

DAFTAR PUSTAKA

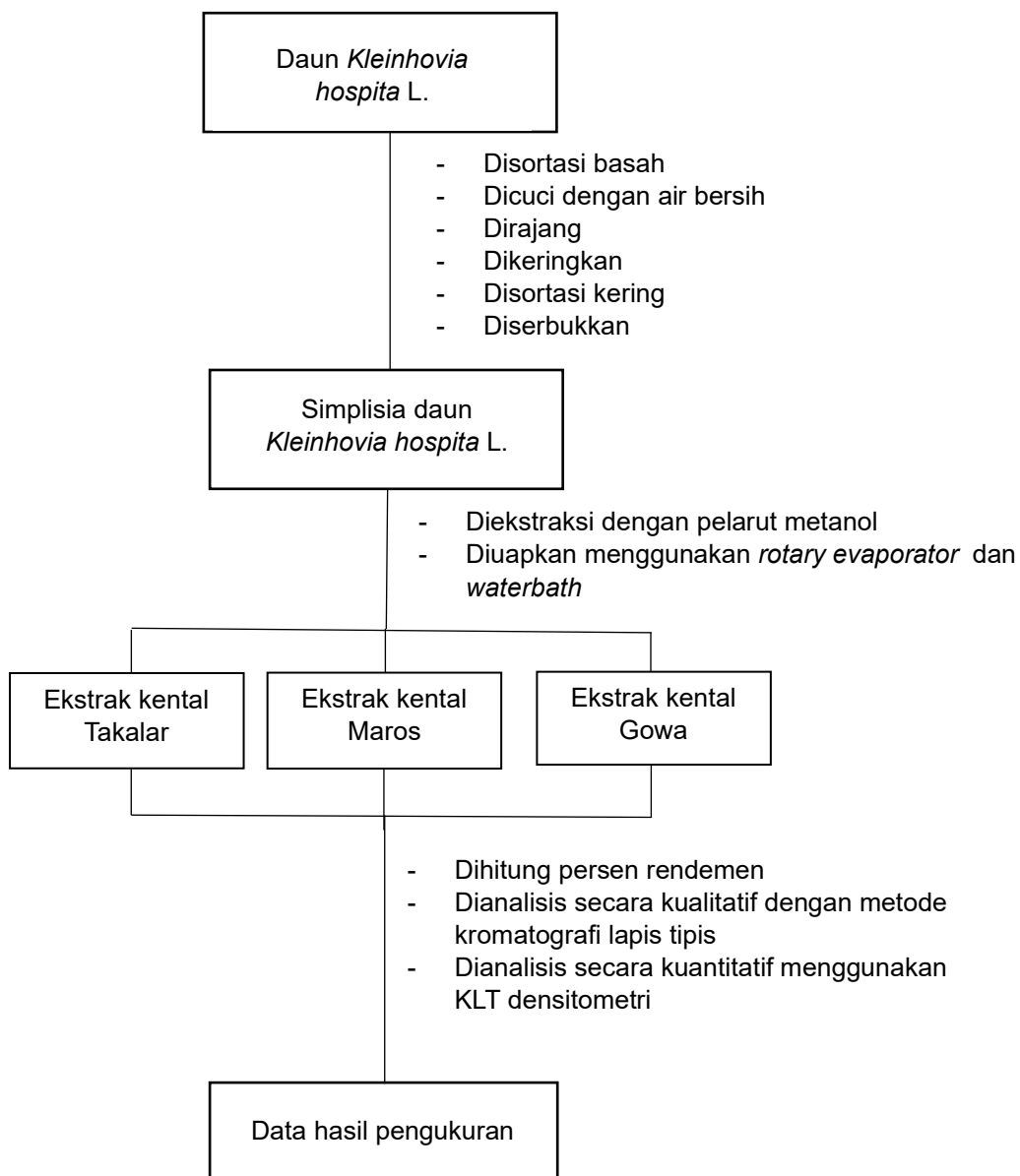
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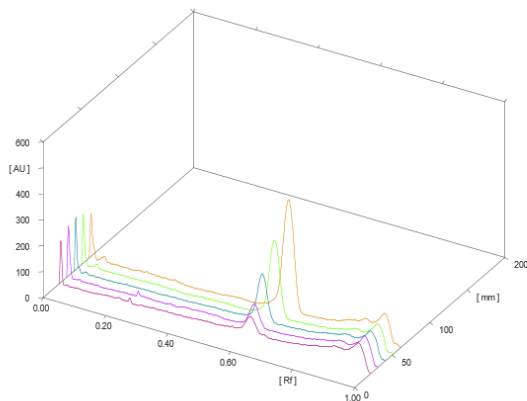
LAMPIRAN

Lampiran 1. Skema kerja



Lampiran 2. Profil KLT-Densitometri

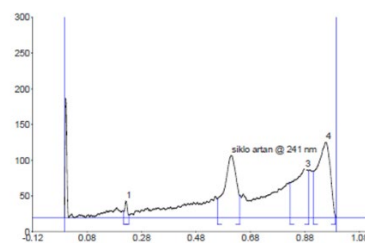
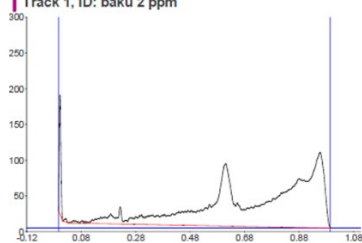
2.1 Kurva Baku



Gambar 1. Densitogram kurva pembandingan triterpenoid sikloartan

Baku 2 μ L

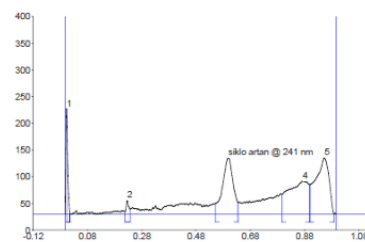
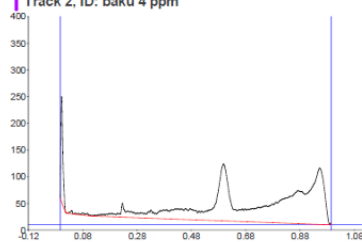
Track 1, ID: baku 2 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.22	8.3	0.23	23.7	8.32	0.24	3.5	213.2	1.80	unknown *
2	0.56	25.8	0.62	87.7	30.76	0.64	30.9	3588.4	30.22	siklo artan
3	0.83	48.7	0.89	68.0	23.83	0.90	65.6	3331.0	28.06	unknown *
4	0.92	64.9	0.96	105.8	37.10	1.00	2.8	4739.8	39.92	unknown *

Baku 4 μ L

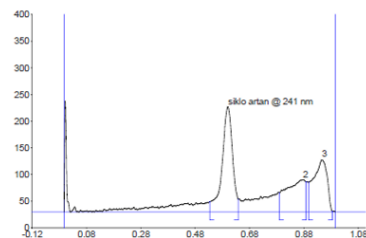
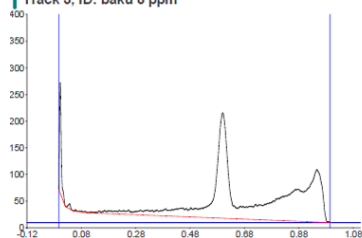
Track 2, ID: baku 4 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.01	197.5	0.01	197.5	39.72	0.02	1.6	820.5	5.76	unknown *
2	0.22	5.1	0.23	26.1	5.24	0.24	9.4	243.8	1.71	unknown *
3	0.56	20.0	0.60	106.3	21.38	0.64	22.2	3906.0	27.42	siklo artan
4	0.80	37.0	0.88	61.6	12.40	0.90	55.5	4315.7	30.29	unknown *
5	0.90	55.5	0.96	105.7	21.26	0.99	0.2	4961.3	34.82	unknown *

Baku 8 µL

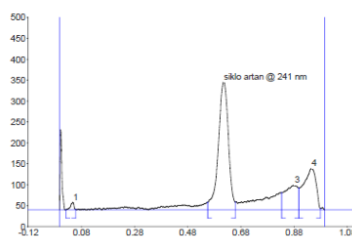
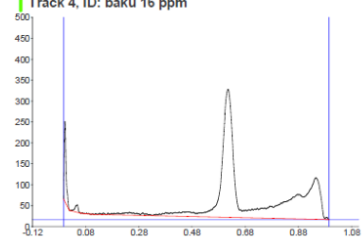
Track 3, ID: baku 8 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.54	19.2	0.60	197.3	55.38	0.64	23.6	7147.6	45.13	siklo artan
2	0.79	35.6	0.88	60.4	16.95	0.89	56.4	4002.7	25.27	unknown *
3	0.90	55.6	0.95	98.5	27.67	0.99	1.5	4686.6	29.59	unknown *

Baku 16 µL

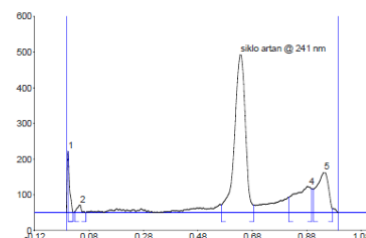
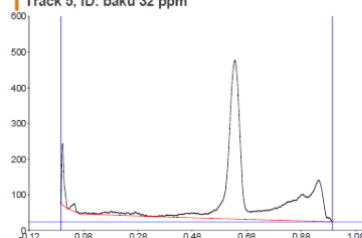
Track 4, ID: baku 16 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.02	0.3	0.05	18.2	3.78	0.06	1.3	217.1	1.19	unknown *
2	0.56	18.2	0.62	306.5	63.56	0.66	18.4	10999.5	60.06	siklo artan
3	0.84	40.7	0.89	58.4	12.11	0.90	52.5	2712.6	14.81	unknown *
4	0.90	52.6	0.95	99.1	20.56	0.98	3.0	4386.0	23.95	unknown *

Baku 32 µL

Track 5, ID: baku 32 ppm

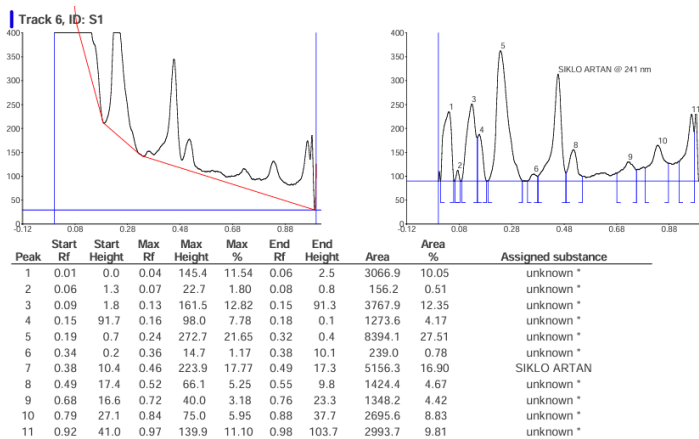


Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.01	172.2	0.01	172.2	20.79	0.02	1.1	915.9	3.45	unknown *
2	0.03	2.9	0.05	22.5	2.72	0.07	0.0	309.9	1.17	unknown *
3	0.57	22.2	0.64	445.4	53.78	0.69	21.3	16680.4	62.83	siklo artan
4	0.82	43.2	0.89	73.7	8.90	0.90	66.4	4123.2	15.53	unknown *
5	0.91	65.8	0.95	114.4	13.81	0.98	10.3	4518.7	17.02	unknown *

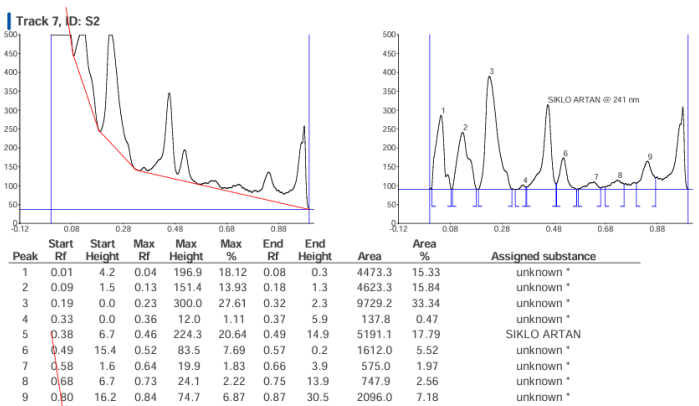
Lampiran 2.2 Ekstrak daun *K.hospita*

a. Takalar

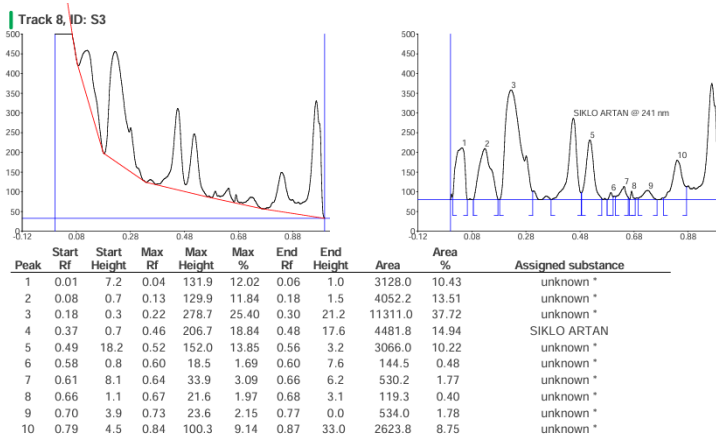
Replikasi 1



Replikasi 2

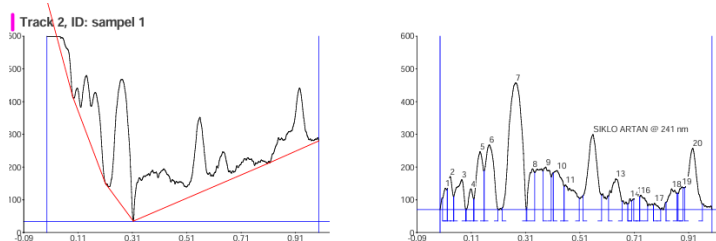


Replikasi 3



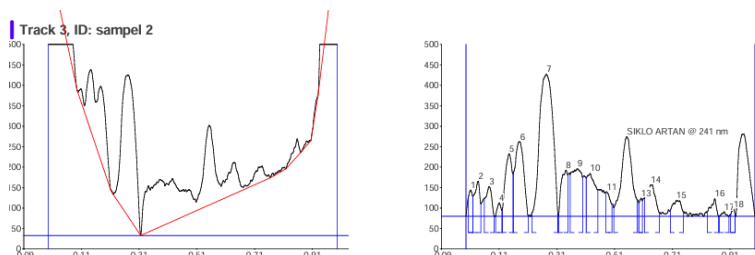
b. Maros

Replikasi 1



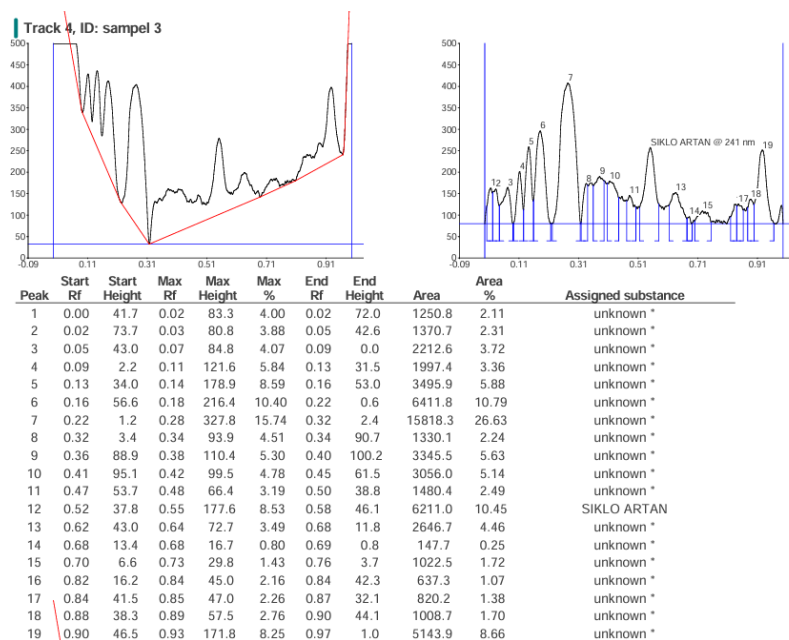
Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.01	35.5	0.02	65.6	2.82	0.02	60.5	879.3	1.27	unknown *
2	0.02	62.5	0.03	101.3	4.36	0.05	39.4	1595.2	2.30	unknown *
3	0.05	40.4	0.08	91.6	3.94	0.09	0.8	2490.7	3.59	unknown *
4	0.09	0.3	0.11	63.9	2.75	0.12	32.1	943.5	1.36	unknown *
5	0.12	32.2	0.14	177.4	7.63	0.16	118.5	4352.3	6.28	unknown *
6	0.16	119.2	0.18	198.5	8.54	0.21	1.0	6037.3	8.71	unknown *
7	0.23	5.8	0.27	387.7	16.68	0.31	0.6	18079.7	26.09	unknown *
8	0.32	6.0	0.34	124.8	5.37	0.35	113.7	2614.1	3.77	unknown *
9	0.38	117.7	0.39	130.3	5.61	0.41	100.6	3368.3	4.86	unknown *
10	0.41	112.2	0.43	119.7	5.15	0.45	70.3	3756.2	5.42	unknown *
11	0.45	71.0	0.46	75.6	3.25	0.51	35.6	2900.9	4.19	unknown *
12	0.52	44.4	0.56	229.9	9.89	0.59	44.4	8022.6	11.58	SIKLO ARTAN
13	0.62	40.7	0.65	94.3	4.06	0.67	25.2	3010.1	4.34	unknown *
14	0.69	18.3	0.70	33.4	1.44	0.70	27.3	367.5	0.53	unknown *
15	0.71	31.8	0.72	44.8	1.93	0.73	38.6	786.6	1.14	unknown *
16	0.73	38.9	0.74	44.4	1.91	0.76	11.5	899.6	1.30	unknown *
17	0.78	13.3	0.79	19.6	0.84	0.81	0.6	273.6	0.39	unknown *
18	0.83	22.6	0.85	64.0	2.75	0.87	50.2	1716.1	2.48	unknown *
19	0.87	49.7	0.89	69.7	3.00	0.89	66.7	1116.5	1.61	unknown *
20	0.90	67.5	0.93	187.7	8.08	0.96	16.5	6084.0	8.78	unknown *

Replikasi 2



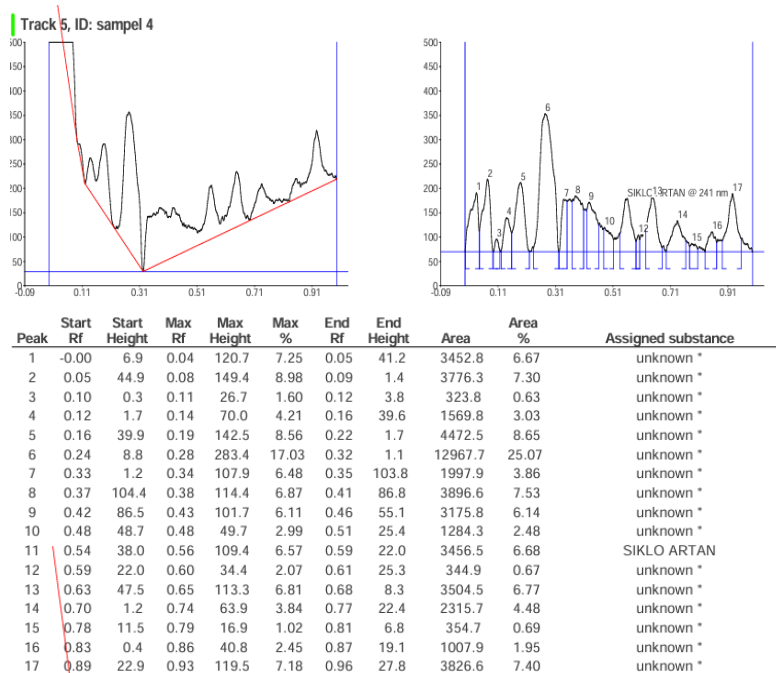
Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.00	46.5	0.01	64.2	3.65	0.02	48.8	843.6	1.57	unknown *
2	0.02	49.5	0.04	86.3	4.90	0.05	30.4	1543.9	2.87	unknown *
3	0.06	43.8	0.08	72.7	4.14	0.09	0.9	1483.9	2.76	unknown *
4	0.10	0.8	0.11	32.9	1.87	0.12	15.1	430.7	0.80	unknown *
5	0.12	17.3	0.15	152.7	8.68	0.16	104.3	3680.9	6.85	unknown *
6	0.16	105.4	0.18	182.1	10.35	0.21	0.1	5666.5	10.55	unknown *
7	0.23	9.2	0.28	347.0	19.73	0.32	6.6	16411.3	30.55	unknown *
8	0.32	3.8	0.34	113.0	6.42	0.35	100.7	2489.2	4.63	unknown *
9	0.36	102.9	0.38	115.9	6.59	0.40	94.7	4364.4	8.12	unknown *
10	0.41	93.6	0.43	104.7	5.95	0.45	64.6	3245.7	6.04	unknown *
11	0.48	59.2	0.49	59.9	3.41	0.50	30.4	951.9	1.77	unknown *
12	0.51	21.3	0.56	195.0	11.09	0.59	39.8	7366.4	13.71	SIKLO ARTAN
13	0.60	33.0	0.60	44.7	2.54	0.61	38.4	475.3	0.88	unknown *
14	0.62	43.4	0.64	77.1	4.38	0.67	9.5	2450.8	4.56	unknown *
15	0.71	14.7	0.73	39.1	2.22	0.75	12.3	1196.7	2.23	unknown *
16	0.84	12.4	0.86	42.8	2.43	0.87	0.0	804.0	1.50	unknown *
17	0.88	0.3	0.89	11.3	0.64	0.91	0.2	142.6	0.27	unknown *
18	0.91	2.9	0.93	17.6	1.00	0.93	5.4	176.5	0.33	unknown *

Replikasi 3



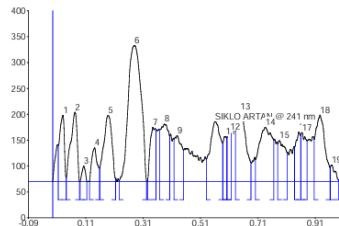
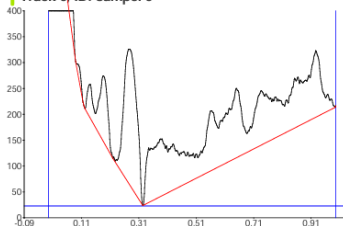
c. Gowa

Replikasi 1



Replikasi 2

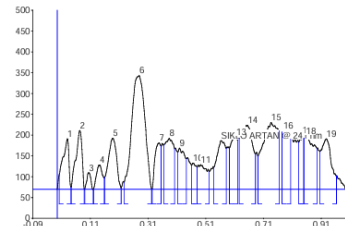
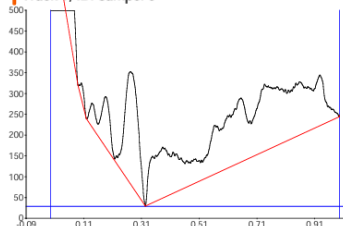
Track 6, ID: sampel 5



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.02	70.2	0.03	128.6	6.34	0.04	7.6	2209.1	3.84	unknown *
2	0.04	7.9	0.07	134.3	6.62	0.09	0.6	3107.1	5.41	unknown *
3	0.09	0.4	0.10	30.2	1.49	0.12	0.6	359.6	0.63	unknown *
4	0.13	1.6	0.14	65.7	3.24	0.16	26.2	1293.7	2.25	unknown *
5	0.16	27.6	0.19	128.0	6.31	0.22	6.9	3790.6	6.60	unknown *
6	0.23	1.8	0.28	263.6	13.00	0.32	1.5	12133.0	21.11	unknown *
7	0.33	1.4	0.35	105.3	5.19	0.36	101.2	2068.6	3.60	unknown *
8	0.37	100.3	0.39	111.6	5.50	0.41	88.3	3415.2	5.94	unknown *
9	0.42	82.3	0.43	89.1	4.39	0.45	61.0	2407.3	4.19	unknown *
10	0.53	43.8	0.56	115.8	5.71	0.59	74.4	4441.3	7.73	SIKLO ARTAN
11	0.59	75.1	0.60	87.1	4.30	0.60	84.0	1091.1	1.90	unknown *
12	0.61	86.4	0.62	97.0	4.78	0.62	93.8	1295.7	2.25	unknown *
13	0.64	98.5	0.65	134.6	6.64	0.69	36.7	4591.6	7.99	unknown *
14	0.70	43.0	0.74	105.3	5.19	0.77	80.4	4922.0	8.56	unknown *
15	0.78	73.2	0.79	79.5	3.92	0.82	56.6	2093.8	3.64	unknown *
16	0.84	67.6	0.86	96.4	4.75	0.86	90.2	1676.3	2.92	unknown *
17	0.86	90.9	0.87	95.1	4.69	0.89	79.1	1725.9	3.00	unknown *
18	0.91	81.9	0.93	128.8	6.35	0.97	27.5	4316.3	7.51	unknown *
19	0.97	28.9	0.97	32.4	1.60	0.99	3.6	531.2	0.92	unknown *

Replikasi 3

Track 7, ID: sampel 6



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.00	35.5	0.03	121.5	5.31	0.04	5.6	2685.4	3.70	unknown *
2	0.05	6.1	0.08	141.3	6.17	0.09	2.3	3099.5	4.28	unknown *
3	0.09	0.4	0.11	39.7	1.73	0.12	0.6	558.8	0.77	unknown *
4	0.12	2.2	0.14	58.6	2.56	0.16	27.7	1264.1	1.74	unknown *
5	0.16	29.0	0.19	122.5	5.35	0.22	3.6	3631.7	5.01	unknown *
6	0.23	17.4	0.28	273.4	11.94	0.32	0.6	12786.5	17.64	unknown *
7	0.33	1.8	0.35	111.9	4.89	0.36	105.0	2303.7	3.18	unknown *
8	0.37	107.7	0.39	122.5	5.35	0.40	97.6	3855.1	5.32	unknown *
9	0.42	89.9	0.42	99.1	4.33	0.44	73.7	2379.8	3.28	unknown *
10	0.46	58.1	0.47	63.1	2.76	0.48	53.1	1058.8	1.46	unknown *
11	0.48	53.3	0.49	59.0	2.58	0.52	42.4	1970.0	2.72	unknown *
12	0.54	53.2	0.57	117.0	5.11	0.58	99.1	3707.4	5.11	SIKLO ARTAN
13	0.59	101.2	0.62	126.0	5.50	0.62	118.5	3057.1	4.22	unknown *
14	0.63	123.0	0.66	153.7	6.71	0.68	84.8	6636.9	9.15	unknown *
15	0.69	80.4	0.74	161.0	7.03	0.77	140.6	8790.1	12.12	unknown *
16	0.78	138.3	0.78	141.0	6.16	0.81	120.8	3717.9	5.13	unknown *
17	0.84	113.2	0.85	128.7	5.62	0.85	122.9	1952.4	2.69	unknown *
18	0.85	123.0	0.86	128.3	5.60	0.90	98.9	4656.0	6.42	unknown *
19	0.91	90.8	0.93	121.4	5.30	0.97	32.7	4385.9	6.05	unknown *

Lampiran 3. Perhitungan

4.1 Perhitungan rendemen ekstrak

Metode Ekstraksi	Replikasi	Berat Sampel (g)	Berat Ekstrak (g)	Rata-rata berat ekstrak (g)	Rendemen (%)	Rata-rata rendemen (%)	SD
Takalar	1	20,00	1,30	1,34	6,50	6,73	±0,1500
	2	20,00	1,40		7,00		
	3	20,00	1,34		6,70		
Maros	1	20,00	1,21	1,42	6,05	7,11	±0,9222
	2	20,00	1,66		8,30		
	3	20,00	1,40		7,00		
Gowa	1	20,00	1,75	1,74	8,75	8,73	±0,4696
	2	20,00	1,63		8,15		
	3	20,00	1,86		9,30		

$$\text{Rumus perhitungan rendemen(\%)} = \frac{\text{bobot ekstrak (g)}}{\text{bobot simplisia (g)}} \times 100 \%$$

Takalar

- Replikasi 1 = $\frac{1,30}{20,00} \times 100 \%$ = 6,50%
- Replikasi 2 = $\frac{1,40}{20,00} \times 100 \%$ = 7,00%
- Replikasi 3 = $\frac{1,34}{20,00} \times 100 \%$ = 6,70%

Maros

- Replikasi 1 = $\frac{1,21}{20,00} \times 100 \%$ = 6,05%
- Replikasi 2 = $\frac{1,66}{20,00} \times 100 \%$ = 8,30%
- Replikasi 3 = $\frac{1,40}{20,00} \times 100 \%$ = 7,00%

Gowa

- Replikasi 1 = $\frac{1,75}{20,00} \times 100 \%$ = 8,75%
- Replikasi 2 = $\frac{1,63}{20,00} \times 100 \%$ = 8,15%
- Replikasi 3 = $\frac{1,86}{20,00} \times 100 \%$ = 9,30%

4.2 Perhitungan Nilai Rf Uji Kualitatif

	Replikasi	Nilai Rf
Takalar	1	0,44
	2	0,44
	3	0,44
Maros	1	0,44
	2	0,44
	3	0,44
Gowa	1	0,44
	2	0,44
	3	0,44
Baku sikloartan		0,44

Rumus nilai Rf = $\frac{\text{Jarak yang ditempuh noda}}{\text{Jarak yang ditempuh eluen}}$

$$\text{Baku Perbandingan} = \frac{2,4}{5,4} = 0,44$$

$$\text{Takalar}_1 = \frac{2,4}{5,4} = 0,44 \quad \text{Maros}_1 = \frac{2,4}{5,4} = 0,44$$

$$\text{Takalar}_2 = \frac{2,4}{5,4} = 0,44 \quad \text{Maros}_2 = \frac{2,4}{5,4} = 0,44$$

$$\text{Takalar}_3 = \frac{2,4}{5,4} = 0,44 \quad \text{Maros}_3 = \frac{2,4}{5,4} = 0,44$$

$$\text{Gowa}_1 = \frac{2,4}{5,4} = 0,44$$

$$\text{Gowa}_2 = \frac{2,4}{5,4} = 0,44$$

$$\text{Gowa}_3 = \frac{2,4}{5,4} = 0,44$$

4.3 Perhitungan kadar senyawa sikloartan

Sampel	Replikasi	Luas Area	x	Kadar	Rata - rata Kadar (%b/v)	SD
Takalar	1	5156.3	0.4969	0.0994	0.0784	±0.0147
	2	5191.1	0.5047	0.1009		
	3	4481.8	0.3453	0.0691		
Maros	1	8022.6	1.1408	0.1141	0.0513	±0.0168
	2	7366.4	0.9934	0.0993		
	3	6211.0	0.7338	0.0734		
Gowa	1	3456.5	0.1150	0.0115	0.0228	±0.0094
	2	4441.3	0.3362	0.0336		
	3	3707.4	0.1714	0.0171		

Persamaan linearitas $y = 4451,5x + 2944,5$

$$\% \text{ kadar} = \frac{\text{konsentrasi senyawa (x)}}{\text{Konsentrasi sampel (50 } \mu\text{g} \times 10)} \times 100\%$$

Konsentrasi sampel 50.000 ppm (50 mg dalam 1 mL)

Takalar (Dataran rendah)

Replikasi 1

$$\text{Konsentrasi sikloartan} = \frac{5156.3-2944,5}{4451,5} = 0,4969$$

$$\% \text{ kadar} = \frac{0,4969}{500} \times 100\% = 0,09\%$$

Replikasi 2

$$\text{Konsentrasi sikloartan} = \frac{5191.1-2944,5}{4451,5} = 0,5049$$

$$\% \text{ kadar} = \frac{0,1828}{500} \times 100\% = 0,10\%$$

Replikasi 3

$$\text{Konsentrasi sikloartan} = \frac{4481.8-2944,5}{4451,5} = 0,3453$$

$$\% \text{ kadar} = \frac{0,3453}{500} \times 100\% = 0,06\%$$

$$\text{Rata-rata Kadar} = 0,07\%$$

$$\text{SD} = \sqrt{\frac{\sum (x-x_i)^2}{n-1}} = \pm 0,0147$$

Konsentrasi sampel 100.000 (100 mg dalam 1 mL)

Maros (Daratan sedang)

Replikasi 1

$$\text{Konsentrasi sikloartan} = \frac{8022.6-2944,5}{4451,5} = 1,1408$$

$$\% \text{ kadar} = \frac{1,1408}{1000} \times 100\% = 0,11\%$$

Replikasi 2

$$\text{Konsentrasi sikloartan} = \frac{7366.4-2944,5}{4451,5} = 0,9934$$

$$\% \text{ kadar} = \frac{0,9934}{1000} \times 100\% = 0,09\%$$

Replikasi 3

$$\text{Konsentrasi sikloartan} = \frac{6211.0-2944,5}{4451,5} = 0,7338$$

$$\% \text{ kadar} = \frac{0,7338}{1000} \times 100\% = 0,07\%$$

$$\text{Rata-rata Kadar} = 0,05\%$$

$$\text{SD} = \sqrt{\frac{\sum(X-X_i)^2}{n-1}}$$

$$= \pm 0,0168$$

Gowa (Dataran tinggi)**Replikasi 1**

$$\text{Konsentrasi sikloartan} = \frac{3456.5-2944,5}{4451,5} = 0,1150$$

$$\% \text{ kadar} = \frac{0,1150}{1000} \times 100\% = 0,01\%$$

Replikasi 2

$$\text{Konsentrasi sikloartan} = \frac{4441.3-2944,5}{4451,5} = 0,3362$$

$$\% \text{ kadar} = \frac{0,3362}{1000} \times 100\% = 0,03\%$$

Replikasi 3

$$\text{Konsentrasi sikloartan} = \frac{3707.4-2944,5}{4451,5} = 0,1714$$

$$\% \text{ kadar} = \frac{0,1714}{1000} \times 100\% = 0,01\%$$

$$\text{Rata-rata Kadar} = 0,02\%$$

$$\text{SD} = \sqrt{\frac{\sum(X-X_i)^2}{n-1}}$$

$$= \pm 0,0094$$

4.4 Perhitungan LOD dan LOQ

Jumlah totalan	AUC	Xi	X - Xi	(X-Xi)2
2	3588.4	3834.8	-246.4	60712.96
4	3906	4725.1	-819.1	670924.81
8	7147.6	6505.7	641.9	412035.61
16	10999.5	10066.9	932.6	869742.76
32	16680.4	17189.3	-508.9	258979.21
			Jumlah	2272395.4

$$\begin{aligned}
 S_y &= \sqrt{\frac{\sum(X-X_i)^2}{n-2}} \\
 &= \sqrt{\frac{2272395.4}{3}} \\
 &= 870,324
 \end{aligned}$$

$$\begin{aligned}
 \text{LOD} &= \frac{3 \times S_y}{a} \\
 &= \frac{3 \times 870,324}{4451,5} \\
 &= 0,58
 \end{aligned}$$

$$\begin{aligned}
 \text{LOQ} &= \frac{10 \times S_y}{a} \\
 &= \frac{10 \times 870,324}{4451,5} \\
 &= 1,95
 \end{aligned}$$

Dokumentasi



Gambar 2. Pengambilan sampel



Gambar 3. Pengeringan sampel



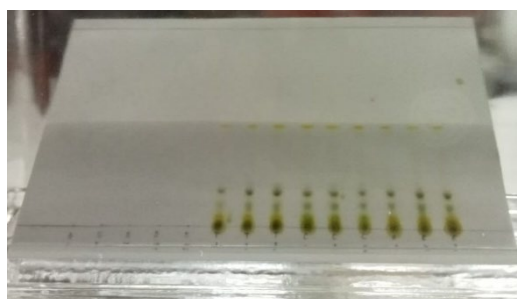
Gambar 4. Ekstraksi metode maserasi



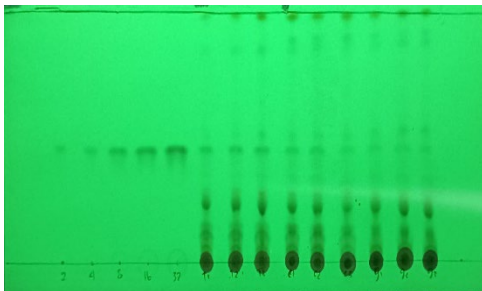
Gambar 5. Penguapan pelarut menggunakan rotary evaporator



Gambar 6. Hasil ekstrak



Gambar 9. Proses pengelusan lempeng KLT



Gambar 10. Hasil KLT



Gambar 11. Uji kuantitatif menggunakan instrument KLT densitometer

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A. Data pribadi

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3. Tamat SMA tahun 2020 di SMK SMTI Makassar

C. Pekerjaan dan Riwayat Pekerjaan

- Jenis pekerjaan : -
- NIP atau identitas lain (NIK) : -
- Pangkat/Jabatan : -

D. Karya ilmiah yang telah dipublikasikan (misalnya pada jurnal):

-

E. Makalah pada Seminar/Konferensi Ilmiah Nasional dan Internasional

-