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Lampiran 1.Komposisi Medium Bold Basal

Component	*Stock Solution (g. L^{-1}. dH_2O)*	*Quantity Used (mL)*
Macronutrients		
$NaNO_3$	25.00	10
$CaCl_2.2H_2O$	2.50	10
$MgSO_4$. $7H_2O$	7.50	10
K_2HPO	7.50	10
KH_2PO_4	17.50	10
NaCl	2.50	10
Alkaline EDTA Solution		1
EDTA	50.00	
KOH	31.00	
Acidified Iron Solution		1
$FeSO_4$. $7H_2O$	4.98	
H_2SO_4		1
Boron Solution		1
H_3BO_3	11.42	
Trace Metal Solution		1
$ZnSO_4$. $7H_2O$	8.82	
$MnCl_2$. $4H_2O$	1.44	
MoO_3	0.71	
$CuSO_4$. $5H_2O$	1.57	
$Co(NO_3)_2$. $6H_2O$	0.49	

Lampiran.2 Pembuatan Medium

1. Medium Bolt Basal (BBM)

931 mL akuades steril

- Ditambah 10 mL masing-masing ($NaNO_3$ 2,5 %, K_2HPO_4 0,75%, KH_2PO_4 1,75%, $MgSO_4.7H_2O$ 0,75%, $CaCl_2.2H_2O$ 0,25 %, NaCl 0,25%).
- Ditambah 1 mL masing-masing (KOH 3,1%, $FeSO_4.7H_2O$ 0,498%, H_3BO_3 1,142%, $ZnSO_4.7H_2O$ 0,882%, $MnCl_2.7H_2O$ 0,144%, MoO_3 0,017%, $CuSO_4.5H_2O$ 0,157 %, $Co(NO_3)_2.6\ H_2O$ 0,049%, Na_2EDTA 5%)

1000 mL campuran

- Diautoklav pada suhu 121^oC selama 15 menit

Medium Bolt Basal

Lampiran 3.Analisis β-karoten menggunakan *High Performance Liquid Chromatography* (HPLC)

Standar β-karoten

- ditimbang sebanyak 0,0006 g
- Dilarutkan dalam diklorometan : metanol 25:75 v/v pada labu ukur 10 mL

Larutan standar 0,06 mg/mL

Instrumen HPLC

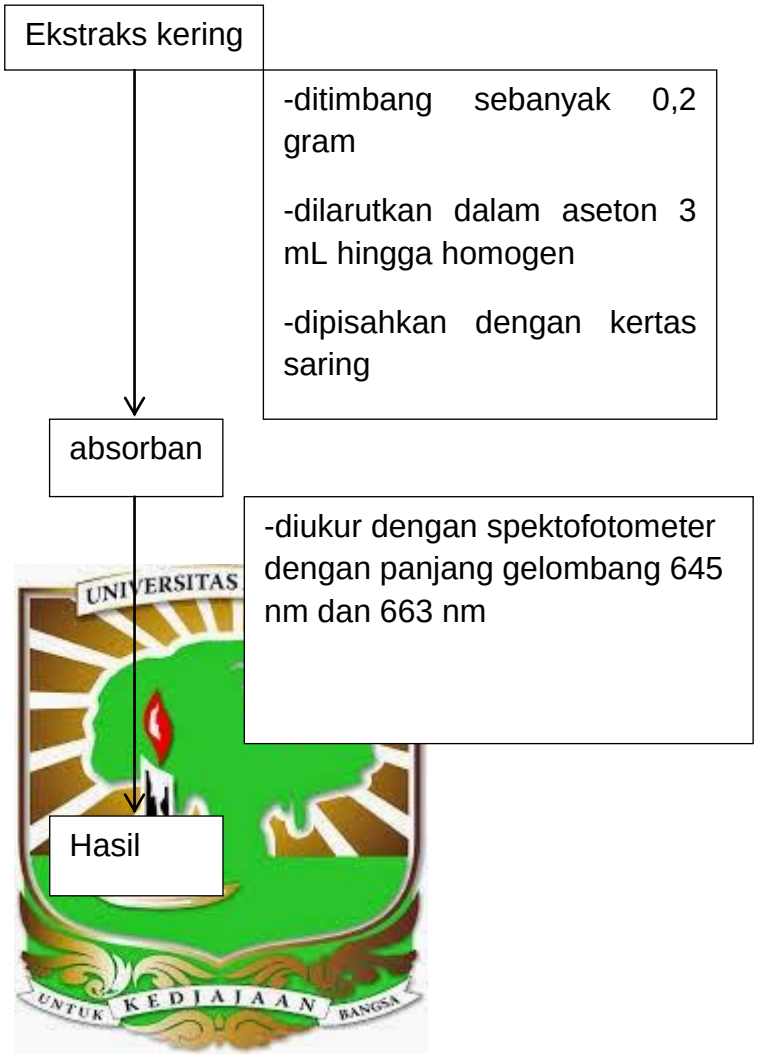
- Dipersiapkan kolom HPLC dengan laju alir 1 mL/min, suhu 25^{o}C, λ 450, fasa gerak diklorometan : asetonitril : metanol (20:70:10 v/v/v)

Larutan standar dan sampel

- Diinjeksikan sebanyak 0,1 mL

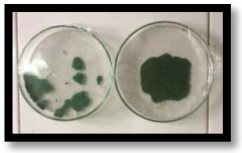
Luas area standar dan sampel

Lampiran 4. Skema Kerja Penentuan Kadar Total Klorofil



Lampiran 5. Kondisi kultur dari keempat mikroalga

Lampiran 6. Ekstraks β-karoten dari *Scenedesmuss* dan *Chlorella* untuk pengujian kandungan β-karoten menggunakan HPLC



Ekstraks biomassa kering

Ekstrak biomassa dengan diklorometan: metanol 25:75 v/v)

Dilakukan pengujian β-karoten dengan HPLC

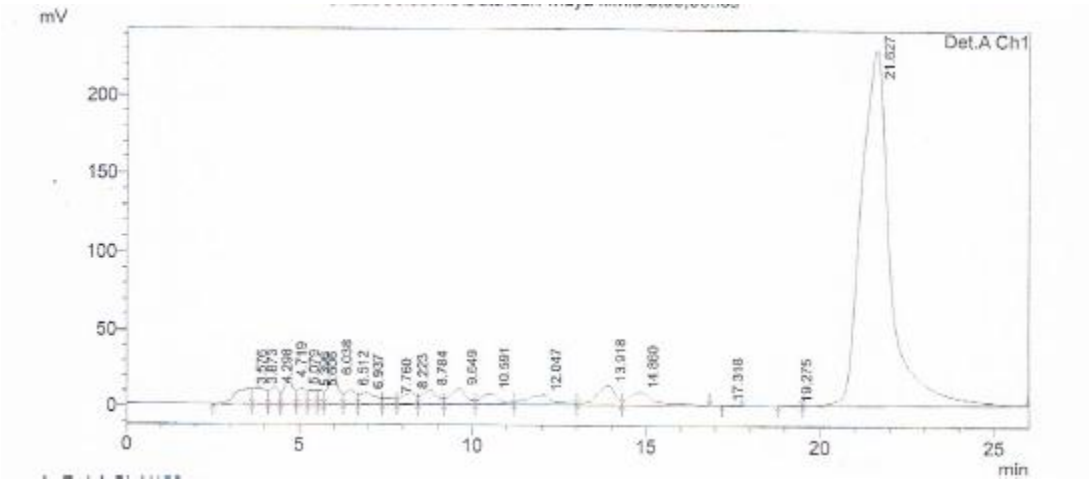
Dengan pelarut diklorometan: metanol 25:75 v/v diekstrak dengan cara sentrifus

Lampiran.7 Laju pertumbuhan dari kedua spesies mikroalga *Scenedesmus* dan *Chlorella*

Hari	Densitas sel *Scenedesmus*	Densitas sel *Chlorella*
1	0,273	0,312
2	0,524	0,554
3	0,827	0,864
4	0,867	1.141
5	1.246	1.197
6	1.567	1.533
7	1.986	1.787
8	2.368	2.276
9	2.782	2.793
10	2.344	3.119
11	2.334	3.003
12	2.816	2.781
13	1.648	2.357

Lampiran 8. Kromatogram pengujian β-karoten dengan HPLC

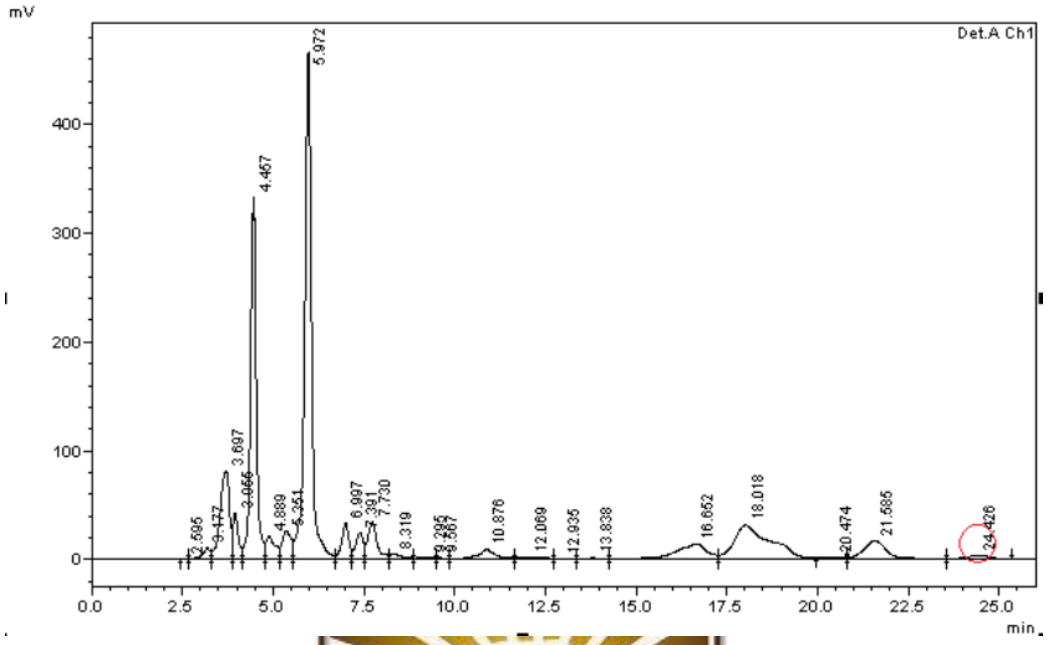
a. Kromatogram standar β-karoten



Detector A Ch1 450nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	3.324	271060	7927	4.906	4.853
2	3.542	146890	7107	2.658	4.351
3	3.974	126631	6177	2.292	3.782
4	4.416	142094	5973	2.572	3.657
5	4.711	53661	5415	0.971	3.315
6	4.921	122058	5605	2.209	3.431
7	5.550	170558	5753	3.087	3.522
8	6.252	220948	5286	3.999	3.236
9	6.725	90047	3706	1.630	2.269
10	7.143	110801	2956	2.005	1.810
11	8.146	64080	2437	1.160	1.492
12	8.741	149188	3354	2.700	2.053
13	9.186	39259	2958	0.710	1.811
14	9.608	66276	3583	1.199	2.193
15	9.803	111222	3720	2.013	2.277
16	10.867	210004	3660	3.801	2.241
17	11.978	29367	1626	0.531	0.996
18	12.364	65644	2263	1.188	1.385
19	13.387	143302	3271	2.593	2.002
20	14.006	65077	2205	1.178	1.350
21	15.054	106261	2605	1.923	1.595
22	15.775	2999	259	0.054	0.159
23	15.925	4339	232	0.079	0.142
24	19.366	1554630	37448	28.135	22.925
25	21.795	1459203	37820	26.408	23.153
Total		5525599	163346	100.000	100.000

b. Kromatogram sampel*Scenedesmuss*

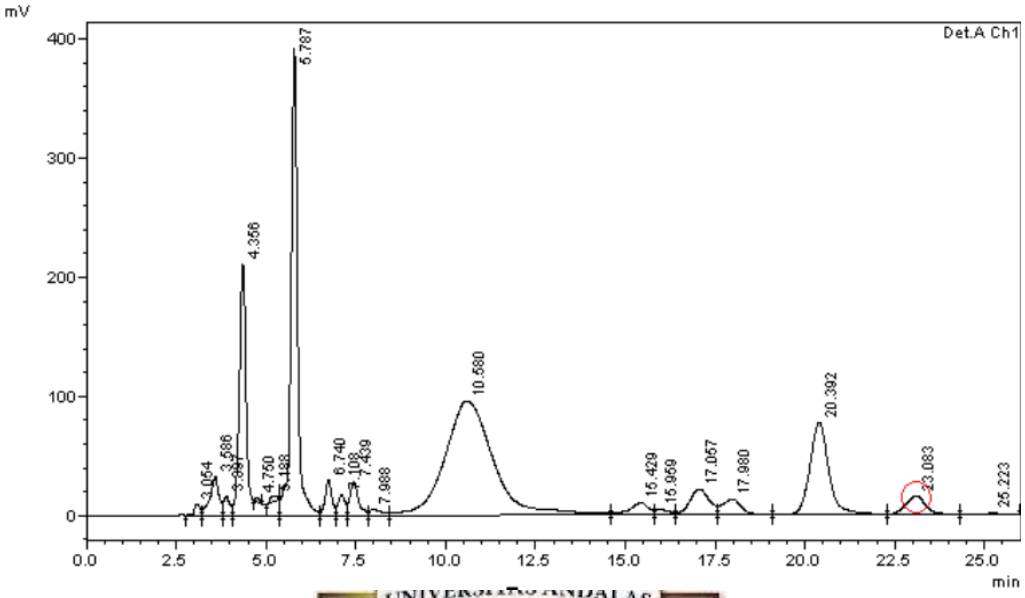


PeakTable

Detector A Ch1 450nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.595	1718	292	0.009	0.025
2	3.177	155110	11289	0.827	0.975
3	3.697	1448099	81731	7.719	7.057
4	3.955	434902	42215	2.318	3.645
5	4.457	3691538	332440	19.679	28.703
6	4.889	380377	21129	2.028	1.824
7	5.351	465732	26107	2.483	2.254
8	5.972	6218133	466661	33.147	40.292
9	6.997	459304	32971	2.448	2.847
10	7.391	359034	24751	1.914	2.137
11	7.730	604165	34356	3.221	2.966
12	8.319	117114	4705	0.624	0.406
13	9.295	41106	1219	0.219	0.105
14	9.567	17542	975	0.094	0.084
15	10.876	310824	8872	1.657	0.766
16	12.069	84761	1918	0.452	0.166
17	12.935	25176	775	0.134	0.067
18	13.838	36087	854	0.192	0.074
19	16.652	819439	13912	4.368	1.201
20	18.018	2229689	30892	11.886	2.667
21	20.474	13266	521	0.071	0.045
22	21.585	720487	16604	3.841	1.434
23	24.426	125565	3002	0.669	0.259
Total		18759169	1158189	100.000	100.000

c. Sampel *Chlorella*



PeakTable

Detector A Ch1 450nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.640	3386	256	0.014	0.026
2	3.054	107552	9515	0.435	0.962
3	3.586	562072	32677	2.273	3.302
4	3.897	188447	15736	0.762	1.590
5	4.356	3201157	210715	12.946	21.295
6	4.750	23742	3142	0.096	0.317
7	5.188	68200	5526	0.276	0.558
8	5.787	4972393	391347	20.110	39.550
9	6.740	375363	28984	1.518	2.929
10	7.108	230974	17347	0.934	1.753
11	7.439	470696	28334	1.904	2.864
12	7.988	119018	4476	0.481	0.452
13	10.580	8960943	95923	36.241	9.694
14	12.983	2912	87	0.012	0.009
15	15.429	376864	10652	1.524	1.077
16	15.959	133520	4720	0.540	0.477
17	17.057	829897	21539	3.356	2.177
18	17.980	500283	13580	2.023	1.372
19	20.392	2892474	77983	11.698	7.881
20	23.083	638454	15765	2.582	1.593
21	25.223	67947	1193	0.275	0.121
Total		24726294	989495	100.000	100.000

Lampiran 9. Perhitungan Kadar Total Klorofil

Jenis mikroalga	Λ 665 nm	Λ 650 nm
Scenedesmuss	2,559	2,003
Chlorella	2,447	1,589

Klorofil A (mg/g) = 16,5 A_{665}– 8,3 A_{650}

Klorofil B (mg/g) = 33,8 A_{650} – 12,5 A_{665}

a. *Scenedesmuss*

Klorofil A = (16,5 x 2,559) – (8,3 x 2,003)

= 42,2235 – 16,6249

= 25,5986

Klorofil B = (33,8 x 2,003) – (12,5 x 2,559)

= 67,7014 – 31,9875

= 35,7139

b. *Chlorella*

Klorofil A = (16,5 x 2,447) – (8,3 x 1,589)

= 40,3755 – 13,1887

= 27,1868

Klorofil B = (33,8 x 1,589) – (12,5 x 2,447)

= 53,7082 – 30,5875

= 23,1207

Total Klorofil

a. *Scenesedmus sp*

Klorofil A + B = 25,5986 + 35,7139

= 61,3125

b. *Chlorella sp*

Klorofil A + B = 27,1868 + 23,1207

= 50,3075

Lampiran 10. Perhitungan Konsentrasi Standar β-karoten

a. Pembuatan larutan standar induk

Massa standar β-karoten = 6 mg

Volume pelarut = 10 mL

Konsentrasi (mg/mL) = $\frac{6\ \text{mg}}{10\ \text{mL}}$

b. Konsentrasi β-karoten dari *Scenedesmuss*

$$\frac{Luas\ Area\ sampel}{Luas\ Area\ Standar}\ xkonsentrasi\ standar\ (\frac{mg}{mL})$$

$$\frac{125565}{1459203}\ x0{,}06\ (\frac{mg}{mL})$$

$$0{,}005\frac{mg}{mL}$$

c. Konsentrasi β-karoten dari *Chlorella*

$$\frac{Luas\ Area\ sampel}{Luas\ Area\ Standar}\ xkonsentrasi\ standar\ (\frac{mg}{mL})$$

$$\frac{638454}{1459203} x\ 0{,}06\ mg/mL$$

0,002 mg/mL

BIODATA PENULIS

DATA PRIBADI

Nama Lengkap	: RISSARIFANI
Tempat dan Tanggal Lahir	:Bukittinggi 28 februari 1994
Jenis Kelamin	: Perempuan
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Asal SMA	: SMAN 2 Bukittinggi
Orang Tua	
Nama Ayah	: Khairul
Pekerjaan	: Pensiunan
Nama Ibu	: Masriyetti
Pekerjaan	: Pegawai Negri Sipil
Anak Ke	: 3
Alamat Rumah	: Jl. Raya Bukittinggi Medan km 4 kecamatan Tilatang Kamang Nagari Aro Kandikir Parit Baru Gadut
Email	: rissarifaniisa@ymail.com
Visi Hidup	:Jangan pernah terpuruk dari satu kegagalan, bangkitlah karna kegagalan itu lah yang akan menjadikan motivasi hidup yang lebih baik.