

## DAFTAR PUSTAKA

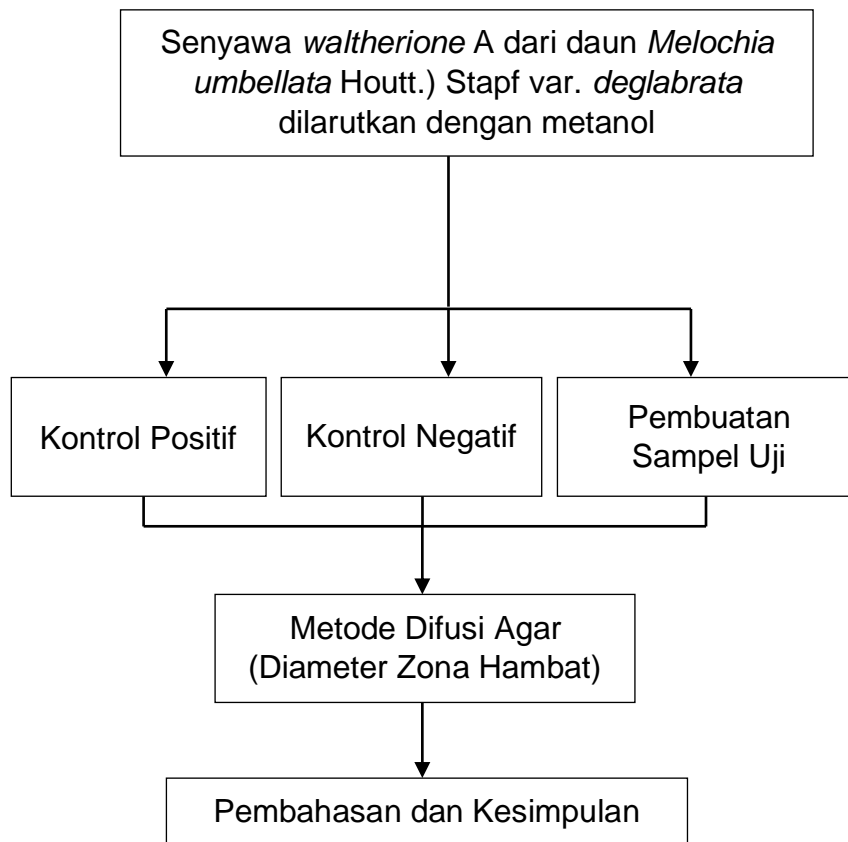
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## LAMPIRAN

### Lampiran 1. Skema Kerja Penelitian



## Lampiran 2. Perhitungan Pengenceran

Penimbangan untuk 500  $\mu\text{l}$  (larutan stok/konsentrasi 2000  $\mu\text{g}/\text{mL}$ )

$$= \frac{500 \mu\text{g}}{1000 \mu\text{L}} \times 2000 \mu\text{g} = 1000 \mu\text{g}$$

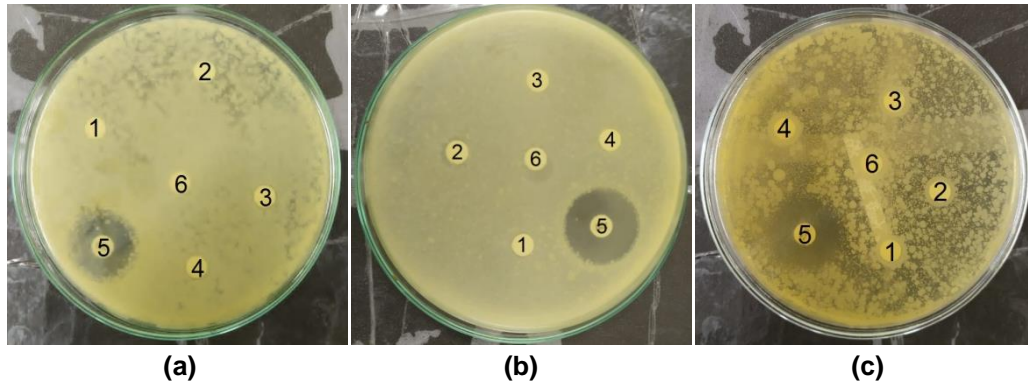
Pengenceran dilakukan 2x (1:1), sehingga:

1. Konsentrasi 1000  $\mu\text{g}/\text{mL}$  = 250  $\mu\text{l}$  larutan konsentrasi 2000  $\mu\text{g}/\text{mL}$  + 250  $\mu\text{l}$  pelarut.
2. Konsentrasi 500  $\mu\text{g}/\text{mL}$  = 250  $\mu\text{l}$  larutan konsentrasi 1000  $\mu\text{g}/\text{mL}$  + 250  $\mu\text{l}$  pelarut.
3. Konsentrasi 250  $\mu\text{g}/\text{mL}$  = 250  $\mu\text{l}$  larutan konsentrasi 500  $\mu\text{g}/\text{mL}$  + 250  $\mu\text{l}$  pelarut.

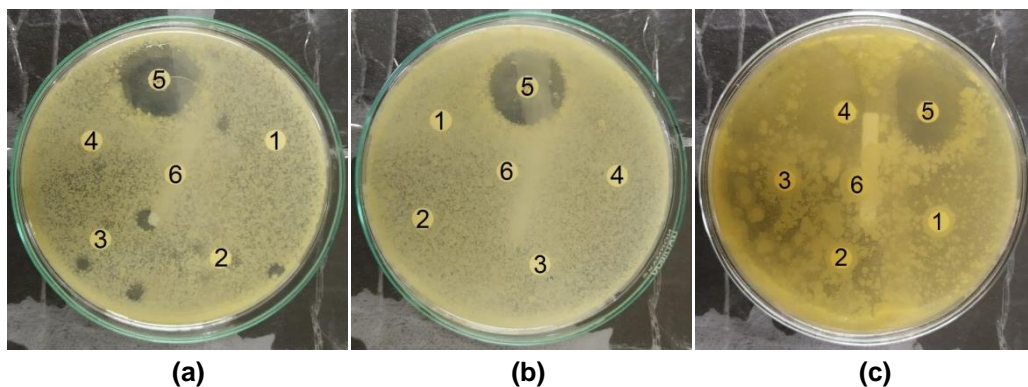
Perhitungan Konsentrasi:

1. Konsentrasi 2000  $\mu\text{g}/1000 \mu\text{L}$  x 20  $\mu\text{l}/\text{disk}$  = 40  $\mu\text{g}/\text{disk}$
2. Konsentrasi 1000  $\mu\text{g}/1000 \mu\text{L}$  x 20  $\mu\text{l}/\text{disk}$  = 20  $\mu\text{g}/\text{disk}$
3. Konsentrasi 500  $\mu\text{g}/1000 \mu\text{L}$  x 20  $\mu\text{l}/\text{disk}$  = 10  $\mu\text{g}/\text{disk}$
4. Konsentrasi 250  $\mu\text{g}/1000 \mu\text{L}$  x 20  $\mu\text{l}/\text{disk}$  = 5  $\mu\text{g}/\text{disk}$

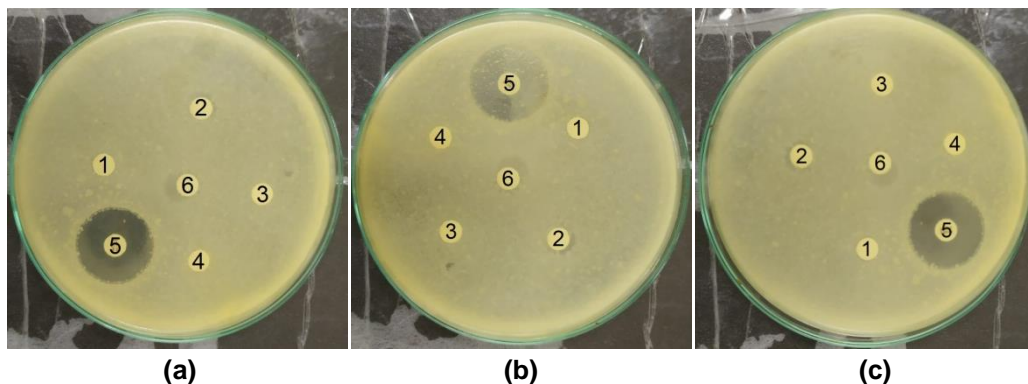
### Lampiran 3. Gambar Hasil Uji Penelitian



Gambar 7. Aktivitas Antibakteri *Waltherione A* Terhadap *E. coli*; (a) Replikasi 1, (b) Replikasi 2, dan (c) Replikasi 3; Keterangan: 1 (konsentrasi 40 µg/disk), 2 (konsentrasi 20 µg/disk), 3 (konsentrasi 10 µg/disk), 4 (konsentrasi 5 µg/disk), 5 (kontrol positif tetrasiklin), dan 6 (kontrol negatif pelarut metanol).



Gambar 8. Aktivitas Antibakteri *Waltherione A* Terhadap *P. aeruginosa*; (a) Replikasi 1, (b) Replikasi 2, dan (c) Replikasi 3; Keterangan: 1 (konsentrasi 40 µg/disk), 2 (konsentrasi 20 µg/disk), 3 (konsentrasi 10 µg/disk), 4 (konsentrasi 5 µg/disk), 5 (kontrol positif tetrasiklin), dan 6 (kontrol negatif pelarut metanol).



Gambar 9. Aktivitas Antibakteri *Waltherione A* Terhadap *S. aureus*; (a) Replikasi 1, (b) Replikasi 2, dan (c) Replikasi 3; Keterangan: 1 (konsentrasi 40 µg/disk), 2 (konsentrasi 20 µg/disk), 3 (konsentrasi 10 µg/disk), 4 (konsentrasi 5 µg/disk), 5 (kontrol positif tetrasiklin), dan 6 (kontrol negatif pelarut metanol).

#### Lampiran 4. Tabel Hasil Uji Penelitian

**Tabel 2. Diameter Zona Hambat *Waltherione A* Terhadap *E. coli***

Replikasi	Diameter Zona Hambat (mm)				
	Kontrol Positif	<i>Waltherione A</i> 40 µg/disk	<i>Waltherione A</i> 20 µg/disk	<i>Waltherione A</i> 10 µg/disk	<i>Waltherione A</i> 5 µg/disk
Replikasi 1	22,25	6,58	6,50	6,35	6,15
Replikasi 2	21,26	6,98	6,79	6,68	6,45
Replikasi 3	20,69	6,79	6,69	6,32	6,27
<b>Nilai Rata-Rata±SD</b>	<b>21,4±0,79</b>	<b>6,78±0,20</b>	<b>6,66±0,14</b>	<b>6,45±0,19</b>	<b>6,29±0,15</b>

**Tabel 3. Diameter Zona Hambat *Waltherione A* Terhadap *P. aeruginosa***

Replikasi	Diameter Zona Hambat (mm)				
	Kontrol Positif	<i>Waltherione A</i> 40 µg/disk	<i>Waltherione A</i> 20 µg/disk	<i>Waltherione A</i> 10 µg/disk	<i>Waltherione A</i> 5 µg/disk
Replikasi 1	22,89	6,81	6,75	6,36	6,28
Replikasi 2	21,06	7,17	6,63	6,47	6,40
Replikasi 3	22,06	6,73	6,67	6,34	6,24
<b>Nilai Rata-Rata±SD</b>	<b>22.01±0,92</b>	<b>6,90±0,23</b>	<b>6,69±0,06</b>	<b>6,39±0,070</b>	<b>6,31±0,08</b>

**Tabel 4. Diameter Zona Hambat *Waltherione A* Terhadap *S. aureus***

Replikasi	Diameter Zona Hambat (mm)				
	Kontrol Positif	<i>Waltherione A</i> 40 µg/disk	<i>Waltherione A</i> 20 µg/disk	<i>Waltherione A</i> 10 µg/disk	<i>Waltherione A</i> 5 µg/disk
Replikasi 1	20,32	6,79	6,63	6,32	6,20
Replikasi 2	19,56	6,78	6,68	6,33	6,29
Replikasi 3	19,66	6,81	6,73	6,45	6,33
<b>Nilai Rata-Rata±SD</b>	<b>19,85±0,41</b>	<b>6,79±0,02</b>	<b>6,68±0,05</b>	<b>6,37±0,07</b>	<b>6,27±0,07</b>

## Lampiran 5. Data Hasil Analisis Statistika

### Lampiran 5.1 Bakteri Uji *E. coli*

#### Uji Normalitas

Tests of Normality							
	Konsentrasi Senyawa Uji	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Diameter Zona Hambat	<i>Waltherione A</i> 40 µg/disk	.175	3	.	1.000	3	1.000
	<i>Waltherione A</i> 20 µg/disk	.247	3	.	.969	3	.661
	<i>Waltherione A</i> 10 µg/disk	.358	3	.	.812	3	.144
	<i>Waltherione A</i> 5 µg/disk	.219	3	.	.987	3	.780

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

a. Lilliefors Significance Correction

#### Uji Homogenitas

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Diameter Zona Hambat	Based on Mean	.218	3	8	.881
	Based on Median	.056	3	8	.981
	Based on Median and with adjusted df	.056	3	5.705	.981
	Based on trimmed mean	.200	3	8	.894

#### One Way Anova

ANOVA					
Diameter Zona Hambat					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.428	3	.143	4.582	.038
Within Groups	.249	8	.031		
Total	.676	11			



## Post Hoc

Multiple Comparisons							
Dependent Variable: Diameter Zona Hambat							
	(I) Konsentrasi Senyawa Uji	(J) Konsentrasi Senyawa Uji	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Waltherione A 40 µg/disk	Waltherione A 20 µg/disk	.12000 0	.143 991	.83 7	-. .3411 1	.5811 1
		Waltherione A 10 µg/disk	.33000 0	.143 991	.17 9	-. .1311 1	.7911 1
		Waltherione A 5 µg/disk	.49000 0*	.143 991	.03 8	.0288 9	.9511 1
	Waltherione A 20 µg/disk	Waltherione A 40 µg/disk	-. .12000 0	.143 991	.83 7	-. .5811 1	.3411 1
		Waltherione A 10 µg/disk	.21000 0	.143 991	.50 2	-. .2511 1	.6711 1
		Waltherione A 5 µg/disk	.37000 0	.143 991	.12 2	-. .0911 1	.8311 1
	Waltherione A 10 µg/disk	Waltherione A 40 µg/disk	-. .33000 0	.143 991	.17 9	-. .7911 1	.1311 1
		Waltherione A 20 µg/disk	-. .21000 0	.143 991	.50 2	-. .6711 1	.2511 1
		Waltherione A 5 µg/disk	.16000 0	.143 991	.69 3	-. .3011 1	.6211 1
	Waltherione A 5 µg/disk	Waltherione A 40 µg/disk	-. .49000 0*	.143 991	.03 8	-. .9511 1	-. .0288 9
		Waltherione A 20 µg/disk	-. .37000 0	.143 991	.12 2	-. .8311 1	.0911 1
		Waltherione A 10 µg/disk	-. .16000 0	.143 991	.69 3	-. .6211 1	.3011 1

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

## Lampiran 5.2 Bakteri Uji *P. aeruginosa*

### Uji Normalitas

Tests of Normality							
	Konsentrasi Senyawa Uji	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Diameter Zona Hambat	<i>Waltherione A</i> 40 µg/disk	.321	3	.	.881	3	<b>.328</b>
	<i>Waltherione A</i> 20 µg/disk	.253	3	.	.964	3	<b>.637</b>
	<i>Waltherione A</i> 10 µg/disk	.333	3	.	.862	3	<b>.274</b>
	<i>Waltherione A</i> 5 µg/disk	.292	3	.	.923	3	<b>.463</b>
*. This is a lower bound of the true significance.							
a. Lilliefors Significance Correction							

### Uji Homogenitas

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Diameter Zona Hambat	Based on Mean	.218	3	8	<b>.881</b>
	Based on Median	.056	3	8	<b>.981</b>
	Based on Median and with adjusted df	.056	3	5.705	<b>.981</b>
	Based on trimmed mean	.200	3	8	<b>.894</b>

### One Way Anova

ANOVA					
Diameter Zona Hambat					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.428	3	.143	4.582	<b>.038</b>
Within Groups	.249	8	.031		
Total	.676	11			

## Post Hoc

Multiple Comparisons							
Dependent Variable: Diameter Zona Hambat							
	(I) Konsentrasi Senyawa Uji	(J) Konsentrasi Senyawa Uji	Mean Differe nce (I- J)	Std. Error	Sig .	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Waltherione A 40 µg/disk	Waltherione A 20 µg/disk	.12000 0	.1439 91	.83 7	-. 3411 1	.5811 1
		Waltherione A 10 µg/disk	.33000 0	.1439 91	.17 9	-. 1311 1	.7911 1
		Waltherione A 5 µg/disk	.49000 0*	.1439 91	.03 8	.0288 9	.9511 1
	Waltherione A 20 µg/disk	Waltherione A 40 µg/disk	-. 12000 0	.1439 91	.83 7	-. 5811 1	.3411 1
		Waltherione A 10 µg/disk	.21000 0	.1439 91	.50 2	-. 2511 1	.6711 1
		Waltherione A 5 µg/disk	.37000 0	.1439 91	.12 2	-. 0911 1	.8311 1
	Waltherione A 10 µg/disk	Waltherione A 40 µg/disk	-. 33000 0	.1439 91	.17 9	-. 7911 1	.1311 1
		Waltherione A 20 µg/disk	-. 21000 0	.1439 91	.50 2	-. 6711 1	.2511 1
		Waltherione A 5 µg/disk	.16000 0	.1439 91	.69 3	-. 3011 1	.6211 1
	Waltherione A 5 µg/disk	Waltherione A 40 µg/disk	-. 49000 0*	.1439 91	.03 8	-. 9511 1	-. 0288 9
		Waltherione A 20 µg/disk	-. 37000 0	.1439 91	.12 2	-. 8311 1	.0911 1
		Waltherione A 10 µg/disk	-. 16000 0	.1439 91	.69 3	-. 6211 1	.3011 1

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

### Lampiran 5.3 Bakteri Uji *S. aureus*

#### Uji Normalitas

Tests of Normality							
	Konsentrasi Senyawa Uji	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Diameter Zona Hambat	<i>Waltherione A</i> 40 µg/disk	.253	3	.	.964	3	.637
	<i>Waltherione A</i> 20 µg/disk	.175	3	.	1.000	3	1.000
	<i>Waltherione A</i> 10 µg/disk	.361	3	.	.807	3	.132
	<i>Waltherione A</i> 5 µg/disk	.265	3	.	.953	3	.583

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

#### Uji Homogenitas

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Diameter Zona Hambat	Based on Mean	2.004	3	8	.192
	Based on Median	.401	3	8	.756
	Based on Median and with adjusted df	.401	3	4.471	.760
	Based on trimmed mean	1.824	3	8	.221

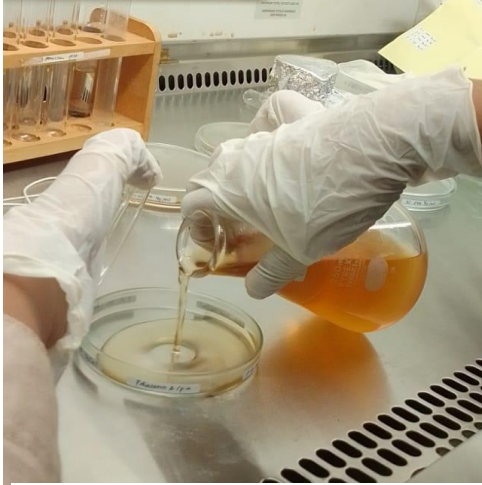
#### One Way Anova

ANOVA					
Diameter Zona Hambat					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.553	3	.184	59.480	.000
Within Groups	.025	8	.003		
Total	.578	11			

## Post Hoc

Multiple Comparisons							
Dependent Variable: Diameter Zona Hambat							
	(I) Konsentrasi Senyawa Uji	(J) Konsentrasi Senyawa Uji	Mean Differ ence (I- J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Boun d	Upper Boun d
Tukey HSD	Waltherione A 40 µg/disk	Waltherione A 20 µg/disk	.11333 3	.045 461	.13 6	-. .0322 5	.2589 1
		Waltherione A 10 µg/disk	.42666 7*	.045 461	.00 0	.2810 9	.5722 5
		Waltherione A 5 µg/disk	.52000 0*	.045 461	.00 0	.3744 2	.6655 8
	Waltherione A 20 µg/disk	Waltherione A 40 µg/disk	-. .11333 3	.045 461	.13 6	-. .2589 1	.0322 5
		Waltherione A 10 µg/disk	.31333 3*	.045 461	.00 1	.1677 5	.4589 1
		Waltherione A 5 µg/disk	.40666 7*	.045 461	.00 0	.2610 9	.5522 5
	Waltherione A 10 µg/disk	Waltherione A 40 µg/disk	-. .42666 7*	.045 461	.00 0	-. .5722 5	-. .2810 9
		Waltherione A 20 µg/disk	-. .31333 3*	.045 461	.00 1	-. .4589 1	-. .1677 5
		Waltherione A 5 µg/disk	.09333 3	.045 461	.24 6	-. .0522 5	.2389 1
	Waltherione A 5 µg/disk	Waltherione A 40 µg/disk	-. .52000 0*	.045 461	.00 0	-. .6655 8	-. .3744 2
		Waltherione A 20 µg/disk	-. .40666 7*	.045 461	.00 0	-. .5522 5	-. .2610 9
		Waltherione A 10 µg/disk	-. .09333 3	.045 461	.24 6	-. .2389 1	-. .0522 5

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

**Lampiran 6. Dokumentasi**

**Gambar 10. Proses pengerjaan *base layer***



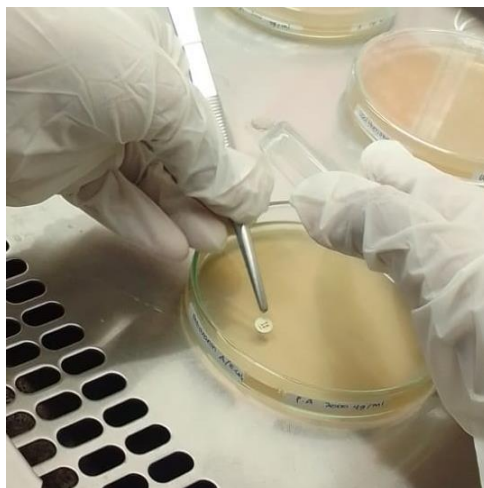
**Gambar 11. Proses pengerjaan bakteri uji dan medium**



**Gambar 12. Proses pengerjaan *seed layer***



**Gambar 13. Proses pemberian larutan uji ke *paper disc***



**Gambar 14. Proses pengerjaan *paper disc***