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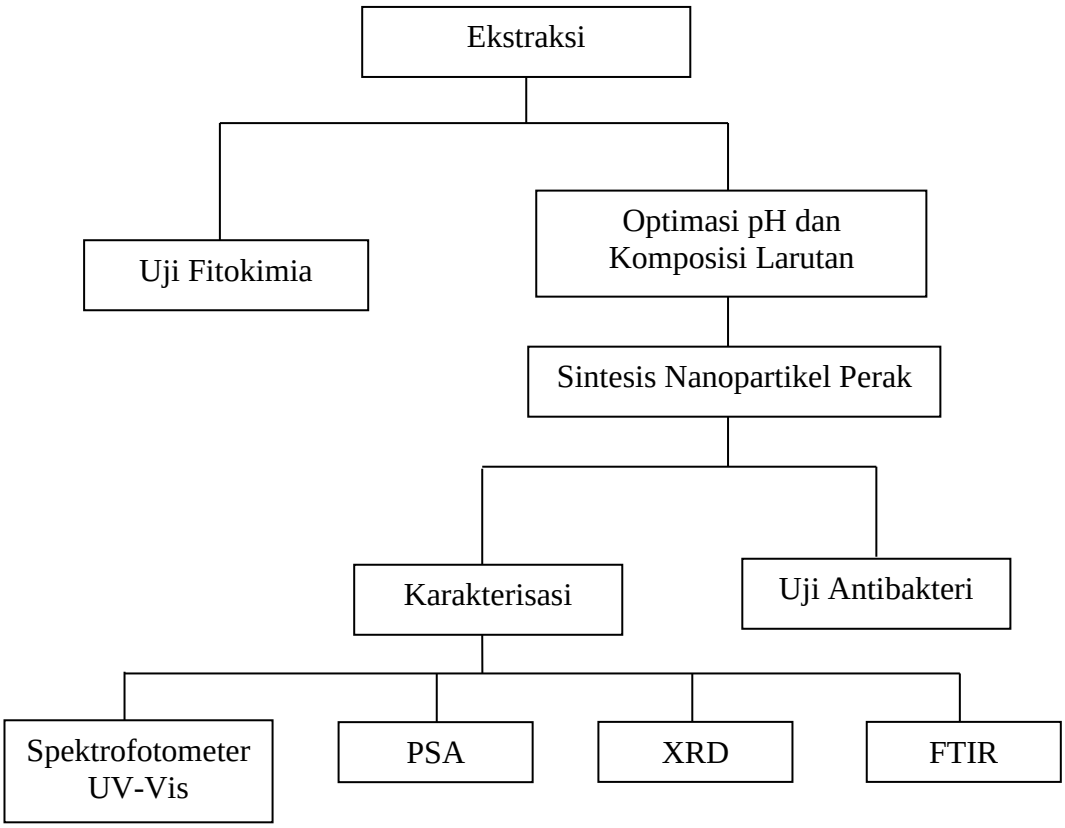
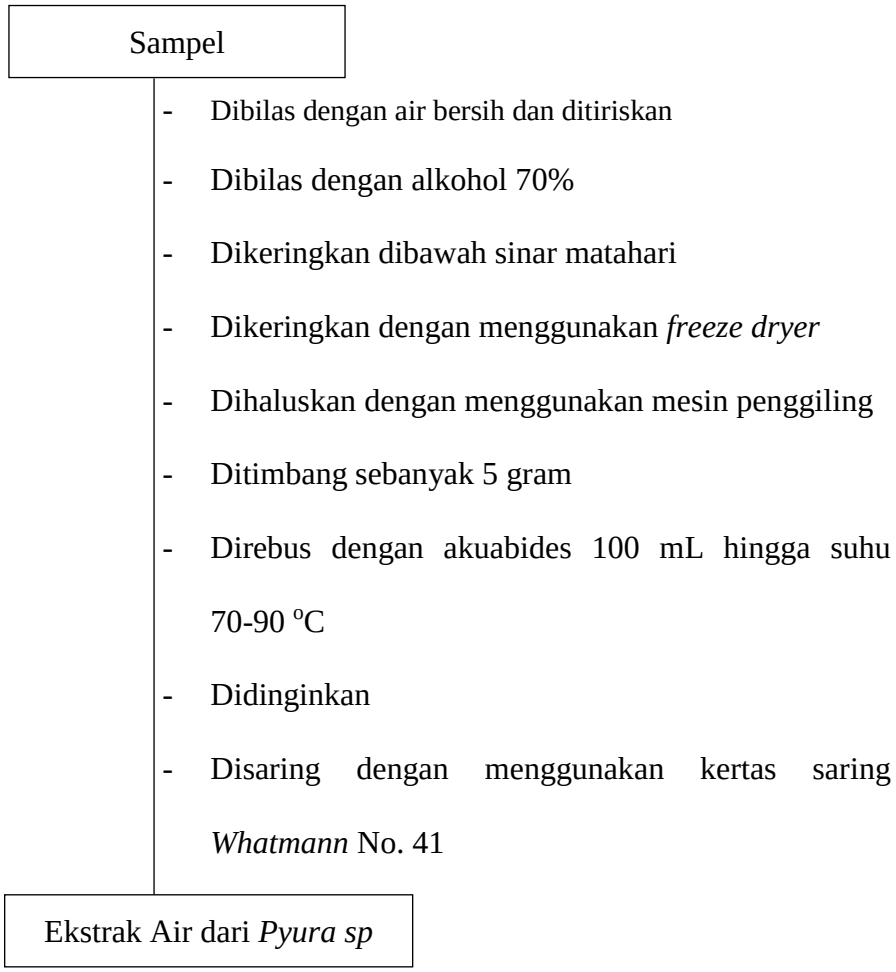
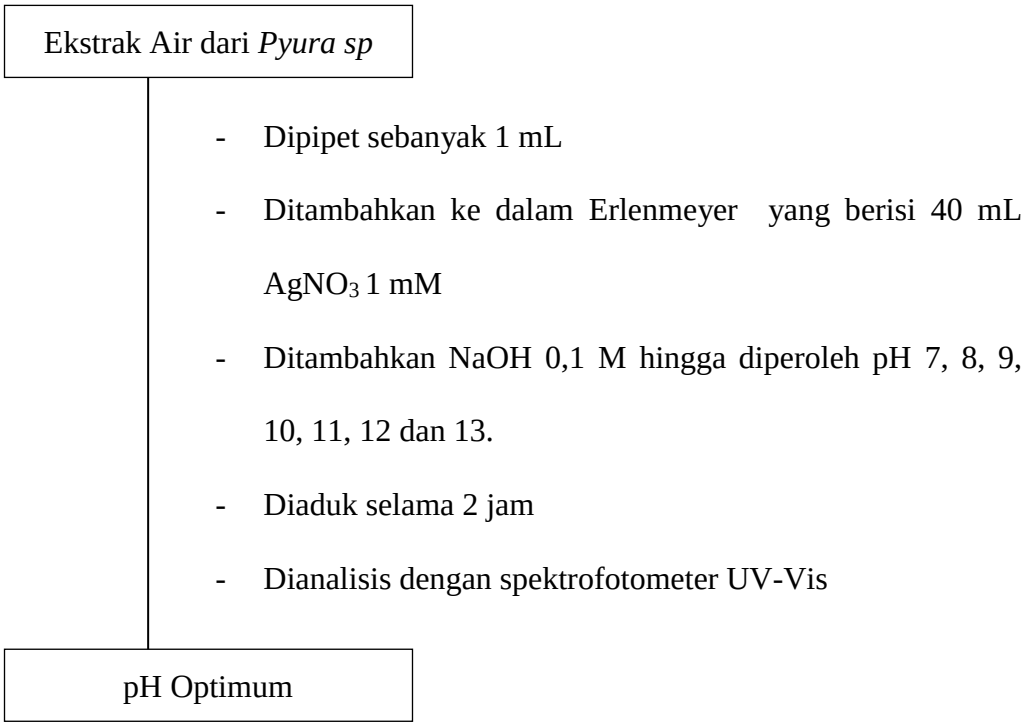
Lampiran 1. Diagram Alur Penelitian



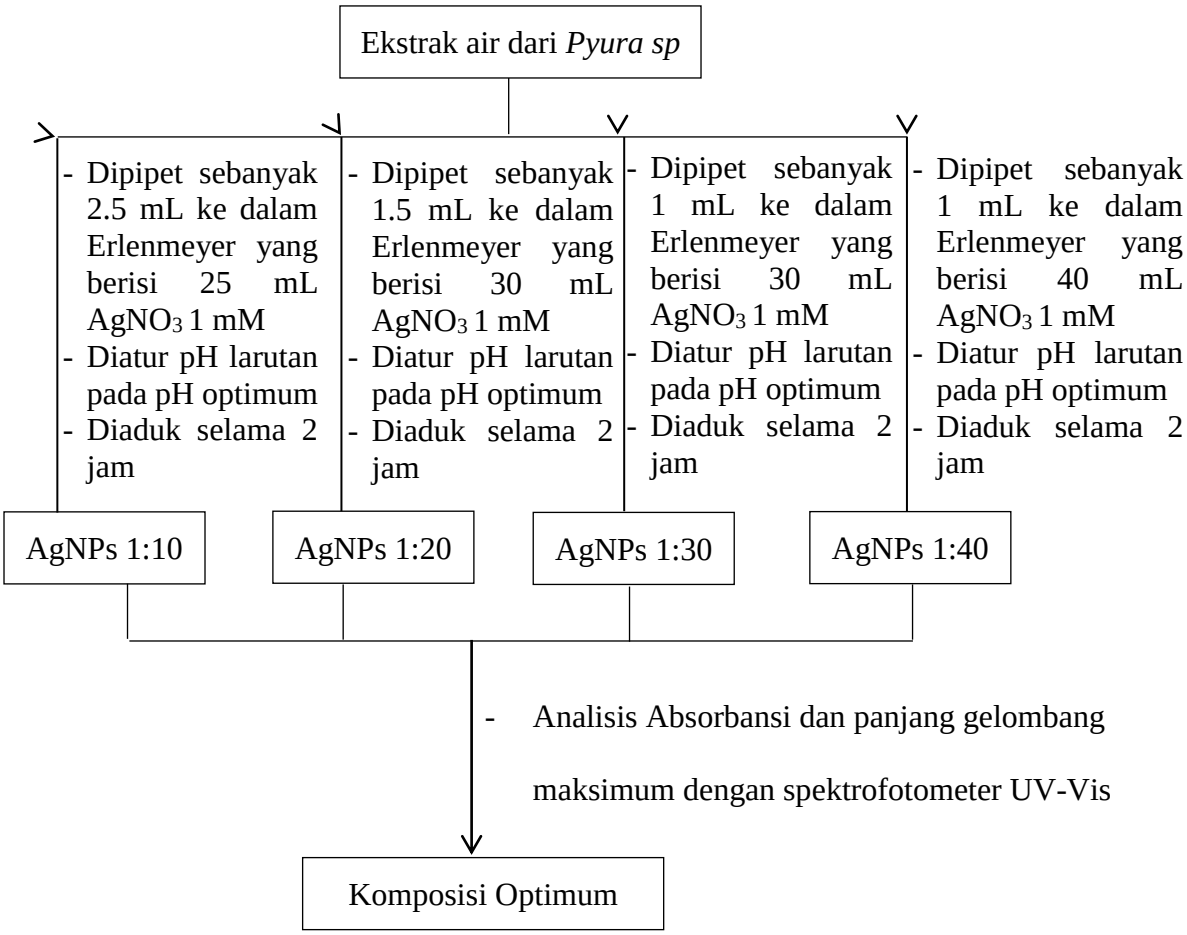
Lampiran 2. Bagan Kerja Preparasi Sampel dan Ekstraksi Sampel



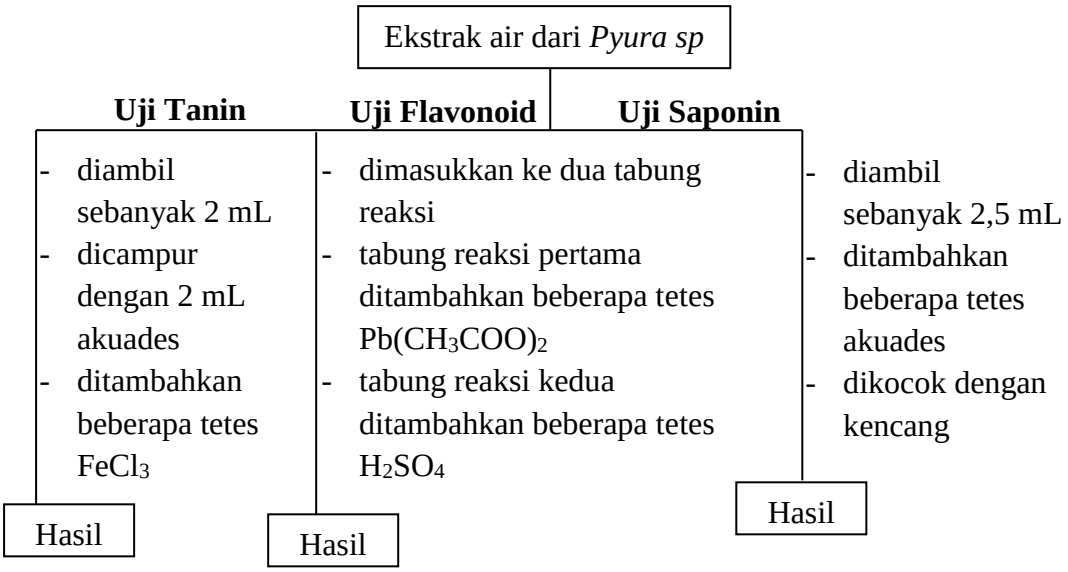
Lampiran 3. Bagan Kerja Optimasi pH



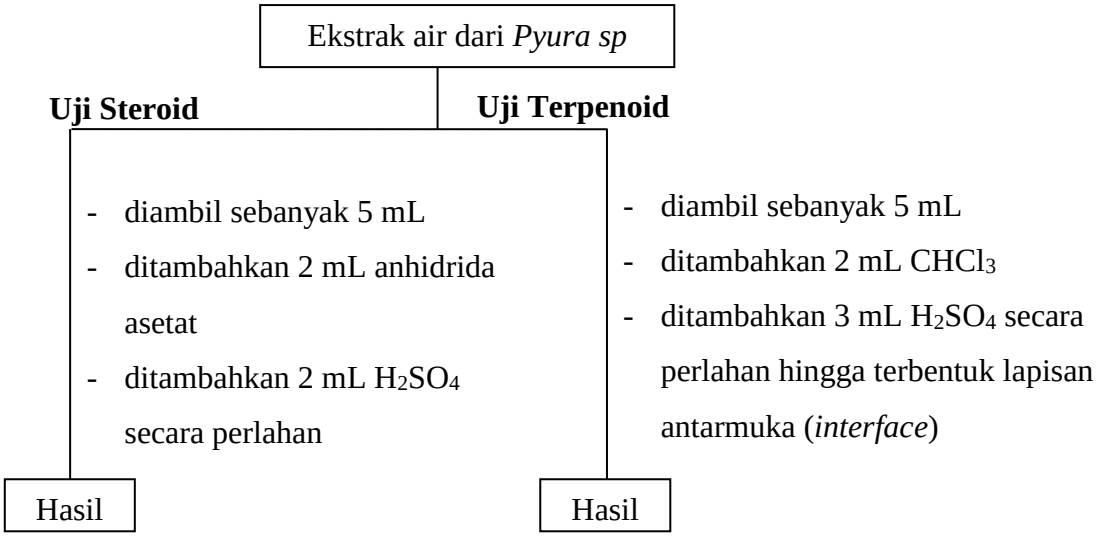
Lampiran 4. Bagan Kerja Optimasi Komposisi Larutan



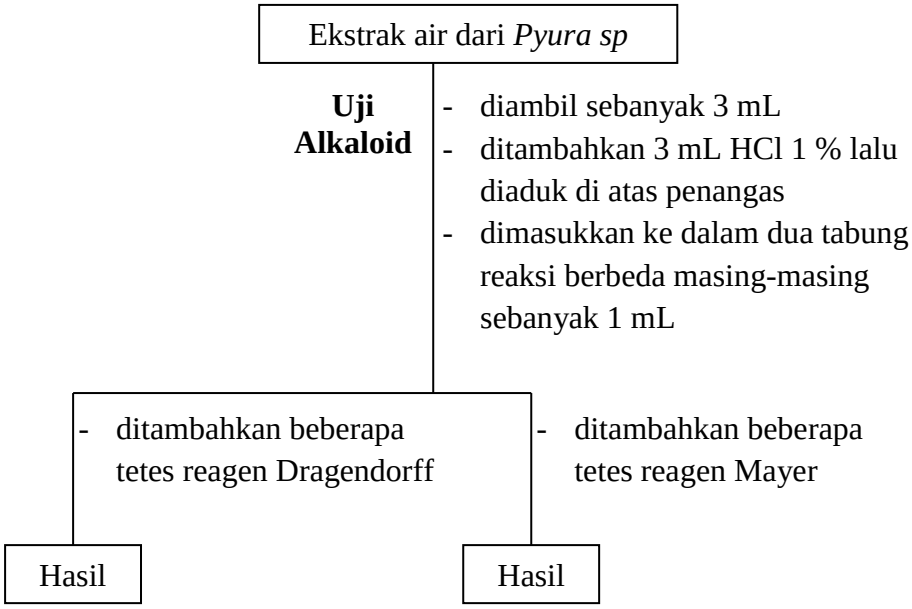
Lampiran 5. Bagan Kerja Uji Fitokimia



Catatan : 1. Terbentuknya endapan hijau menandakan adanya tannin
2. Terbentuknya endapan berwarna kuning (penambahan timbal asetat) dan endapan berwarna jingga (penambahan asam sulfat) menandakan adanya flavonoid
3. Terbentuknya busa yang banyak menandakan adanya saponin

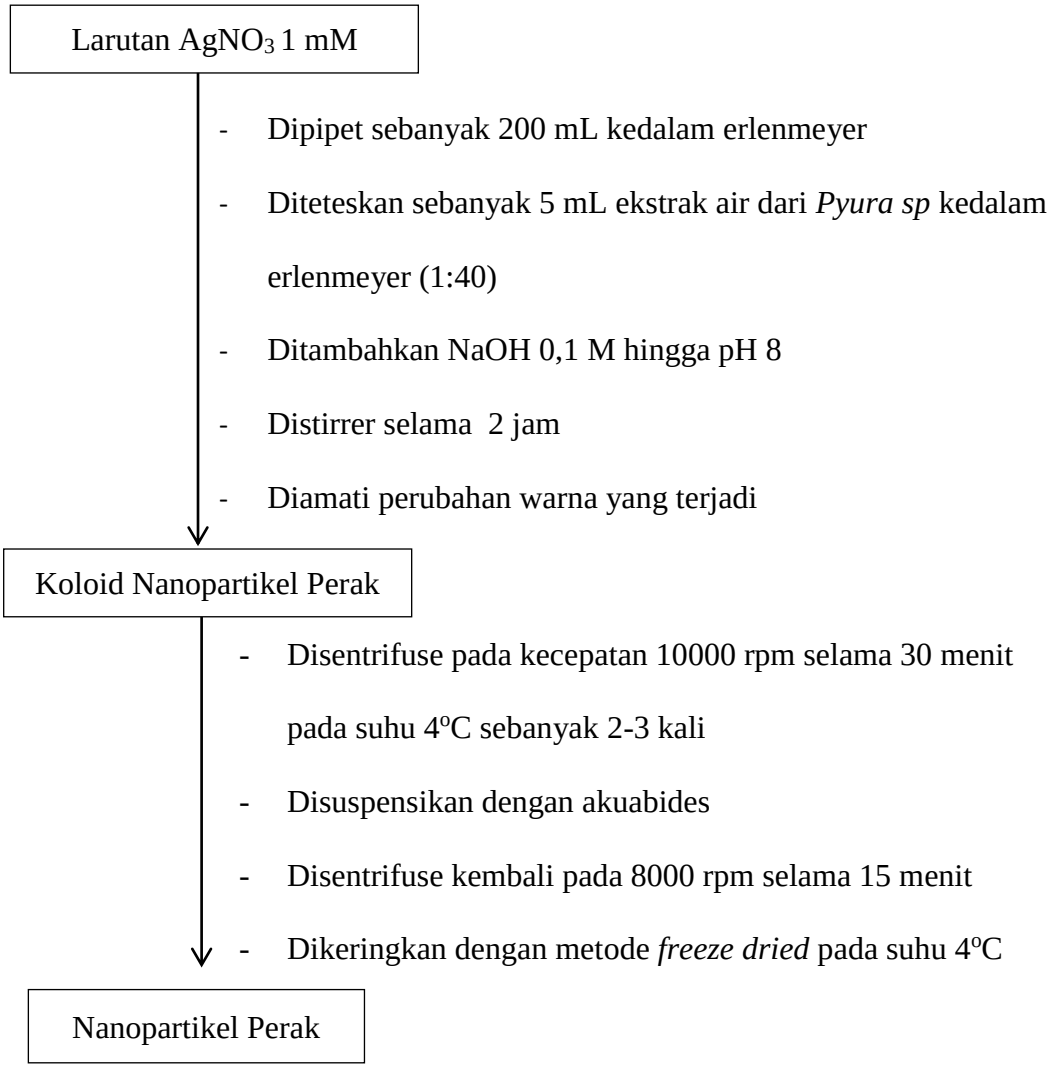


Catatan: 1. Terjadinya perubahan warna dari ungu menjadi biru atau hijau menandakan adanya steroid
2. Terbentuknya warna merah pada lapisan antarmuka (*interface*) menujukkan adanya terpenoid

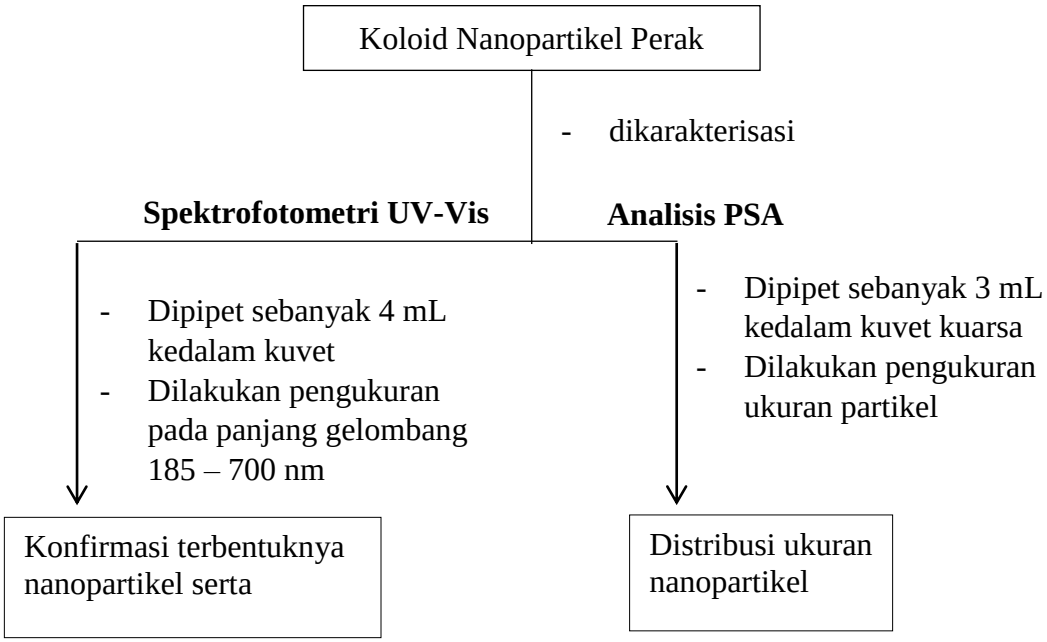


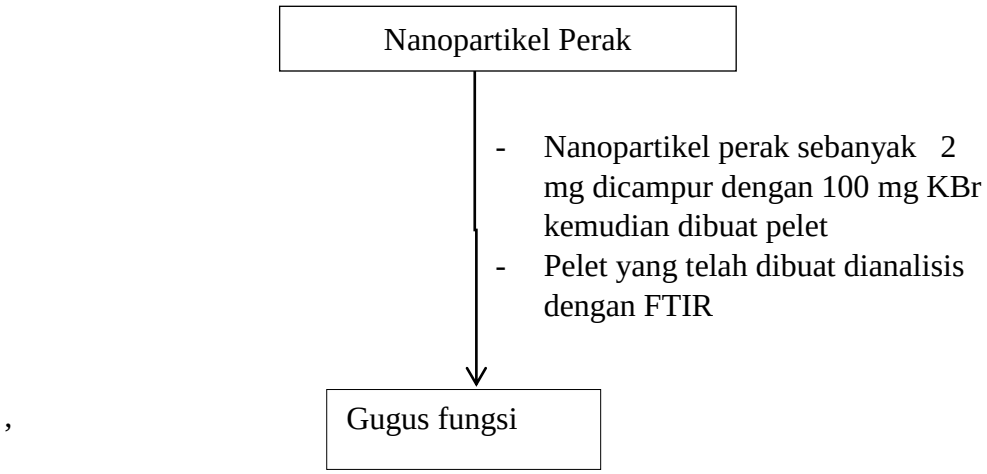
Catatan : Terbentuknya endapan berwana oranye pada saat penambahan reagen Dragendorff dan endapan berwarna krim kekuning-kuningan pada saat penambahan reagen Mayer menandakan adanya alkaloid.

Lampiran 6. Bagan Kerja Sintesis Nanopartikel Perak



Lampiran 7. Bagan Kerja Karakterisasi Nanopartikel





Lampiran 8. Bagan Kerja Uji Bioaktivitas Antibakteri

Nutrien Agar

- Ditimbang sebanyak 5 gram dimasukkan kedalam gelas kimia
- Dilarutkan dengan 250 mL akuades di dalam labu erlenmeyer
- Dihomogenkan dengan stirrer diatas penangas air hingga mendidih dan diatur pH nya menjadi pH 7.
- Nutrien agar dimasukkan ke dalam tabung reaksi sebanyak ± 5 mL
- Disterilkan dalam autoklaf pada suhu 121^{o}C tekanan 2 atm selama 15 menit
- Didinginkan hingga suhu mencapai 40 – 45^{o}C pada kemiringan 30^{o}

Nutrien Agar Miring

- Bakteri *Escherichia coli* sebanyak 2-3 ose di gores ke dalam medium nutrient agar miring secara aseptis
- Diinkubasi dalam incubator pada suhu 37^{o}C selama 18-24 jam

Bakteri Uji

- Diswab merata pada permukaan media Mueller Hinton Agar (MHA) yang terdapat pada cawan petri
- Didiamkan selama 5 menit

Media Uji Bioaktivitas Bakteri

- Nanopartikel perak ditimbang sebanyak 7.2 mg kemudian dilarutkan dengan 2 mL akuades steril.
- Kertas cakram dicelupkan kedalam larutan nanopartikel, $AgNO_3$, ekstrak air dari *Pyura sp*, ampisilin (kontrol positif) dan akuades (kontrol negatif) selama 15 menit.
- Diletakkan diatas media MHA yang telah berisi bakteri
- Diinkubasi pada suhu 37^{o}C selama 2×24 jam
- Diamati dan diukur diameter hambat yang terbentuk

Hambat Bakteri

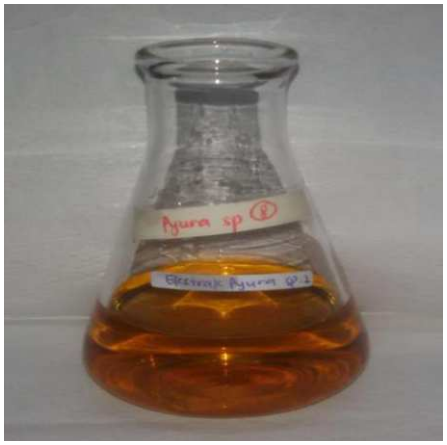
Diberikan perlakuan yang sama berdasarkan bagan kerja diatas untuk bakteri *Staphylococus aureus*.

Lampiran 9. Dokumentasi Penelitian

Gambar 1. Sampel *Pyura sp* sebelum dihaluskan

Gambar 2. Sampel *Pyura sp* setelah dihaluskan

Gambar 3. Proses ekstraksi



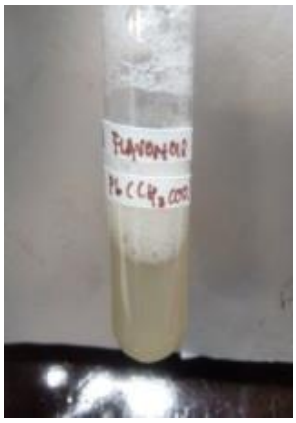
Gambar 4. Ekstrak air dari *Pyura sp*

bar 5. Proses sintesis nanopartikel perak

Gambar 6. Nanopartikel perak

Lampiran 10. Hasil Uji Fitokimia

Gambar 7. Uji Tanin



Gambar 8. Flavonoid 1

Gambar 8. Flavonoid 2

Gambar 9. Uji Saponin

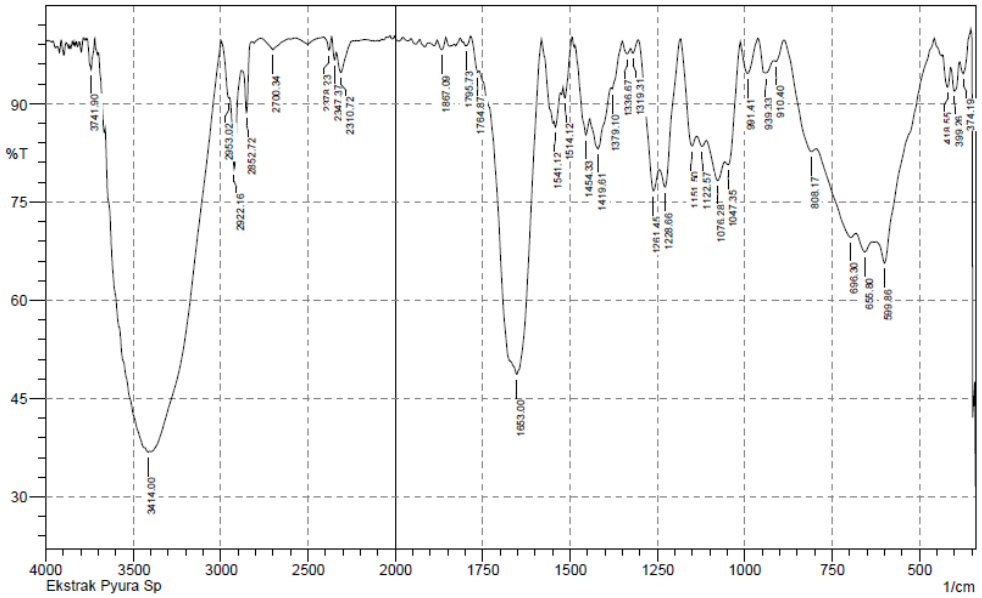
Gambar 10. Uji Steroid

Gambar 10. Uji Terpenoid

Gambar 11. Uji Alkaloid 1

Gambar 12. Uji Alkaloid 2

Lampiran 11. Spektrum FT-IR Ekstrak Air dari *Pyura sp*



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	374.19	94.527	3.384	383.83	352.97	0.413	0.254
2	399.26	91.902	3.878	408.91	385.76	0.676	0.255
3	418.55	92.503	3.654	432.05	410.84	0.57	0.233
4	599.86	65.663	7.588	623.01	459.06	14.224	1.331
5	655.8	67.345	2.118	680.87	636.51	7.306	0.301
6	696.3	69.536	2.188	794.67	682.8	13.983	0.828
7	808.17	82.659	2.531	887.26	796.6	4.55	0.796
8	910.4	96.424	0.724	916.19	887.26	0.297	0.053
9	939.33	94.634	3.587	962.48	916.19	0.773	0.409
10	991.41	94.571	4.783	1010.7	962.48	0.695	0.583
11	1047.35	80.658	3.766	1055.06	1012.63	2.431	0.546
12	1076.28	78.261	4.049	1109.07	1056.99	4.898	0.59
13	1122.57	83.464	1.179	1136.07	1111	1.9	0.084
14	1151.5	83.527	5.973	1182.36	1138	2.335	0.683
15	1228.66	77.244	7.812	1244.09	1184.29	3.849	1.023
16	1261.45	76.687	8.485	1303.88	1246.02	4.056	1.127
17	1319.31	97.666	1.15	1327.03	1303.88	0.151	0.054
18	1336.67	97.557	1.283	1350.17	1327.03	0.189	0.081
19	1379.1	92.201	1.024	1382.96	1350.17	0.643	0.081
20	1419.61	83.066	6.434	1442.75	1382.96	3.735	1.022
21	1454.33	85.222	5.001	1485.19	1444.68	1.885	0.562
22	1514.12	90.83	3.412	1519.91	1494.83	0.598	0.214
23	1541.12	86.417	1.778	1544.98	1527.62	0.912	0.088
24	1653	48.731	49.119	1759.08	1581.63	28.408	26.355
25	1764.87	94.717	1.126	1784.15	1761.01	0.286	0.04
26	1795.73	98.823	0.221	1797.66	1784.15	0.04	0.014
27	1867.09	98.185	1.692	1880.6	1855.52	0.123	0.108
28	2310.72	94.729	3.466	2335.8	2243.21	1.176	0.627
29	2347.37	96.647	2.008	2364.73	2337.72	0.253	0.134
30	2378.23	98.107	2.061	2407.16	2364.73	0.139	0.168
31	2700.34	98.172	1.73	2769.78	2615.47	0.57	0.503
32	2852.72	88.624	8.476	2879.72	2821.86	1.44	0.766
33	2922.16	79.944	12.615	2949.16	2881.65	3.736	1.612
34	2953.02	90.86	0.729	2997.38	2949.16	1.035	-0.015
35	3414	36.869	0.254	3433.29	3406.29	11.651	0.061
36	3741.9	95.195	4.677	3763.12	3720.69	0.499	0.475

Comment;

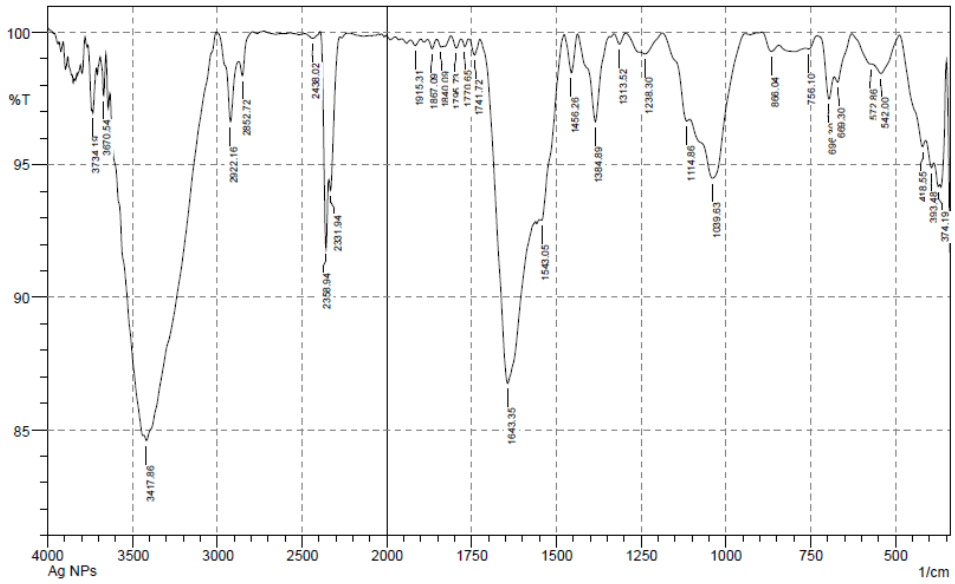
Ekstrak Pyura Sp

Resolution;

Apodization;

User; FTIR

Lampiran 12. Spektrum FT-IR Nanopartikel Perak



1	374.19	94.18	0.255	387.69	370.33	0.419	0.005
2	393.48	94.895	0.39	410.84	387.69	0.482	0.019
3	418.55	95.684	0.642	486.06	410.84	0.855	0.141
4	542	98.447	0.745	570.93	487.99	0.375	0.142
5	572.86	98.809	0.038	628.79	570.93	0.162	0.005
6	669.3	98.118	0.564	680.87	628.79	0.241	0.043
7	696.3	97.484	1.315	731.02	680.87	0.277	0.079
8	756.1	99.373	0.161	765.74	731.02	0.067	0.013
9	866.04	99.282	0.46	893.04	842.89	0.103	0.051
10	1039.63	94.494	3.534	1105.21	943.19	2.335	1.161
11	1114.86	96.65	0.39	1186.22	1107.14	0.524	-0.052
12	1238.3	99.189	0.232	1253.73	1186.22	0.145	0.033
13	1313.52	99.557	0.401	1328.95	1294.24	0.034	0.028
14	1384.89	96.622	3.263	1436.97	1344.38	0.583	0.539
15	1456.26	98.482	1.45	1477.47	1436.97	0.133	0.121
16	1543.05	92.903	0.418	1546.91	1477.47	1.126	0.075
17	1643.35	86.755	9.536	1724.36	1562.34	5.896	3.166
18	1741.72	99.15	0.589	1759.08	1724.36	0.08	0.041
19	1770.65	99.458	0.293	1780.3	1759.08	0.036	0.013
20	1795.73	99.415	0.396	1811.16	1780.3	0.05	0.025
21	1840.09	99.448	0.125	1853.59	1832.38	0.041	0.005
22	1867.09	99.375	0.36	1880.6	1853.59	0.049	0.018
23	1915.31	99.498	0.231	1928.82	1899.88	0.048	0.014
24	2331.94	94.046	1.219	2341.58	2277.93	0.833	0.112
25	2358.94	91.829	4.398	2391.73	2343.51	0.996	0.394
26	2438.02	99.776	0.219	2484.32	2393.66	0.05	0.048
27	2852.72	98.367	0.82	2873.94	2791	0.243	0.048
28	2922.16	96.628	2.68	3005.1	2873.94	0.807	0.494
29	3417.86	84.584	0.757	3433.29	3007.02	16.631	1.575
30	3670.54	97.612	1.542	3691.75	3657.04	0.232	0.102
31	3734.19	96.955	0.367	3738.05	3714.9	0.235	0.017

Date/Time; 10/22/2018 9:40:08 AM
No. of Scans;
Resolution;
Apodization;

Lampiran 13. Hasil Analisis XRD

*** Basic Data Process ***

Group : Standard
Data : PMande#bahrun

Strongest 3 peaks

no.	peak no.	2Theta (deg)	d (A)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
1	4	44.0441	2.05433	100	0.17670	2587	24816
2	7	64.4020	1.44551	83	0.19940	2148	24391
3	12	77.5116	1.23051	77	0.24030	1987	26669

Peak Data List

peak no.	2Theta (deg)	d (A)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
1	37.8059	2.37772	11	0.18310	277	3070
2	39.5257	2.27813	25	0.14600	645	5656
3	43.7200	2.06881	4	0.12660	114	1639
4	44.0441	2.05433	100	0.17670	2587	24816
5	57.4816	1.60196	22	0.16430	566	5263
6	57.8249	1.59327	4	0.10340	101	519
7	64.4020	1.44551	83	0.19940	2148	24391
8	64.7000	1.43957	5	0.08800	128	1246
9	68.8057	1.36334	19	0.19500	500	5310
10	69.2228	1.35614	4	0.12570	97	590
11	77.1600	1.23523	4	0.16440	109	1972
12	77.5116	1.23051	77	0.24030	1987	26669

Lampiran 14. Data JCPDS Nanopartikel Perak

PCPDFWIN - [PDF # 030931, Wavelength = 1.5405 (A)]

PDFNumber Search Print View Data Conversion Window Clear Help

03-0931 (Deleted)

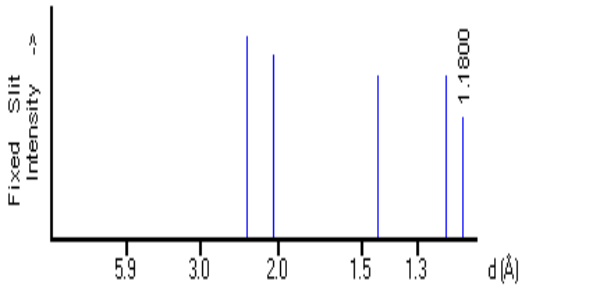
CAS Number:

Molecular Weight: 107.87
Volume[CD]: 67.27
Dx: 10.651 Dm: 10.500

Sys: Cubic
Lattice: Face-centered
S.G.: Fm3m (225)
Cell Parameters:
a 4.067 b c
α β γ

SS/FOM: F 4=3(0.360, 4)
I/Icor:
Rad: CuKa1
Lambda: 1.5405
Filter:
d-sp:

Ag
Silver
Ref: Jung, Z. Kristallogr., Kristallgeom., Kristallphys., Kristallchem., 64, 423 (1926)



d(A)	Int-f	h	k	l	d(A)	Int-f	h	k	l	d(A)	Int-f	h	k	l
2.3200	100	1	1	1	1.4400	80	2	2	0	1.1800	60			
2.0500	90	2	0	0	1.2200	80	3	1	1					

Lampiran 15. Hasil Analisis PSA

Condition Summary S/N : 123909

User	: Common	Group	:	Repetition	: 1/1
Date	: 11/19/2018	File Name	: AgNps-pyura sp_20181119_140940		
Time	: 14:09:40	Sample Information	:		
SOP Name	: Sampel Uji PSA			Security	: No Security

Version 2.31 / 2.03

Measurement Condition

Sampling Time	: N/A	(μs)			
Correlation Channel	: 440	(ch)	Correlation Method	: TD	
Accumulation times	: 30	(times)	Attenuator 1	: 15.71	(%)
Cell Center	: Z : 3.000	(mm)	Pinhole	: 50	(μm)
	X : 7.500	(mm)			
Scattering Angle	: 165.0	(°)	Temperature	: 25.0	(°C)
Diluent Name	: WATER				
Refractive Index	: 1.3328		Viscosity	: 0.8878	(cP)
Intensity	: 9935	(cps)			

Cumulants Results

Mean Diameter	(d)	: 102.9	(nm)	Diffusion Constant (D)	: 4.782e-008	(cm^2/sec)
Polydispersity Index	(P.I.)	: 0.257		Decay Constant (Γ)	: 3027.2	(1/sec)

Fitting Parameter

Analysis Method	: CONTIN						
Histogram Range	: 10.0 - 4000.0	(nm)	Cut	Left	: 0	Right	: 0
Fitting Range	: 1.003 - 2						
Noise Cut Level	: 0.3	(%)					
Residual	: 2.047e-002 [NG]						

Size Distribution Table S/N : 123909

User	: Common	Group	:	Repetition	: 1/1
Date	: 11/19/2018	File Name	: AgNps-pyura sp_20181119_140940		
Time	: 14:09:40	Sample Information	:		
SOP Name	: Sampel Uji PSA			Security	: No Security

Version 2.31 / 2.03

Γ (1/sec)	d(nm)	f(%)Int.	f(cum.%)int.	f(%)Vol.	f(cum.%)Vol.	f(%)No.	f(cum.%)No.
311407.4	1.0	0.0	0.0	0.0	0.0	0.00	0.00
288542.8	1.1	0.0	0.0	0.0	0.0	0.00	0.00
267357.0	1.2	0.3	0.3	31.2	31.2	40.40	40.40
247726.7	1.3	0.4	0.8	29.0	60.3	29.89	70.29
229537.7	1.4	0.4	1.2	23.2	83.5	19.03	89.32
212684.3	1.5	0.4	1.5	16.4	99.9	10.68	100.00
197068.2	1.6	0.0	1.5	0.0	99.9	0.00	100.00
182598.8	1.7	0.0	1.5	0.0	99.9	0.00	100.00
169191.8	1.8	0.0	1.5	0.0	99.9	0.00	100.00
156769.1	2.0	0.0	1.5	0.0	99.9	0.00	100.00
145258.6	2.1	0.0	1.5	0.0	99.9	0.00	100.00
134593.2	2.3	0.0	1.5	0.0	99.9	0.00	100.00
124710.9	2.5	0.0	1.5	0.0	99.9	0.00	100.00
115554.2	2.7	0.0	1.5	0.0	99.9	0.00	100.00
107069.8	2.9	0.0	1.5	0.0	99.9	0.00	100.00
99208.3	3.1	0.0	1.5	0.0	99.9	0.00	100.00
91924.1	3.4	0.0	1.5	0.0	99.9	0.00	100.00
85174.7	3.7	0.0	1.5	0.0	99.9	0.00	100.00
78920.9	3.9	0.0	1.5	0.0	99.9	0.00	100.00
73126.2	4.3	0.0	1.5	0.0	99.9	0.00	100.00
67757.1	4.6	0.0	1.5	0.0	99.9	0.00	100.00
62782.1	5.0	0.0	1.5	0.0	99.9	0.00	100.00
58172.4	5.4	0.0	1.5	0.0	99.9	0.00	100.00
53901.2	5.8	0.0	1.5	0.0	99.9	0.00	100.00
49943.6	6.2	0.0	1.5	0.0	99.9	0.00	100.00
46276.5	6.7	0.0	1.5	0.0	99.9	0.00	100.00
42878.8	7.3	0.0	1.5	0.0	99.9	0.00	100.00
39730.5	7.8	0.0	1.5	0.0	99.9	0.00	100.00
36813.3	8.5	0.0	1.5	0.0	99.9	0.00	100.00
34110.3	9.1	0.0	1.5	0.0	99.9	0.00	100.00
31605.8	9.9	0.0	1.5	0.0	99.9	0.00	100.00
29285.2	10.6	0.0	1.5	0.0	99.9	0.00	100.00
27135.0	11.5	0.0	1.5	0.0	99.9	0.00	100.00
25142.7	12.4	0.0	1.5	0.0	99.9	0.00	100.00
23296.6	13.4	0.0	1.5	0.0	99.9	0.00	100.00
21586.1	14.4	0.0	1.5	0.0	99.9	0.00	100.00
20001.2	15.6	0.0	1.5	0.0	99.9	0.00	100.00
18532.6	16.8	0.0	1.5	0.0	99.9	0.00	100.00
17171.9	18.1	0.0	1.5	0.0	99.9	0.00	100.00
15911.1	19.6	0.0	1.5	0.0	99.9	0.00	100.00
14742.8	21.1	0.0	1.5	0.0	99.9	0.00	100.00
13660.3	22.8	0.0	1.5	0.0	99.9	0.00	100.00
	24.6	0.0	1.5	0.0	99.9	0.00	100.00
	26.6	0.0	1.5	0.0	99.9	0.00	100.00
	28.7	0.0	1.5	0.0	99.9	0.00	100.00
	30.9	0.0	1.5	0.0	99.9	0.00	100.00
	33.4	0.0	1.5	0.0	99.9	0.00	100.00

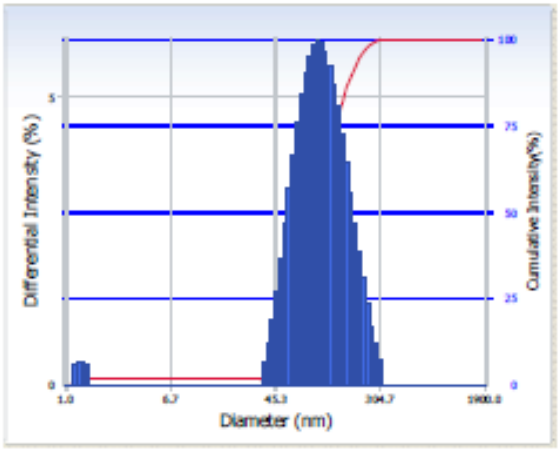
Γ (1/sec)	d(nm)	f(%)Int.	f(cum.%)int.	f(%)Vol.	f(cum.%)Vol.	f(%)No.	f(cum.%)No.
8644.7	36.0	0.4	1.9	0.0	99.9	0.00	100.00
8010.0	38.9	0.7	2.6	0.0	99.9	0.00	100.00
7421.8	42.0	1.1	3.7	0.0	99.9	0.00	100.00
6876.9	45.3	1.6	5.4	0.0	99.9	0.00	100.00
6372.0	48.9	2.2	7.6	0.0	100.0	0.00	100.00
5904.1	52.7	2.8	10.4	0.0	100.0	0.00	100.00
5470.6	56.9	3.4	13.8	0.0	100.0	0.00	100.00
5068.9	61.4	4.0	17.8	0.0	100.0	0.00	100.00
4696.8	66.3	4.6	22.4	0.0	100.0	0.00	100.00
4351.9	71.6	5.0	27.4	0.0	100.0	0.00	100.00
4032.4	77.2	5.4	32.8	0.0	100.0	0.00	100.00
3736.3	83.3	5.7	38.6	0.0	100.0	0.00	100.00
3462.0	90.0	5.9	44.5	0.0	100.0	0.00	100.00
3207.8	97.1	6.0	50.5	0.0	100.0	0.00	100.00
2972.3	104.8	6.0	56.4	0.0	100.0	0.00	100.00
2754.0	113.1	5.8	62.2	0.0	100.0	0.00	100.00
2551.8	122.0	5.6	67.8	0.0	100.0	0.00	100.00
2364.5	131.7	5.2	73.0	0.0	100.0	0.00	100.00
2190.8	142.1	4.8	77.8	0.0	100.0	0.00	100.00
2030.0	153.4	4.4	82.2	0.0	100.0	0.00	100.00
1880.9	165.6	3.9	86.1	0.0	100.0	0.00	100.00
1742.8	178.7	3.3	89.4	0.0	100.0	0.00	100.00
1614.9	192.8	2.8	92.2	0.0	100.0	0.00	100.00
1496.3	208.1	2.3	94.6	0.0	100.0	0.00	100.00
1386.4	224.6	1.8	96.4	0.0	100.0	0.00	100.00
1284.6	242.4	1.4	97.8	0.0	100.0	0.00	100.00
1190.3	261.6	1.0	98.8	0.0	100.0	0.00	100.00
1102.9	282.3	0.7	99.6	0.0	100.0	0.00	100.00
1021.9	304.7	0.4	100.0	0.0	100.0	0.00	100.00
946.9	328.9	0.0	100.0	0.0	100.0	0.00	100.00
877.4	354.9	0.0	100.0	0.0	100.0	0.00	100.00
813.0	383.1	0.0	100.0	0.0	100.0	0.00	100.00
753.3	413.4	0.0	100.0	0.0	100.0	0.00	100.00
698.0	446.2	0.0	100.0	0.0	100.0	0.00	100.00
646.7	481.5	0.0	100.0	0.0	100.0	0.00	100.00
599.2	519.7	0.0	100.0	0.0	100.0	0.00	100.00
555.2	560.9	0.0	100.0	0.0	100.0	0.00	100.00
514.5	605.3	0.0	100.0	0.0	100.0	0.00	100.00
476.7	653.3	0.0	100.0	0.0	100.0	0.00	100.00
441.7	705.0	0.0	100.0	0.0	100.0	0.00	100.00
409.3	760.9	0.0	100.0	0.0	100.0	0.00	100.00
379.2	821.2	0.0	100.0	0.0	100.0	0.00	100.00
351.4	886.3	0.0	100.0	0.0	100.0	0.00	100.00
325.6	956.5	0.0	100.0	0.0	100.0	0.00	100.00
301.7	1032.3	0.0	100.0	0.0	100.0	0.00	100.00
279.5	1114.1	0.0	100.0	0.0	100.0	0.00	100.00
259.0	1202.4	0.0	100.0	0.0	100.0	0.00	100.00
240.0	1297.7	0.0	100.0	0.0	100.0	0.00	100.00
222.4	1400.5	0.0	100.0	0.0	100.0	0.00	100.00
206.0	1511.5	0.0	100.0	0.0	100.0	0.00	100.00
190.9	1631.2	0.0	100.0	0.0	100.0	0.00	100.00
176.9	1760.5	0.0	100.0	0.0	100.0	0.00	100.00
163.9	1900.0	0.0	100.0	0.0	100.0	0.00	100.00

Intensity Distribution S/N : 123909

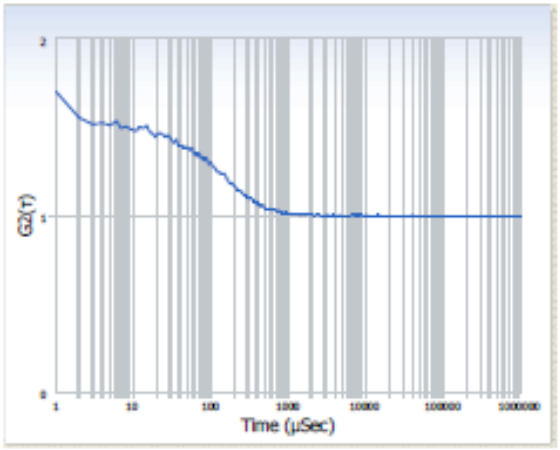
User	: Common	Group	:	Repetition	: 1/1
Date	: 11/19/2018	File Name	: AgNps-pyura sp_20181119_140940		
Time	: 14:09:40	Sample Information	:		
SOP Name	: Sampel Uji PSA			Security	: No Security

Version 2.31 / 2.03

Intensity Distribution



ACF



Distribution Results (Contin)

Peak	Diameter (nm)	Std. Dev.
1	1.3	0.1
2	113.4	53.3
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
Average	111.7	54.6

Residual : 2.047e-002 (N.G)

Cumulants Results

Diameter	(d)	: 102.9	(nm)
Polydispersity Index	(P.I.)	: 0.257	
Diffusion Const.	(D)	: 4.782e-008	(cm²/sec)

Measurement Condition

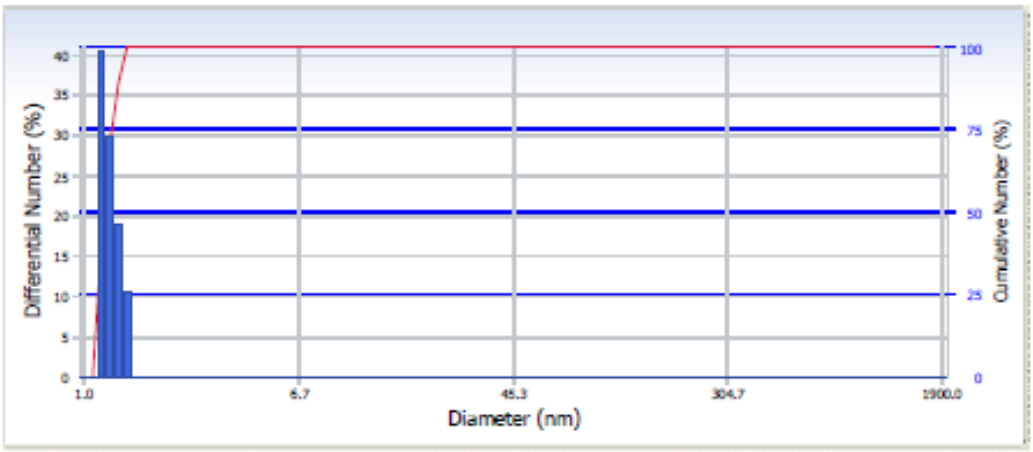
Temperature	: 25.0	(°C)
Diluent Name	: WATER	
Refractive Index	: 1.3328	
Viscosity	: 0.8878	(cP)
Scattering Intensity	: 9935	(cps)

Number Distribution S/N : 123909

User	: Common	Group	:	Repetition	: 1/1
Date	: 11/19/2018	File Name	: AgNps-pyura sp_20181119_140940		
Time	: 14:09:40	Sample Information	:		
SOP Name	: Sampel Uji PSA			Security	: No Security

Version 2.31 / 2.03

Number Distribution



Distribution Results (Contin)

Peak	Diameter (nm)	Std. Dev.
1	1.3	0.1
2	49.3	13.4
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
Average	1.3	0.1

Residual : 2.047e-002 (N.G)

Cumulants Results

Diameter	(d)	: 102.9	(nm)
Polydispersity Index	(P.I.)	: 0.257	
Diffusion Const.	(D)	: 4.782e-008	(cm²/sec)

Measurement Condition

Temperature	: 25.0	(°C)
Diluent Name	: WATER	
Refractive Index	: 1.3328	
Viscosity	: 0.8878	(cP)
Scattering Intensity	: 9935	(cps)

Number Distribution Table

d (nm)	f(%)	f(cum.%)	d (nm)	f(%)	f(cum.%)	d (nm)	f(%)	f(cum.%)	d (nm)	f(%)	f(cum.%)
1.0	0.0	0.0	6.7	0.0	100.0	45.3	0.0	100.0	304.7	0.0	100.0
1.1	0.0	0.0	7.3	0.0	100.0	48.9	0.0	100.0	328.9	0.0	100.0
1.2	40.4	40.4	7.8	0.0	100.0	52.7	0.0	100.0	354.9	0.0	100.0
1.3	29.9	70.3	8.5	0.0	100.0	56.9	0.0	100.0	383.1	0.0	100.0
1.4	19.0	89.3	9.1	0.0	100.0	61.4	0.0	100.0	413.4	0.0	100.0
1.5	10.7	100.0	9.9	0.0	100.0	66.3	0.0	100.0	446.2	0.0	100.0
1.6	0.0	100.0	10.6	0.0	100.0	71.6	0.0	100.0	481.5	0.0	100.0
1.7	0.0	100.0	11.5	0.0	100.0	77.2	0.0	100.0	519.7	0.0	100.0
1.8	0.0	100.0	12.4	0.0	100.0	83.3	0.0	100.0	560.9	0.0	100.0
2.0	0.0	100.0	13.4	0.0	100.0	90.0	0.0	100.0	605.3	0.0	100.0
2.1	0.0	100.0	14.4	0.0	100.0	97.1	0.0	100.0	653.3	0.0	100.0
2.3	0.0	100.0	15.6	0.0	100.0	104.8	0.0	100.0	705.0	0.0	100.0
2.5	0.0	100.0	16.8	0.0	100.0	113.1	0.0	100.0	760.9	0.0	100.0
2.7	0.0	100.0	18.1	0.0	100.0	122.0	0.0	100.0	821.2	0.0	100.0
2.9	0.0	100.0	19.6	0.0	100.0	131.7	0.0	100.0	886.3	0.0	100.0
3.1	0.0	100.0	21.1	0.0	100.0	142.1	0.0	100.0	956.5	0.0	100.0
		00.0	22.8	0.0	100.0	153.4	0.0	100.0	1032.3	0.0	100.0
		00.0	24.6	0.0	100.0	165.6	0.0	100.0	1114.1	0.0	100.0
		00.0	26.6	0.0	100.0	178.7	0.0	100.0	1202.4	0.0	100.0
		00.0	28.7	0.0	100.0	192.8	0.0	100.0	1297.7	0.0	100.0

(nm) D (50%) : 1.2 (nm) D (90%) : 1.4 (nm)

Number Distribution Table

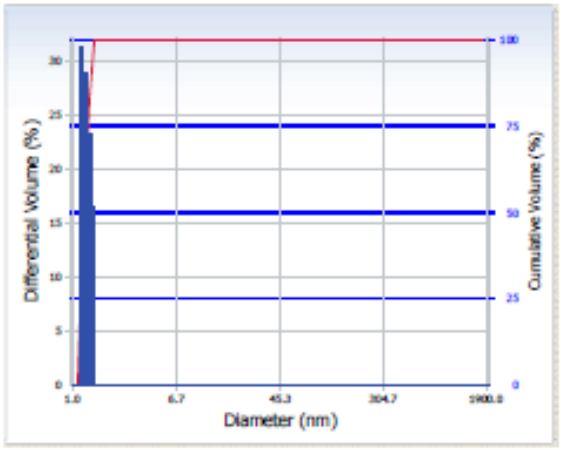
d (nm)	f(%)	f(cum.%)	d (nm)	f(%)	f(cum.%)	d (nm)	f(%)	f(cum.%)	d (nm)	f(%)	f(cum.%)
4.6	0.0	100.0	30.9	0.0	100.0	208.1	0.0	100.0	1400.5	0.0	100.0
5.0	0.0	100.0	33.4	0.0	100.0	224.6	0.0	100.0	1511.5	0.0	100.0
5.4	0.0	100.0	36.0	0.0	100.0	242.4	0.0	100.0	1631.2	0.0	100.0
5.8	0.0	100.0	38.9	0.0	100.0	261.6	0.0	100.0	1760.5	0.0	100.0
6.2	0.0	100.0	42.0	0.0	100.0	282.3	0.0	100.0	1900.0	0.0	100.0

Volume Distribution S/N : 123909

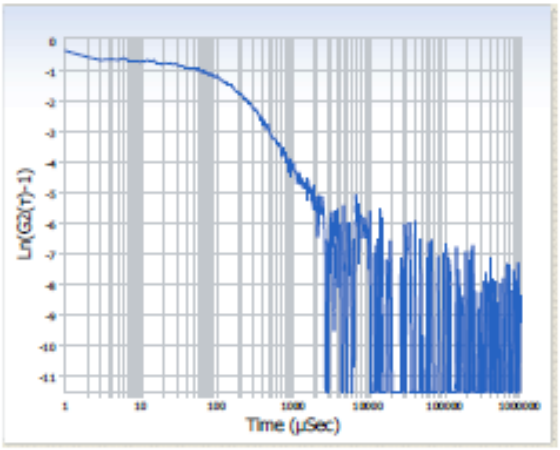
User	: Common	Group	:	Repetition	: 1/1
Date	: 11/19/2018	File Name	: AgNps-pyura sp_20181119_140940		
Time	: 14:09:40	Sample Information	:		
SOP Name	: Sampel Uji PSA			Security	: No Security

Version 2.31 / 2.03

Volume Distribution



Ln(G2(τ)-1) vs τ



Distribution Results (Contin)

Peak	Diameter (nm)	Std. Dev.
1	1.3	0.1
2	65.6	26.9
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
Average	1.3	1.9

Residual : 2.047e-002 (N.G)

Cumulants Results

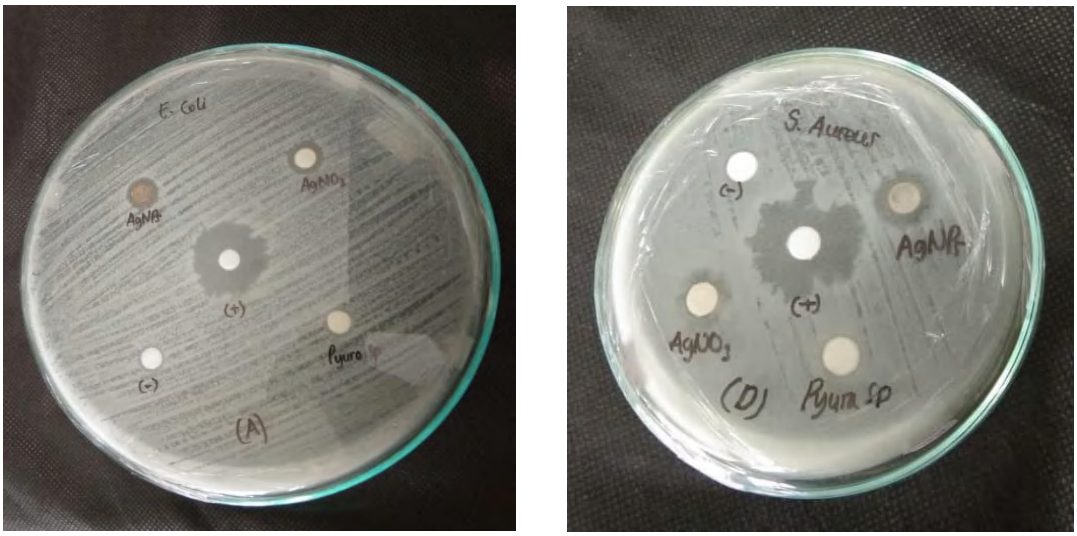
Diameter	(d)	: 102.9	(nm)
Polydispersity Index	(P.I.)	: 0.257	
Diffusion Const.	(D)	: 4.782e-008	(cm²/sec)

Measurement Condition

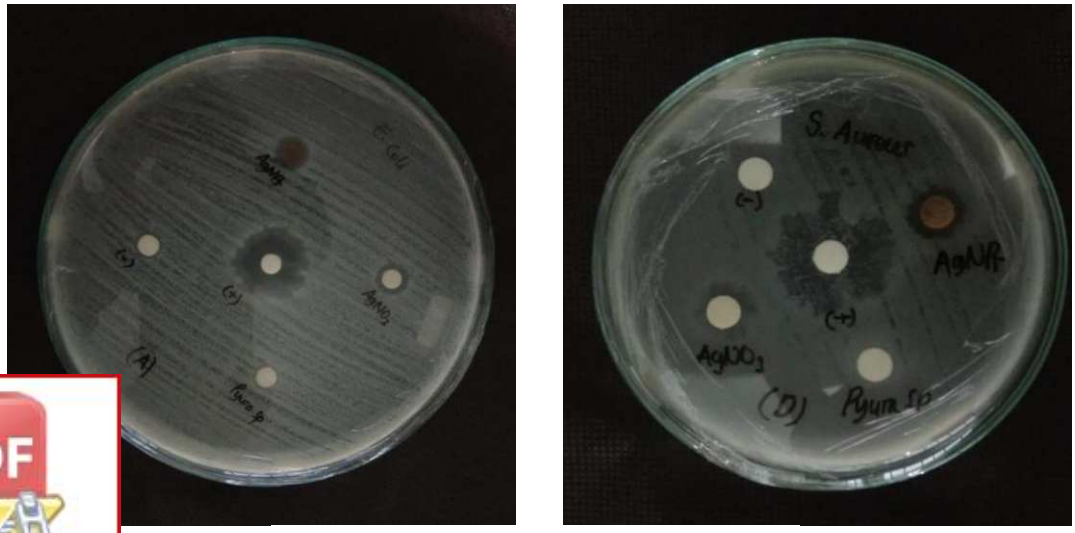
Temperature	: 25.0	(°C)
Diluent Name	: WATER	
Refractive Index	: 1.3328	
Viscosity	: 0.8878	(cP)
Scattering Intensity	: 9935	(cps)

Lampiran 16. Pengamtan Uji Aktivias Antibakteri

Gambar 13. Pengamatan 18 jam



Gambar 14. Pengamatan 24 jam



Gambar 15. Pengamatan 48 jam

Lampiran 17. Hasil Uji Aktivias Antibakteri

Sampel	*E. Coli*			*S. Aureus*		
	18 Jam	**24 Jam**	**48 Jam**	**18 Jam**	**24 Jam**	**48 Jam**
NPAg	11,85	11,8	9,5	12,525	12,875	11,425
$AgNO_3$	10,1	11,5	10,15	8,95	11,2	7,65
Ekstak *Pyura*	8,5	9,1	9,55	7,45	7,95	7,425
Kontrol (+)	25,375	24,225	17,775	24,9	24,3	23,2
Kontrol (-)	0	0	0	0	0	0