-	-	-
<i>E. coli</i>	Batch 1	11,2	11,9	11,5	11,53
	Batch 2	11,7	11,5	11,9	11,70
	Batch 3	11,4	11,3	11,6	11,43
	(+) Ciprofloxacin	23,9	24,6	23,3	23,93
	(-) akuades	-	-	-	-
<i>C. albicans</i>	Batch 1	6,9	6,8	7,1	6,93
	Batch 2	7,1	7,3	6,7	7,03
	Batch 3	6,8	7,2	6,9	6,97
	(+) ketokonazole	26,8	27,5	27,5	27,27
	(-) akuades	-	-	-	-

Jenis Mikroba	Sampel	Diameter (mm)	Kategori	Standar
<i>Staphylococcus aureus</i>	Kombucha	12.70 ± 0.153	Kuat	Menurut (Davis & Stout, 1971) : Lemah (≤4 mm), sedang (5-10 mm), kuat (10-20 mm), sangat kuat (≥20 mm).
	(+) Ciprofloxacin	17.47 ± 0.45	Sangat kuat	
	(-) akuades	-	-	
<i>Escherichia coli</i>	Kombucha	11.55 ± 0.137	Kuat	
	(+) Ciprofloxacin	23.93 ± 0.65	Kuat	
	(-) akuades	-	-	
<i>Candida albicans</i>	Kombucha	6.98 ± 0.05	Sedang	
	(+) ketokonazole	27.27 ± 0.40	Sangat kuat	
	(-) akuades	-	-	



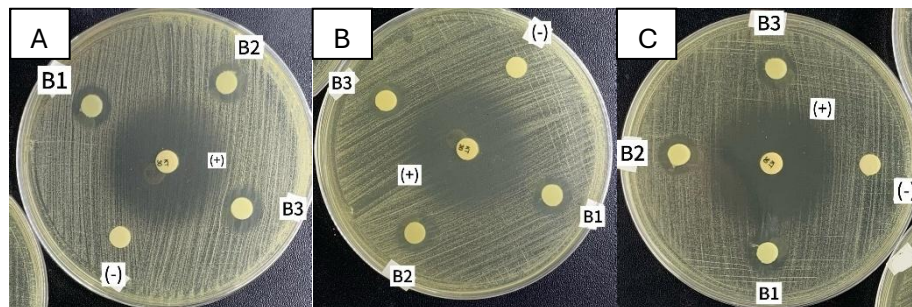
Hasil Uji Aktivitas kombucha terhadap *S. aureus*



Hasil Uji Aktivitas kombucha terhadap *E. coli*

Keterangan Gambar *S. aureus* dan *E. coli* :

A = Replikasi 1 ; B1 = Kombucha batch 1 ; (-) = kontrol negatif (akuades)
 B = Replikasi 2 ; B2 = Kombucha batch 2 ; (+) = kontrol positif (ciprofloxacin)
 C = Replikasi 3 ; B3 = Kombucha batch 3



Hasil Uji Aktivitas kombucha terhadap *C. albicans*

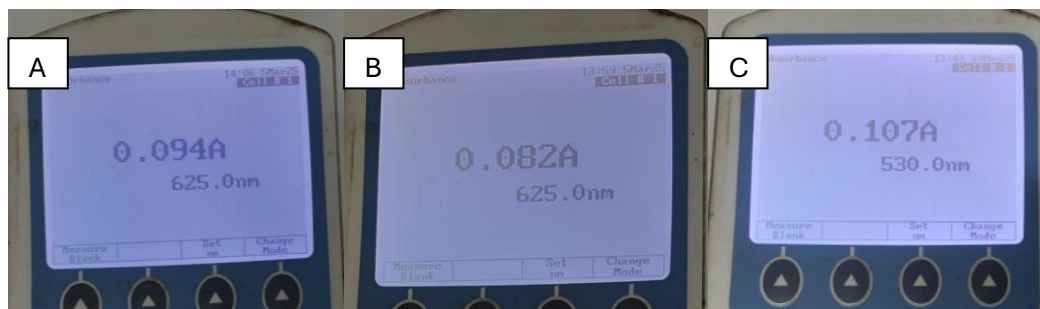
Keterangan :

A = Replikasi 1 ; B1 = Kombucha batch 1 ; (-) = kontrol negatif (akuades)
 B = Replikasi 2 ; B2 = Kombucha batch 2 ; (+) = kontrol positif (ketokonazole)
 C = Replikasi 3 ; B3 = Kombucha batch 3



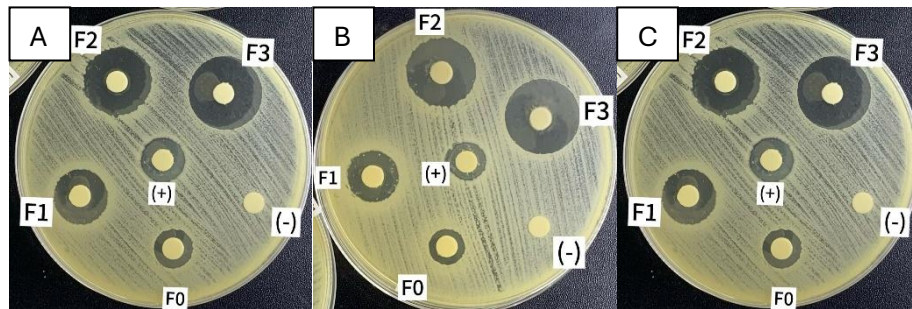
Proses pengujian *C. albicans* *S. aureus* *E. coli*
aktivitas kombucha

Lampiran 9. Hasil nilai absorban suspensi bakteri dan jamur

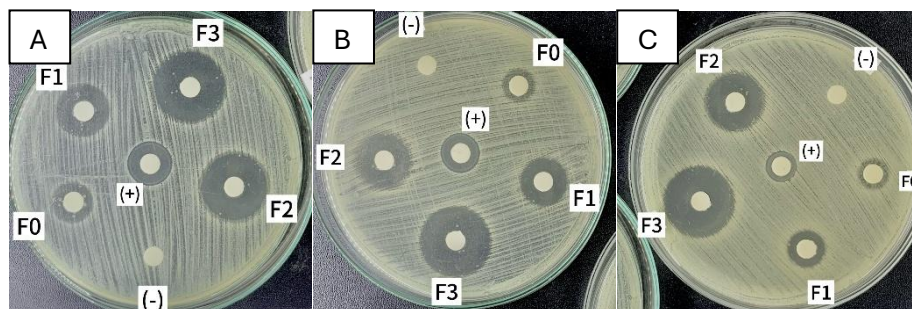


Lampiran 10. Uji aktivitas antimikroba sediaan sabun mandi cair

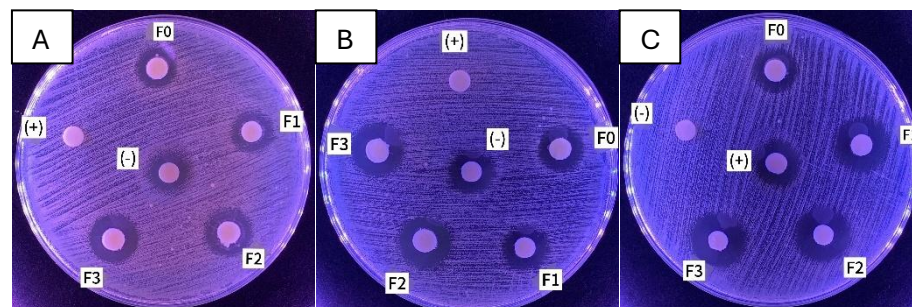
Mikroba	Kombucha	Rep 1 (mm)	Rep 2 (mm)	Rep 3 (mm)
<i>S. aureus</i>	F0	6,1	6,1	6,2
	F1	8,4	9,1	10,9
	F2	12	12,6	14,4
	F3	16,8	15,9	16,8
	(+) sabun cair 'X'	6,4	6,5	7
	(-) akuades	-	-	-
<i>E. coli</i>	F0	6,9	6,8	6,9
	F1	9,8	11	8,5
	F2	13,7	12,9	13,1
	F3	15	14,5	14,4
	(+)sabun cair 'X'	6,6	6,7	7,5
	(-) akuades	-	-	-
<i>C.albicans</i>	F0	5,9	6,3	6,1
	F1	7,1	7,3	6,9
	F2	9,9	9,7	9,6
	F3	10,2	10,3	10,5
	(+)sabun cair 'X'	6,7	6,3	6,5
	(-) akuades	-	-	-



Hasil Uji Aktivitas Sabun Cair terhadap *S.aureus*



Hasil Uji Aktivitas Sabun Cair terhadap *E.coli*



Hasil Uji Aktivitas Sabun Cair terhadap *C.albicans*

Keterangan :

A = Replikasi 1

B = Replikasi 2

C = Replikasi 3

F0 = Sabun Cair tanpa kombucha

F1 = Sabun Cair dengan kombucha 2%

F2 = Sabun Cair dengan kombucha 4%

F3 = Sabun Cair dengan kombucha 6%

(-) = Kontrol negatif (akuades)

(+) = Kontrol positif (sabun cair dipasaran “X”)

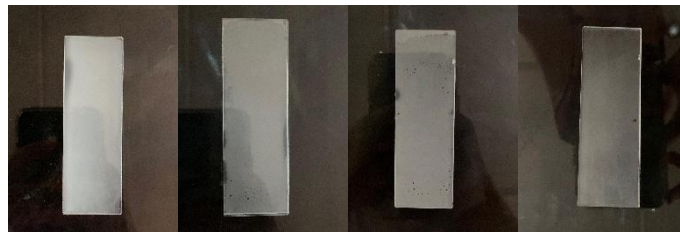
Lampiran 11. Evaluasi uji organoleptik sediaan sabun mandi cair

Formula	Replikasi	Hasil Pengamatan			
		Warna	Bau	Bentuk	Homogenitas
F0	1	Putih	Tidak berbau	Cair agak kental	Homogen
	2	Putih	Tidak berbau	Cair agak kental	Homogen
	3	Putih	Tidak berbau	Cair agak kental	Homogen
F1	1	Putih	Tidak berbau	Cair agak kental	Homogen
	2	Putih	Tidak berbau	Cair agak kental	Homogen
	3	Putih	Tidak berbau	Cair agak kental	Homogen
F2	1	Putih sedikit krem	Bau sedikit kombucha	Cair tidak terlalu kental	Homogen
	2	Putih sedikit krem	Bau sedikit kombucha	Cair tidak terlalu kental	Homogen
	3	Putih sedikit krem	Bau sedikit kombucha	Cair tidak terlalu kental	Homogen
F3	1	Putih sedikit krem	Bau sedikit kombucha	Cair tidak terlalu kental	Homogen
	2	Putih sedikit krem	Bau sedikit kombucha	Cair tidak terlalu kental	Homogen
	3	Putih sedikit krem	Bau sedikit kombucha	Cair tidak terlalu kental	Homogen



Lampiran 12. Evaluasi uji homogenitas sediaan sabun mandi cair

Replikasi	F0	F1	F2	F3
1	Homogen	Homogen	Homogen	Homogen
2	Homogen	Homogen	Homogen	Homogen
3	Homogen	Homogen	Homogen	Homogen



Lampiran 13. Evaluasi uji pH sediaan sabun mandi cair

Replikasi	F0	F1	F2	F3
1	9.24	8.93	8.44	8.03
2	9.26	8.96	8.38	8.01
3	9.28	8.92	8.46	8.02
Rata-Rata	9.26 ± 0.02	8.94 ± 0.02	8.43 ± 0.04	8.02 ± 0.01



Lampiran 14. Evaluasi uji viskositas sediaan sabun mandi cair

Replikasi	F0	F1	F2	F3
1	1678	1663	1635	1617
2	1682	1665	1632	1620
3	1677	1668	1633	1622
Rata-Rata	1679 ± 2.6	1665 ± 2.5	1633 ± 1.5	1620 ± 2.5



Lampiran 15. Evaluasi uji tinggi busa sediaan sabun mandi cair

Replikasi	F0	F1	F2	F3
1	21,2	17,7	15,8	15,1
2	21,2	17,8	15,3	14,5
3	19,1	17,7	15,7	14,7
Rata-Rata	$20,5 \pm 1,2$	$17,7 \pm 0,1$	$15,6 \pm 0,3$	$14,8 \pm 0,3$



Lampiran 16. Evaluasi uji iritasi sediaan sabun mandi cair

Waktu	Efek iritasi	Kelompok Uji				
		KP	F0	F1	F2	F3
Jam ke-24	Eritema	0	0	0	2	2
	Udema	0	0	0	0	0
Jam ke-48	Eritema	0	0	0	0	0
	Udema	0	0	0	0	0
Jam ke-72	Eritema	0	0	0	0	0
	Udema	0	0	0	0	0
Jumlah eritema		0	0	0	2	2
Jumlah udema		0	0	0	0	0

Keterangan :

KP : Kontrol Pembanding (tanpa dioleskan)

F0 : Basis Sabun Mandi Cair

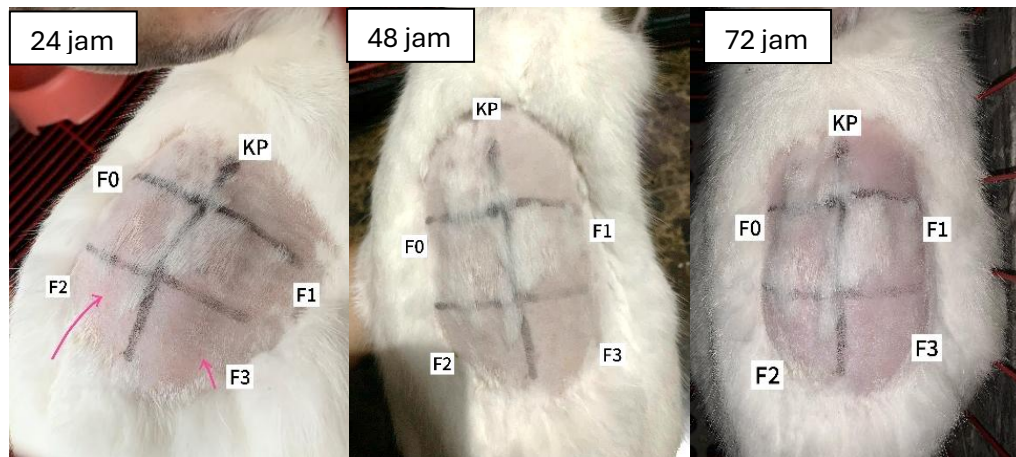
F1 : Sabun Mandi Cair Kombucha daun manggis 2%

F2 : Sabun Mandi Cair Kombucha daun manggis 4%

F3 : Sabun Mandi Cair Kombucha daun manggis 6%

Eritema : Kemerahan pada kulit

Udema : Bengkak pada kulit



Jumlah pengamatan = jumlah kelinci x waktu pengamatan

Jumlah pengamatan = $1 \times 3 = 3$

F0

$$A = \frac{0}{3} = 0$$

$$B = \frac{0}{3} = 0$$

C = Jumlah hewan 1

$$\text{Indeks iritasi primer} = \frac{0-0}{1} = 0$$

F1

$$A = \frac{0}{3} = 0$$

$$B = \frac{0}{3} = 0$$

C = Jumlah hewan 1

$$\text{Indeks iritasi primer} = \frac{0-0}{1} = 0$$

F2

$$A = \frac{1}{3} = 0,33$$

$$B = \frac{0}{3} = 0$$

C = Jumlah hewan 1

$$\text{Indeks iritasi primer} = \frac{0,33-0}{1} = 0,33$$

F2

$$A = \frac{2}{3} = 0,67$$

$$B = \frac{0}{3} = 0$$

C = Jumlah hewan 1

$$\text{Indeks iritasi primer} = \frac{0,67-0}{1} = 0,67$$

Lampiran 17. Hasil analisis statistic pengukuran pH

Normalitas

Tests of Normality							
	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
pH	F0	.175	3	.	1.000	3	1.000
	F1	.292	3	.	.923	3	.463
	F2	.292	3	.	.923	3	.463
	F3	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

Homogenitas

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
pH	Based on Mean	2.476	3	8	.136
	Based on Median	.633	3	8	.614
	Based on Median and with adjusted df	.633	3	3.765	.633
	Based on trimmed mean	2.292	3	8	.155

Oneway

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.702	3	.901	1350.879	.000
Within Groups	.005	8	.001		
Total	2.707	11			

Post hoc

Multiple Comparisons						
Dependent Variable: pH						
Bonferroni						
(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F0	F1	.32333*	.02108	.000	.2500	.3967
	F2	.83333*	.02108	.000	.7600	.9067
	F3	1.24000*	.02108	.000	1.1667	1.3133
F1	F0	-.32333*	.02108	.000	-.3967	-.2500
	F2	.51000*	.02108	.000	.4367	.5833
	F3	.91667*	.02108	.000	.8433	.9900

F2	F0	-.83333*	.02108	.000	-.9067	-.7600
	F1	-.51000*	.02108	.000	-.5833	-.4367
	F3	.40667*	.02108	.000	.3333	.4800
F3	F0	-1.24000*	.02108	.000	-1.3133	-1.1667
	F1	-.91667*	.02108	.000	-.9900	-.8433
	F2	-.40667*	.02108	.000	-.4800	-.3333

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

Lampiran 18. Hasil analisis statistic pengukuran Viskositas

Normalitas

Tests of Normality							
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
Viskositas	F0	.314	3	.	.893	3	.363
	F1	.219	3	.	.987	3	.780
	F2	.253	3	.	.964	3	.637
	F3	.219	3	.	.987	3	.780

a. Lilliefors Significance Correction

Homogenitas

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Viskositas	Based on Mean	.381	3	8	.770
	Based on Median	.133	3	8	.937
	Based on Median and with adjusted df	.133	3	6.522	.937
	Based on trimmed mean	.358	3	8	.785

Oneway

ANOVA

Viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6816.667	3	2272.222	413.131	.000
Within Groups	44.000	8	5.500		
Total	6860.667	11			

Post hoc

Multiple Comparisons

Dependent Variable: Viskositas

Bonferroni

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F0	F1	13.667*	1.915	.001	7.01	20.33
	F2	45.667*	1.915	.000	39.01	52.33
	F3	59.333*	1.915	.000	52.67	65.99
F1	F0	-13.667*	1.915	.001	-20.33	-7.01
	F2	32.000*	1.915	.000	25.34	38.66
	F3	45.667*	1.915	.000	39.01	52.33
F2	F0	-45.667*	1.915	.000	-52.33	-39.01
	F1	-32.000*	1.915	.000	-38.66	-25.34
	F3	13.667*	1.915	.001	7.01	20.33
F3	F0	-59.333*	1.915	.000	-65.99	-52.67
	F1	-45.667*	1.915	.000	-52.33	-39.01
	F2	-13.667*	1.915	.001	-20.33	-7.01

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

Lampiran 19. Hasil analisis statistic pengukuran Tinggi Busa

Normalitas

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
TinggiBusa	F0	.372	3	.	.781	3	.069
	F1	.269	3	.	.949	3	.567
	F2	.373	3	.	.780	3	.067
	F3	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

Homogenitas

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
TinggiBusa	Based on Mean	9.843	3	8	.005
	Based on Median	.741	3	8	.557

Based on Median and with adjusted df	.741	3	2.331	.608
Based on trimmed mean	7.983	3	8	.009

Oneway

ANOVA

TinggiBusa

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	59.375	3	19.792	46.248	.000
Within Groups	3.424	8	.428		
Total	62.799	11			

Post hoc

Multiple Comparisons

Dependent Variable: TinggiBusa

Games-Howell

(I) Formula	(J) Formula	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
		(I-J)			Lower Bound	Upper Bound
F0	F1	2.77333	.71609	.146	-2.1689	7.7155
	F2	4.90333*	.73390	.043	.3253	9.4814
	F3	5.76333*	.73689	.030	1.2357	10.2910
F1	F0	-2.77333	.71609	.146	-7.7155	2.1689
	F2	2.13000*	.16610	.012	1.0558	3.2042
	F3	2.99000*	.17885	.007	1.8226	4.1574
F2	F0	-4.90333*	.73390	.043	-9.4814	-.3253
	F1	-2.13000*	.16610	.012	-3.2042	-1.0558
	F3	.86000	.24046	.075	-.1217	1.8417
F3	F0	-5.76333*	.73689	.030	-10.2910	-1.2357
	F1	-2.99000*	.17885	.007	-4.1574	-1.8226
	F2	-.86000	.24046	.075	-1.8417	.1217

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

Lampiran 20. Hasil determinasi daun manggis


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SEKOLAH ILMU DAN TEKNOLOGI HAYATI
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e-mail: sith@itb.ac.id situs: www.sith.itb.ac.id

Nomor : 9371/IT1.C11.2/TA.00/2024
Hal : Determinasi tumbuhan

23 Desember 2024

Yth. Dekan
Fakultas Farmasi
Universitas Bhakti Kencana
Jalan Soekarno Hatta No. 754
Bandung

Memperhatikan permintaan Saudara dalam surat No. 0904/03.S1-FF/UBK/XII/2024 tanggal 04 Desember 2024 mengenai determinasi tumbuhan, dengan ini kami sampaikan bahwa setelah dilakukan pendeterminasian oleh staf kami, sampel tumbuhan yang dikirim oleh Sdr. Ayu Siti Aisyah (NIM: 211FF03050), yaitu:

No	Nama sampel	Hasil determinasi	Famili
1.	Manggis	<i>Garcinia mangostana</i> L.	Clusiaceae

Referensi:

1. Backer C. A., Bakhuizen van den Brink, R. C. (1963). *Flora of Java. Vol I*. N.V.P. Noordhoff.
2. Blancke, R. (2016). *Tropical Fruits and Other Edible Plants of the World: An Illustrated Guide*. Comstock Publishing Associates

Demikian yang kami sampaikan. Atas perhatian dan kerjasama yang diberikan, kami ucapkan terima kasih.


Wakil Dekan Bidang Sumber Daya,
Angga Dwiartama, S.Si., M.Si., Ph.D.
NIP. 198302052012121002

Tembusan:
1. Dekan SITH ITB

Terakreditasi oleh:



Lampiran 21. Surat keterangan kode etik


**KOMISI ETIK PENELITIAN KESEHATAN
UNIVERSITAS BHAKTI KENCANA**

Jl. Soekarno - Hatta 754. Bandung
Telp : 022-7830 760 / 022-7830-768
Email : komisi.etik@bku.ac.id


**KOMISI ETIK PENELITIAN KESEHATAN
HEALTH RESEARCH ETHICS COMMITTEE
UNIVERSITAS BHAKTI KENCANA
BHAKTI KENCANA UNIVERSITY**
**KETERANGAN LAYAK ETIK
DESCRIPTION OF ETHICAL APPROVAL
"ETHICAL APPROVAL"
162/09.KEPK/UBK/VI/2025**

Protokol penelitian yang diusulkan oleh :
The research protocol proposed by :

Peneliti Utama : Ayu Siti Aisyah
Principal in investigator

Nama institusi : Universitas Bhakti Kencana
Name of institution

Dengan judul :
Title

Uji Aktivitas Antimikroba dan Formulasi sediaan sabun mandi cair dari fermentasi Kombucha Daun Manggis (Garcinia mangostana L.)

Antimicrobial Activity Test and Formulation of Liquid Bath Soap Preparations from Fermented Mangosteen Leaf Kombucha (Garcinia mangostana L.)

Dinyatakan layak etik sesuai (tujuh) standar WHO 2011, yaitu 1) Nilai Sosial, 2) Nilai Ilmiah, 3) Pemerataan Beban dan Manfaat, dan 4) Risiko, 5) Bujukan atau eksploitasi, 6) Kerahasiaan atau Privacy, 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 Value, 2) Scientific Value, 3) Equitable Assessment and Benefits, 4) Risks, 5) Persuasion/Exploitation, 6) Confidentiality and Privacy, and Informed Consent, referring to the 2016 CIOMS guidelines. This is as indicated by the fulfillment of the indicators of each standards.

Pernyataan Laik Etik ini berlaku selama kurun waktu 24 Juni 2025 sampai dengan tanggal 24 Juni 2026.

This declaration of ethics applies during the period 24 th June 2025 until 24 th June 2026.

24 Juni 2025
Professor and Chairperson

R. Nety Rustikayanti, S.Kp., M.Kep.
NIK. 02019010336

Lampiran 22. Certificate of Analysis bakteri *Escherichia coli*



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Thermo Fisher Scientific
Microbiology
12076 Santa Fe Trail Drive
Lenexa, KS 66215
800.255.6750
800.447.5761 fax
www.thermofisher.com

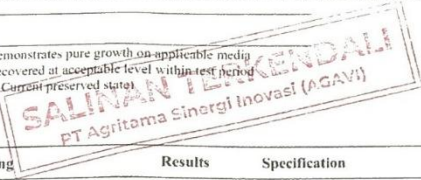
Certificate of Analysis - Certified Reference Material **thermoscientific**

Thermo Scientific™ Trademark™
 Product Number R4607050
 Product Name E. coli ATCC 25922 PK/5
 Lot Number 168884
 Usage Decision Accepted (OK)
 Expiration Date 2026-03-19

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

Product Char Results

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



Microbiological testing	Results	Specification
>95% Identification on MicroSEQ	100	95 - 100
Microscopic Features	Pass	
>85% Identification on API 20E	Pass	
>85% Identification on RapID ONE	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 23. *Certificate of Analysis* jamur *Candida albicans*



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Certificate of Analysis - Certified Reference Material

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 24. *Certificate of Analysis* bakteri *Staphylococcus aureus*



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Microbiology
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Lenexa, KS 66115
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Certificate of Analysis - Certified Reference Material

Thermo Scientific™ Trademark™
Product Number R-6609902
Product Name S. aureus ssp. aureus ATCC 6538P PK-5
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 Chart 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	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.

Page 1 of 2

Printed on: 2024/10/11

Lampiran 25. *Certificate of Analysis* Muller Hinton Agar

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
Colour on reconstitution	Straw 2-3	Straw 2-3
pH (25°C)	7.2	7.2 - 7.4
Clarity	Clear	Clear

Microbiological Performance

Antibiotic susceptibility tests are performed in accordance with, and meet the acceptance limits of, the current ISO/TS 16782. 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	31	25 - 32
Cefoxitin FOX30	29	23 - 29
Gentamicin CN10	24	19 - 27
Penicillin P10	36	26 - 37

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

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

Lampiran 26. *Certificate of Analysis* Potato Dextrose Agar

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
Tested using acidified medium				
Aerobic incubation at 25°C for 5 days				
<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
Inoculation using stab technique				
<i>Aspergillus fumigatus</i> ATCC®9197	>1E+04	-	-	Cream 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
Tested in accordance with USP/EP/BP/JP				
Aerobic incubation at 25°C for 5 to 7 days				
<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

Lampiran 27. *Certificate of Analysis* Minyak Zaitun

Certificate of Analysis (COA)

1. Product Data Information	
Product Name :	Pure Olive Oil
Scientific Name :	<i>Olea europaea</i>
Country of Origin :	Italy
Appearance :	Pale yellow to green
Odor :	Very mild olive odor
Solubility :	Soluble in alcohol and oils. Almost insoluble in water
Extraction Method :	Cold pressed
2. Product Data Properties	
Specific Gravity :	0.910 to 0.930 @ 20° Celcius
Optical Rotation :	-10.0 to +30.0 @ 20° Celcius
Refractive Index :	1.460 to 1.480 @ 20° Celcius
Flash point :	320 ° Celcius

Lampiran 28. *Certificate of Analysis* Alkohol 70%

CERTIFICATE OF ANALYSIS

Re : SOLVENT 70%

Batch No : 002024.7.020

Date of Manufacture : 20 Juli 2024

Date of Expiration : No Expiry

NO	PARAMETER	DIMENTIION	RESULT	METHODE
1	Ethanol contains 15C	% V/V	70.02%	BP
2	Acidity	Ppm	7.5	SNI
3	Fusel Oil Constituents	Ppm	18.5	AOAC
4	Test Time 15C	Minutes	7.9	BP
5	Methanol Contains %	Ppm	26%	-
6	Residu After	Ppm	0.80	SCI TABLE
	Evaporation			
			2	
7	Isopropil Alkohol	Ppm	28%	Flam

Jakarta, 20 Juli 2024

(QC)

Lampiran 29. *Certificate of Analysis* Phenoxyetanol


 Innovative Chemicals

PCI INNOVATIVE CHEMICALS SDN. BHD.

Certificate of Analysis

Trade Name: **Innosei® PHE**

Manufacturing Date: 17-05-2024 Expiry Date: 17-05-2026

Batch No.: M4050219 Page: 1 of 1

Properties	Unit	Specification	Value
Appearance @ 25 °C	-	Clear colorless liquid	Passed
Specific Gravity @ 25 °C	-	1.101 - 1.108	1.107
Refractive Index @ 20 °C	-	1.5368 - 1.5388	1.5386
Purity	%	> 99.5	99.9
Phenol	ppm	Max. 5.0	4.4

Prepared by:  Checked by:  Approved by: 



Statement: To the best of our knowledge, the above data is correct. We cannot accept liability for any errors in this document. Some parameters are subject to change upon storage, the data on this CoA reflect the status at time of analysis. *Optimal storage conditions in accordance with chapter 7 of Safety Data Sheet.

PCI INNOVATIVE CHEMICALS SDN. BHD.
Co. No. 201701003217 (1217367-X)

No. 7, Zone Innovation Park, Jalan Bestari 3A/KU7, Taman Perindustrian Kapar Bestari, 42200 Kapar, Selangor Darul Ehsan, Malaysia.
Tel: +6(03) 3292 9488 Fax: +6(03) 3292 9884 Email: general@pci-inno.com.my Website: www.corporate-pci.com

Lampiran 30. *Certificate of Analysis* Cakram Kertas

MACHEREY-NAGEL


Certificate

Filter paper MN 827

REF: 484000

LOT: CE207001

strongly absorbent, soft

typical data	unit	specifies	based on
basis weight	g/m ²	270	DIN EN ISO 536
thickness	mm	0.65 - 0.70	DIN EN ISO 12625-3
migration distance	mm/ 10min	130 - 140	Klemm
surface		smooth	

Confirmation

Hereby we confirm that the above mentioned product has successfully passed our quality control system in accordance with EN ISO 9001 and meets the specific quality criteria.

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



MACHEREY-NAGEL GmbH & Co. KG - Valenciennr Str. 11 - 52355 Düren - Germany - www.mn-net.com
 DE +49 24 21 969-0 info@mn-net.com FR +33 388 68 22 68 sales-fr@mn-net.com
 CH +41 62 388 55 00 sales-ch@mn-net.com US +1 688 321 62 24 sales-us@mn-net.com

1/1

Lampiran 31. *Certificate of Analysis* Natrium Carboxymethylcellulose

HEAD OFFICE :
MENARA BATARA 32ND FLOOR
JL. K.H. NAS MANSYUR KAY 126
JAKARTA 10220
INDONESIA
TEL : +62(21) 5745010, 5745011
FAX : +62(21) 57901293
www.arbecem.com

PLANT SITE :
KORANAN INDUSTRI JABARDA
JL. JARDATKA V BLOK H2
CIARANG BEKAS 17530
INDONESIA
TEL : +62(21) 8934311 - 12
FAX : +62(21) 8930799, 8934364
www.arbecem.com

PT. ARBE CHEMINDO

CERTIFICATE OF ANALYSIS



ARBECEL F - 400 P

LOT NO. : 1217F147A
PRODUCTION DATE : februari 2025
EXPIRY DATE : april 2027
SHELF LIFE : If stored under dry and clean conditions in its original packaging, the product has along shelf time.

On the, which the consignment is a part, the following value were determined . They conform to the agreed product specification.

Item Of Analysis	Method	Result	Spec
1. Viscosity, 1% solution, 25 °C, Aquadest, 30 rpm, dry basis, spdl 2.	ASTM D 1439 - 15	440	200 - 600 cps
2. Moisture (as packed)	ASTM D 1439 - 15	7,0%	10% max.
3. Purity (dry basis)	-	99,60%	99.5% min.
4. DS	ASTM D 1439 - 15	0,82	0.65 - 0.85
5. pH- Value	HOECHST 9010	7,45	6.5 - 7.5
6. Bulk Density (BD)	-	610 Kg/M3	400 min.

The above particulars do not release the customer from the obligation to carry out an inspection of good received.

PT. ARBE CHEMINDO
Yon Nanius - QC
QC. Head Of Dept.

Lampiran 32. *Certificate of Analysis* Butylated hydroxytoluene



W-288,MIDC,TTC Industrial Area,
Thane-Belapur Road,Rabale,
Tel: 022 276908637
Info@adventchembio.com
www.adventchembio.com

An ISO 9001:2015 & ISO 14001:2015 Certified Company

PRODUCT SPECIFICATIONS

Product Name: Butylated hydroxytoluene (BHT)
(90352)

Product Code: 90352

Molecular Formula : $C_{15}H_{24}O$

CAS No.:128-37-0

Test	Specification
TEST	LABEL CLAIM SPECIFICATION
DESCRIPTION	Colourless crystals or white crystalline powder.
GUARANTEE ANALYSIS	
ASSAY (GC)	NLT 99.0%
MELTING RANGE	68 - 71°C
MAXIMUM LIMITS OF IMPURITIES	
SULPHATED ASH	0.1%

This document has been produced electronically and valid without signature.

New format Issue Date : 01.01.2020

Lampiran 33. *Certificate of Analysis* Akuades

CERTIFICATE OF ANALYSIS

Product Name	: AQUADEST	Molecular Weight	: 18.02 g/mol
Catalog No.	: A-1078A	Batch No.	: 170621003
Grade	: Laboratory Reagent	Manufacturing Date	: June 17, 2021
Formula	: H ₂ O	Expire Date	: June, 2026
Cas No	: 7732 – 18 - 5		

NO	ITEM TEST	UNITS	SPECIFICATION	RESULT
1.	Appearance	–	Clear and free of visible particulate	Passes test
2.	Conductivity at 25 °C	uS/cm	≤ 4.3	0.21
3.	pH at 25 °C	–	5.0 – 7.5	6.56
4.	Turbidity	NTU	≤ 0.5	< 0.5
5.	Total Dissolve Solid (TDS)	ppm	≤ 0.5	0.25
6.	Residu on evaporation	ppm	≤ 1.0	NIL
7.	Total Organic Carbon (TOC)	ppm	≤ 50	< 50
8.	Total Hardness	ppm	≤ 0.1	NIL
9.	Chloride (Cl)	ppm	≤ 0.5	0.376
10.	Silica (as SiO ₂)	ppm	≤ 0.5	0.0559
11.	Iron (Fe)	ppm	≤ 0.1	0.0499
12.	Aromatic Hydrocarbon	ppm	Free of Hydrocarbon	NIL

Lampiran 34. Hasil cek plagiarisme

Ayu Siti Aisyah_draft skripsi.pdf			
ORIGINALITY REPORT			
3%	3%	1%	0%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS
PRIMARY SOURCES			
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3	Yahdian Rasyadi, Revi Yenti, Aulia Putri Jasril. "Formulasi dan Uji Stabilitas Fisik Sabun Mandi Cair Ekstrak Etanol Buah Kapulaga (Amomum compactum Sol. ex Maton)", PHARMACY: Jurnal Farmasi Indonesia (Pharmaceutical Journal of Indonesia), 2019 Publication	1%	
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Lampiran 35. Kartu Bimbingan

22/09/25, 18.42

Rekap Percakapan Bimbingan



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Jl. Soekarno Hatta No.754, Cipadung Kidul, Kec. Panyileukan, Kota Bandung, Jawa Barat 40614
 Website : www.bku.ac.id/ e-Mail : sekretariat@bku.ac.id / Telepon : 022 7830 760

REKAP PERCAKAPAN BIMBINGAN

Judul Proposal : Formulasi Sediaan Sabun Mandi Cair Fermentasi Kombucha Daun Manggis (*Garcinia mangostana* L.) Sebagai Antimikroba

Sesi / Bahasan : ke-1 /

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 0421088202 - Dr Rahma Ziska, M.Si

Tidak ada data percakapan

Sesi / Bahasan : ke-1 /

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 8935020021 - MOHAMAD ISRONIJAYA

Tidak ada data percakapan

Sesi / Bahasan : ke-2 /

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 0421088202 - Dr Rahma Ziska, M.Si

Tidak ada data percakapan

Sesi / Bahasan : ke-2 /

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 8935020021 - MOHAMAD ISRONIJAYA

Tidak ada data percakapan

Sesi / Bahasan : ke-3 /

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 8935020021 - MOHAMAD ISRONIJAYA

Tidak ada data percakapan

Sesi / Bahasan : ke-3 /

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 0421088202 - Dr Rahma Ziska, M.Si

Tidak ada data percakapan

Sesi / Bahasan : ke-4 /

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 8935020021 - MOHAMAD ISRONIJAYA

Tidak ada data percakapan

Sesi / Bahasan : ke-4 / melakukan bimbingan secara offline di kampus ITB

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 0421088202 - Dr Rahma Ziska, M.Si

Tidak ada data percakapan

Sesi / Bahasan : ke-5 / meminta tanda tangan untuk daftar seminar kolokium

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 8935020021 - MOHAMAD ISRONIJAYA

Tidak ada data percakapan

Sesi / Bahasan : ke-5 / menyerahkan print out draft skripsi dari bab 1-5 untuk di cek ulang

Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 0421088202 - Dr Rahma Ziska, M.Si

Tidak ada data percakapan

Sesi / Bahasan : ke-6 / meminta tanda tangan untuk seminar kolokium
Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 0421088202 - Dr Rahma Ziska, M.Si

Tidak ada data percakapan

Sesi / Bahasan : ke-6 / Assalamualaikum bapak, selamat pagi. izin mengirimkan draft skripsi bab 4, terimakasih
Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 8935020021 - MOHAMAD ISRONIJAYA

Tidak ada data percakapan

Sesi / Bahasan : ke-7 / Diskusi terkait pewarnaan bakteri secara online
Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 0421088202 - Dr Rahma Ziska, M.Si

Tidak ada data percakapan

Sesi / Bahasan : ke-7 / assalamualaikum bapak, selamat pagi. izin mengirimkan draft skripsi bab 5, terimakasih bapak
Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 8935020021 - MOHAMAD ISRONIJAYA

Tidak ada data percakapan

Sesi / Bahasan : ke-8 /
Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 0421088202 - Dr Rahma Ziska, M.Si

Tidak ada data percakapan

Sesi / Bahasan : ke-8 /
Mahasiswa : 211FF03050 - AYU SITI AISYAH **Pembimbing** : 8935020021 - MOHAMAD ISRONIJAYA

Tidak ada data percakapan

Lampiran 36. Riwayat Hidup Penulis



Penulis yang bernama lengkap **Ayu Siti Aisyah** lahir di Bandung, pada tanggal 16 April 2003. Penulis merupakan anak tunggal dari pasangan Enjang saepudin dan Eni Anis Nurjanah. Memulai pendidikan formal di SD Negeri 5 Majalaya dan lulus pada tahun 2015. Selanjutnya, penulis melanjutkan pendidikan di SMP Negeri 1 Paseh dan lulus pada tahun 2018. Pendidikan menengah atas ditempuh di SMA Negeri 2 Majalaya dan berhasil menyelesaikannya

pada tahun 2021. Pada tahun yang sama penulis melanjutkan studi di Program studi Farmasi, Fakultas Farmasi, Universitas Bhakti Kencana.

Selama menjalani masa perkuliahan, penulis memiliki ketertarikan yang tinggi dalam kelompok keilmuan Farmasetika dan Teknologi Farmasi. Sehingga penulis mengambil Skripsi yang berjudul “**Formulasi Sediaan Sabun Mandi Cair Fermentasi Kombucha Daun Manggis (*Garnicia mangostana* L.) Sebagai Antimikroba**” disusun sebagai salah satu syarat untuk memperoleh gelar Sarjana Farmasi (S.Farm) di Universitas Bhakti kencana. Skripsi ini diselesaikan dengan baik atas bimbingan dan arahan dari dosen pembimbing yaitu Ibu Dr. Rahma Ziska, M.Si dan Bapak apt. Mohamad Isronijaya, S.Si., MM, QIA.

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