

## LAMPIRAN

### Lampiran 1. *Ethical Clearance*

#### KOMISI BIOETIKA PENELITIAN KEDOKTERAN/KESEHATAN

#### FAKULTAS KEDOKTERAN

#### UNIVERSITAS ISLAM SULTAN AGUNG SEMARANG

Sekretariat : Gedung C Lantai I Fakultas Kedokteran Unissula  
Jl. Raya Kaligawe Km 4 Semarang, Telp. 024-6583584, Fax 024-6594366

## Ethical Clearance

No. 305/IX/2020/Komisi Bioetik

Komisi Bioetika Penelitian Kedokteran/Kesehatan Fakultas Kedokteran Universitas Islam Sultan Agung Semarang, setelah melakukan pengkajian atas usulan penelitian yang berjudul :

#### UJI AKTIVITAS EKSTRAK ULAT HONGKONG (*Tenebrio molitor*) TERHADAP DAYA HAMBAT BAKTERI *Escherichia coli* DAN *Bacillus cereus* SECARA IN VITRO

Peneliti Utama : Nur Afifah  
Pembimbing : Rina Wijayanti, M.Sc., Apt.  
Willi Wahyu Timur, M.Sc., Apt.  
Tempat Penelitian : Laboratorium Farmasi Herbal UNISSULA  
Laboratorium Mikrobiologi FK UNISSULA

dengan ini menyatakan bahwa usulan penelitian diatas telah memenuhi prasyarat etik penelitian. Oleh karena itu Komisi Bioetika merekomendasikan agar penelitian ini dapat dilaksanakan dengan mempertimbangkan prinsip-prinsip yang dinyatakan dalam Deklarasi Helsinki dan panduan yang tertuang dalam Pedoman Nasional Etik Penelitian Kesehatan (PNEPK) Departemen Kesehatan RI tahun 2004.

Semarang, 15 September 2020

Komisi Bioetika Penelitian Kedokteran/Kesehatan  
Fakultas Kedokteran Unissula

Ketua,



(dr. Sofwan Dahlan, Sp.F(K))

## Lampiran 2. Determinasi Hewan



KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI  
UNIVERSITAS NEGERI SEMARANG  
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM  
LABORATORIUM JURUSAN BIOLOGI

Alamat : Gedung D11 FMIPA UNNES Kampus Sekaran Gunungpati Semarang 50229  
website : [biologi.unnes.ac.id](http://biologi.unnes.ac.id), email : [labbiologi.unnes@yahoo.com](mailto:labbiologi.unnes@yahoo.com)

No. : 452/UN/37.1.4.5/LT/2019

Lampiran : -

Perihal : Hasil Identifikasi hewan

Kepada Yth.

Sdr. Nur Afifah, NIM : 33101600442

Mahasiswa Jurusan Farmasi Universitas Islam Sultan Agung Semarang

Dengan hormat,

Bersama ini kami sampaikan hasil identifikasi hewan yang Saudara kirimkan ke Labortorium Taksonomi Hewan Jurusan Biologi FMIPA Universitas Negeri Semarang (UNNES), adalah sebagai berikut.

Kingdom : Animalia  
Phylum : Arthropoda  
Classis : Insecta  
Ordo : Coleoptera  
Familia : Tenebrionidae  
Genus : *Tenebrio*  
Spesies : *Tenebrio molitor*  
( George C.Mc Cavin : 2000 )  
Nama local : Ulat hongkong

Demikian, semoga berguna bagi saudara.

Semarang, 26 Juni 2019

Mengetahui,

Ketua Jurusan Biologi FMIPA UNNES

Dra. Endah Peniati, M.Si.  
NIP-196511161991032001

Kepala laboratorium Biologi

Dr. Ning Setiati, M.Si.  
NIP. 195903101987032001

### Lampiran 3. Hasil Uji Kadar Air

#### Keterangan: Uji kadar air simplisia

Replikasi 1	Replikasi 2	Replikasi 3
<pre> PNO. 1 UNIT M/W MODE TIME TEMP 120C STOP 00:15  Wet W(g) 1.009  TIME M/W(%) 00:00:00 0.00 *00:15:00 4.76  Dry W(g) 0.961 00:15:00 4.76           </pre>	<pre> PNO. 1 UNIT M/W MODE TIME TEMP 120C STOP 00:15  Wet W(g) 3.583  TIME M/W(%) 00:00:00 0.00 *00:15:00 1.31  Dry W(g) 3.536 00:15:00 1.31           </pre>	<pre> PNO. 1 UNIT M/W MODE TIME TEMP 120C STOP 00:15  Wet W(g) 1.778  TIME M/W(%) 00:00:00 0.00 *00:15:00 4.22  Dry W(g) 1.782           </pre>

#### Keterangan: Uji kadar air ekstrak

Replikasi 1	Replikasi 2	Replikasi 3
<pre> PNO. 1 UNIT M/W MODE TIME TEMP 120C STOP 00:15  Wet W(g) 0.548  TIME M/W(%) 00:00:00 0.00 *00:15:00 2.55  Dry W(g) 0.534           </pre>	<pre> PNO. 1 UNIT M/W MODE TIME TEMP 120C STOP 00:15  Wet W(g) 0.553  TIME M/W(%) 00:00:00 0.00 *00:15:00 4.70  Dry W(g) 0.527           </pre>	<pre> PNO. 1 UNIT M/W MODE TIME TEMP 120C STOP 00:15  Wet W(g) 0.588  TIME M/W(%) 00:00:00 0.00 *00:15:00 3.40  Dry W(g) 0.563 00:15:00 3.40           </pre>

### Lampiran 4. Perhitungan Rendemen

#### Rendemen Ekstrak

$$\text{Rendemen} = \frac{\text{Bobot ekstrak kental}}{\text{bobot sampel}} \times 100\%$$

$$\text{Rendemen} = \frac{100,241 \text{ gram}}{635 \text{ gram}} \times 100\%$$

$$\text{Rendemen} = 15,78\%$$

## Lampiran 5. Hasil Kadar Abu Total

### Hasil Kadar Abu Total

Sampel	Replikasi I	Replikasi II	Replikasi III	Rata-rata	SD
Ekstrak ulat Hongkong	8,78%	8,68%	8,74%	8,73%	0,0005

### Perhitungan Kadar Abu Total

$$\text{kadar abu total} = \frac{W_2 - W_0}{W_1 - W_0} \times 100\%$$

Keterangan:

W0 = berat krus kosong

W1 = berat krus + ekstrak

W2 = berat krus + hasil pemijaran

1. Replikasi I

$$\begin{aligned} \text{kadar abu total} &= \frac{53,8539 - 53,5905}{56,5905 - 53,5905} \times 100\% \\ &= \frac{0,2634}{3} \times 100\% \\ &= 8,78\% \end{aligned}$$

2. Replikasi II


$$\begin{aligned} \text{kadar abu total} &= \frac{54,5489 - 54,2885}{57,2885 - 54,2885} \times 100\% \\ &= \frac{0,2604}{3} \times 100\% \\ &= 8,68\% \end{aligned}$$

## 3. Replikasi III


$$\begin{aligned} \text{kadar abu total} &= \frac{52,5804 - 52,3181}{55,3181 - 52,3181} \times 100\% \\ &= \frac{0,2623}{3} \times 100\% \\ &= 8,74\% \end{aligned}$$



## Lampiran 6. Hasil Skrining Fitokimia



**YAYASAN BADAN WAKAF SULTAN AGUNG  
UNIVERSITAS ISLAM SULTAN AGUNG (UNISSULA)**  
Jl. Raya Kaligawe Km 4 Semarang 50112 Telp (024) 6583584 (8 Sal) Fax (024) 6582455  
email: informasi@unissula.ac.id web: www.unissula.ac.id



PRODI FARMASI FK
Bismillah Membangun Generasi Khaira Ummah

**LAPORAN HASIL UJI**

No. Sertifikat : 01/LPF/II/2020

Informasi Peneliti

Nama : Nur Afifah                      Tanggal Pengujian: 21 September 2020

NIM : 33101600462


Hasil Pengujian

Skrining Fitokimia Ekstrak Ulat Hongkong (*Tenebrio molitor*):

Parameter Uji	Reagen	Hasil Identifikasi	Metode	Kesimpulan
Alkaloid	Pereksi Mayer	Terbentuk endapan putih	Tabung	Negatif
Flavonoid	Serbuk Mg dan HCl pekat	Kuning	Tabung	Negatif
Fenol	FeCl <sub>3</sub> 1%	Hijau kehitaman	tabung	Positif
Saponin	Aquadest	Terbentuknya buih	Tabung	Positif
Tanin	FeCl <sub>3</sub> 1%	Coklat kehijauan atau biru kehitaman	Tabung	Negatif

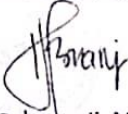
Semarang, 3 Desember 2020

Laboran Prodi Farmasi  
FK UNISSULA




Nisrina Nur A, Amd. AF

Kepala Laboratorium Farmasi Unissula



Ika Buana Januarti, M.Sc., Apt  
NIK.211213007



Parameter Uji	Reagen	Warna	Metode	Gambar
Alkaloid	Pereaksi Mayer	Terbentuk Endapan Putih	Tabung	 NEGATIF
Flavonoid	Serbuk MG+Hcl pekat	Kuning	Tabung	 NEGATIF
Fenol	FeCl <sub>3</sub> 1%	Hijau Kehitaman	Tabung	 POSITIF



Saponin	Aquadest	Terbentuknya Buih	Tabung	 POSITIF
Tanin	FeCl <sub>3</sub> 1%	Coklat kehijauan atau biru kehitaman	Tabung	 NEGATIF





### Lampiran 7. Perhitungan Pengenceran Konsentrasi Ekstrak

Pembuatan DMSO 1% dari DMSO 100% sebanyak 100 ml

$$N_1.V_1 = N_2.V_2$$

$$100\%. V_1 = 1\%.100$$

$$V_1 = 100\%: 100\%$$

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

(1 ml DMSO 100% ditambahkan dengan 99 ml aquades)

Ekstrak yang sebelumnya didapatkan yaitu 100% pengenceran konsentrasi ekstrak Ulat Hongkong untuk 10 ml dari:

#### I. Pengenceran 5%

$$N_1.V_1 = N_2.V_2$$

$$100\%. V_1 = 5\%.10$$

$$V_1 = 50\%: 100\%$$

$$V_1 = 0,5$$

(0,5 ml ekstrak ditambahkan dengan 9,5 ml DMSO 1%)

#### II. Pengenceran 10%

$$N_1.V_1 = N_2.V_2$$

$$100\%. V_1 = 10\%.10$$

$$V_1 = 10\%: 100\%$$

$$V_1 = 1$$

(1 ml ekstrak ditambahkan dengan 9 ml DMSO 1%)

#### III. Pengenceran 20%

$$N_1.V_1 = N_2.V_2$$

$$100\%. V_1 = 20\%.10$$

$$V_1 = 200\%: 100\%$$

$$V_1 = 2$$

(2 ml ekstrak ditambahkan dengan 8 ml DMSO 1%)

IV. Pengenceran 40%

$$N_1 \cdot V_1 = N_2 \cdot V_2$$

$$100\% \cdot V_1 = 40\% \cdot 10$$

$$V_1 = 400\% : 100\%$$

$$V_1 = 4$$

(4 ml ekstrak ditambahkan dengan 6 ml DMSO 1%)

V. Pengenceran 80%

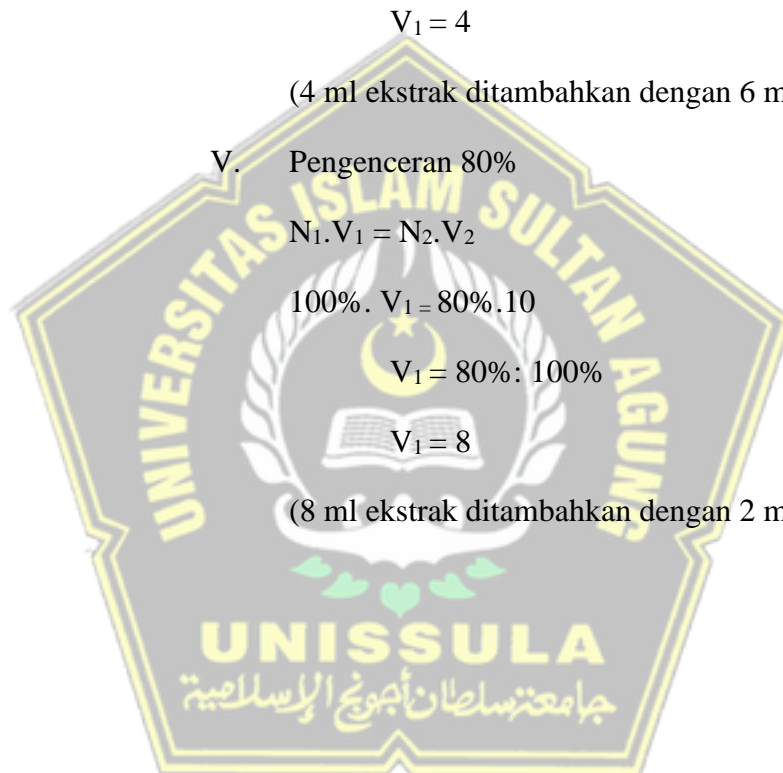
$$N_1 \cdot V_1 = N_2 \cdot V_2$$

$$100\% \cdot V_1 = 80\% \cdot 10$$

$$V_1 = 80\% : 100\%$$

$$V_1 = 8$$

(8 ml ekstrak ditambahkan dengan 2 ml DMSO 1%)



## Lampiran 8. Analisis Statistik Daya Hambat Bakteri

### Shapiro-Wilk

**Tests of Normality**

Kelompok	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	
E.coli	Konsentrasi 5%	.	3	.	3	.	
	Konsentrasi 10%	.	3	.	3	.	
	Konsentrasi 20%	.	3	.	3	.	
	Konsentrasi 40%	.	3	.	3	.	
	Konsentrasi 80%	.	3	.	3	.	
	K+	.328	3	.	.871	3	.298
	K-	.	3	.	.	3	.
Bacilus_Cereus	Konsentrasi 5%	.	3	.	3	.	
	Konsentrasi 10%	.	3	.	3	.	
	Konsentrasi 20%	.	3	.	3	.	
	Konsentrasi 40%	.184	3	.	.999	3	.927
	Konsentrasi 80%	.219	3	.	.987	3	.780
	K+	.356	3	.	.818	3	.157
	K-	.	3	.	.	3	.

a. Lilliefors Significance Correction

### Levene test

**Test of Homogeneity of Variances**

	Levene Statistic	df1	df2	Sig.	
e.coli	Based on Mean	13.081	6	14	.000
	Based on Median	1.714	6	14	.190
	Based on Median and with adjusted df	1.714	6	2.000	.413
	Based on trimmed mean	11.269	6	14	.000
Bacilus_Cereus	Based on Mean	4.404	6	14	.010
	Based on Median	2.165	6	14	.110
	Based on Median and with adjusted df	2.165	6	4.950	.208
	Based on trimmed mean	4.247	6	14	.012

### ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
E.coli	Between Groups	2845.726	6	474.288	8032.290	.000
	Within Groups	.827	14	.059		
	Total	2846.552	20			
Bacilus_Cereus	Between Groups	917.870	6	152.978	425.502	.000
	Within Groups	5.033	14	.360		
	Total	922.903	20			

### Kruskal Wallis

Kelompok	N	Mean Rank
	E.coli	
Konsentrasi 5%	3	9.50
Konsentrasi 10%	3	9.50
Konsentrasi 20%	3	9.50
Konsentrasi 40%	3	9.50
Konsentrasi 80%	3	9.50
K+	3	20.00
K-	3	9.50
Total	21	
Bacilus_Cereus		
Konsentrasi 5%	3	6.50
Konsentrasi 10%	3	6.50
Konsentrasi 20%	3	6.50
Konsentrasi 40%	3	14.33
Konsentrasi 80%	3	16.67
K+	3	20.00
K-	3	6.50
Total	21	

### Test Statistics<sup>a,b</sup>

	e.coli	Bacilus_Cereus
Kruskal-Wallis H	19.860	19.638
df	6	6
Asymp. Sig.	.003	.003

a. Kruskal Wallis Test

b. Grouping Variable: Kelompok

**Mann-Whitney****Kelompok I dan II**

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 5%	3	3.50	10.50
	Konsentrasi 10%	3	3.50	10.50
	Total	6		
Bacillus_Cereus	Konsentrasi 5%	3	3.50	10.50
	Konsentrasi 10%	3	3.50	10.50
	Total	6		

**Test Statistics<sup>a</sup>**

	Ecoli	Bacillus_Cereus
Mann-Whitney U	4.500	4.500
Wilcoxon W	10.500	10.500
Z	.000	.000
Asymp. Sig. (2-tailed)	1.000	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	1.000 <sup>b</sup>

a. Grouping Variable: Kelompok

**Kelompok I dan III****Ranks**

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 5%	3	3.50	10.50
	Konsentrasi 20%	3	3.50	10.50
	Total	6		
Bacillus_Cereus	Konsentrasi 5%	3	3.50	10.50
	Konsentrasi 20%	3	3.50	10.50
	Total	6		

**Test Statistics<sup>a</sup>**

	Ecoli	Bacillus_Cereus
Mann-Whitney U	4.500	4.500
Wilcoxon W	10.500	10.500
Z	.000	.000
Asymp. Sig. (2-tailed)	1.000	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	1.000 <sup>b</sup>

a. Grouping Variable: Kelompok

b. Not corrected for ties.

**Kelompok I dan IV****Ranks**

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 5%	3	3.50	10.50
	Konsentrasi 40%	3	3.50	10.50
	Total	6		
Bacillus_Cereus	Konsentrasi 5%	3	2.00	6.00
	Konsentrasi 40%	3	5.00	15.00
	Total	6		

**Test Statistics<sup>a</sup>**

	Ecoli	Bacillus_Cereus
Mann-Whitney U	4.500	.000
Wilcoxon W	10.500	6.000
Z	.000	-2.087
Asymp. Sig. (2-tailed)	1.000	.037
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	.100 <sup>b</sup>

a. Grouping Variable: Kelompok

b. Not corrected for ties.

## Kelompok I dan V

Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 5%	3	3.50	10.50
	Konsentrasi 80%	3	3.50	10.50
	Total	6		
Bacilus_Cereus	Konsentrasi 5%	3	2.00	6.00
	Konsentrasi 80%	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	4.500	.000
Wilcoxon W	10.500	6.000
Z	.000	-2.087
Asymp. Sig. (2-tailed)	1.000	.037
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	.100 <sup>b</sup>

## Kelompok I dan VI

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 5%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		
Bacilus_Cereus	Konsentrasi 5%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	.000	.000
Wilcoxon W	6.000	6.000
Z	-2.087	-2.087
Asymp. Sig. (2-tailed)	.037	.037
Exact Sig. [2*(1-tailed Sig.)]	.100 <sup>b</sup>	.100 <sup>b</sup>

a. Grouping Variable: Kelompok

b. Not corrected for ties.

## Kelompok I dan VII

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 5%	3	3.50	10.50
	K-	3	3.50	10.50
	Total	6		
Bacilus_Cereus	Konsentrasi 5%	3	3.50	10.50
	K-	3	3.50	10.50
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	4.500	4.500
Wilcoxon W	10.500	10.500
Z	.000	.000
Asymp. Sig. (2-tailed)	1.000	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	1.000 <sup>b</sup>

a. Grouping Variable: Kelompok

b. Not corrected for ties.

## Kelompok II dan III

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 10%	3	3.50	10.50
	Konsentrasi 20%	3	3.50	10.50
	Total	6		
Bacillus_Cereus	Konsentrasi 10%	3	3.50	10.50
	Konsentrasi 20%	3	3.50	10.50
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacillus_Cereus
Mann-Whitney U	4.500	4.500
Wilcoxon W	10.500	10.500
Z	.000	.000
Asymp. Sig. (2-tailed)	1.000	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	1.000 <sup>b</sup>

a. Grouping Variable: Kelompok

b. Not corrected for ties.





## Kelompok II dan IV

Kelompok		N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 10%	3	3.50	10.50
	Konsentrasi 40%	3	3.50	10.50
	Total	6		
Bacilus_Cereus	Konsentrasi 10%	3	2.00	6.00
	Konsentrasi 40%	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	4.500	.000
Wilcoxon W	10.500	6.000
Z	.000	-2.087
Asymp. Sig. (2-tailed)	1.000	.037
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	.100 <sup>b</sup>

a. Grouping Variable: Kelompok

b. Not corrected for ties.

## Kelompok II dan V

Kelompok		N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 10%	3	3.50	10.50
	Konsentrasi 80%	3	3.50	10.50
	Total	6		
Bacilus_Cereus	Konsentrasi 10%	3	2.00	6.00
	Konsentrasi 80%	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	4.500	.000
Wilcoxon W	10.500	6.000
Z	.000	-2.087
Asymp. Sig. (2-tailed)	1.000	.037
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	.100 <sup>b</sup>

a. Grouping Variable: Kelompok

## Kelompok II dan VI

Kelompok		N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 10%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		
Bacilus_Cereus	Konsentrasi 10%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	.000	.000
Wilcoxon W	6.000	6.000
Z	-2.087	-2.087
Asymp. Sig. (2-tailed)	.037	.037
Exact Sig. [2*(1-tailed Sig.)]	.100 <sup>b</sup>	.100 <sup>b</sup>

a. Grouping Variable: Kelompok

## Kelompok II dan VII

Ranks				
	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 10%	3	3.50	10.50
	K-	3	3.50	10.50
	Total	6		
Bacillus_Cereus	Konsentrasi 10%	3	3.50	10.50
	K-	3	3.50	10.50
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacillus_Cereus
Mann-Whitney U	4.500	4.500
Wilcoxon W	10.500	10.500
Z	.000	.000
Asymp. Sig. (2-tailed)	1.000	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	1.000 <sup>b</sup>

a. Grouping Variable: Kelompok

## Kelompok III dan IV

Ranks				
	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 20%	3	3.50	10.50
	Konsentrasi 40%	3	3.50	10.50
	Total	6		
Bacillus_Cereus	Konsentrasi 20%	3	2.00	6.00
	Konsentrasi 40%	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacillus_Cereus
Mann-Whitney U	4.500	.000
Wilcoxon W	10.500	6.000
Z	.000	-2.087
Asymp. Sig. (2-tailed)	1.000	.037
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	.100 <sup>b</sup>

a. Grouping Variable: Kelompok

## Kelompok III dan V

Ranks				
	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 20%	3	3.50	10.50
	Konsentrasi 80%	3	3.50	10.50
	Total	6		
Bacillus_Cereus	Konsentrasi 20%	3	2.00	6.00
	Konsentrasi 80%	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacillus_Cereus
Mann-Whitney U	4.500	.000
Wilcoxon W	10.500	6.000
Z	.000	-2.087
Asymp. Sig. (2-tailed)	1.000	.037
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	.100 <sup>b</sup>

a. Grouping Variable: Kelompok

b. Not corrected for ties.

## Kelompok III dan VI

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 20%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		
Bacilus_Cereus	Konsentrasi 20%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	.000	.000
Wilcoxon W	6.000	6.000
Z	-2.087	-2.087
Asymp. Sig. (2-tailed)	.037	.037
Exact Sig. [2*(1-tailed Sig.)]	.100 <sup>b</sup>	.100 <sup>b</sup>

## Kelompok III dan VII

## Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 20%	3	3.50	10.50
	K-	3	3.50	10.50
	Total	6		
Bacilus_Cereus	Konsentrasi 20%	3	3.50	10.50
	K-	3	3.50	10.50
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	4.500	4.500
Wilcoxon W	10.500	10.500
Z	.000	.000
Asymp. Sig. (2-tailed)	1.000	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	1.000 <sup>b</sup>

## Kelompok IV dan V

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 40%	3	3.50	10.50
	Konsentrasi 80%	3	3.50	10.50
	Total	6		
Bacilus_Cereus	Konsentrasi 40%	3	2.33	7.00
	Konsentrasi 80%	3	4.67	14.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	4.500	1.000
Wilcoxon W	10.500	7.000
Z	.000	-1.528
Asymp. Sig. (2-tailed)	1.000	.127
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	.200 <sup>b</sup>

## Kelompok IV dan VI

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 40%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		
Bacilus_Cereus	Konsentrasi 40%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	.000	.000
Wilcoxon W	6.000	6.000
Z	-2.087	-1.964
Asymp. Sig. (2-tailed)	.037	.050
Exact Sig. [2*(1-tailed Sig.)]	.100 <sup>b</sup>	.100 <sup>b</sup>

a. Grouping Variable: Kelompok

## Kelompok IV dan VII

## Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 40%	3	3.50	10.50
	K-	3	3.50	10.50
	Total	6		
Bacilus_Cereus	Konsentrasi 40%	3	5.00	15.00
	K-	3	2.00	6.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	4.500	.000
Wilcoxon W	10.500	6.000
Z	.000	-2.087
Asymp. Sig. (2-tailed)	1.000	.037
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	.100 <sup>b</sup>

## Kelompok V dan VI

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	Konsentrasi 80%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		
Bacilus_Cereus	Konsentrasi 80%	3	2.00	6.00
	K+	3	5.00	15.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacilus_Cereus
Mann-Whitney U	.000	.000
Wilcoxon W	6.000	6.000
Z	-2.087	-1.964
Asymp. Sig. (2-tailed)	.037	.050
Exact Sig. [2*(1-tailed Sig.)]	.100 <sup>b</sup>	.100 <sup>b</sup>

a. Grouping Variable: Kelompok

## Kelompok V dan VII

	Kelompok	N	Mean Rank	Ranks
Ecoli	Konsentrasi 80%	3	3.50	10.50
	K-	3	3.50	10.50
	Total	6		
Bacillus_Cereus	Konsentrasi 80%	3	5.00	15.00
	K-	3	2.00	6.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacillus_Cereus
Mann-Whitney U	4.500	.000
Wilcoxon W	10.500	6.000
Z	.000	-2.087
Asymp. Sig. (2-tailed)	1.000	.037
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	.100 <sup>b</sup>

## Kelompok VI dan VII

	Kelompok	N	Mean Rank	Sum of Ranks
Ecoli	K+	3	5.00	15.00
	K-	3	2.00	6.00
	Total	6		
Bacillus_Cereus	K+	3	5.00	15.00
	K-	3	2.00	6.00
	Total	6		

Test Statistics<sup>a</sup>

	Ecoli	Bacillus_Cereus
Mann-Whitney U	.000	.000
Wilcoxon W	6.000	6.000
Z	-2.087	-2.087
Asymp. Sig. (2-tailed)	.037	.037
Exact Sig. [2*(1-tailed Sig.)]	.100 <sup>b</sup>	.100 <sup>b</sup>





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HIJRAH PENDIDIKAN :  
 PENERBITAN JURNAL PENELITIAN TRIGUNA ISLAM  
 DALAM KERANGKA EKOSISTEM ILMU DAN KEADILAN

FAKULTAS KEDOKTERAN

Bismillah Membangun Generasi Khaira Ummah

**HASIL PENELITIAN**

Percobaan	Sample	Zona Hambat	
		<i>Escherichia coli</i>	<i>Bacillus cereus</i>
1	5%	0 mm	0 mm
2		0 mm	0 mm
3		0 mm	0 mm
1	10%	0 mm	0 mm
2		0 mm	0 mm
3		0 mm	0 mm
1	20%	0 mm	0 mm
2		0 mm	0 mm
3		0 mm	0 mm
1	40%	0 mm	7,00 mm
2		0 mm	8,50 mm
3		0 mm	7,80 mm
1	80%	0 mm	8,00 mm
2		0 mm	10,50 mm
3		0 mm	9,50 mm
1	kontrol (+)	33,00 mm	18,00 mm
2		32,80 mm	18,10 mm
3		34,00 mm	19,10 mm
1	kontrol (-)	0 mm	0 mm
2		0 mm	0 mm
3		0 mm	0 mm

Semarang, 9 Desember 2020  
 Mengetahui,  
 Kepala Lab. Mikrobiologi Klinik  
 Fakultas Kedokteran UNISSULA Semarang

  
  
**dr. Rahayu, Sp.MK**



## Lampiran 9. Sertifikat Bakteri *e.coli* dan *bacillus cereus*

### *Escherichia coli*

#### Bruker Daltonik MALDI Biotyper Classification Results



#### Meaning of Score Values

Range	Interpretation	Symbols	Color
2.00 – 3.00	High-confidence identification	(+++)	green
1.70 – 1.99	Low-confidence identification	(+)	yellow
0.00 – 1.69		(-)	red

#### Meaning of Consistency Categories (A - C)

Category	Interpretation
(A)	<b>High consistency:</b> The best match is a high-confidence identification. The second-best match is (1) a high-confidence identification in which the species is identical to the best match, (2) a low-confidence identification in which the species or genus is identical to the best match, or (3) a non-identification.
(B)	<b>Low consistency:</b> The requirements for high consistency are not met. The best match is a high- or low-confidence identification. The second-best match is (1) a high- or low-confidence identification in which genus is identical to the best match or (2) a non-identification.
(C)	<b>No consistency:</b> The requirements for high or low consistency are not met.

Run Creation Date/Time: 2020-03-27T11:51:17.542 KLH

Applied MSP Library(ies): BDAL, Mycobacteria Library (bead method), Filamentous Fungi Library, Listeria





Sample Name	Sample ID	Organism (best match)	Score Value
C7 (+++) (A)	335-506	Escherichia coli	2.55

#### Comments:

closely related to Shigella / Escherichia fergusonii and not definitely distinguishable at the moment



Certificate of Analysis: Lyophilized Microorganism Specification and Performance Upon Release

<b>Specifications</b> Microorganism Name: Escherichia coli Catalog Number: 0335 Lot Number: 335-506** Reference Number: ATCC® 25922™** Purity: Pure Passage from Reference: 3	<b>Expiration Date:</b> 2022/3/31 <b>Release Information:</b> Quality Control Technologist: Mary L Bowman Release Date: 2020/4/8
<b>Performance</b>	
<b>Macroscopic Features:</b> 2 colony types, both are gray & beta hemolytic; one is circular to irregular, convex, slightly erose edge & smooth; other is larger, irregular, low convex, erose edge & rough <b>Microscopic Features:</b> Gram negative straight rod	<b>Medium:</b> SBAP <b>Method:</b> Gram Stain (1)
<b>ID System: MALDI-TOF (1)</b> See attached ID System results document.	<b>Other Features/ Challenges: Results</b> (1) Oxidase (Kovacs): negative Beta-glucuronidase (E. coli Broth w/MUG): positive (1) Ampicillin (10 mcg - Disk Susceptibility): 15 - 22 mm (1) Gentamicin (10 mcg - Disk Susceptibility): 19 - 26 mm (1) SXT (1.25/23.75 mcg - Disk Susceptibility): 23 - 29 mm   Amanda Kuperus Quality Control Manager AUTHORIZED SIGNATURE
<p>**Disclaimer: The last digit(s) of the lot number appearing on the product label and packing slip are merely a packaging event number. The lot number displayed on this certificate is the actual base lot number.</p> <p>Note for Vitak®: Although the Vitak® 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.</p> <p>⚠ Refer to the enclosed product insert for instructions, intended use and hazard/safety information.</p> <p>Individual products are traceable to a recognized culture collection.</p> <div style="display: flex; justify-content: space-between;"> <div>             ACCREDITED            REFERENCE MATERIAL PRODUCER            CERT #2655.02         </div> <div>             ATCC Licensed Derivative         </div> <div> <p>(*) The ATCC Licensed Derivative Emblem, the ATCC Licensed Derivative word mark and the ATCC catalog marks are trademarks of ATCC, Microbiologics, Inc. is licensed to use these trademarks and to sell products derived from ATCC® cultures.</p> </div> </div> <div style="display: flex; justify-content: space-between;"> <div>             ACCREDITED            TESTING CERT #2655.01         </div> <div> <p>(1) These tests are accredited to ISO/IEC 17025:2005.</p> </div> </div>	

*Bacillus cereus*

## Bruker Daltonik MALDI Biotyper Classification Results



## Meaning of Score Values

Range	Interpretation	Symbols	Color
2.00 – 3.00	High-confidence identification	(+++)	green
1.70 – 1.99	Low-confidence identification	(+)	yellow
0.00 – 1.69		(-)	red

## Meaning of Consistency Categories (A - C)

Category	Interpretation
(A)	<b>High consistency:</b> The best match is a high-confidence identification. The second-best match is (1) a high-confidence identification in which the species is identical to the best match, (2) a low-confidence identification in which the species or genus is identical to the best match, or (3) a non-identification.
(B)	<b>Low consistency:</b> The requirements for high consistency are not met. The best match is a high- or low-confidence identification. The second-best match is (1) a high- or low-confidence identification in which genus is identical to the best match or (2) a non-identification.
(C)	<b>No consistency:</b> The requirements for high or low consistency are not met.

Run Creation Date/Time: 2019-10-08T15:30:21.360kn





Applied MSP Library(ies): BDAL, Mycobacteria Library (bead method), Filamentous Fungi Library, Listeria

Sample Name	Sample ID	Organism (best match)	Score Value
E6 (+++) (A)	256-90	Bacillus cereus	2.45

## Comments:

Bacillus anthracis, cereus, mycoides, pseudomycooides, thuringiensis and weihenstephanensis are closely related and members of the Bacillus cereus group. In particular Bacillus cereus spectra are very similar to spectra from Bacillus anthracis. Bacillus anthracis is not included in the MALDI Biotyper database. For differentiation an adequate identification method has to be selected by an experienced professional. The quality of spectra (score) depends on the degree of sporulation: Use fresh material.


**Certificate of Analysis: Lyophilized Microorganism Specification and Performance Upon Release**

<b>Specifications</b> Microorganism Name: Bacillus cereus Catalog Number: 0256 Lot Number: 256-90** Reference Number: ATCC® 11778™* Purity: Pure Passage from Reference: 2	<b>Expiration Date:</b> 2021/9/30 <b>Release Information:</b> <b>Quality Control Technologist:</b> Keshia L. Negen <b>Release Date:</b> 2019/10/18
<b>Performance</b>	
<b>Macroscopic Features:</b> Large, circular to irregular, flat, erose edge, gray, dull, beta hemolytic. <b>Microscopic Features:</b> Straight, gram positive rods with rounded ends; occurring mostly in chains.	<b>Medium:</b> SBAP <b>Method:</b> Gram Stain (1)
<b>ID System:</b> MALDI-TOF (1) See attached ID System results document.	<b>Other Features/ Challenges: Results</b> (1) Catalase (3% Hydrogen Peroxide): positive Parasporal crystals (Phase Contrast Microscopy): not present Rhizoid colonies: not present   Amanda Kuperus Quality Control Manager AUTHORIZED SIGNATURE
<p>**Disclaimer: The last digit(s) of the lot number appearing on the product label and packing slip are merely a packaging event number. The lot number displayed on this certificate is the actual base lot number.</p> <p>Note for Vitak®: Although the Vitak® 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.</p> <p>⚠ Refer to the enclosed product insert for instructions, intended use and hazard/safety information.</p> <p>Individual products are traceable to a recognized culture collection.</p> <div style="display: flex; justify-content: space-between;"> <div>             ACCREDITED            REFERENCE MATERIAL PRODUCER            CERT #2655.02         </div> <div>  </div> <div>           (*) The ATCC Licensed Derivative Emblem, the ATCC Licensed Derivative word mark and the ATCC catalog marks are trademarks of ATCC. Microbiologics, Inc. is licensed to use these trademarks and to sell products derived from ATCC® cultures.         </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>             ACCREDITED            TESTING CERT #2655.01         </div> <div>           (1) These tests are accredited to ISO/IEC 17025:2005.         </div> </div>	



**Lampiran 10. Dokumentasi Penelitian**

Gambar 1. Penimbangan



Gambar 2. Perendaman



Gambar 3. Pencucian



Gambar 4. Pengeringan

Gambar 5. Pengukuran  
Kadar Air

Gambar 6. Penghalusan



Gambar 7. Proses Maserasi



Gambar 8. Penyaringan



Gambar 9. Proses Rotary



Gambar 10. Pengujian Bebas Etanol



Gambar 11. Pengujian Kadar Abu



Gambar 12. Skringing Fitokimia



Gambar 13. Pengenceran Konsentrasi Ekstrak



Gambar 14. Suspensi Bakteri



Gambar 15. Pengujian Daya Hambat



Gambar 16. Hasil *Bacillus cereus* (K-)



Gambar 17. Hasil *Bacillus cereus* (K+)

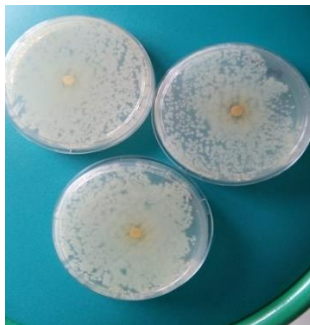


Gambar 18. Hasil *Bacillus cereus* 5%





Gambar 19. Hasil *Bacillus cereus* 10%



Gambar 20. Hasil *Bacillus cereus* 20%



Gambar 21. Hasil *Bacillus cereus* 40%



Gambar 22. Hasil *Bacillus cereus* 80%



Gambar 23. Hasil *E. coli* K(-)



Gambar 24. Hasil *E. coli* K(+)



Gambar 25. Hasil *E. coli* 5%



Gambar 26. Hasil *E. coli* 10%



Gambar 27. Hasil *E. coli* 20%



Gambar 28. Hasil *E. coli*  
40%



Gambar 29. Hasil *E. coli*  
80%

