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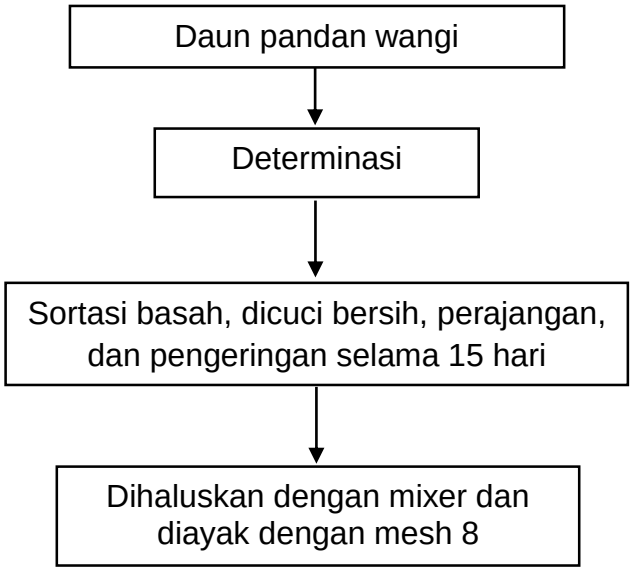
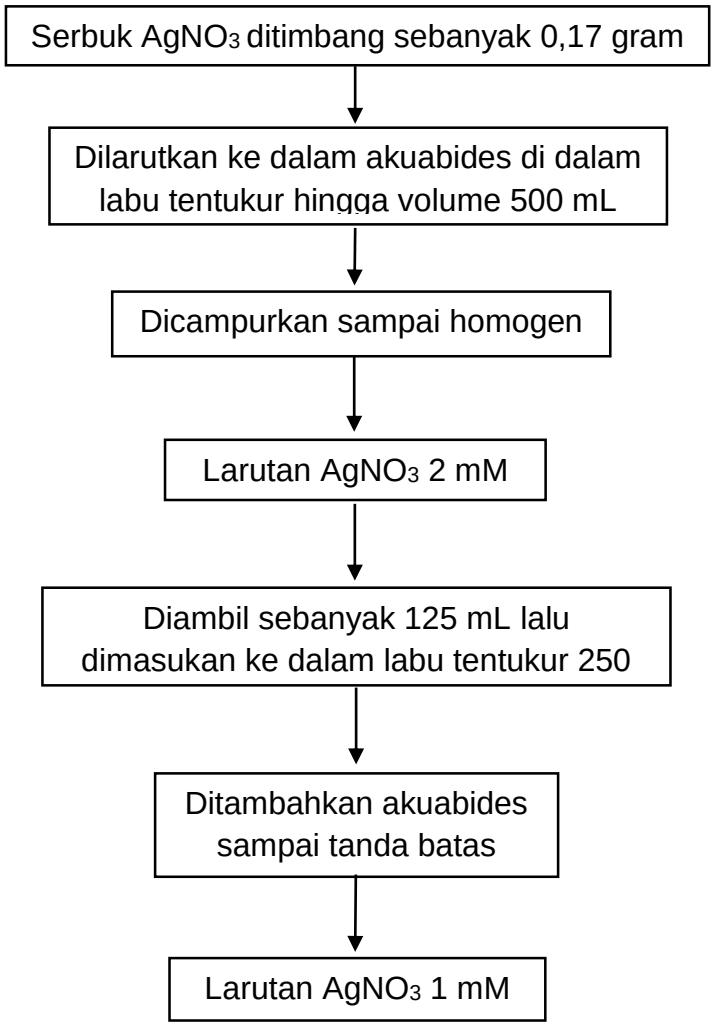
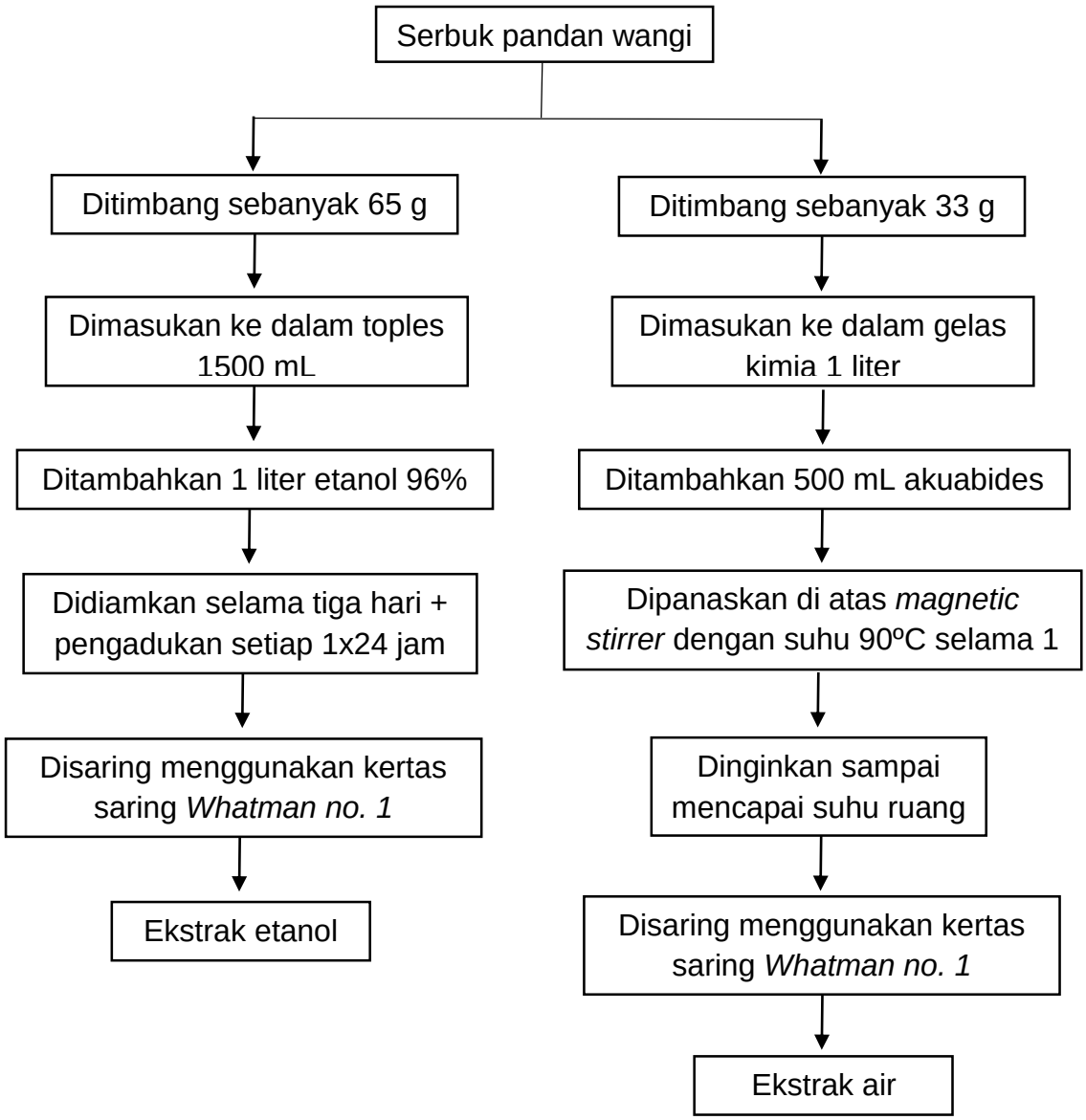
Lampiran 1. Skema kerja preparasi sampel



Lampiran 2. Skema kerja pembuatan larutan $AgNO_3$



Lampiran 3. Skema kerja pembuatan ekstrak pandan wangi



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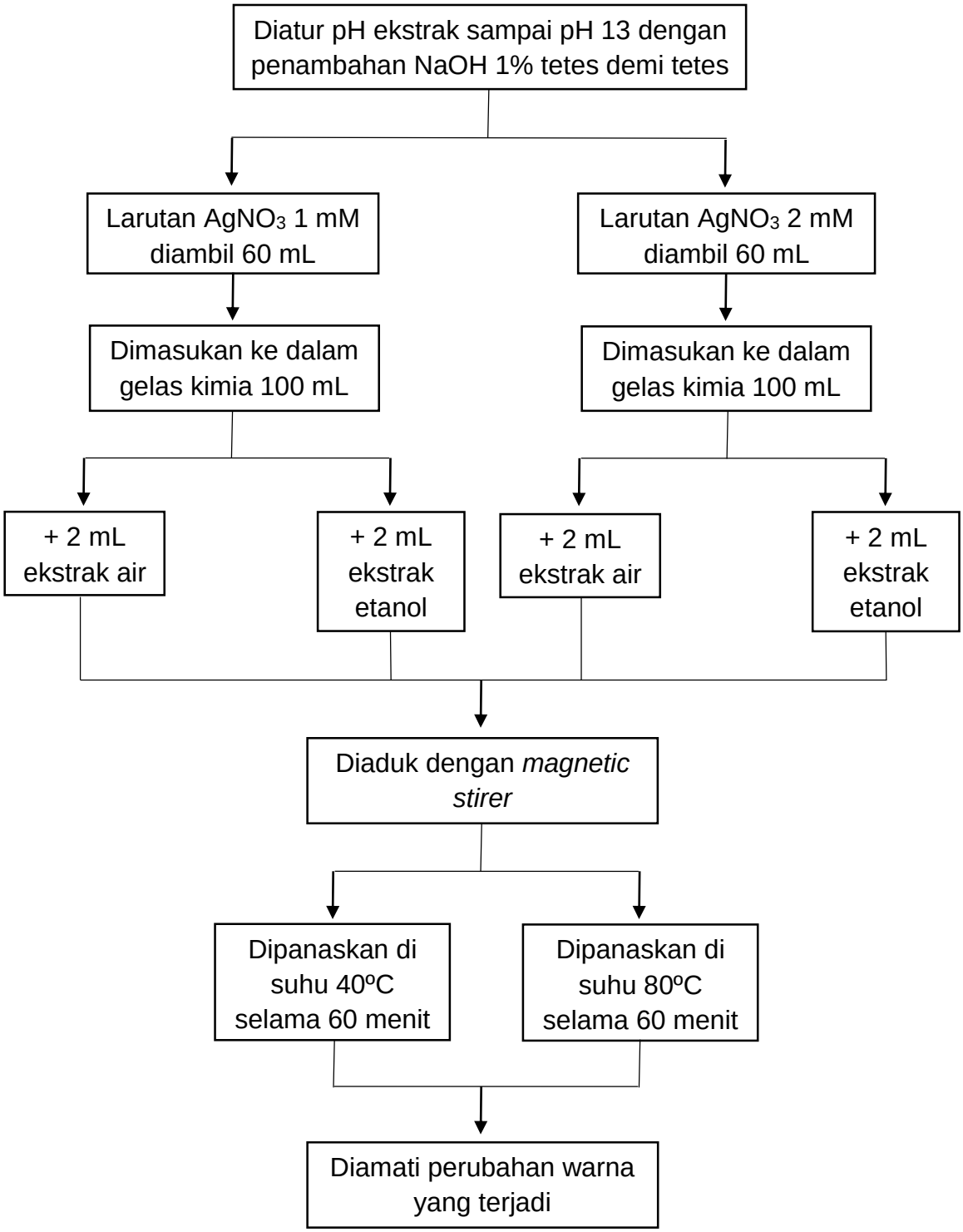
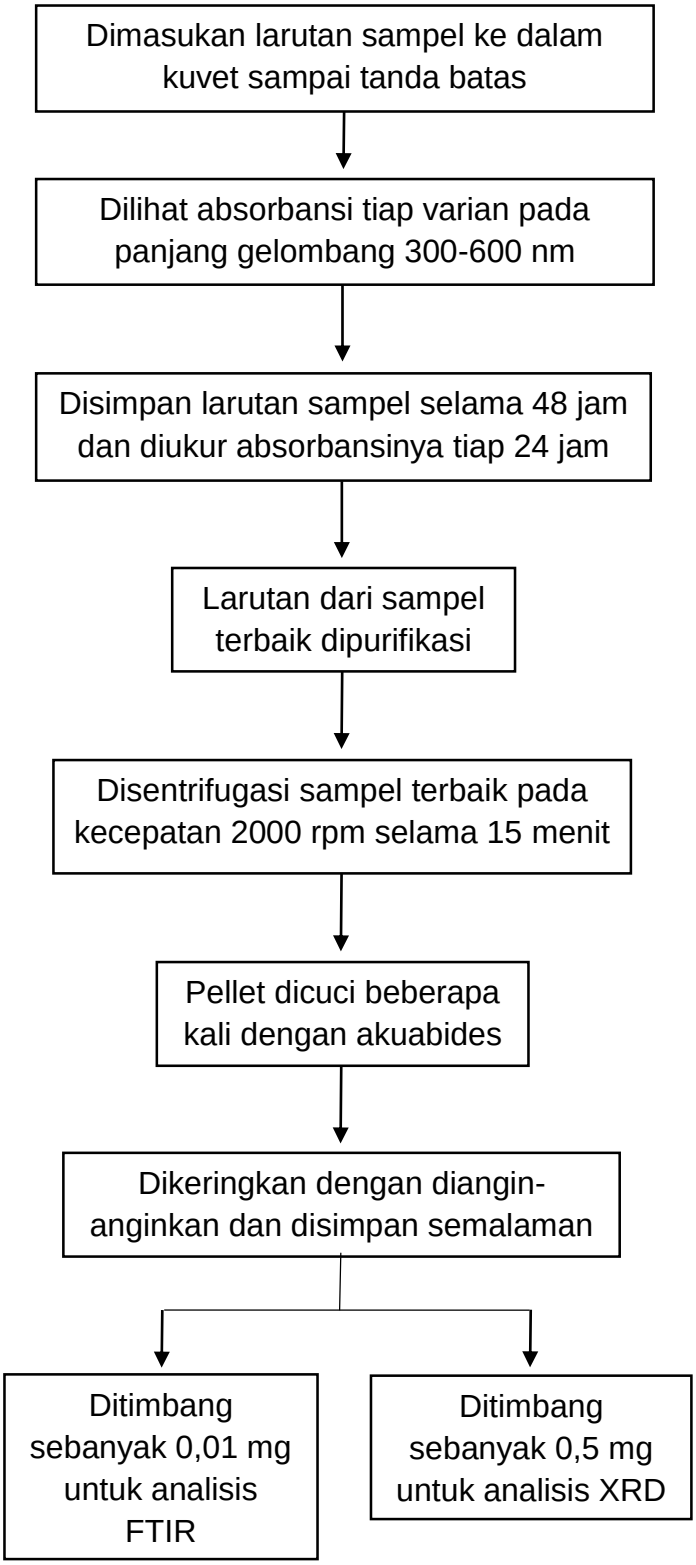
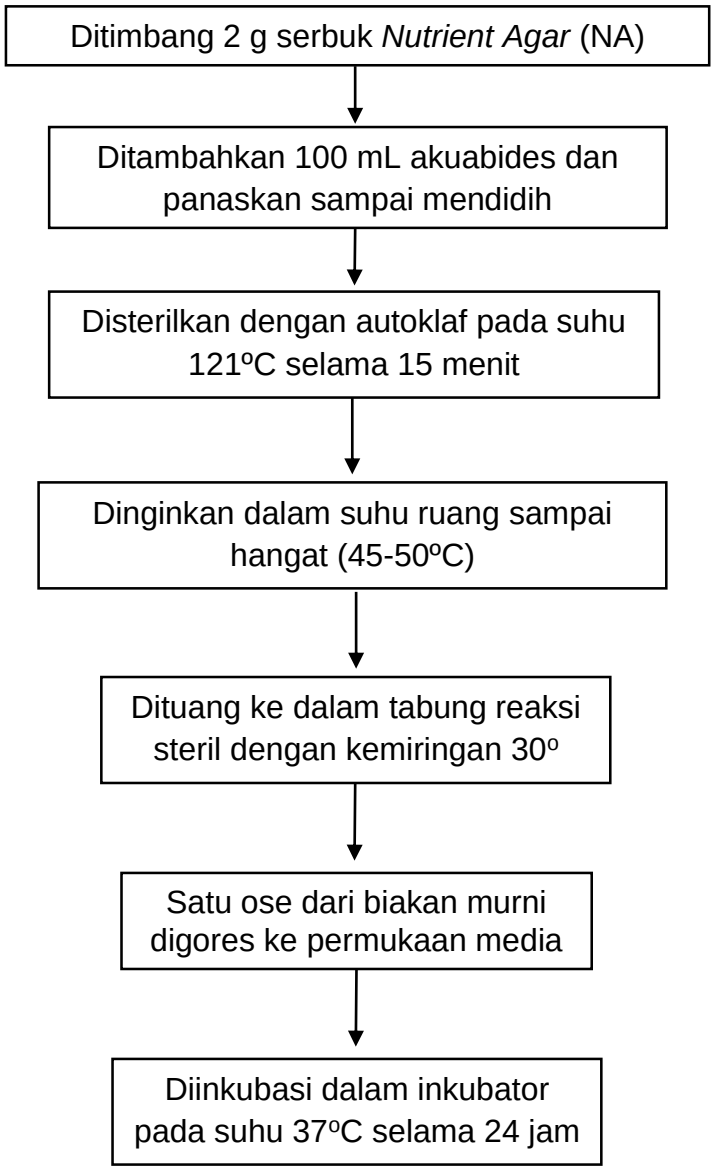


Lampiran 5. Skema kerja karakterisasi nanopartikel perak



Lampiran 6. Skema kerja pembuatan media NA dan peremajaan bakteri



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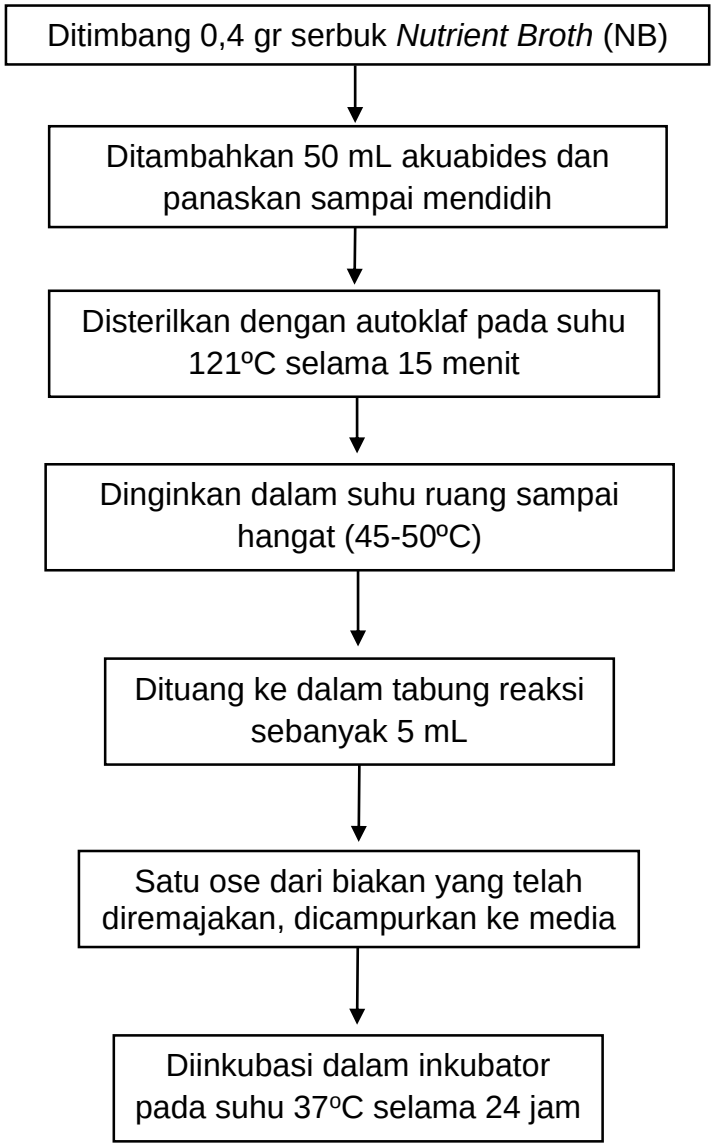
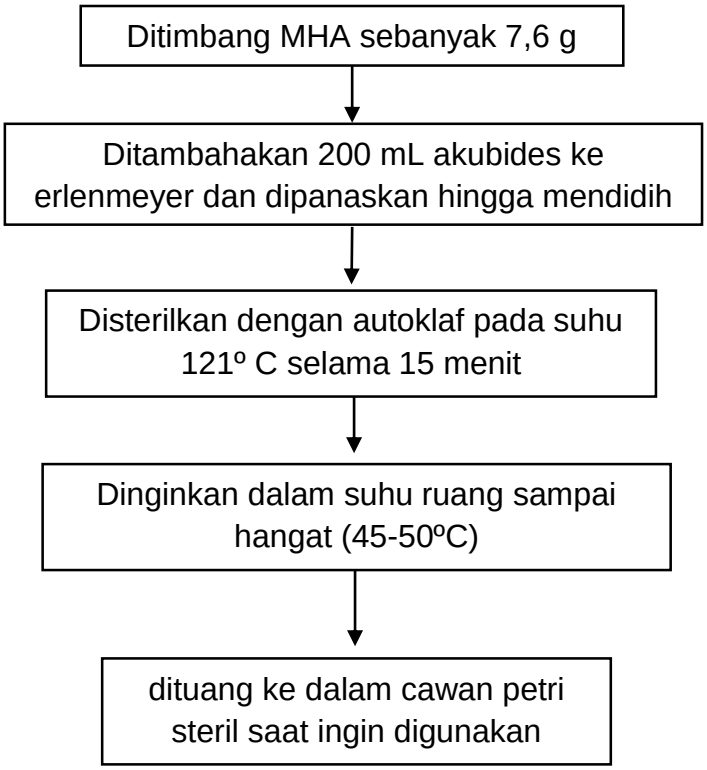
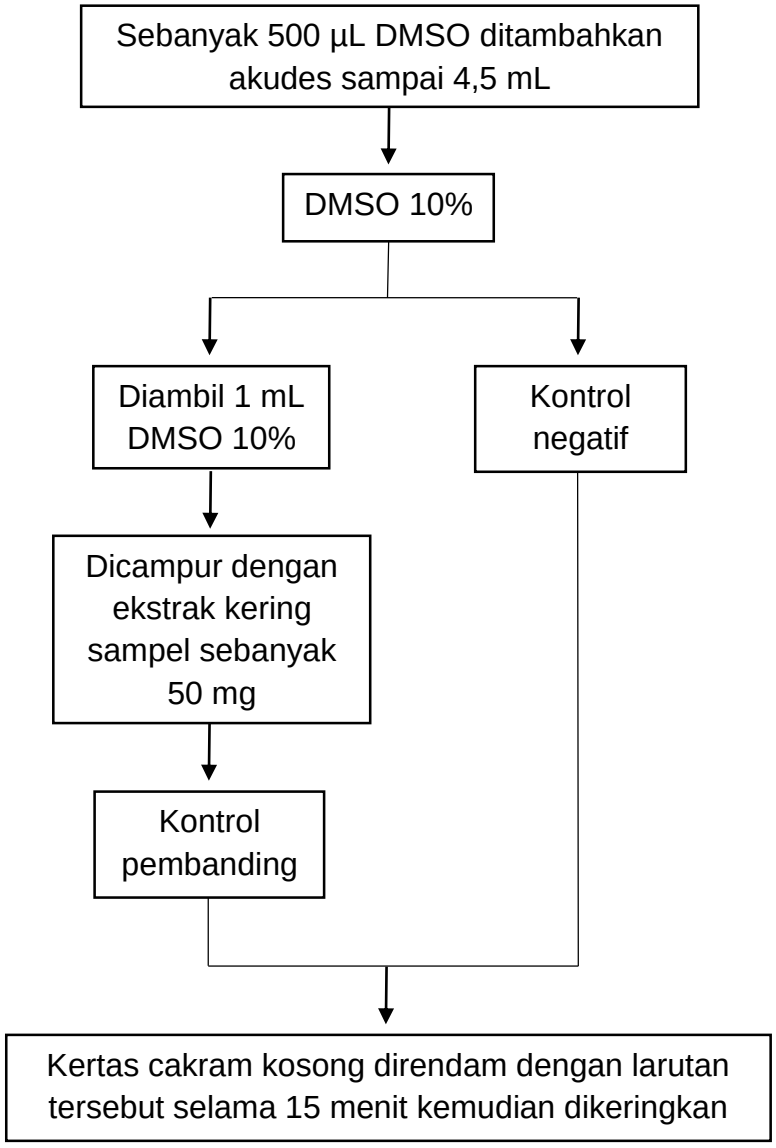


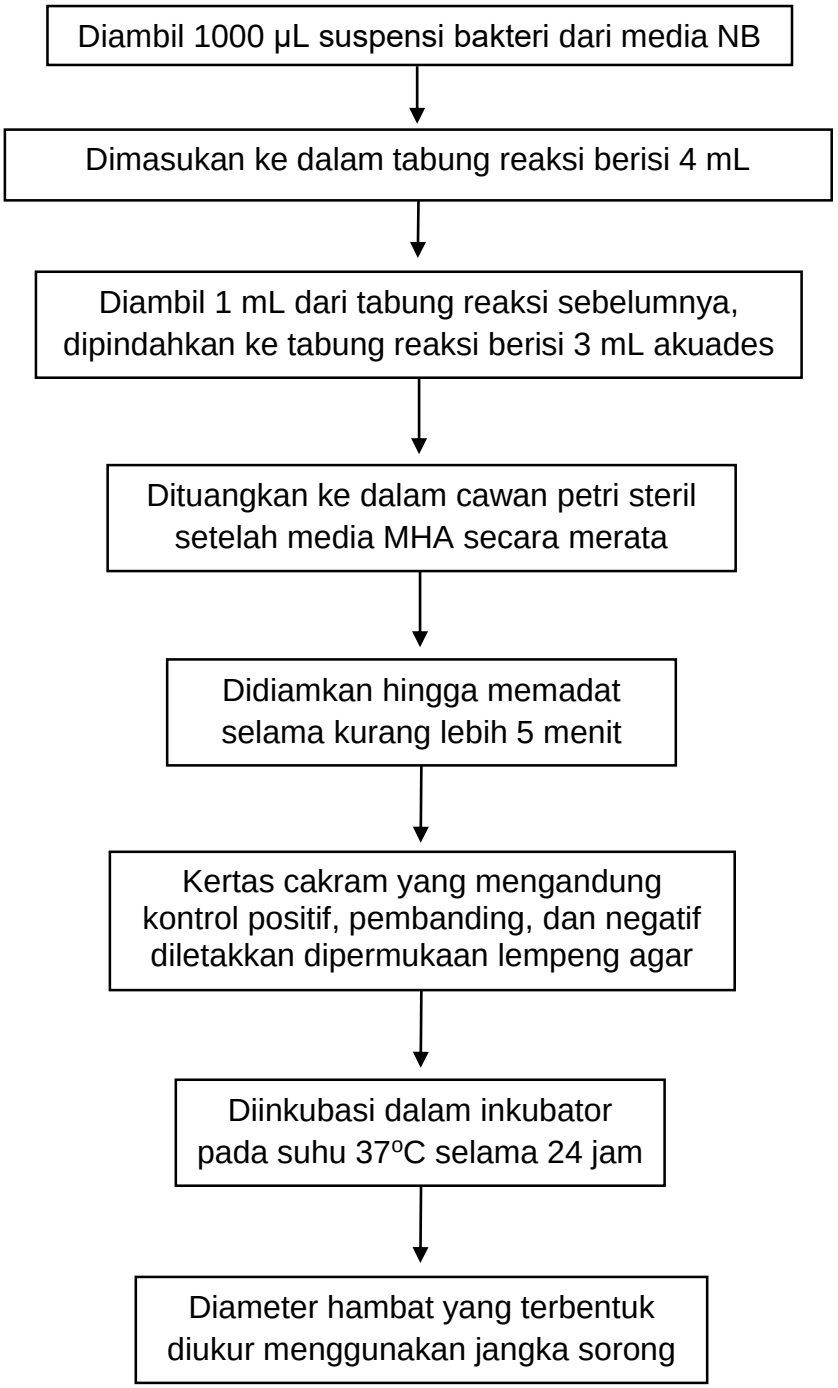
Lampiran 8. Skema kerja pembuatan media MHA



Lampiran 9. Skema kerja pembuatan kontrol pembanding dan negatif



Lampiran 10. Skema kerja uji aktivitas antibakteri



Lampiran 11. Perhitungan

A. Perhitungan rendamen ekstrak

1. Ekstrak etanol

$$\% \text{ rendamen} = \frac{bobot\ hasil}{bobot\ awal} \times 100\%$$

$$\% \text{ rendamen} = \frac{17{,}65\ g}{65\ g} \times 100\%$$

$$\% \text{ rendamen} = 27{,}2\%$$

2. Ekstrak air

$$\% \text{ rendamen} = \frac{15{,}8\ g}{33\ g} \times 100\%$$

$$\% \text{ rendamen} = 47{,}9\%$$

B. Perhitungan konsentrasi larutan $AgNO_3$

1. $AgNO_3$ 2 mM => 0,002 M dalam 500 mL akubides

$$0{,}002\ M = \frac{x}{Mr} \times \frac{1000}{500}$$

$$0{,}002\ M = \frac{x}{170} \times 20$$

$$20\ X = 0{,}002 \times 170$$

$$X = \frac{0{,}34}{20}$$

$$= 0{,}017\ g$$

2. Pengenceran larutan $AgNO_3$ untuk konsentrasi 1 mM

$$\frac{V1}{V2} = \frac{n1}{n2}$$

$$\frac{X}{500} = \frac{1}{2}$$

$$X = \frac{500}{2}$$

$$= 250\ mL$$

C. Perhitungan konsentrasi ekstrak

1. Konsentrasi 3,3 % pada ekstrak etanol dalam 2 mL pelarut

$$X = \frac{3,3}{100} \times 2 \text{ mL}$$

$$= 0,07 \text{ g}$$

2. Konsentrasi 1:30 ekstrak air dalam 60 mL larutan $AgNO_3$

Larutan ekstrak = Larutan $AgNO_3$

$$\frac{1}{30} = \frac{X}{60\ mL}$$

$$= 2 \text{ mL}$$

D. Perhitungan ukuran kristal AgNP

1. $2\theta = 37,9790$

$\theta = 18,9895$

Cos $\theta = 0,94557$

βFWHM $= \frac{0,90200}{180\ rad}$ X 3,14

$\beta = 0.01574287$

$$D = \frac{K\lambda}{\beta cos\theta}$$

$$= \frac{(0,94)(0,15406)}{radian(0,90200)(0,94557)}$$

$$= \frac{0,1448164}{(0.01574287)(0,94557)}$$

$$= \frac{0,1448164}{0,014886}$$

$$= 9,728 \text{ nm}$$

2. 2θ = 44,0550

   θ = 22,0275

   Cos θ = 0,92700

   βFWHM = $\frac{1,23000}{180\ rad}$ X 3,14

   β = 0.02146755

   D = $\frac{(0,94)(0,15406)}{radian(1,23000)(0,84642)}$

   = $\frac{0,1448164}{(0.02146755)(0,92700)}$

   = $\frac{0,1448164}{0.019900}$

   = 7,27 nm

3. 2θ = 64,3500

   θ = 32.1750

   Cos θ = 0,84642

   βFWHM = $\frac{0,72000}{180\ rad}$ X 3,14

   β = 0.01256637

   D = $\frac{(0,94)(0,15406)}{radian(0,72000)(0,84642)}$

   = $\frac{0,1448164}{(0.01256637)(0,84642)}$

   = $\frac{0,1448164}{0.0106364}$

   = 13,615 nm

4. 2θ = 77,2750

   θ = 38,6375

   Cos θ = 0,78111

   βFWHM = $\frac{0,91000}{180\ rad}$ X 3,14

   β = 0.0158825

   D = $\frac{(0,94)(0,15406)}{radian(0,91000)(0,78111)}$

   = $\frac{0,1448164}{(0.0158825)(0,78111)}$

   = $\frac{0,1448164}{0,012406}$

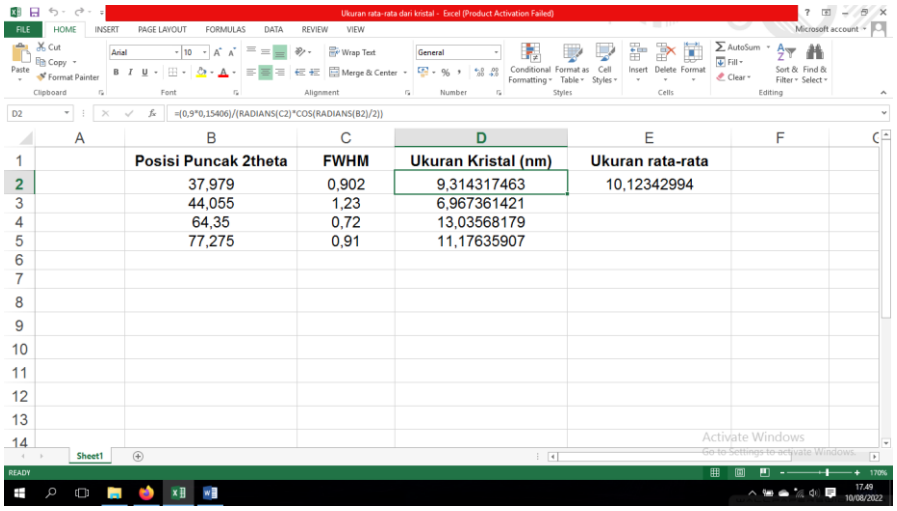
   = 11,673 nm

5. Ukuran kristal rata-rata

   $D_{rata\text{-}rata}$ = $\frac{9,728+7,27+11,673+13,615}{4}$

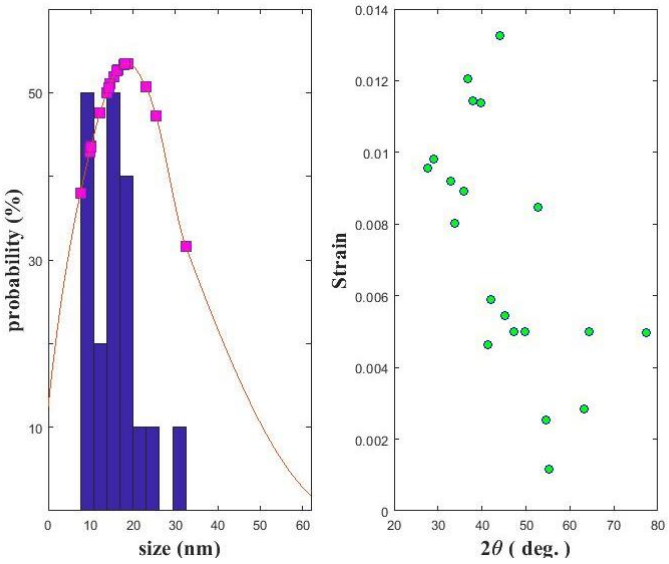
   = 10,5715 nm

6. Pengukuran ukuran kristal menggunakan excel



	A	B	C	D	E	F
1		Posisi Puncak 2theta	FWHM	Ukuran Kristal (nm)	Ukuran rata-rata	
2		37,979	0,902	9,314317463	10,12342994	
3		44,055	1,23	6,967361421		
4		64,35	0,72	13,03568179		
5		77,275	0,91	11,17635907		
6						
7						
8						
9						
10						
11						
12						
13						
14						

7. Prediksi ukuran kristal dengan XRD



E. Perhitungan diameter rata-rata hambatan AgNP

8. AgNP ekstrak air

E. coli = $\frac{(10,7+11,4)}{2}$

= 11,05 mm

S. aureus = $\frac{(10,1+11,1)}{2}$

= 10,6 mm

9. AgNP ekstrak etanol

E. coli = $\frac{(7,8+8,4)}{2}$

= 8,1 mm

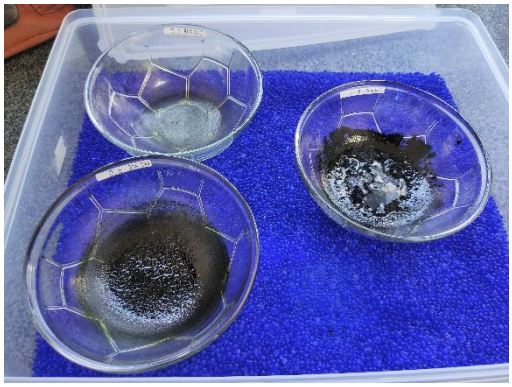
S. aureus = $\frac{(9,5+7,2)}{2}$

= 8,35 mm

Lampiran 12. Dokumentasi penelitian

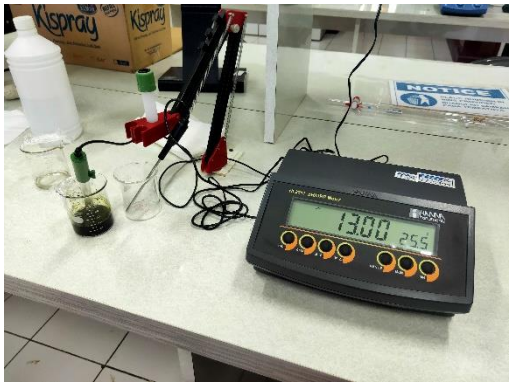
Daun pandan wangi kering

Sampel setelah dihaluskan



Esktrak etanol pandan wangi

Ekstrak air pandan wangi



Pengaturan pH pada ekstrak

Proses pengadukan dan pemanasan

Lampiran 13. Hasil determinasi tanaman pandan wangi

KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,
RISET DAN TEKNOLOGI

UNIVERSITAS NEGERI MAKASSAR (UNM)
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
LABORATORIUM BIOLOGI
Alamat : Kampus UNM Parangtambung Jl. Mallengkeri, Makassar 90224
Tlp. (0411) 840610 Fax. (0411) 841504
Laman : http://bio.fmipa.unm.ac.id

4 April 2022

No : 013/UN36.1.4/Lab.Biologi/IV/2022
Lamp : -
Hal : Hasil Identifikasi Tanaman

Kepada Yth.
Alfiana Dwi Puspita
Program Magister S2 Farmasi
Universitas Hasanuddin

Dengan Hormat,

Bersama ini, kami sampaikan hasil identifikasi Tanaman yang saudara(i) kirimkan. Identifikasi dilakukan oleh staf peneliti laboratorium Botani Jurusan Biologi FMIPA UNM dengan hasil sebagai berikut:

Kingdom : Plantae
Divisi : Magnoliophyta
Kelas : Liliopsida
Ordo : Liliales
Ordo : Pandanales
Famili : Pandanaceae
Genus : Pandanus
Spesies : *Pandanus amaryllifolius* Roxb.

Kunci determinasi : 1b – 2b – 3b – 4b – 6b – 7b – 9b – 10b – 11a – 67a – 68a – Fam. Pandanaceae – Pandanus – 1b – *Pandanus amaryllifolius* Roxb.

Sumber pustaka :

1. http://plantamor.com/species/info/pandanus/amaryllifolius
2. https://www.gbif.org/species/5327986
3. https://www.nparks.gov.sg/florafaunaweb/flora/2/2/2299
4. https://indiabiodiversity.org/species/show/226077
5. http://tropical.theferns.info/viewtropical.php?id=Pandanus+amaryllifolius
6. Steenis, Van C.G.G.J. 2013. Flora. PT. Balai Pustaka, Jakarta.

Demikian untuk diketahui dan dipergunakan sebagaimana mestinya.

Kepala laboratorium Biologi
FMIPA UNM

Prof. Oslan Jumadi, S.SI., M.Phil., Ph.D
NIP. 19701016 199702 1 001

Lampiran 14. Data spektrofotometer UV-Vis untuk $AgNO_3$

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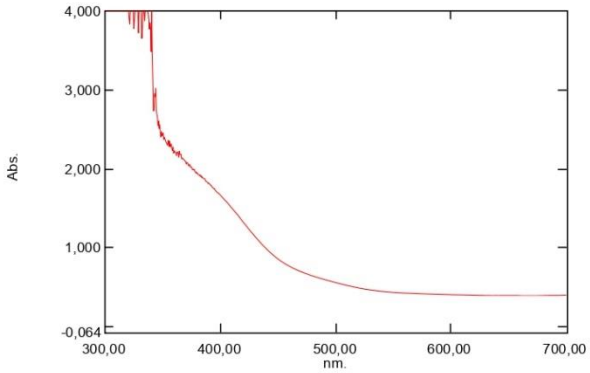

No.	P/V	Wavelength	Abs.	Description
1	↑	651,50	0,397	
2	↑	335,00	4,000	
3	↑	326,00	4,000	
4	↓	636,00	0,396	
5	↓	332,00	3,651	
6	↓	325,00	3,773	

25/02/2022

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Lampiran 15. Data spektrofotometer UV-Vis untuk seluruh varian

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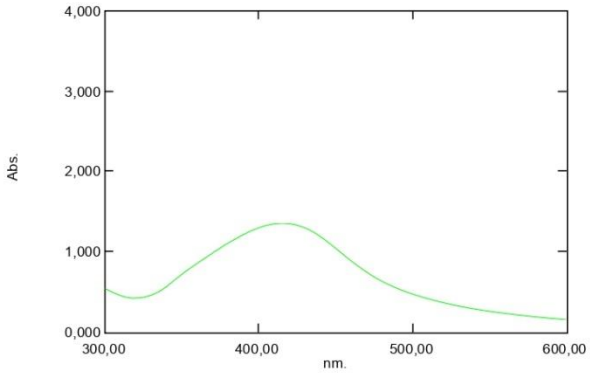

No.	P/V	Wavelength	Abs.	Description
1		414,60	1,354	
2		317,80	0,420	

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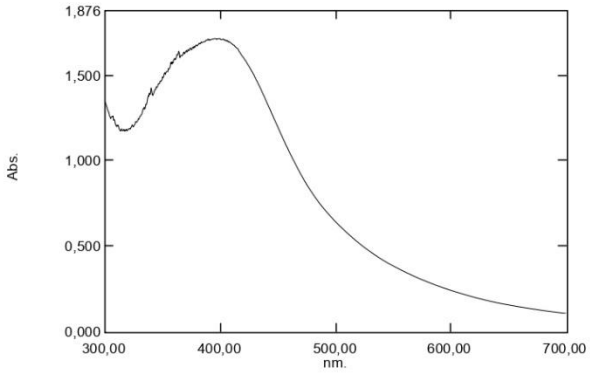

No.	P/V	Wavelength	Abs.	Description
1		402,50	1,711	
2		317,00	1,170	

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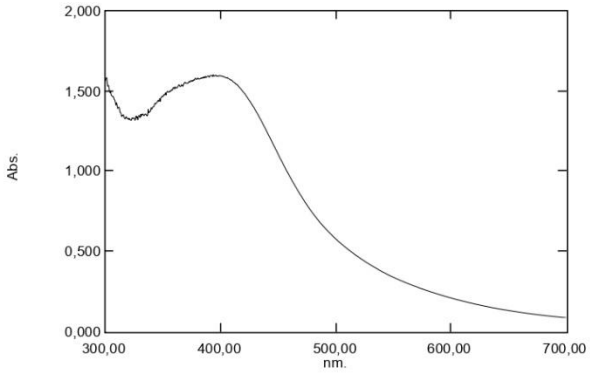

No.	P/V	Wavelength	Abs.	Description
1		394,00	1,601	
2		322,50	1,317	

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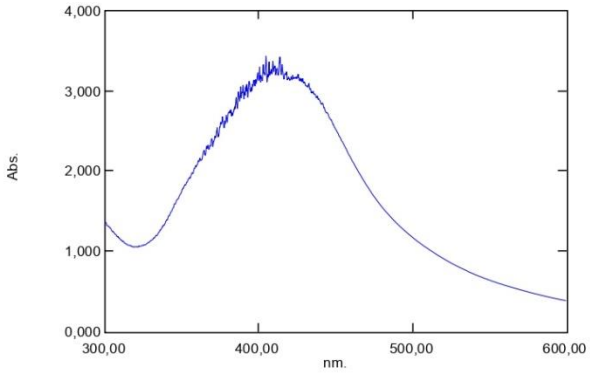

No.	P/V	Wavelength	Abs.	Description
1	↑	441,60	2,847	
2	↑	425,80	3,208	
3	↑	413,80	3,425	
4	↑	404,80	3,434	
5	↑	386,80	2,991	
6	↑	376,40	2,681	
7	↑	369,40	2,404	
8	↓	440,80	2,833	
9	↓	420,20	3,130	
10	↓	412,60	3,194	
11	↓	387,60	2,873	
12	↓	377,40	2,541	
13	↓	370,20	2,304	
14	↓	318,80	1,051	

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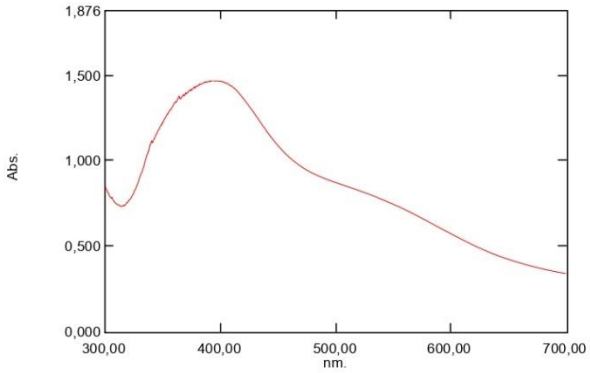

No.	P/V	Wavelength	Abs.	Description
1		394,00	1,467	
2		314,00	0,730	

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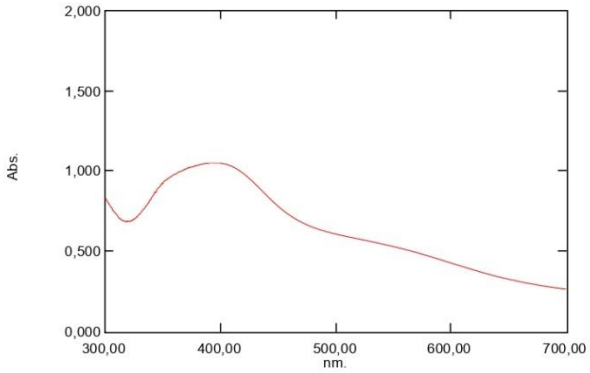

No.	P/V	Wavelength	Abs.	Description
1		398,00	1,052	
2		318,00	0,684	

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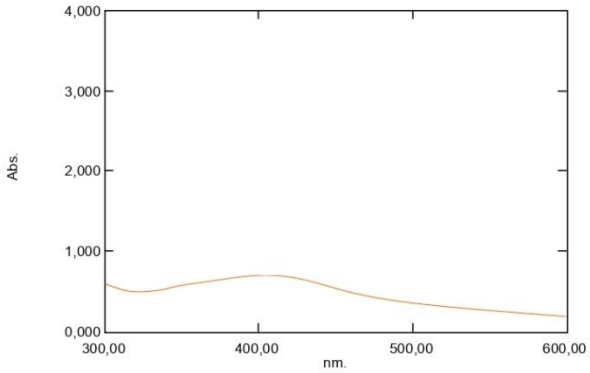

No.	P/V	Wavelength	Abs.	Description
1	↑	404,20	0,701	
2	↑	336,00	0,518	
3	↓	336,80	0,517	
4	↓	322,60	0,493	

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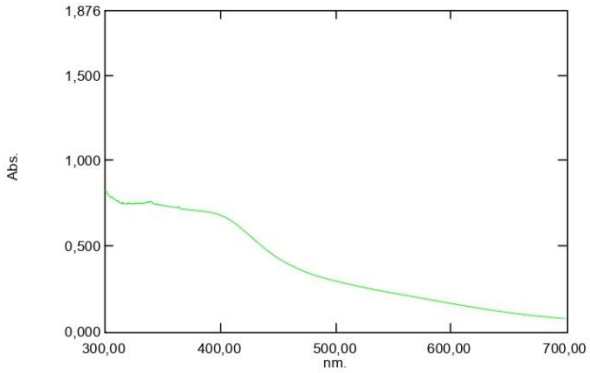

No.	P/V	Wavelength	Abs.	Description
1	↑	340,00	0,760	
2	↓	326,00	0,745	

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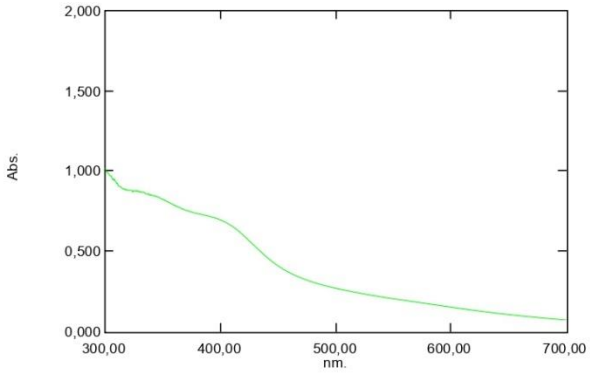

No.	P/V	Wavelength	Abs.	Description

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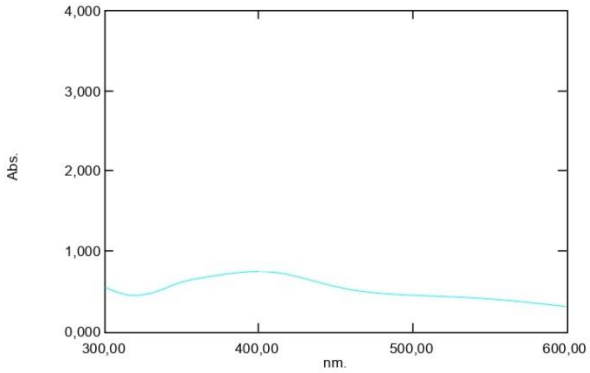

No.	P/V	Wavelength	Abs.	Description
1	↑	400,40	0,746	
2	↓	319,40	0,449	

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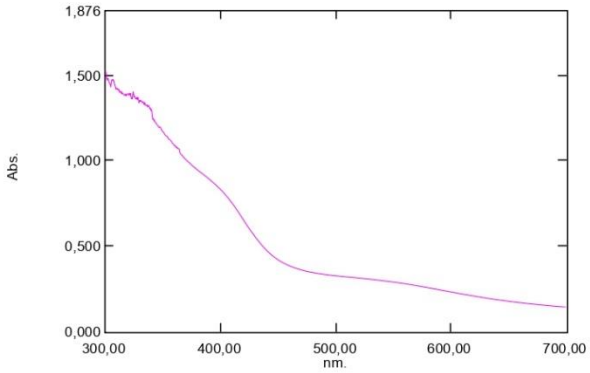

No.	P/V	Wavelength	Abs.	Description
1	↑	324,50	1,402	
2	↓	318,50	1,377	

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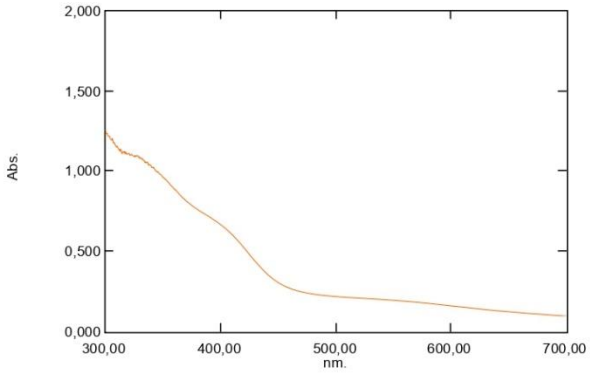

No.	P/V	Wavelength	Abs.	Description
1	↑	321,00	1,111	
2	↓	319,00	1,106	

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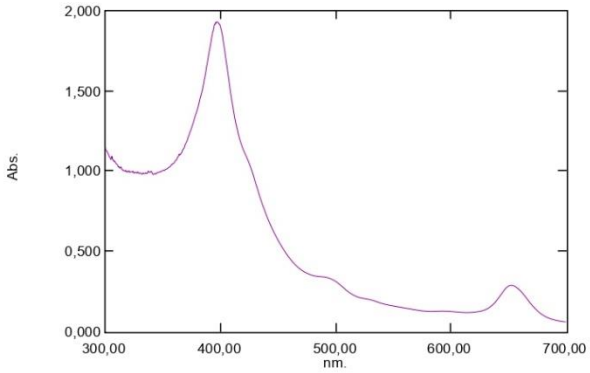

No.	P/V	Wavelength	Abs.	Description
1	↑	652,50	0,287	
2	↑	592,50	0,126	
3	↑	397,00	1,933	
4	↑	337,50	1,000	
5	↓	613,50	0,117	
6	↓	583,00	0,124	
7	↓	342,00	0,979	
8	↓	321,50	0,993	

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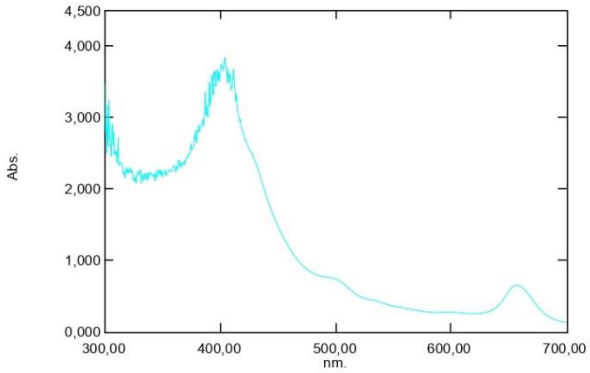

No.	P/V	Wavelength	Abs.	Description
1	↑	657,00	0,649	
2	↑	598,50	0,269	
3	↑	411,50	3,685	
4	↑	359,50	2,324	
5	↓	619,00	0,249	
6	↓	587,00	0,264	
7	↓	361,50	2,234	
8	↓	331,50	2,076	

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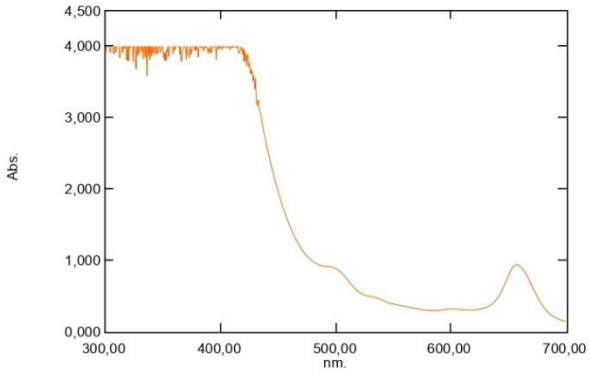

No.	P/V	Wavelength	Abs.	Description
1	↑	657,00	0,934	
2	↑	602,00	0,315	
3	↑	418,00	3,994	
4	↑	405,00	4,000	
5	↑	376,00	4,000	
6	↑	368,50	4,000	
7	↑	356,50	4,000	
8	↑	322,00	4,000	
9	↑	305,50	4,000	
10	↓	617,00	0,299	
11	↓	584,50	0,292	
12	↓	416,00	3,906	
13	↓	396,50	3,811	
14	↓	373,00	3,841	
15	↓	366,50	3,786	
16	↓	336,50	3,583	
17	↓	320,50	3,795	
18	↓	304,50	3,917	

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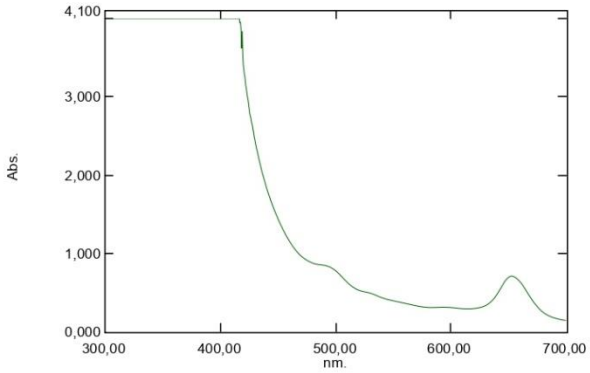

No.	P/V	Wavelength	Abs.	Description
1	↑	653,00	0,706	
2	↑	593,00	0,309	
3	↓	614,50	0,288	
4	↓	583,50	0,305	

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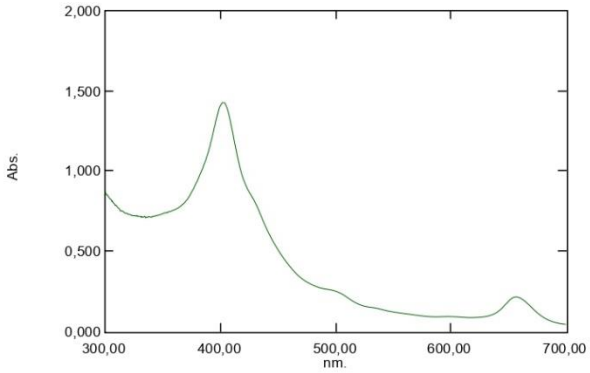

No.	P/V	Wavelength	Abs.	Description
1	↑	656,50	0,215	
2	↑	597,00	0,092	
3	↑	402,50	1,430	
4	↓	617,50	0,086	
5	↓	588,00	0,091	
6	↓	335,50	0,708	

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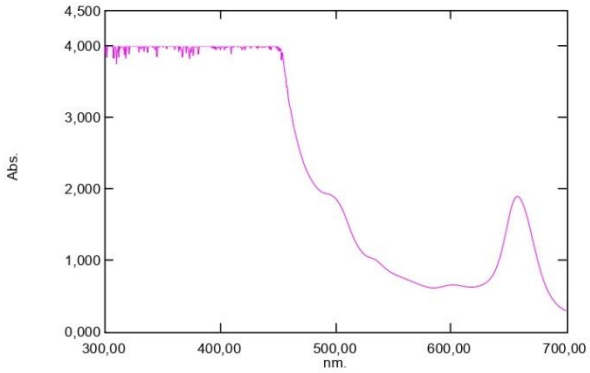

No.	P/V	Wavelength	Abs.	Description
1	↑	657,50	1,894	
2	↑	602,00	0,652	
3	↑	444,50	4,000	
4	↑	437,50	4,000	
5	↑	422,00	4,000	
6	↑	406,50	4,000	
7	↑	382,50	4,000	
8	↑	368,00	4,000	
9	↑	354,00	4,000	
10	↑	347,00	4,000	
11	↑	334,50	4,000	
12	↑	321,50	4,000	
13	↑	313,50	4,000	
14	↑	302,50	4,000	
15	↓	617,50	0,619	
16	↓	585,00	0,609	
17	↓	444,00	3,947	
18	↓	432,50	3,968	
19	↓	419,00	3,951	

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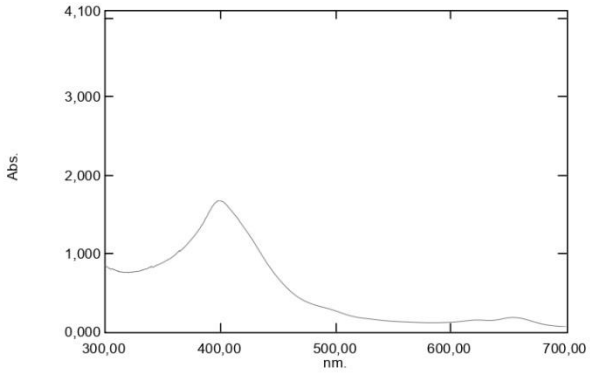

No.	P/V	Wavelength	Abs.	Description
1	↑	653,50	0,178	
2	↑	623,00	0,145	
3	↑	399,50	1,674	
4	↓	633,50	0,139	
5	↓	583,50	0,110	
6	↓	320,50	0,751	

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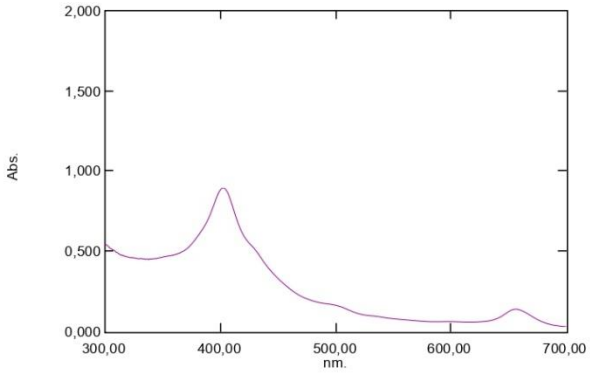

No.	P/V	Wavelength	Abs.	Description
1	↑	656,50	0,139	
2	↑	597,00	0,061	
3	↑	402,50	0,896	
4	↓	617,00	0,057	
5	↓	586,50	0,060	
6	↓	344,50	0,454	

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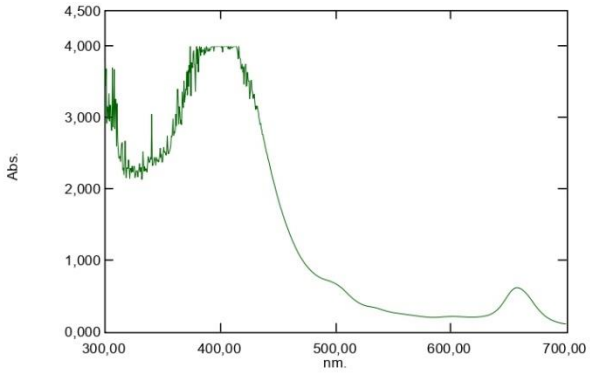

No.	P/V	Wavelength	Abs.	Description
1	↑	657,50	0,613	
2	↑	602,00	0,210	
3	↑	411,50	4,000	
4	↑	398,50	4,000	
5	↑	393,00	4,000	
6	↓	618,00	0,199	
7	↓	585,00	0,197	
8	↓	408,50	3,959	
9	↓	397,50	3,997	

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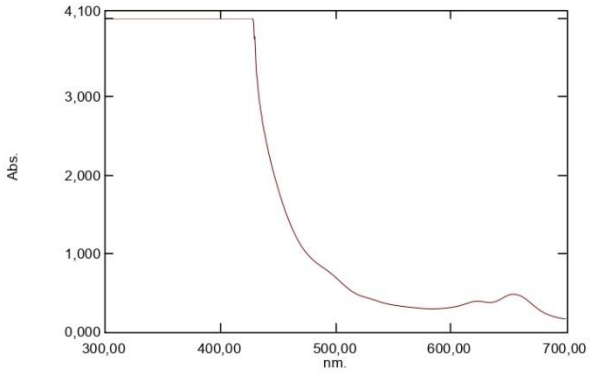
FAKULTAS FARMASI UNIVERSITAS HASANUDDIN

Gedung Pusat Kegiatan Penelitian Lantai IV Wing B



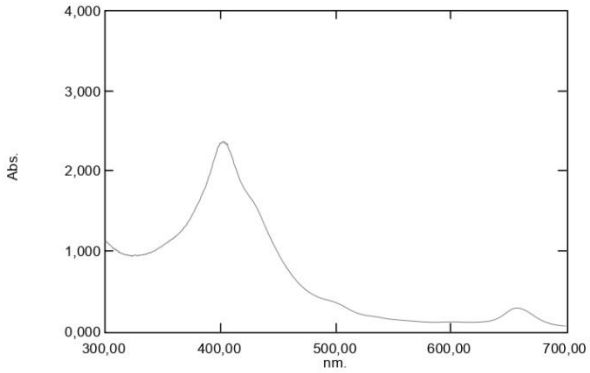
No.	P/V	Wavelength	Abs.	Description
1	↑	654,00	0,475	
2	↑	623,00	0,386	
3	↓	633,50	0,369	
4	↓	584,00	0,288	

17/03/2022

Makassar,
Analis

LABORATORIUM BIOFARMAKA
FAKULTAS FARMASI UNIVERSITAS HASANUDDIN

Gedung Pusat Kegiatan Penelitian Lantai IV Wing B



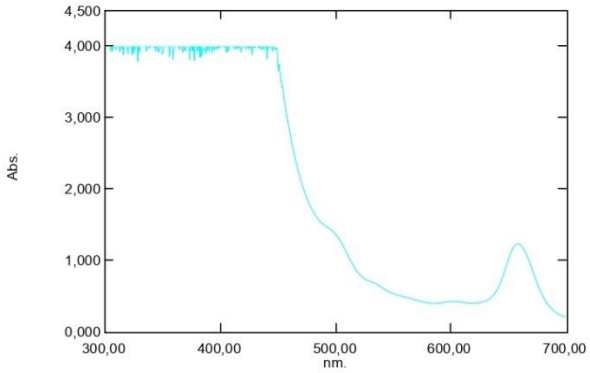
No.	P/V	Wavelength	Abs.	Description
1	↑	657,50	0,292	
2	↑	601,00	0,117	
3	↑	402,50	2,373	
4	↓	617,00	0,112	
5	↓	586,00	0,113	
6	↓	323,50	0,937	

17/03/2022

Makassar,
Analis

LABORATORIUM BIOFARMAKA
FAKULTAS FARMASI UNIVERSITAS HASANUDDIN

Gedung Pusat Kegiatan Penelitian Lantai IV Wing B

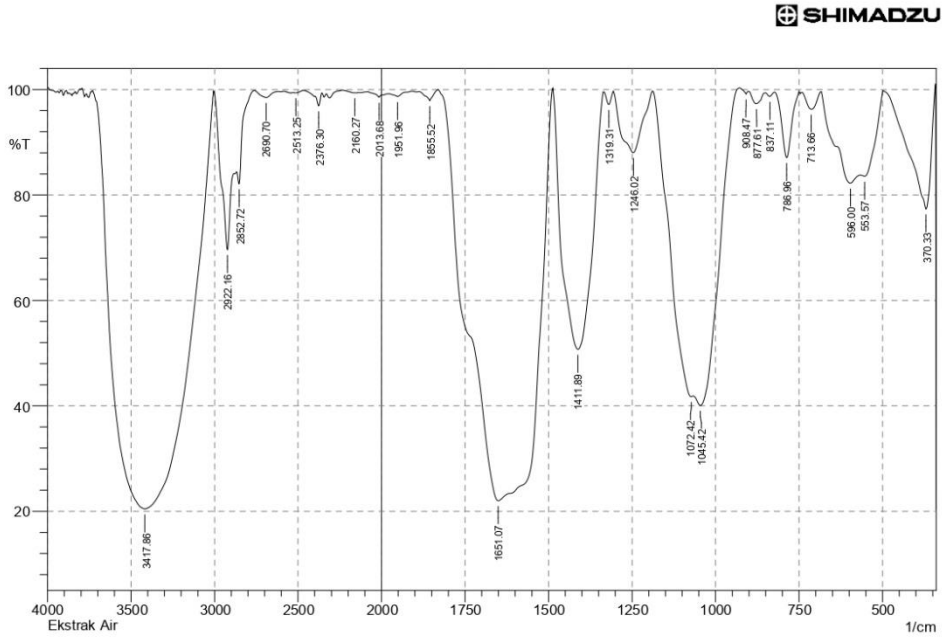


No.	P/V	Wavelength	Abs.	Description
1	↑	658,00	1,229	
2	↑	602,50	0,420	
3	↑	442,50	4,000	
4	↑	430,50	4,000	
5	↑	408,00	4,000	
6	↑	391,50	4,000	
7	↑	370,00	4,000	
8	↑	360,50	4,000	
9	↑	351,00	4,000	
10	↑	339,00	4,000	
11	↑	330,50	4,000	
12	↑	320,50	4,000	
13	↑	310,50	4,000	
14	↓	619,00	0,396	
15	↓	585,00	0,393	
16	↓	440,50	3,821	
17	↓	427,50	3,886	
18	↓	405,50	3,917	
19	↓	382,50	3,846	

17/03/2022

Makassar,
Analis

Lampiran 16. Data FTIR ekstrak air daun pandan wangi

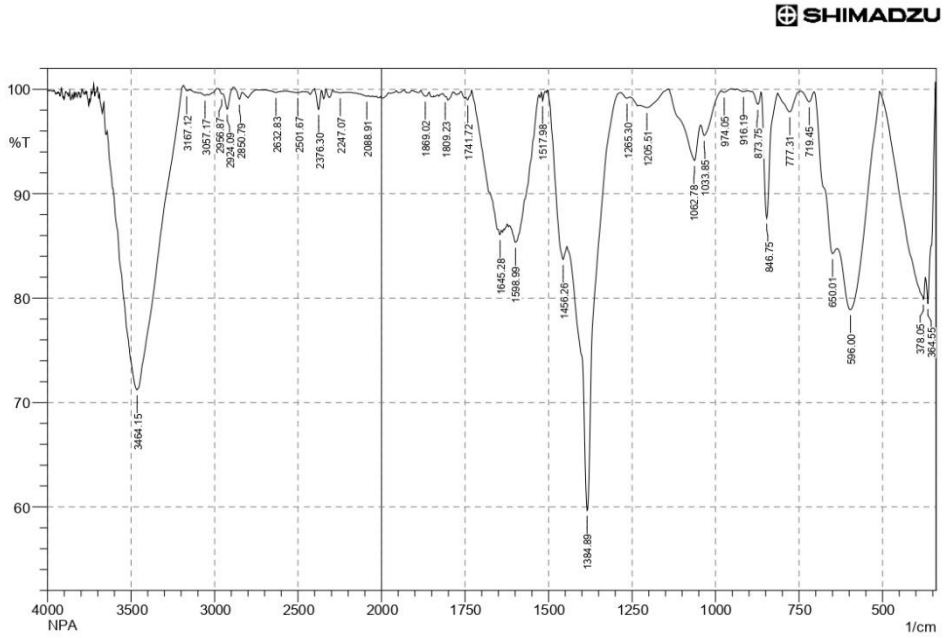


No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	370.33	77.353	22.484	497.63	343.33	7.7	7.566
2	553.57	83.548	3.044	565.14	499.56	3.389	0.905
3	596	82.254	5.478	682.8	567.07	6.679	2.13
4	713.66	96.27	3.268	742.59	682.8	0.583	0.464
5	786.96	87.091	12.452	821.68	750.31	1.947	1.807
6	837.11	98.703	0.736	850.61	823.6	0.111	0.045
7	877.61	97.318	2.183	900.76	854.47	0.362	0.262
8	908.47	99.151	0.683	927.76	900.76	0.03	0.027
9	1045.42	40.083	10.116	1064.71	929.69	27.813	4.295
10	1072.42	41.758	2.868	1188.15	1066.64	24.584	2.057
11	1246.02	88.028	11.621	1305.81	1190.08	3.822	3.646
12	1319.31	97.137	2.483	1336.67	1305.81	0.213	0.161
13	1411.89	50.729	49.175	1487.12	1336.67	26.56	26.494
14	1651.07	22.014	78.132	1830.45	1487.12	126.606	126.813
15	1855.52	97.893	1.947	1888.31	1830.45	0.252	0.205
16	1951.96	98.647	0.7	1977.04	1926.89	0.205	0.062
17	2013.68	98.547	0.771	2085.05	1980.89	0.4	0.122
18	2160.27	99.38	0.183	2233.57	2127.48	0.209	0.044
19	2376.3	96.916	2.121	2397.52	2357.01	0.351	0.178
20	2513.25	99.38	0.161	2530.61	2472.74	0.123	0.029
21	2690.7	98.493	1.217	2762.06	2621.26	0.551	0.375
22	2852.72	82.13	4.489	2868.15	2762.06	3.06	0.335
23	2922.16	69.638	19.376	3005.1	2883.58	10.278	5.54
24	3417.86	20.453	79.287	3730.33	3007.02	291.946	291.122

Comment;
Ekstrak Air

Date/Time; 11/17/2021 10:34:52 AM
No. of Scans;
Resolution;
Apodization;

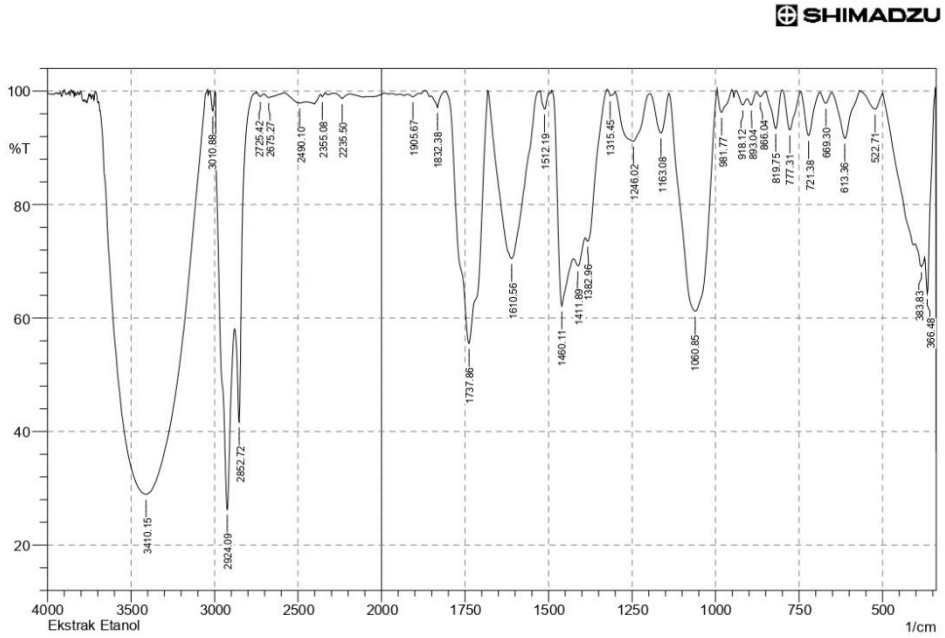
Lampiran 17. Data FTIR hasil biosintesis AgNP dari ekstrak air



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	364.55	79.456	5.922	370.33	343.33	1.776	0.586
2	378.05	79.9	2.8	507.28	372.26	7.172	1.217
3	596	78.889	10.473	634.58	509.21	8.294	3.792
4	650.01	84.265	3.48	704.02	636.51	3.176	0.652
5	719.45	98.805	0.972	746.45	705.95	0.119	0.082
6	777.31	97.849	1.885	813.96	746.45	0.351	0.271
7	846.75	87.653	11.928	862.18	813.96	1.152	1.067
8	873.75	98.553	1.188	891.11	864.11	0.1	0.072
9	916.19	99.784	0.139	935.48	902.69	0.02	0.011
10	974.05	99.721	0.21	983.7	952.84	0.02	0.015
11	1033.85	95.57	1.526	1043.49	983.7	0.654	0.184
12	1062.78	93.187	3.998	1139.93	1045.42	1.59	0.858
13	1205.51	98.251	0.6	1226.73	1141.86	0.407	0.127
14	1265.3	99.154	0.228	1284.59	1257.59	0.076	0.014
15	1384.89	59.673	30.773	1444.68	1284.59	12.909	7.258
16	1456.26	83.707	3.688	1502.55	1446.61	2.681	0.609
17	1517.98	98.907	0.821	1521.84	1510.26	0.029	0.017
18	1598.99	85.348	4.089	1616.35	1529.55	3.88	1.186
19	1645.28	86.087	0.985	1728.22	1641.42	3.224	0.371
20	1741.72	98.992	0.481	1747.51	1730.15	0.054	0.022
21	1809.23	99.295	0.069	1816.94	1807.3	0.024	0.001
22	1869.02	99.333	0.478	1882.52	1857.45	0.053	0.033
23	2088.91	99.341	0.083	2129.41	2077.33	0.13	0.01
24	2247.07	99.671	0.165	2293.36	2210.42	0.099	0.045
25	2376.3	98.077	1.877	2401.38	2358.94	0.173	0.167
26	2501.67	99.682	0.116	2565.33	2472.74	0.104	0.026
27	2632.83	99.68	0.18	2694.56	2598.12	0.08	0.029
28	2850.79	99.06	0.81	2887.44	2833.43	0.08	0.07
29	2924.09	98.094	1.743	2951.09	2887.44	0.231	0.199
30	2956.87	99.562	0.103	2981.95	2951.09	0.026	0.002
31	3057.17	99.423	0.131	3088.03	3045.6	0.087	0.012
32	3167.12	99.859	0.326	3186.4	3145.9	-0.001	0.03
33	3464.15	71.217	26.399	3641.6	3186.4	35.238	31.442

Date/Time; 11/17/2021 10:16:00 AM
No. of Scans;

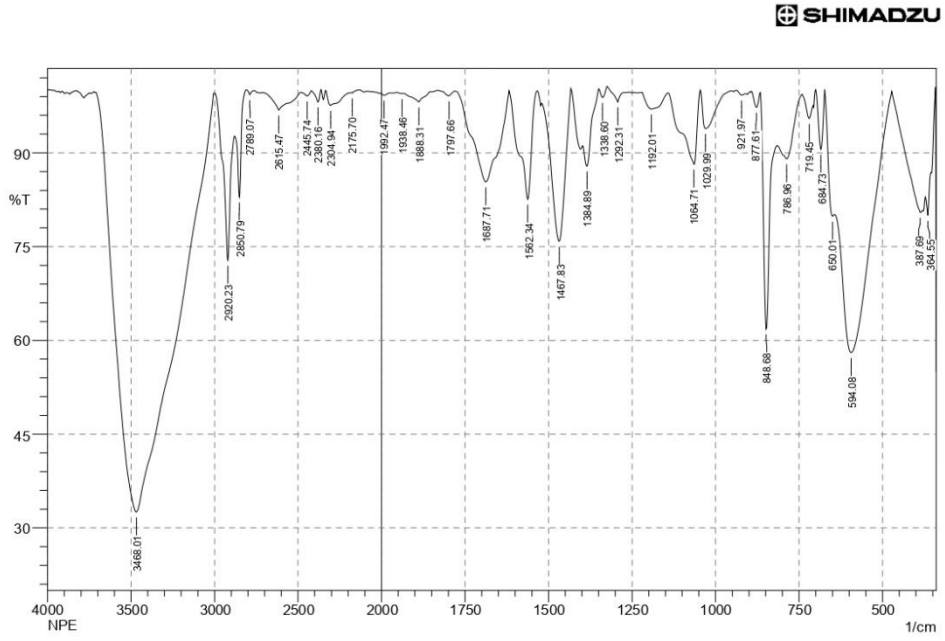
Lampiran 18. Data FTIR ekstrak etanol daun pandan wangi



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	366.48	64.317	11.504	372.26	343.33	2.784	0.691
2	383.83	69.062	2.437	401.19	374.19	4.103	0.208
3	522.71	96.825	3	569	499.56	0.482	0.451
4	613.36	91.679	8.271	651.94	569	1.426	1.413
5	669.3	97.867	1.926	686.66	651.94	0.189	0.158
6	721.38	92.176	7.701	744.52	686.66	0.948	0.913
7	777.31	93.161	6.943	800.46	744.52	0.805	0.825
8	819.75	93.422	6.708	850.61	800.46	0.679	0.701
9	866.04	99.023	0.891	877.61	850.61	0.062	0.053
10	893.04	97.545	1.62	904.61	877.61	0.181	0.092
11	918.12	97.547	1.658	939.33	904.61	0.217	0.121
12	981.77	96.27	4.111	995.27	950.91	0.408	0.476
13	1060.85	61.205	38.365	1138	997.2	17.799	17.529
14	1163.08	92.619	6.968	1195.87	1139.93	1.012	0.91
15	1246.02	91.145	8.535	1300.02	1197.79	2.62	2.48
16	1315.45	99.179	0.946	1325.1	1300.02	0.041	0.049
17	1382.96	73.544	2.915	1388.75	1325.1	4.043	0.365
18	1411.89	69.19	2.695	1425.4	1390.68	5.175	0.299
19	1460.11	62.136	24.038	1489.05	1427.32	8.582	3.772
20	1512.19	96.832	3.097	1525.69	1496.76	0.215	0.204
21	1610.56	70.489	29.388	1680	1533.41	12.171	12.091
22	1737.86	55.521	44.516	1809.23	1681.93	16.397	16.415
23	1832.38	97.143	2.39	1851.66	1809.23	0.234	0.155
24	1905.67	98.977	0.524	1919.17	1886.38	0.1	0.032
25	2235.5	98.658	0.904	2279.86	2189.21	0.306	0.133
26	2355.08	99.027	0.505	2364.73	2337.72	0.081	0.031
27	2490.1	97.888	0.716	2580.76	2447.67	0.887	0.245
28	2675.27	98.877	0.673	2704.2	2580.76	0.401	0.189
29	2725.42	99.054	0.628	2750.49	2704.2	0.126	0.066
30	2852.72	41.706	25.755	2879.72	2760.14	14.405	3.883
31	2924.09	26.32	47.412	2993.52	2881.65	36.112	22.527
32	3010.88	96.522	3.474	3028.24	2997.38	0.24	0.241
33	3410.15	28.941	70.061	3693.68	3043.67	203.161	200.706

Date/Time; 11/17/2021 11:36:09 AM
No. of Scans;

Lampiran 19. Data FTIR hasil biosintesis AgNP dari ekstrak etanol



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	364.55	79.972	4.377	370.33	356.83	1.101	0.141
2	387.69	80.477	1.447	470.63	381.91	4.73	0.386
3	594.08	58.034	27.656	642.3	472.56	22.063	13.901
4	650.01	79.86	4.286	671.23	644.22	1.913	0.461
5	684.73	90.591	9.525	700.16	673.16	0.627	0.64
6	719.45	95.515	2.69	740.67	707.88	0.416	0.196
7	786.96	89.037	5.185	813.96	742.59	2.348	0.839
8	848.68	61.822	34.89	866.04	815.89	4.641	3.557
9	877.61	97.273	2.456	893.04	866.04	0.185	0.155
10	921.97	99.226	0.473	937.4	910.4	0.06	0.029
11	1029.99	93.903	6.087	1045.42	952.84	1.134	1.114
12	1064.71	88.197	11.461	1141.86	1047.35	2.827	2.673
13	1192.01	97.01	2.616	1219.01	1141.86	0.701	0.571
14	1292.31	98.123	1.888	1325.1	1273.02	0.137	0.167
15	1338.6	98.855	1.559	1350.17	1325.1	0.05	0.097
16	1384.89	87.868	5.397	1396.46	1350.17	1.337	0.447
17	1467.83	75.834	23.502	1519.91	1433.11	5.299	4.966
18	1562.34	82.589	17.151	1616.35	1535.34	3.294	3.186
19	1687.71	85.348	14.538	1778.37	1618.28	5.83	5.749
20	1797.66	99.102	0.822	1830.45	1780.3	0.09	0.077
21	1888.31	98.135	1.524	1934.6	1853.59	0.369	0.242
22	1938.46	99.482	0.061	1953.89	1934.6	0.039	0.004
23	1992.47	99.19	0.365	2005.97	1977.04	0.078	0.022
24	2175.7	99.585	0.112	2185.35	2133.27	0.036	-0.001
25	2304.94	97.597	2.311	2333.87	2185.35	0.94	0.809
26	2380.16	98.149	1.917	2420.66	2362.8	0.214	0.222
27	2445.74	99.088	0.742	2482.39	2420.66	0.154	0.102
28	2615.47	96.843	2.814	2711.92	2482.39	1.63	1.289
29	2789.07	99.306	0.711	2810.28	2763.99	0.047	0.049
30	2850.79	82.939	12.802	2879.72	2810.28	2.311	1.24
31	2920.23	72.815	22.083	2999.31	2881.65	6.692	4.597
32	3468.01	32.55	67.043	3711.04	3007.02	162.924	161.575

Date/Time; 11/17/2021 10:23:15 AM
No. of Scans;
Resolution;

Lampiran 20. Data XRD hasil biosintesis nanopartikel perak

```
         ***  Basic Data Process  ***

# Data Infomation
          Group               : Standard
          Data                : Ag#nano3Alfiana
          Sample Nmae         : serbuk
          Comment             :
          Date & Time         : 11-19-21 09:17:47

# Measurement Condition
    X-ray tube
          target              : Cu
          voltage             : 40.0 (kV)
          current             : 30.0 (mA)
    Slits
          Auto Slit           : Used
          divergence slit     :   1.00000 (deg)
          scatter slit        :   1.00000 (deg)
          receiving slit      :   0.30000(mm)
    Scanning
          drive axis          : Theta-2Theta
          scan range          :   23.0000 - 78.0000 (deg)
          scan mode           : Continuous Scan
          scan speed          :    2.0000 (deg/min)
          sampling pitch      :    0.0200 (deg)
          preset time         :    0.60 (sec)

# Data Process Condition
    Smoothing                 [ AUTO ]
          smoothing points    : 49
    B.G.Subtruction           [ AUTO ]
          sampling points     : 51
          repeat times        : 30
    Ka1-a2 Separate           [ MANUAL ]
          Ka1 a2 ratio        : 50 (%)
    Peak Search               [ AUTO ]
          differential points : 47
          FWHM threhold       : 0.050 (deg)
          intensity threhold  : 30 (par mil)
          FWHM ratio  (n-1)/n : 2
    System error Correction   [ NO ]
    Precise peak Correction   [ NO ]
```

*** Basic Data Process ***

Group : Standard
Data : Ag#nano3Alfiana

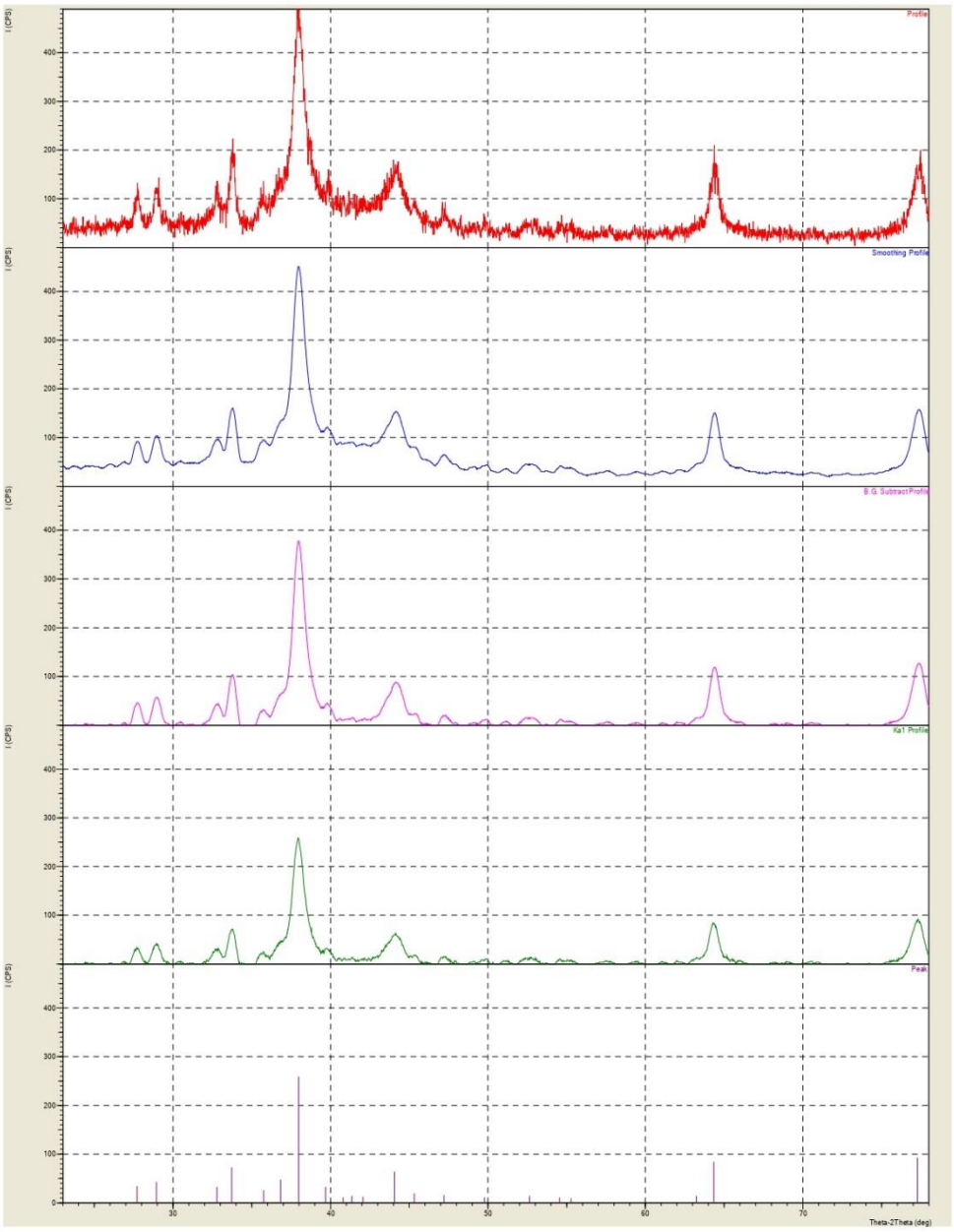
Strongest 3 peaks

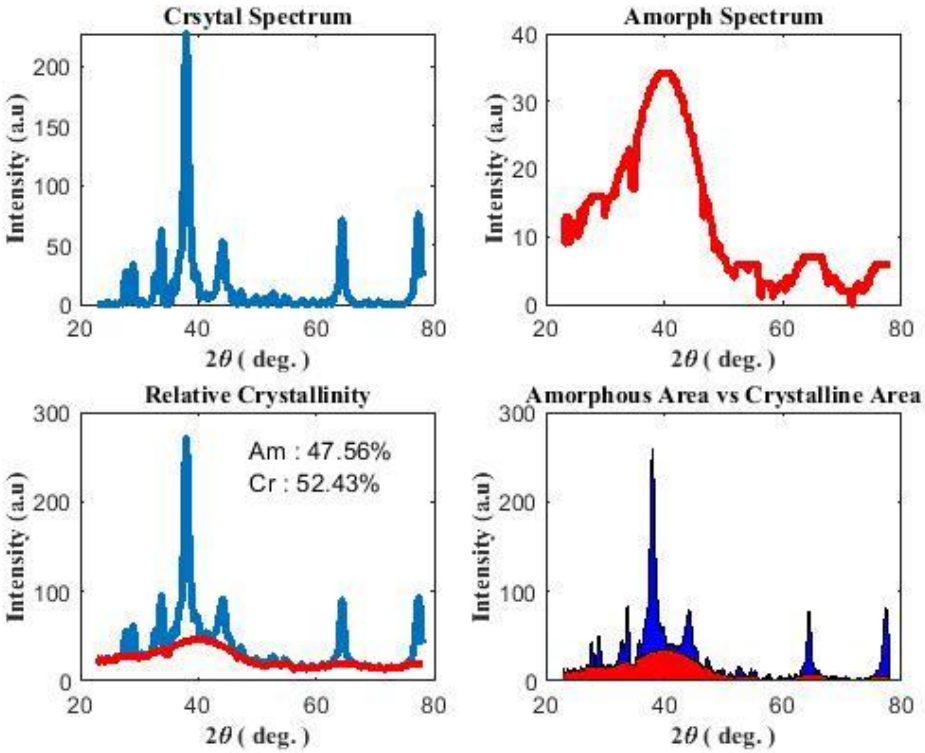
no.	peak no.	2Theta (deg)	d (A)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
1	7	37.9790	2.36728	100	0.90200	155	6972
2	21	77.2750	1.23368	35	0.91000	55	2850
3	20	64.3500	1.44655	32	0.72000	50	2201

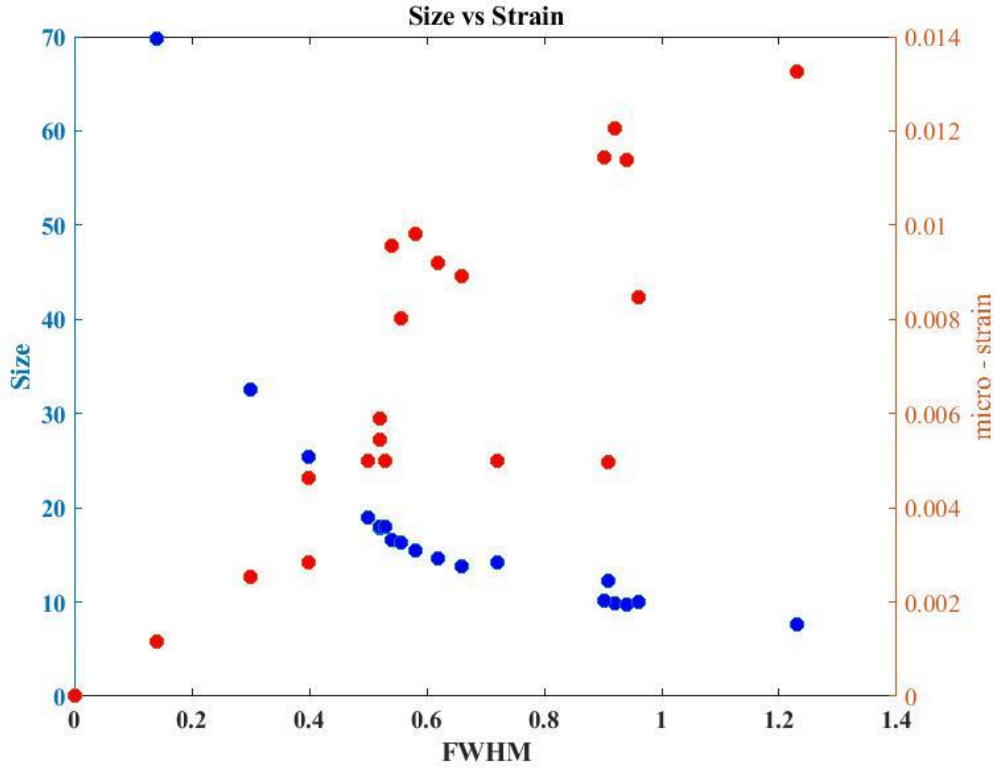
Peak Data List

peak no.	2Theta (deg)	d (A)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
1	27.7100	3.21675	13	0.54000	20	579
2	28.9500	3.08172	16	0.58000	25	816
3	32.7900	2.72907	12	0.62000	19	701
4	33.7283	2.65526	28	0.55670	43	1215
5	35.7600	2.50892	10	0.66000	15	461
6	36.8400	2.43781	18	0.92000	28	1587
7	37.9790	2.36728	100	0.90200	155	6972
8	39.6800	2.26963	12	0.94000	19	1484
9	40.8000	2.20987	4	0.00000	6	0
10	41.3600	2.18124	5	0.40000	8	249
11	42.0600	2.14654	5	0.52000	7	255
12	44.0550	2.05385	25	1.23000	38	2412
13	45.3200	1.99942	7	0.52000	11	357
14	47.2100	1.92369	6	0.50000	9	300
15	49.7750	1.83040	4	0.53000	6	219
16	52.6400	1.73732	5	0.96000	8	466
17	54.5500	1.68092	4	0.30000	6	148
18	55.2700	1.66071	3	0.14000	5	92
19	63.2400	1.46924	5	0.40000	8	269
20	64.3500	1.44655	32	0.72000	50	2201
21	77.2750	1.23368	35	0.91000	55	2850

< Group: Standard Data: Ag#nano3Alfiana >



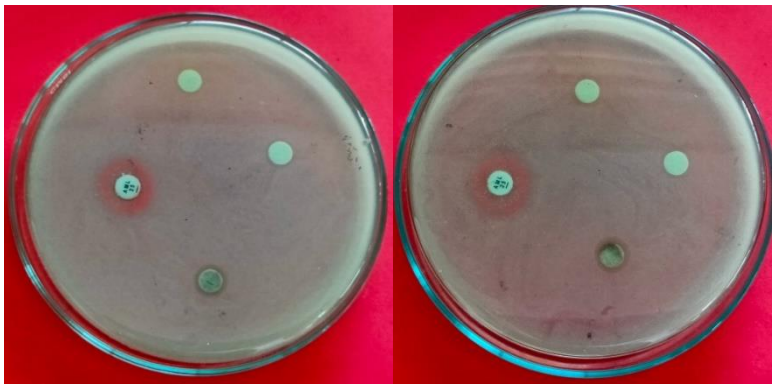

Crsytal Spectrum
Intensity (a.u)
2θ (deg.)
Amorph Spectrum
Intensity (a.u)
2θ (deg.)
Relative Crystallinity
Am : 47.56%
Cr : 52.43%
Intensity (a.u)
2θ (deg.)
Amorphous Area vs Crystalline Area
Intensity (a.u)
2θ (deg.)


Size vs Strain
Size
micro - strain
FWHM

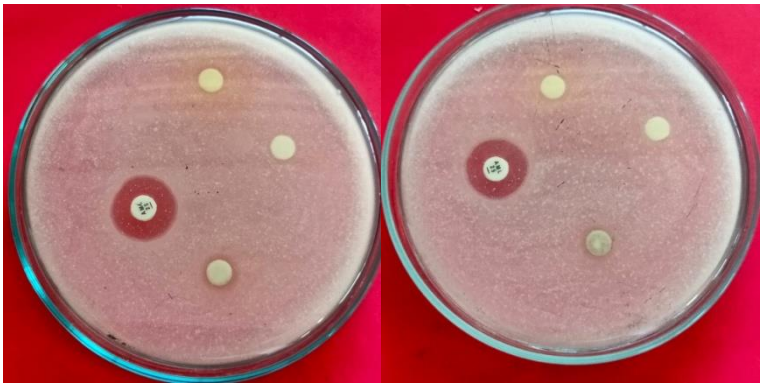
Lampiran 21. Foto uji aktivitas antimikroba

Pengamatan duplo pada AgNP dari ekstrak air dengan bakteri *S. aureus*

Pengamatan duplo pada AgNP dari ekstrak air dengan bakteri *E. coli*



Pengamatan duplo pada AgNP dari ekstrak etanol dengan bakteri *S. aureus*



Pengamatan duplo pada AgNP dari ekstrak etanol dengan bakteri *E. coli*