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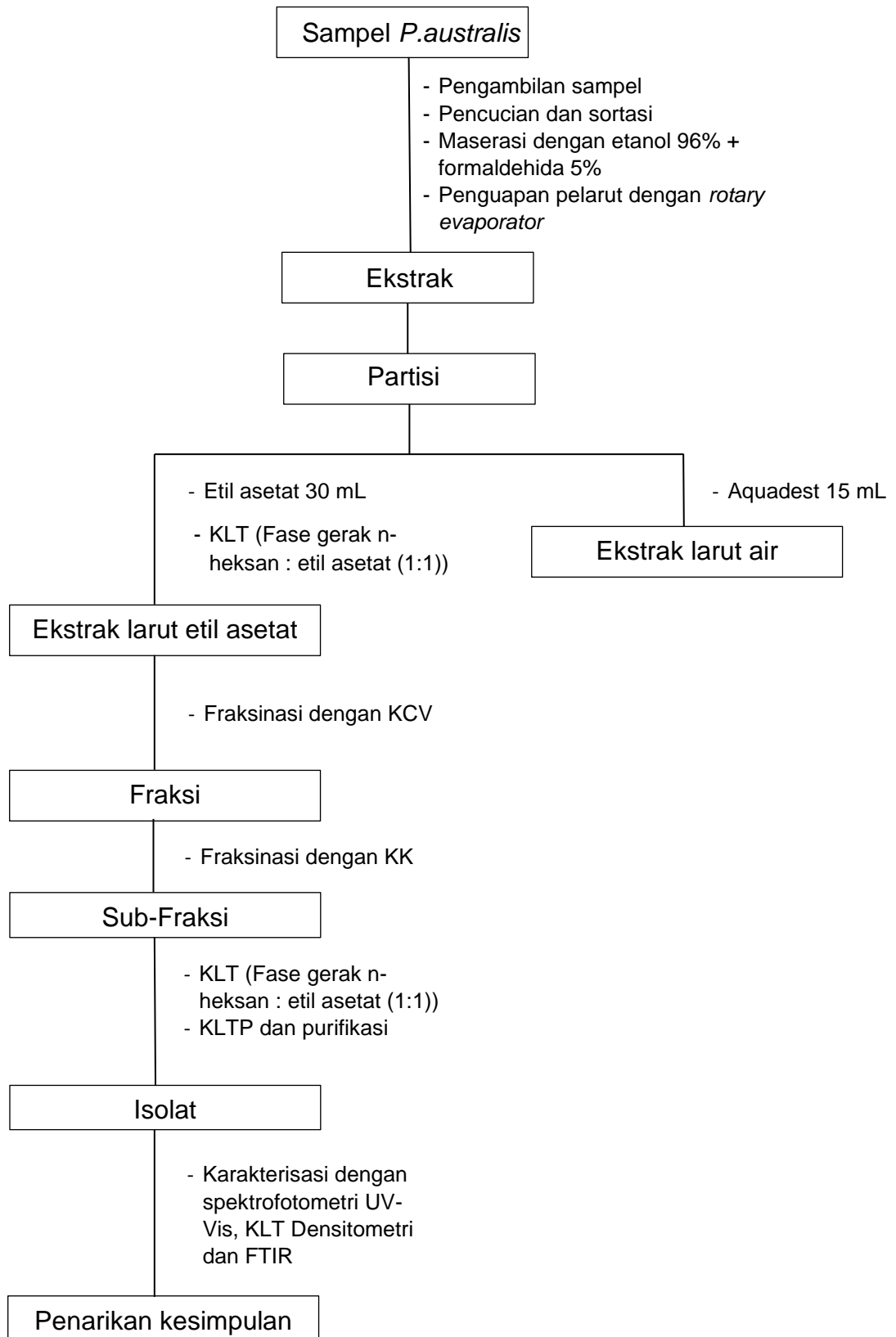
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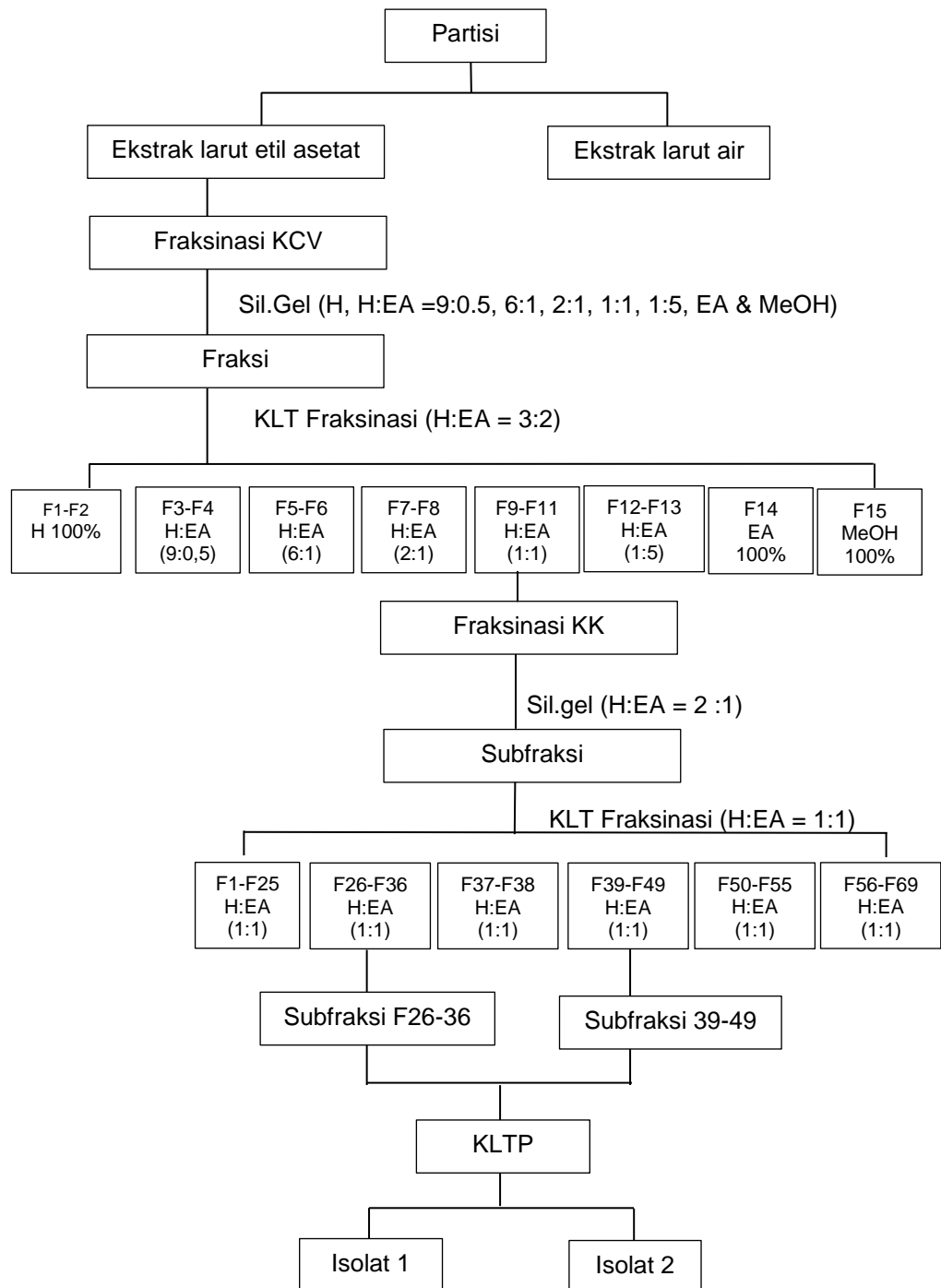
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LAMPIRAN

Lampiran 1. Skema Kerja



Lampiran 2. Skema Kerja Isolasi



Keterangan : H = n-heksana;

EA = etil asetat;

MeOH = Metanol

Lampiran 3. Dokumentasi Penelitian



Gambar 21. Sampel *Padina australis*



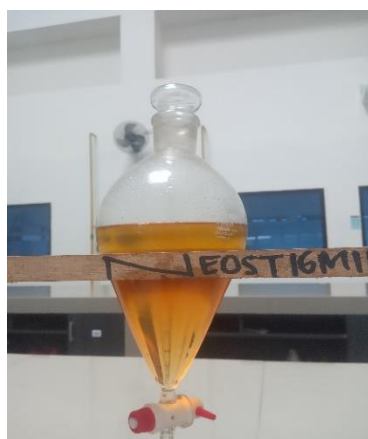
Gambar 22. Proses maserasi



Gambar 23. Proses penyaringan ekstrak



Gambar 24. Proses penguapan pelarut



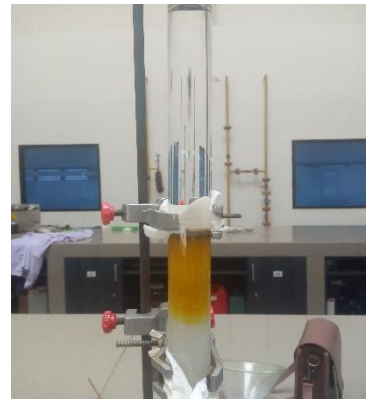
Gambar 25. Proses partisi ekstrak (ECC)



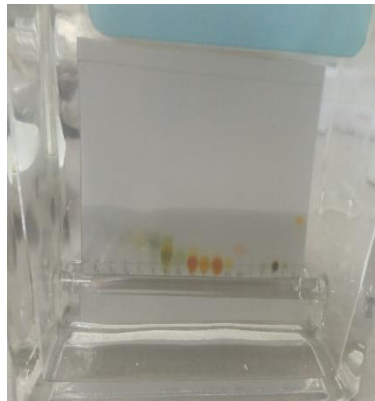
Gambar 26. Identifikasi dengan metode KLT



Gambar 27. Proses fraksinasi metode KCV



Gambar 28. Proses fraksinasi metode KK



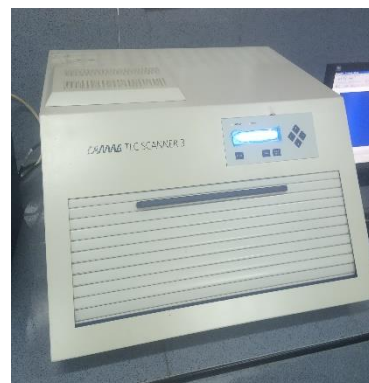
Gambar 29. KLT Fraksinasi



Gambar 30. Proses KLTP



Gambar 31. Pengukuran dengan spektrofotometri UV-Vis

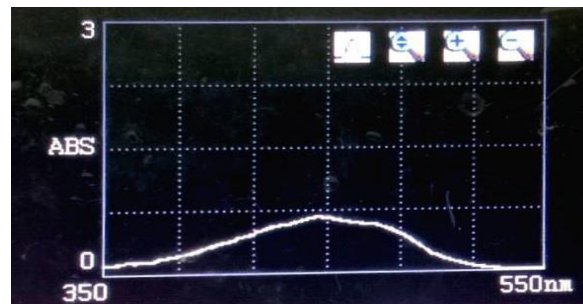


Gambar 32. Pengukuran luas area dengan KLT Densitometri

Lampiran 4. Hasil Spektrofotometri UV-Vis

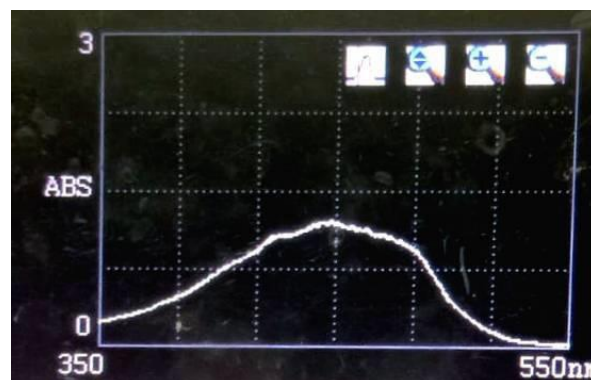
Baku *Fucoxanthin* (Sigma Aldrich®)

Peak			Valley		
ID	WL (nm)	ABS	ID	WL (nm)	ABS
1	447.0	0.668	1	470.0	0.565
2	470.4	0.572	2	525.2	0.022



Isolat *Fucoxanthin*

Peak			Valley		
ID	WL (nm)	ABS	ID	WL (nm)	ABS
1	449.8	1.200	1	467.4	1.065
2	470.8	1.086	2	526.2	0.065



Lampiran 5. Perhitungan nilai Rf**Isolat *Fucoxanthin* (Fase gerak n-heksana : etil asetat) (1:1)**

$$R_f = \frac{\text{Jarak yang ditempuh noda isolat}}{\text{jarak yang ditempuh fase gerak}}$$

$$R_f = \frac{5,1}{8} = 0,637$$

Baku *fucoxanthin* (fase gerak n-heksana : etil asetat) (1:1)

$$R_f = \frac{\text{Jarak yang ditempuh noda isolat}}{\text{jarak yang ditempuh fase gerak}}$$

$$R_f = \frac{5,1}{8} = 0,637$$

Isolat 2 (fase gerak petroleum eter : etil eter : aseton) (15:3:2)

$$R_f = \frac{\text{Jarak yang ditempuh noda isolat}}{\text{jarak yang ditempuh fase gerak}}$$

$$R_f = \frac{1,5}{5,9} = 0,25$$

Baku *astaxanthin* (fase gerak petroleum eter : etil eter : aseton) (15:3:2)

$$R_f = \frac{\text{Jarak yang ditempuh noda isolat}}{\text{jarak yang ditempuh fase gerak}}$$

$$R_f = \frac{1,3}{5,9} = 0,22$$

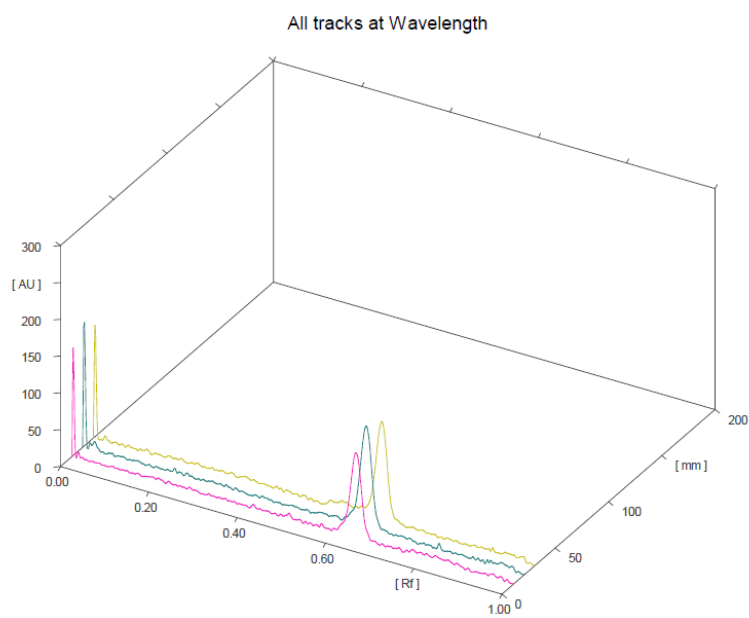
Lampiran 6. Hasil Karakterisasi KLT Densitometri

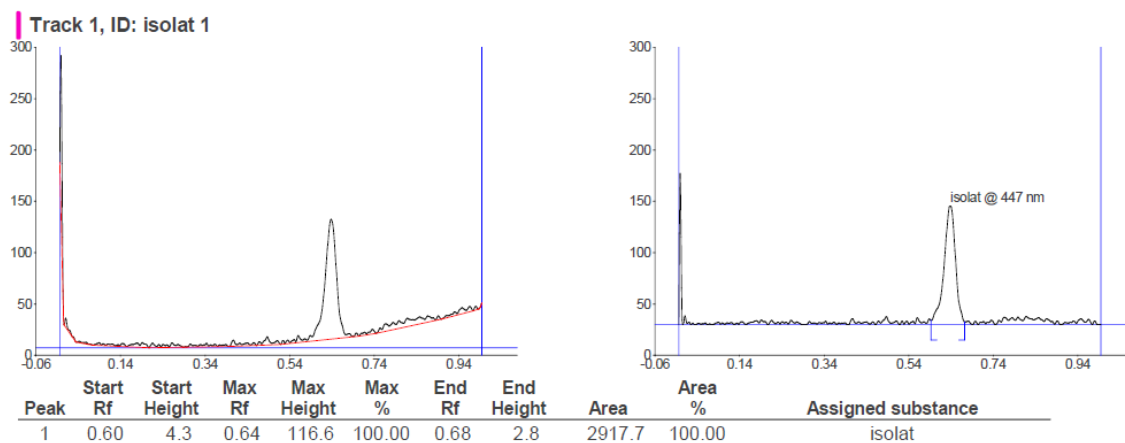
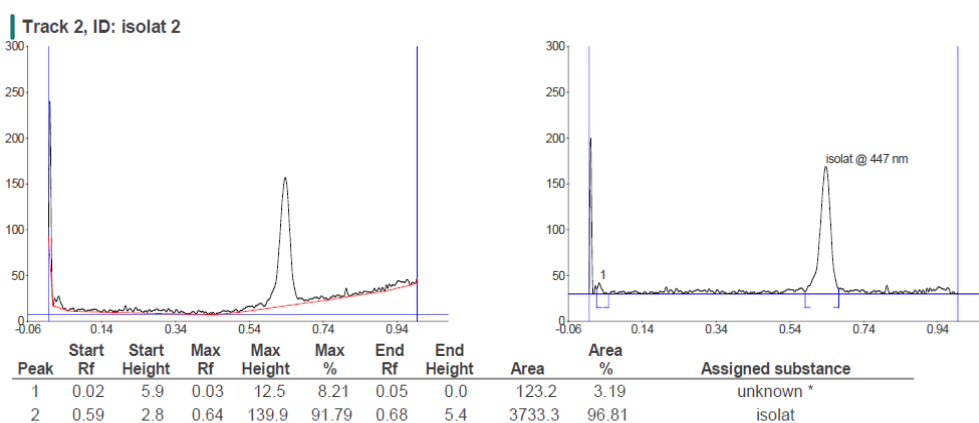
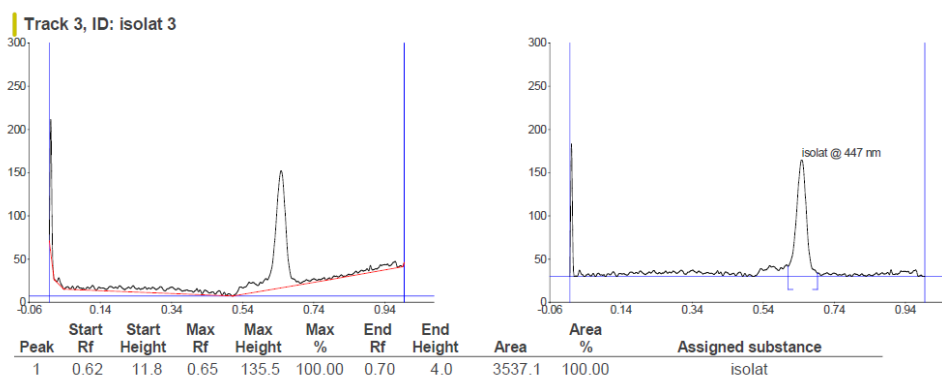
Isolat *Fucoxanthin*

Tabel 9. Konsentrasi Baku *fucoxanthin* vs luas area

Konsentrasi (ppm)	Luas Area
5	1206,9
10	2397,7
15	6092,4
20	7634,7
25	8358,8

Densitogram isolat *fucoxanthin*



Kromatogram Isolat *fucoxanthin* IKromatogram isolat *fucoxanthin* IIKromatogram isolat *fucoxanthin* III

Perhitungan Persentase Jumlah Fucoxanthin dalam ekstrak *P.australis*

$$y = 390,82x - 724,14$$

Luas area Isolat *Fucoxanthin* I = 2917,7

$$2917,7 = 390,82x - 724,14$$

$$x = \frac{2917,7 + 724,14}{390,82}$$

$$x = 9,3184$$

$$\begin{aligned} \text{Persentase jumlah fucoxanthin} &= \frac{x}{\text{Jumlah sampel (ppm)}} \times 100\% \\ &= \frac{9,3184}{1000} \times 100\% \\ &= 0,93\% \text{ b/b} \end{aligned}$$

Luas area Isolat *Fucoxanthin* II = 3733,3

$$3733,3 = 390,82x - 724,14$$

$$x = \frac{3733,3 + 724,14}{390,82}$$

$$x = 11,4053$$

$$\begin{aligned} \text{Persentase jumlah fucoxanthin} &= \frac{x}{\text{Jumlah sampel (ppm)}} \times 100\% \\ &= \frac{11,4053}{1000} \times 100\% \\ &= 1,14\% \text{ b/b} \end{aligned}$$

Luas area Isolat *Fucoxanthin* III = 3537,1

$$3537,1 = 390,82x - 724,14$$

$$x = \frac{3537,1 + 724,14}{390,82}$$

$$x = 10,9033$$

$$\begin{aligned} \text{Persentase jumlah fucoxanthin} &= \frac{x}{\text{Jumlah sampel (ppm)}} \times 100\% \\ &= \frac{10,9033}{1000} \times 100\% \end{aligned}$$

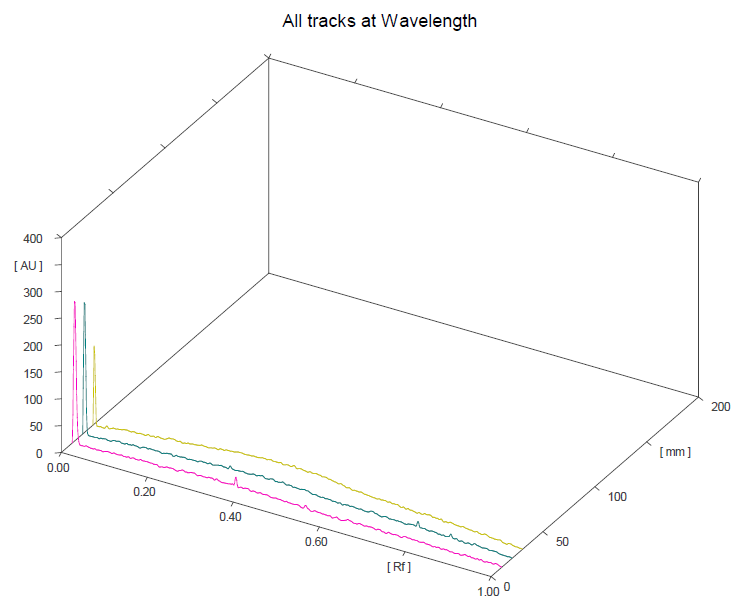
$$= 1,09\% \text{ b/b}$$

$$\bar{x} \text{ persentase jumlah fucoxanthin} = \frac{0,93+1,14+1,09}{3} = 1,05\%$$

Tabel 10. Konsentrasi baku *astaxanthin* vs luas area

Konsentrasi (ppm)	Luas Area
5	1051,4
10	2276,4
15	3740,2
20	4645,3
25	5342,7

Densitogram isolat yang diduga sebagai *astaxanthin*



Baku standar *fucoxanthin* (Sigma Aldrich®)

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Analysis Report

Method	C:\CAMAG\winCATS\Data\2023\April\Fitrah fukosantin\baku fukosantin.cme	
Created by	camag	Saturday, January 01, 2005 12:03:53 AM
Last modified by	camag	Saturday, January 01, 2005 12:08:28 AM
SOP document		
Validated	Design	
Description :		
Analysis	C:\CAMAG\winCATS\Data\2023\januarisiklo artan\20050101-213.cna	
Created/used by	camag	Saturday, January 01, 2005 12:10:04 AM
Current user	camag	

Stationary phase

Executed by	camag	Saturday, January 01, 2005 12:08:26 AM
Plate size (X x Y)	20.0 x 10.0 cm	
Material	HPTLC plates silica gel 60 F 254	
Manufacturer	E. MERCK KGaA	
Batch		
GLP code		
Pre-washing	No	
Modification	No	

Definitions - Screening

Executed by	camag	Saturday, January 01, 2005 12:08:37 AM
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Samples

Baku 5 ppm
Baku 10 ppm
Baku 15 ppm
Baku 20 ppm
Baku 25 ppm

Substance name	Rf	Window size	Manufacturer	Batch number	Expiry date	Product number
fukosantin	0.40	1.300				

Detection - CAMAG TLC Scanner 3

Information

Application position	15.0 mm
Solvent front position	93.5 mm

Instrument

Executed by	camag	Saturday, January 01, 2005 12:08:26 AM
Number of tracks	5	
Position of first track X	9.9 mm	
Distance between tracks	10.0 mm	
Scan start pos. Y	15.0 mm	
Scan end pos. Y	93.5 mm	
Slit dimensions	4.00 x 0.30 mm, Micro	
Optimize optical system	Light	
Scanning speed:	20 mm/s	
Data resolution:	100 µm/step	

User : camag
Saturday, January 01, 2005 12:10:28 AM

Approved :
Report ID : 07D5010107000A04

SN 1410W024, V1.4.3
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winCATS Planar Chromatography Manager

Measurement Table

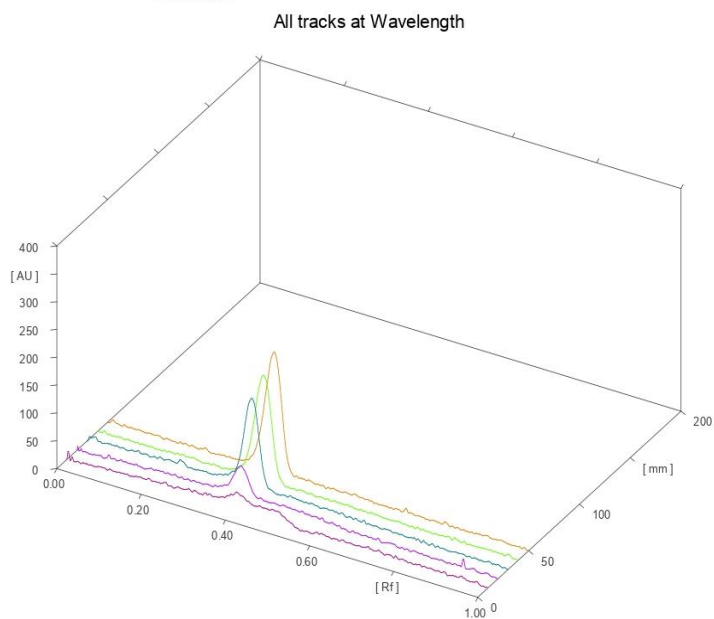
Wavelength	447
Lamp	D2 & W
Measurement Type	Remission
Measurement Mode	Absorption
Optical filter	Second order
Detector mode	Automatic
PM high voltage	349 V

Detector properties

Y-position for 0 adjust	15.0 mm
Track # for 0 adjust	0
Analog Offset	10%
Sensitivity	Automatic (16)

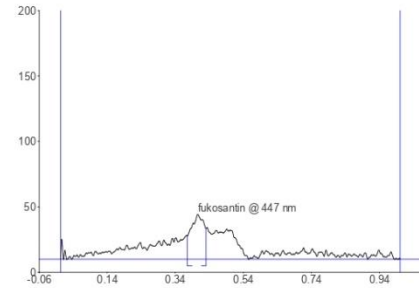
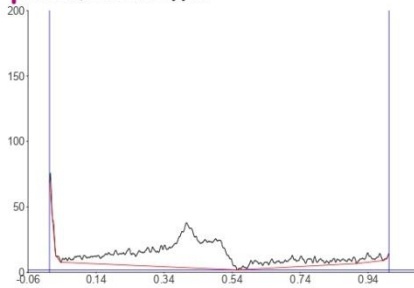
Integration**Properties**

Data filtering	Savitsky-Golay 7
Baseline correction	Lowest Slope
Peak threshold min. slope	5
Peak threshold min. height	10 AU
Peak threshold min. area	50
Peak threshold max. height	990 AU
Track start position	15.0 mm
Track end position	93.5 mm
Display scaling	Automatic



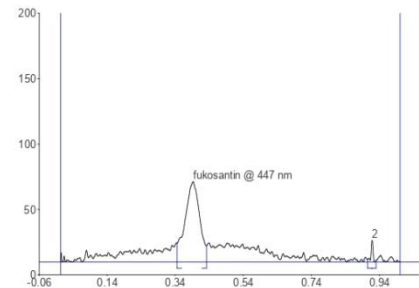
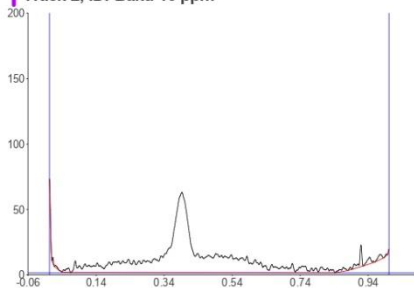
winCATS Planar Chromatography Manager

Track 1, ID: Baku 5 ppm



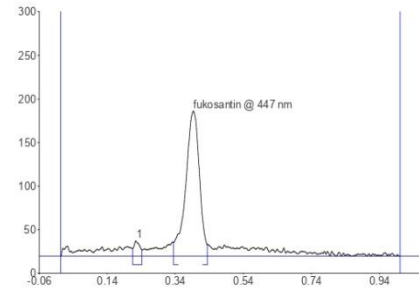
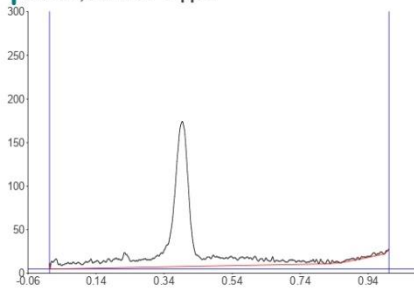
Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.37	18.0	0.40	34.4	100.00	0.43	23.7	1206.9	100.00	fukosantin

Track 2, ID: Baku 10 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.34	14.6	0.39	61.4	78.72	0.43	12.5	2397.7	96.35	fukosantin
2	0.90	1.9	0.92	16.6	21.28	0.93	1.2	90.8	3.65	unknown *

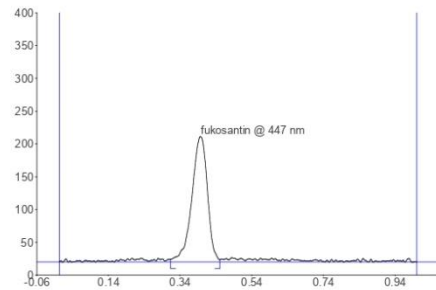
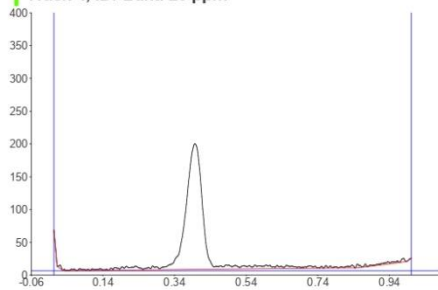
Track 3, ID: Baku 15 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.21	8.8	0.22	17.4	9.46	0.24	7.1	286.5	4.49	unknown *
2	0.33	15.7	0.39	166.6	90.54	0.43	13.3	6092.4	95.51	fukosantin

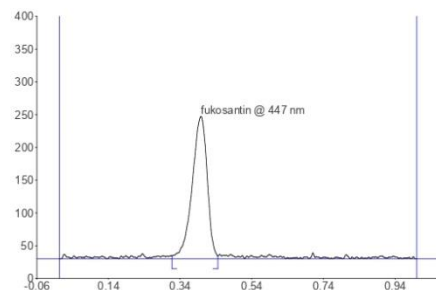
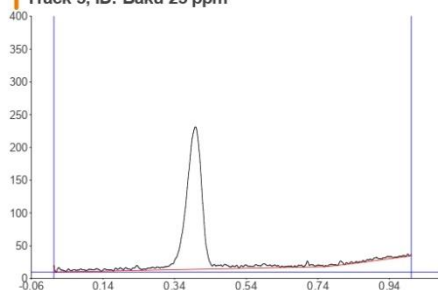
winCATS Planar Chromatography Manager

Track 4, ID: Baku 20 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.31	4.4	0.39	191.6	100.00	0.45	3.6	7634.7	100.00	fukosantin

Track 5, ID: Baku 25 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.31	4.8	0.40	217.5	100.00	0.44	4.5	8358.8	100.00	fukosantin

Spectrum scan

Executed by camag Saturday, January 01, 2005 12:10:04 AM
 Mode All detected peaks
 Slit dimensions 6.00 x 0.30 mm, Micro
 Optimize optical system Resolution
 Scanning speed 100 nm/s
 Data resolution 1 nm/step
 Reference spectrum, pos X 9.9 mm
 Reference spectrum, pos Y 15.0 mm

Measurement Table

Lamp D2 & W
 Start wavelength 400 nm
 End wavelength 700 nm
 Measurement type Remission
 Measurement Mode Absorption
 Optical filter Second order
 Detector Mode Automatic

Detector properties

Y-position for 0 adjust 0.0 mm
 Track # for 0 adjust 0
 Analog Offset 10%
 Sensitivity Automatic (18)

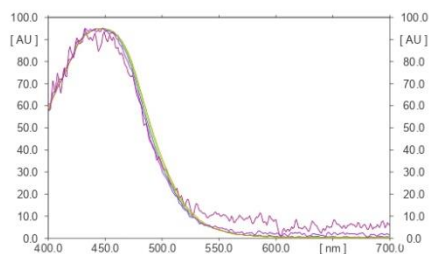
User : camag
 Saturday, January 01, 2005 12:10:28 AM

Approved :
 Report ID : 07D5010107000A04

SN 1410W024, V1.4.3
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winCATS Planar Chromatography Manager

fukosantin on all Tracks



T	Rf	Substance	Max. @
1	0.40	Rf fukosantin	432 nm
2	0.39	Rf fukosantin	448 nm
3	0.39	Rf fukosantin	448 nm
4	0.39	Rf fukosantin	449 nm
5	0.40	Rf fukosantin	448 nm

Evaluation results

Evaluation Sequence

Track	Track type	Vial	Sample ID
1	Sample	1	Baku 5 ppm
2	Sample	1	Baku 10 ppm
3	Sample	1	Baku 15 ppm
4	Sample	1	Baku 20 ppm
5	Sample	1	Baku 25 ppm

Table of substances

Substance	Position Tracks						
	MD	mm	1	2	3	4	5
fukosantin	46.1		A	A	A	A	A

Isolat 1 fucoxanthin

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Analysis Report

Method C:\CAMAG\winCATS\Data\2023\April\fitrah
fukosantin\isolat.cme
Created by camag Saturday, January 01, 2005 12:59:44 AM
Last modified by camag Saturday, January 01, 2005 1:03:01 AM
SOP document Validated Design
Description :
Analysis C:\CAMAG\winCATS\Data\2023\januari\siklo
artan\20050101-220.cna
Created/used by camag Saturday, January 01, 2005 1:05:43 AM
Current user camag

Stationary phase

Executed by camag Saturday, January 01, 2005 1:04:20 AM
Plate size (X x Y) 20.0 x 10.0 cm
Material HPTLC plates silica gel 60 F 254
Manufacturer E. MERCK KGaA
Batch
GLP code
Pre-washing No
Modification No

Definitions - Screening

Executed by camag Saturday, January 01, 2005 1:04:32 AM

Samples

isolat 1
isolat 2
isolat 3

Substance name	Rf	Window size	Manufacturer	Batch number	Expiry date	Product number
isolat	0.65	1.100				

Detection - CAMAG TLC Scanner 3

Information

Application position 14.5 mm
Solvent front position 93.5 mm

Instrument

CAMAG TLC Scanner 3 "Scanner3_140717" S/N 140717 (1.14.28)
Executed by camag Saturday, January 01, 2005 1:04:20 AM
Number of tracks 3
Position of first track X 10.9 mm
Distance between tracks 10.0 mm
Scan start pos. Y 14.5 mm
Scan end pos. Y 93.5 mm
Slit dimensions 4.00 x 0.30 mm, Micro
Optimize optical system Light
Scanning speed: 20 mm/s
Data resolution: 100 µm/step

User : camag
Saturday, January 01, 2005 1:06:00 AM

Approved :
Report ID : 07D501010701052B

SN 1410W024, V1.4.3
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winCATS Planar Chromatography Manager

Measurement Table

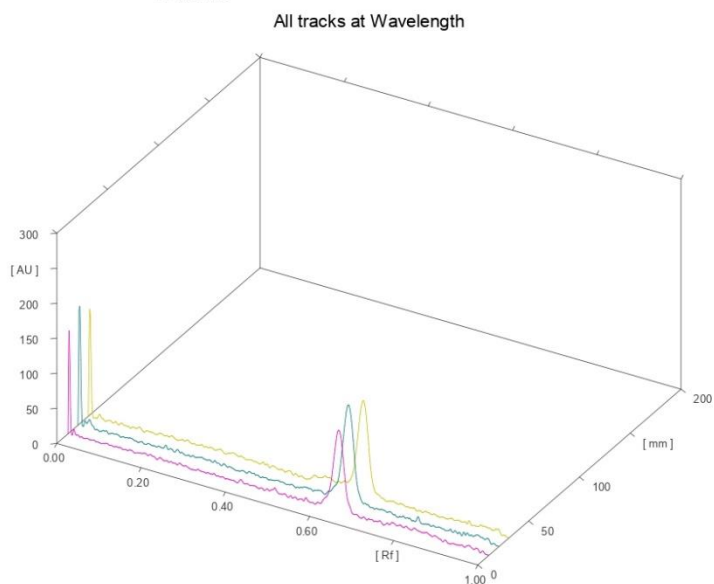
Wavelength	447
Lamp	D2 & W
Measurement Type	Remission
Measurement Mode	Absorption
Optical filter	Second order
Detector mode	Automatic
PM high voltage	352 V

Detector properties

Y-position for 0 adjust	14.5 mm
Track # for 0 adjust	0
Analog Offset	10%
Sensitivity	Automatic (16)

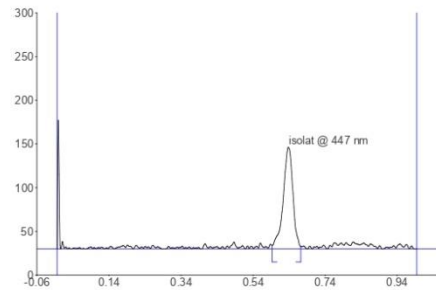
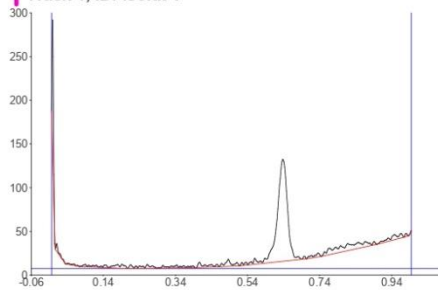
Integration**Properties**

Data filtering	Savitsky-Golay 7
Baseline correction	Lowest Slope
Peak threshold min. slope	5
Peak threshold min. height	10 AU
Peak threshold min. area	50
Peak threshold max. height	990 AU
Track start position	14.5 mm
Track end position	93.5 mm
Display scaling	Automatic



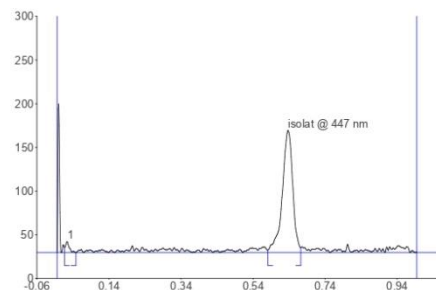
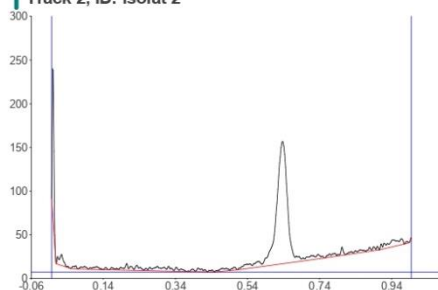
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Track 1, ID: isolat 1



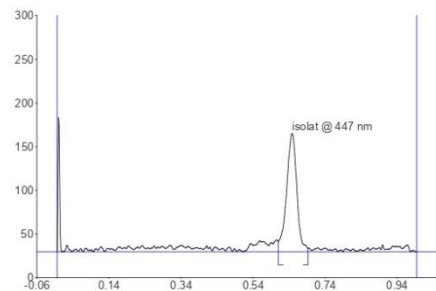
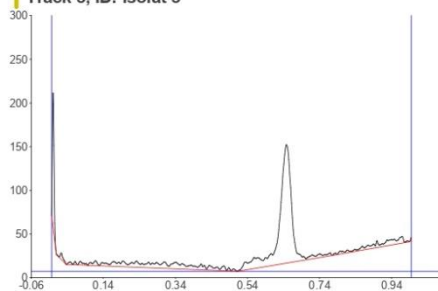
Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.60	4.3	0.64	116.6	100.00	0.68	2.8	2917.7	100.00	isolat

Track 2, ID: isolat 2



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.02	5.9	0.03	12.5	8.21	0.05	0.0	123.2	3.19	unknown *
2	0.59	2.8	0.64	139.9	91.79	0.68	5.4	3733.3	96.81	isolat

Track 3, ID: isolat 3



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.62	11.8	0.65	135.5	100.00	0.70	4.0	3537.1	100.00	isolat

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Spectrum scan

Executed by camag Saturday, January 01, 2005 1:05:43 AM
Mode All detected peaks
Slit dimensions 6.00 x 0.30 mm, Micro
Optimize optical system Resolution
Scanning speed 100 nm/s
Data resolution 1 nm/step
Reference spectrum, pos X 10.9 mm
Reference spectrum, pos Y 14.5 mm

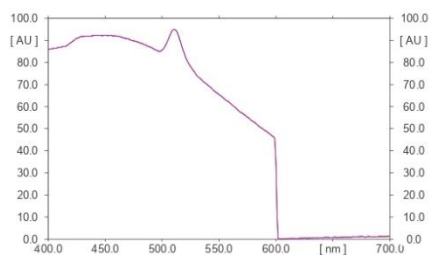
Measurement Table

Lamp D2 & W
Start wavelength 400 nm
End wavelength 700 nm
Measurement type Remission
Measurement Mode Absorption
Optical filter Second order
Detector Mode Automatic

Detector properties

Y-position for 0 adjust 0.0 mm
Track # for 0 adjust 0
Analog Offset 10%
Sensitivity Automatic (25)

isolat on all Tracks



T	Rf	Substance	Max. @
1	0.64	Rf isolat	511 nm
2	0.64	Rf isolat	511 nm
3	0.65	Rf isolat	511 nm

Evaluation results**Evaluation Sequence**

Track	Track type	Vial	Sample ID
1	Sample	1	isolat 1
2	Sample	1	isolat 2
3	Sample	1	isolat 3

Table of substances

Substance	Position Tracks		
	MD	mm	1 2 3
isolat	65.7	A	A A

Baku standar *astaxanthin* (Sigma Aldrich®)

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Analysis Report

Method C:\CAMAG\winCATS\Data\2023\April\fitrah fukosantin\baku
astasantin.cme
Created by camag Saturday, January 01, 2005 12:02:47 AM
Last modified by camag Saturday, January 01, 2005 12:04:16 AM
SOP document Validated Design
Description :
Analysis C:\CAMAG\winCATS\Data\2023\januari\siklo
artan\20050101-224.cna
Created/used by camag Saturday, January 01, 2005 12:07:30 AM
Current user camag

Stationary phase

Executed by camag Saturday, January 01, 2005 12:05:52 AM
Plate size (X x Y) 20.0 x 10.0 cm
Material HPTLC plates silica gel 60 F 254
Manufacturer E. MERCK KGaA
Batch
GLP code
Pre-washing No
Modification No

Definitions - Screening

Executed by camag Saturday, January 01, 2005 12:06:03 AM

Samples

Baku 5 ppm
Baku 10 ppm
Baku 15 ppm
Baku 20 ppm
Baku 25 ppm

Substance name	Rf	Window size	Manufacturer	Batch number	Expiry date	Product number
astasantin	0.19	1.200				

Detection - CAMAG TLC Scanner 3

Information
Application position 14.2 mm
Solvent front position 93.5 mm
Instrument CAMAG TLC Scanner 3 "Scanner3_140717" S/N 140717 (1.14.28)
Executed by camag Saturday, January 01, 2005 12:05:52 AM
Number of tracks 5
Position of first track X 10.1 mm
Distance between tracks 10.0 mm
Scan start pos. Y 14.2 mm
Scan end pos. Y 93.5 mm
Slit dimensions 4.00 x 0.30 mm, Micro
Optimize optical system Light
Scanning speed: 20 mm/s
Data resolution: 100 µm/step

User : camag
Saturday, January 01, 2005 12:09:10 AM

Approved :
Report ID : 07D501010700071E

SN 1410W024, V1.4.3
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winCATS Planar Chromatography Manager

Measurement Table

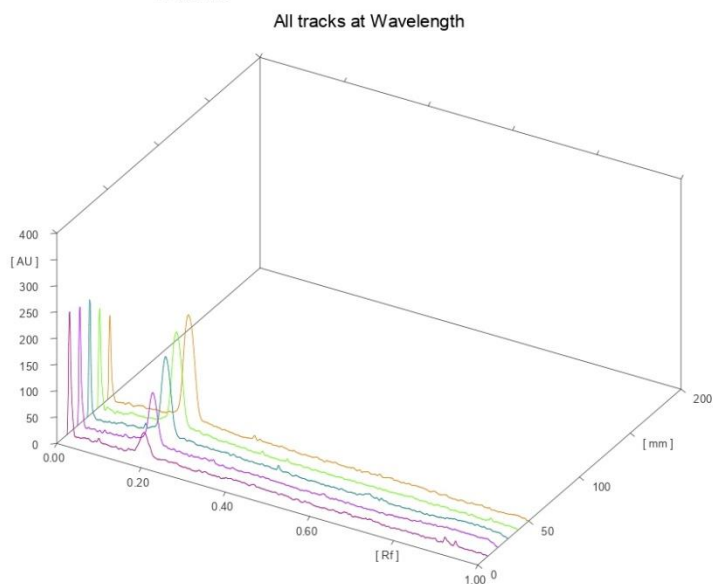
Wavelength	472
Lamp	D2 & W
Measurement Type	Remission
Measurement Mode	Absorption
Optical filter	Second order
Detector mode	Automatic
PM high voltage	337 V

Detector properties

Y-position for 0 adjust	14.2 mm
Track # for 0 adjust	0
Analog Offset	10%
Sensitivity	Automatic (16)

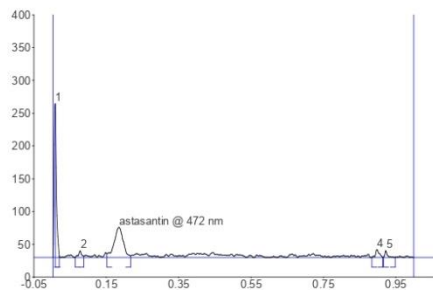
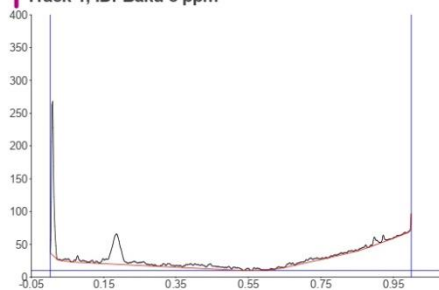
Integration**Properties**

Data filtering	Savitsky-Golay 7
Baseline correction	Lowest Slope
Peak threshold min. slope	5
Peak threshold min. height	10 AU
Peak threshold min. area	50
Peak threshold max. height	990 AU
Track start position	14.2 mm
Track end position	93.5 mm
Display scaling	Automatic



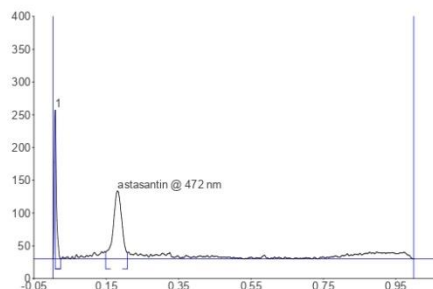
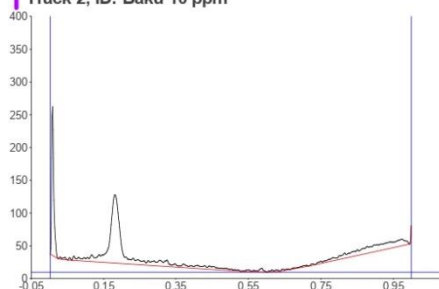
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Track 1, ID: Baku 5 ppm



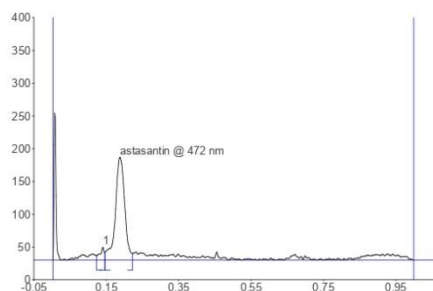
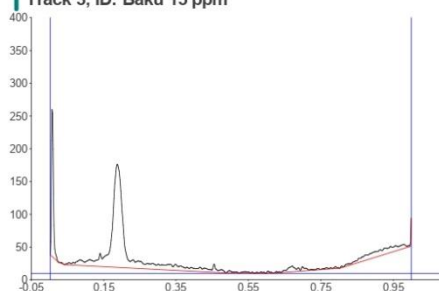
Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.01	234.6	0.01	234.6	74.85	0.02	2.1	830.6	38.73	unknown *
2	0.06	0.1	0.08	10.2	3.24	0.09	2.3	80.6	3.76	unknown *
3	0.15	5.7	0.18	46.1	14.71	0.22	2.4	1051.4	49.02	astasantin
4	0.88	0.1	0.90	12.3	3.91	0.91	1.0	113.0	5.27	unknown *
5	0.92	0.6	0.92	10.3	3.28	0.95	0.3	69.0	3.22	unknown *

Track 2, ID: Baku 10 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.01	227.2	0.01	227.2	68.55	0.02	0.2	809.5	26.23	unknown *
2	0.15	11.0	0.18	104.2	31.45	0.21	9.7	2276.4	73.77	astasantin

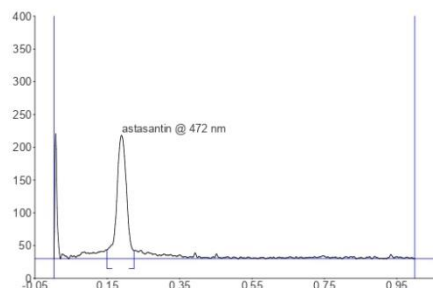
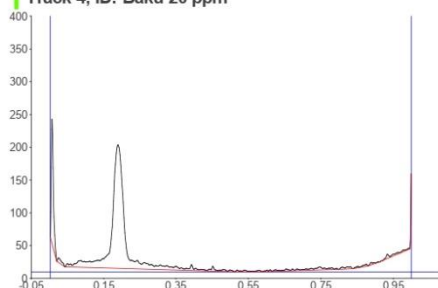
Track 3, ID: Baku 15 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.12	7.3	0.14	20.0	11.30	0.14	11.5	222.4	5.61	unknown *
2	0.15	12.1	0.19	157.1	88.70	0.22	9.8	3740.2	94.39	astasantin

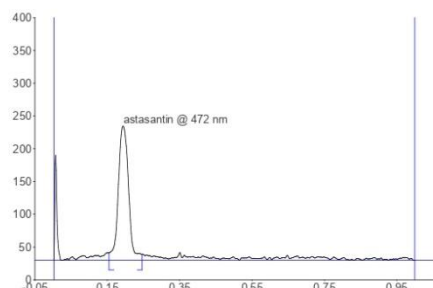
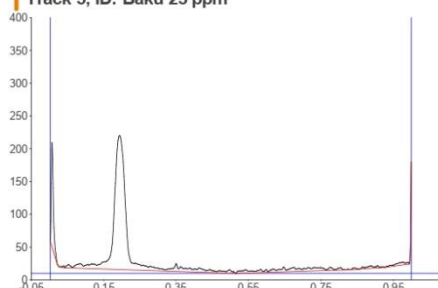
winCATS Planar Chromatography Manager

Track 4, ID: Baku 20 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.15	13.9	0.19	188.3	100.00	0.22	12.5	4645.3	100.00	astasantin

Track 5, ID: Baku 25 ppm



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.15	11.4	0.19	204.8	100.00	0.24	8.9	5342.7	100.00	astasantin

Spectrum scan

Executed by	camag	Saturday, January 01, 2005 12:07:30 AM
Mode	All detected peaks	
Slit dimensions	6.00 x 0.30 mm, Micro	
Optimize optical system	Resolution	
Scanning speed	100 nm/s	
Data resolution	1 nm/step	
Reference spectrum, pos X	10.1 mm	
Reference spectrum, pos Y	14.2 mm	

Measurement Table

Lamp	D2 & W
Start wavelength	400 nm
End wavelength	700 nm
Measurement type	Remission
Measurement Mode	Absorption
Optical filter	Second order
Detector Mode	Automatic

User : camag
Saturday, January 01, 2005 12:09:10 AM

Approved :
Report ID : 07D501010700071E

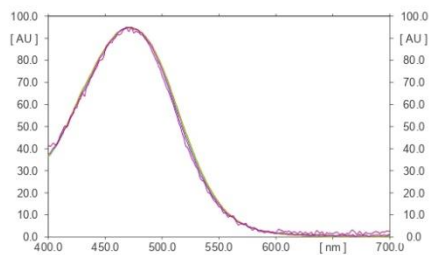
SN 1410W024, V1.4.3
Page 4 of 5

winCATS Planar Chromatography Manager

Detector properties

Y-position for 0 adjust 0.0 mm
 Track # for 0 adjust 0
 Analog Offset 10%
 Sensitivity Automatic (18)

astasantin on all Tracks



T	Rf	Substance	Max. @
1	0.18	Rf astasantin	468 nm
2	0.18	Rf astasantin	470 nm
3	0.19	Rf astasantin	473 nm
4	0.19	Rf astasantin	473 nm
5	0.19	Rf astasantin	473 nm

Evaluation results**Evaluation Sequence**

Track	Track type	Vial	Sample ID
1	Sample	1	Baku 5 ppm
2	Sample	1	Baku 10 ppm
3	Sample	1	Baku 15 ppm
4	Sample	1	Baku 20 ppm
5	Sample	1	Baku 25 ppm

Table of substances

Substance	Position Tracks					
	MD mm	1	2	3	4	5
astasantin	28.9	A	A	A	A	A

Isolat 2 (Senyawa yang diduga *astaxanthin*)

winCATS Planar Chromatography Manager

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FAKULTAS FARMASI
UNIVERSITAS HASANUDIN

Analysis Report

Method C:\CAMAG\winCATS\Data\2023\April\fitrah
fukosantin\isolat2.cme
Created by camag Saturday, January 01, 2005 1:50:21 AM
Last modified by camag Saturday, January 01, 2005 1:51:08 AM
SOP document Validated Design
Description :
Analysis C:\CAMAG\winCATS\Data\2023\januari\siklo
artan\20050101-226.cna
Created/used by camag Saturday, January 01, 2005 1:53:52 AM
Current user camag

Stationary phase

Executed by camag Saturday, January 01, 2005 1:52:31 AM
Plate size (X x Y) 20.0 x 10.0 cm
Material HPTLC plates silica gel 60 F 254
Manufacturer E. MERCK KGaA
Batch
GLP code
Pre-washing No
Modification No

Definitions - Screening

Executed by camag Saturday, January 01, 2005 1:52:52 AM

Samples

isolat 1
isolat 2
isolat 3

Substance name	Rf	Window size	Manufacturer	Batch number	Expiry date	Product number
isolat asta	0.38	0.500				

Detection - CAMAG TLC Scanner 3

Information

Application position 14.5 mm
Solvent front position 93.5 mm

Instrument

CAMAG TLC Scanner 3 "Scanner3_140717" S/N 140717 (1.14.28)
Executed by camag Saturday, January 01, 2005 1:52:31 AM
Number of tracks 3
Position of first track X 10.6 mm
Distance between tracks 10.0 mm
Scan start pos. Y 14.5 mm
Scan end pos. Y 93.5 mm
Slit dimensions 4.00 x 0.30 mm, Micro
Optimize optical system Light
Scanning speed: 20 mm/s
Data resolution: 100 µm/step

User : camag
Saturday, January 01, 2005 1:53:58 AM

Approved :
Report ID : 07D5010107013534

SN 1410W024, V1.4.3
Page 1 of 4

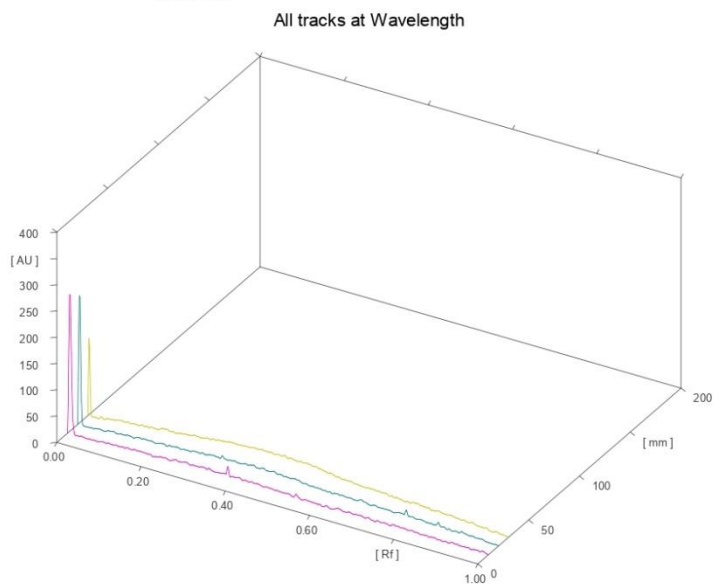
winCATS Planar Chromatography Manager

Measurement Table

Wavelength	472
Lamp	D2 & W
Measurement Type	Remission
Measurement Mode	Absorption
Optical filter	Second order
Detector mode	Automatic
PM high voltage	337 V

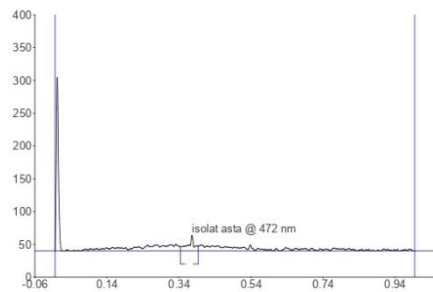
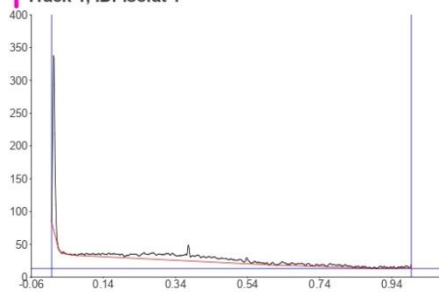
Integration**Properties**

Data filtering	Savitsky-Golay 7
Baseline correction	Lowest Slope
Peak threshold min. slope	5
Peak threshold min. height	10 AU
Peak threshold min. area	50
Peak threshold max. height	990 AU
Track start position	14.5 mm
Track end position	93.5 mm
Display scaling	Automatic



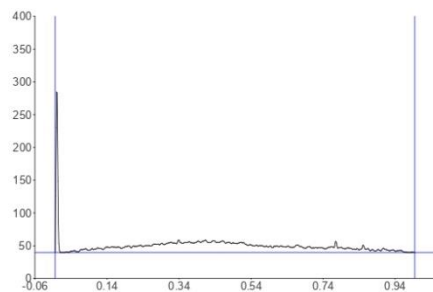
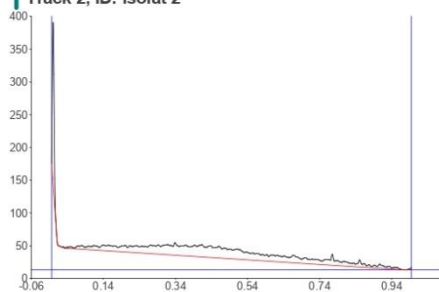
winCATS Planar Chromatography Manager

Track 1, ID: isolat 1

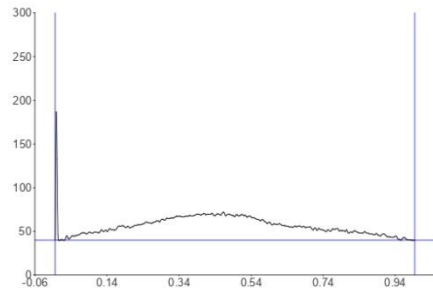
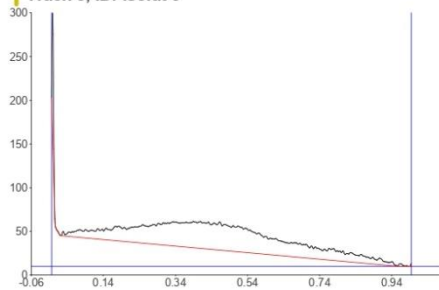


Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.35	6.5	0.38	23.8	100.00	0.40	7.2	369.7	100.00	isolat asta

Track 2, ID: isolat 2



Track 3, ID: isolat 3



Spectrum scan

Executed by	camag	Saturday, January 01, 2005 1:53:52 AM
Mode	All detected peaks	
Slit dimensions	6.00 x 0.30 mm, Micro	
Optimize optical system	Resolution	
Scanning speed	100 nm/s	
Data resolution	1 nm/step	
Reference spectrum, pos X	10.6 mm	
Reference spectrum, pos Y	14.5 mm	

User : camag
Saturday, January 01, 2005 1:53:58 AM

Approved :
Report ID : 07D5010107013534

SN 1410W024, V1.4.3
Page 3 of 4

winCATS Planar Chromatography Manager

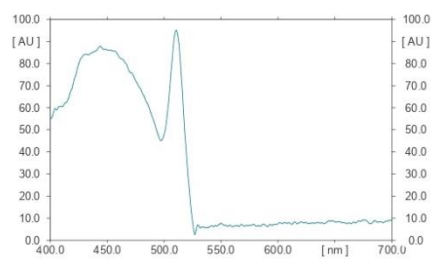
Measurement Table

Lamp	D2 & W
Start wavelength	400 nm
End wavelength	700 nm
Measurement type	Remission
Measurement Mode	Absorption
Optical filter	Second order
Detector Mode	Automatic

Detector properties

Y-position for 0 adjust	0.0 mm
Track # for 0 adjust	0
Analog Offset	10%
Sensitivity	Automatic (20)

isolat asta on all Tracks



T	Rf	Substance	Max. @
1	0.38 Rf	isolat asta	511 nm

Evaluation results**Evaluation Sequence**

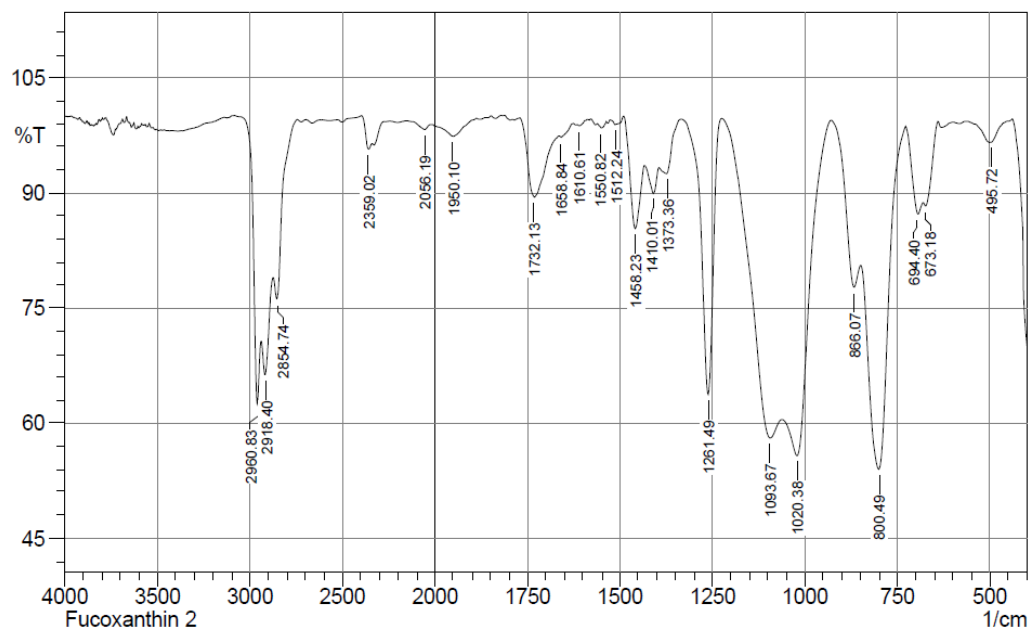
Track	Track type	Vial	Sample ID
1	Sample	1	isolat 1
2	Sample	1	isolat 2
3	Sample	1	isolat 3

Table of substances

Substance	Position Tracks		
	MD mm	1	2 3
isolat asta	44.6	A	

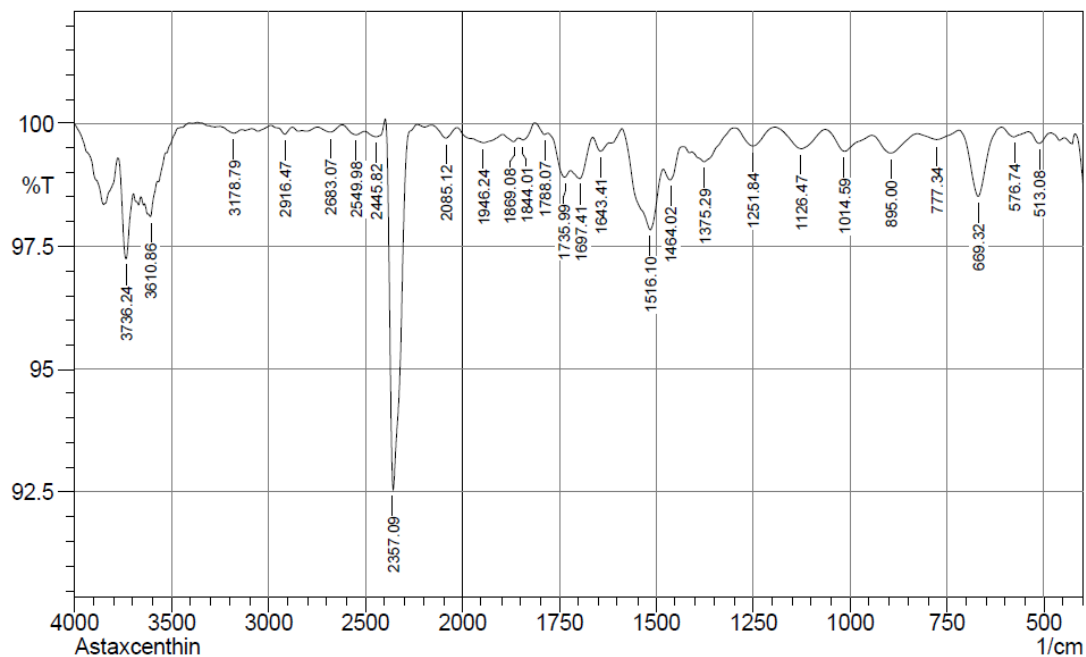
Lampiran 7. Hasil Karakterisasi Spektroskopi FTIR

Isolat 1 (*Fucoxanthin*)



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	495.72	96.621	0.124	497.65	451.36	0.36	-0.045
2	673.18	88.323	2.454	680.89	640.39	1.377	0.27
3	694.4	87.261	4.404	727.19	680.89	1.822	0.494
4	800.49	53.994	33.78	848.71	727.19	16.317	10.277
5	866.07	77.749	6.978	927.79	848.71	4.497	0.699
6	1020.38	55.765	16.584	1060.88	927.79	17.965	3.281
7	1093.67	58.069	10.26	1224.84	1060.88	19.93	1.929
8	1261.49	63.736	35.964	1332.86	1224.84	6.389	6.242
9	1373.36	92.532	1.589	1383.01	1332.86	0.842	-0.01
10	1410.01	89.934	3.511	1433.16	1394.58	1.448	0.317
11	1458.23	85.374	11.015	1491.02	1433.16	2.248	1.422
12	1512.24	98.93	0.816	1527.67	1491.02	0.118	0.084
13	1550.82	98.49	0.67	1560.46	1537.32	0.123	0.041
14	1610.61	98.765	0.264	1614.47	1595.18	0.086	0.018
15	1658.84	97.27	0.338	1662.69	1626.05	0.313	0.033
16	1732.13	89.471	9.471	1770.71	1666.55	2.762	2.134
17	1950.1	97.402	1.956	2013.75	1888.37	0.833	0.478
18	2056.19	98.282	0.767	2154.56	2025.32	0.613	0.153
19	2359.02	95.739	1.92	2397.6	2339.73	0.657	0.213
20	2854.74	76.241	5.82	2874.03	2744.8	6.017	-0.718
21	2918.4	66.334	7.044	2939.61	2874.03	9.574	1.275
22	2960.83	62.513	13.64	3053.42	2939.61	7.82	-0.759

Isolat 2 (Senyawa yang belum teridentifikasi)



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	513.08	99.597	0.227	540.09	482.22	0.071	0.027
2	576.74	99.731	0.153	609.53	540.09	0.06	0.024
3	669.32	98.517	1.377	719.47	609.53	0.314	0.265
4	777.34	99.676	0.152	825.56	719.47	0.116	0.038
5	895	99.399	0.377	943.22	825.56	0.208	0.094
6	1014.59	99.437	0.394	1064.74	943.22	0.189	0.094
7	1126.47	99.49	0.412	1193.98	1064.74	0.171	0.116
8	1251.84	99.546	0.374	1300.07	1193.98	0.12	0.083
9	1375.29	99.223	0.35	1408.08	1300.07	0.236	0.08
10	1464.02	98.853	0.386	1481.38	1433.16	0.185	0.039
11	1516.1	97.837	1.502	1589.4	1481.38	0.642	0.4
12	1643.41	99.438	0.227	1664.62	1622.19	0.083	0.021
13	1697.41	98.88	0.457	1722.49	1664.62	0.216	0.06
14	1735.99	98.91	0.312	1780.36	1722.49	0.177	0.033
15	1788.07	99.779	0.077	1813.15	1780.36	0.018	0.005
16	1844.01	99.668	0.124	1855.58	1813.15	0.04	0.014
17	1869.08	99.632	0.101	1896.09	1855.58	0.054	0.009
18	1946.24	99.612	0.221	2027.25	1896.09	0.159	0.073
19	2085.12	99.706	0.236	2158.42	2027.25	0.095	0.064
20	2357.09	92.551	7.514	2399.53	2231.71	2.037	2.064
21	2445.82	99.734	0.249	2505.62	2399.53	0.093	0.078
22	2549.98	99.775	0.119	2621.35	2505.62	0.079	0.033
23	2683.07	99.827	0.128	2748.65	2621.35	0.063	0.037
24	2916.47	99.784	0.153	2989.76	2877.89	0.057	0.029
25	3178.79	99.807	0.093	3250.16	3136.36	0.068	0.023
26	3610.86	98.11	0.208	3622.44	3572.29	0.347	0.017
27	3736.24	97.247	1.669	3778.68	3697.66	0.651	0.273



**LABORATORIUM ILMU LINGKUNGAN DAN KELAUTAN
DEPARTEMEN BIOLOGI
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS HASANUDDIN, KAMPUS TAMALANREA
JL. PERINTIS KEMERDEKAAN KM.10, MAKASSAR**

No : 062/ILK.BIO/PP.13/10/2021
Hal : Identifikasi Algae
Lamp : 1 Lembar

SURAT KETERANGAN

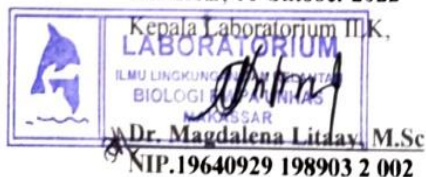
Yang bertanda tangan dibawah ini, menerangkan bahwa setelah mengkaji karakter sampel ganggang algae dan identifikasi maka terdapat tiga spesies yaitu :

Alga Coklat (Phaeophyta)

Sampel : Terima tanggal 06/10/2022
Kondisi sampel : lembab

1. Jenis : *Sargassum polycystum* C. Agardh
Diskripsi : Tanaman cukup besar, panjangnya antara 10-40 cm. Alga berwarna coklat, melekat pada substrat keras. Stipula silindris, kaku, dapat tegak sepanjang thallus. Cabang utama kaku mengeluarkan cabang sekunder tumbuh selang-seling dan pada cabang ini terdapat daun, thallus bercabang berbentuk lembaran seperti daun bergelombang, tepi daun bergerigi tidak beraturan, dengan permukaan licin dan agak kaku, dari nodus terdapat bulatan-bulatan banyak menyerupai buah. Tangkai vesikula oval, melekat banyak pada cabang tertier, tunggal atau bergerombol.
2. Jenis : *Sargassum sp.*
Diskripsi : Tanaman besar, panjang antara 20-40 cm, berwarna coklat. Bentuk daun besar. oval, dengan tepi bergerigi atau berombak dan ujung agak meruncing. Permukaan licin. Thallus silindris. Tidak memiliki organ pelekat (*holdfast*).
3. Jenis : *Padina australis* Hanch, 1887
Diskripsi : Thallus terdiri dari beberapa helaian bentuk kipas/filament berwarna coklat. Ukuran filament ini sedikit lebih besar dibandingkan jenis lain dari *Padina*. Tepi luar filament menebal dan permukaan atas filament mempunyai garis konsentris warna putih. Organ pelekat (*holdfast*) bentuk discoid.

Makassar, 10 Oktober 2022



Tembusan :
1. Arsip



LABORATORIUM ILMU LINGKUNGAN DAN KELAUTAN
DEPARTEMEN BIOLOGI
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JL. PERINTIS KEMERDEKAAN KM.10, MAKASSAR

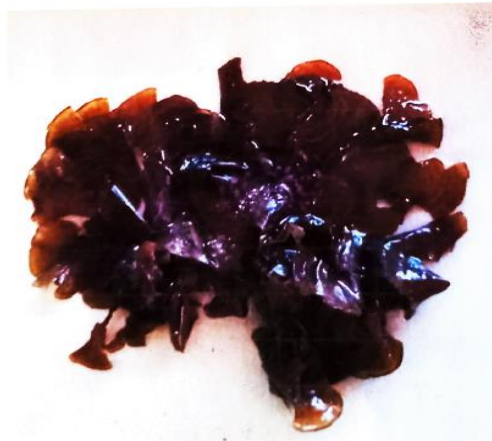
Lampiran



Gambar 1. *Sargassum polycystum* C. Agardh



Gambar 2. *Sargassum* sp.



Gambar 3. *Padina australis* Hanch, 1887