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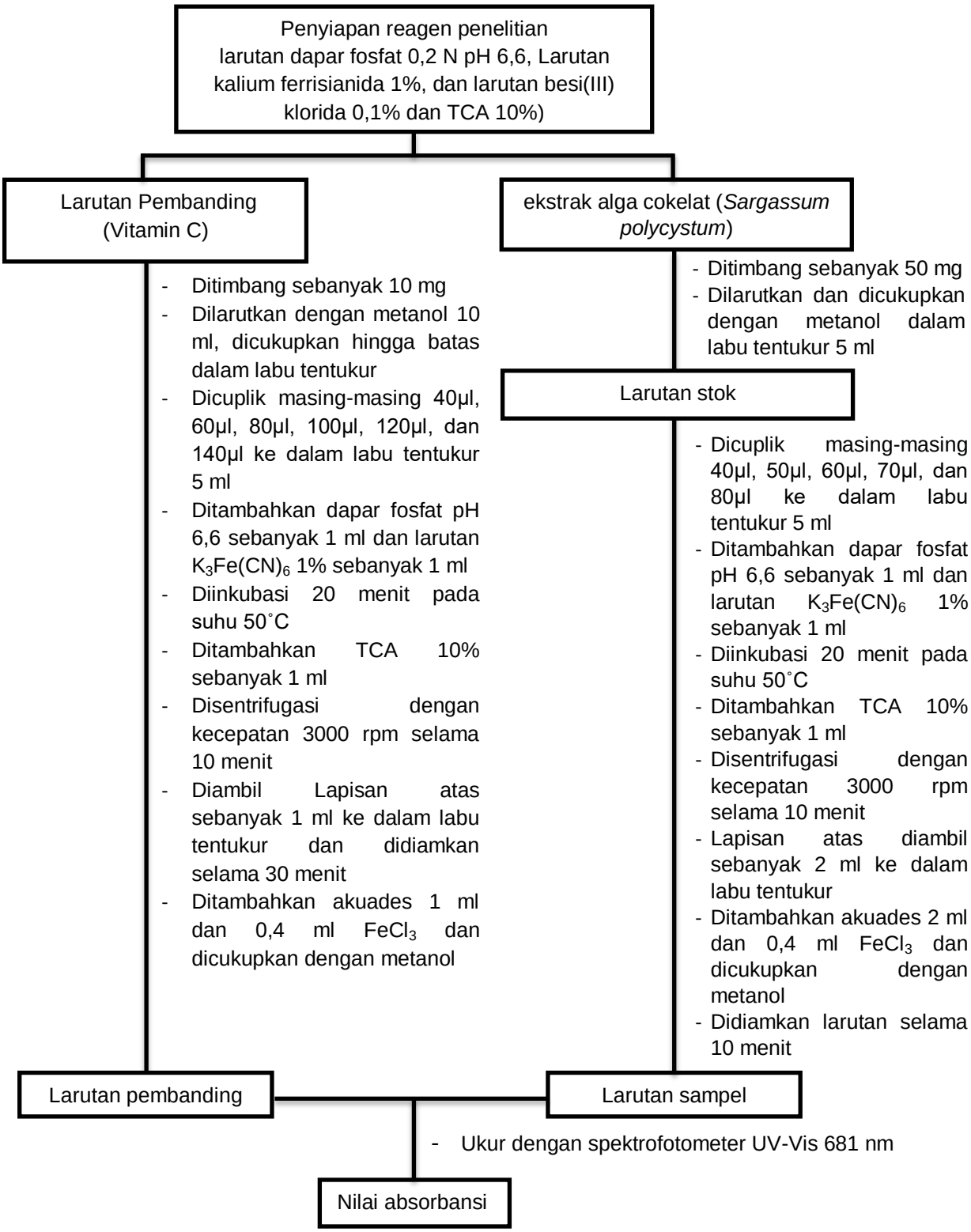
LAMPIRAN

Lampiran 1. Skema Kerja Uji aktivitas antioksidan dengan metode *Ferric Reducing Antioxidant Power* (FRAP)



Lampiran 2. Hasil dan perhitungan pengukuran aktivitas antioksidan dengan metode *Ferric Reducing Antioxidant Power* (FRAP)

1. Hasil dan perhitungan pengukuran aktivitas antioksidan larutan pembanding vitamin C

$$\textbf{\% FRAP} = \frac{(\textbf{Rata-rata serapan sampel}) - (\textbf{Rata-rata serapan blanko})}{(\textbf{Rata-rata serapan sampel})} \textbf{ x 100\%}$$

- Konsentrasi 12 ppm = $\frac{0,478 - 0,061}{0,478}$ x 100% = 87,238%
- Konsentrasi 16 ppm = $\frac{0,574 - 0,061}{0,574}$ x 100% = 89,373%
- Konsentrasi 20 ppm = $\frac{0,655 - 0,061}{0,655}$ x 100% = 90,687%
- Konsentrasi 24 ppm = $\frac{0,735 - 0,061}{0,735}$ x 100% = 91,701%
- Konsentrasi 28 ppm = $\frac{0,823 - 0,061}{0,823}$ x 100% = 92,588%

Tabel 3. Hasil pengukuran aktivitas antioksidan vitamin C

Nama	Absorbansi	Rata-rata	% FRAP	Log Konsentrasi (x)	Nilai probit (y)
Blanko	0,062 0,063 0,059	0,061	-	-	-
Vitamin C 12 ppm	0,479 0,474 0,481	0,478	87,24%	1,079	6,13
Vitamin C 16 ppm	0,565 0,574 0,582	0,574	89,37%	1,204	6,23
Vitamin C 20 ppm	0,632 0,676 0,656	0,655	90,69%	1,301	6,34
Vitamin C 24 ppm	0,73 0,728 0,746	0,735	91,70%	1,38	6,41
Vitamin C 28 ppm	0,827 0,807 0,836	0,823	92,59%	1,447	6,48

Perhitungan persamaan kurva baku:

y = 0,961x + 5,0857 a = 0,961 b = 5,0857 r = 0,9968

y = ax + b

y = 0,961x + 5,0857

5 = 0,961x + 5,0857

x = -0,089

antilog x = 0,814

IC_{50} = 0,814 µg/ml (<50 µg/ml, aktivitas antioksidan sangat kuat)

2. Hasil dan perhitungan pengukuran aktivitas antioksidan larutan sampel ekstrak alga cokelat (*Sargassum polycystum*)

% FRAP = $\frac{(\text{Rata−rata serapan sampel})-(\text{Rata−rata serapan blanko})}{(\text{Rata−rata serapan sampel})}$ **x 100%**

- Konsentrasi 260 ppm = $\frac{0,210-0,063}{0,210}$ x 100% = 70%
- Konsentrasi 300 ppm = $\frac{0,271-0,063}{0,271}$ x 100% = 76,753%
- Konsentrasi 340 ppm = $\frac{0,293-0,063}{0,293}$ x 100% = 78,498%
- Konsentrasi 380 ppm = $\frac{0,314-0,063}{0,314}$ x 100% = 79,936%
- Konsentrasi 420 ppm = $\frac{0,327-0,063}{0,327}$ x 100% = 80,734%

Tabel 4. Hasil pengukuran aktivitas antioksidan ekstrak alga cokelat (*Sargassum polycystum*)

Nama	Absorbansi	Rata-rata	% FRAP	Log Konsentrasi (x)	Nilai probit (y)
Blanko	0,068 0,06 0,061	0,063	-	-	-
Ekstrak 260 ppm	0,21 0,208 0,211	0,210	70%	2,415	5,52
Ekstrak 300 ppm	0,274 0,264 0,274	0,271	76,753%	2,477	5,74
Ekstrak 340 ppm	0,296 0,293 0,291	0,293	78,498%	2,531	5,77
Ekstrak 380 ppm	0,309 0,315 0,318	0,314	79,936%	2,580	5,84
Ekstrak 420 ppm	0,324 0,332 0,325	0,327	80,734%	2,623	5,88

Perhitungan persamaan kurva baku:

y = 1,6103x + 1,6836 a = 1,6103 b = 1,6836 r = 0,8953

y = ax + b

y = 1,6103x + 1,6836

5 = 1,6103x + 1,6836

x = 2,059

antilog x = 114,681

IC_{50} = 114,681 µg/ml (100-250 µg/ml, aktivitas antioksidan sedang)

Lampiran 3. Hasil pengukuran absorbansi larutan pembanding vitamin C dan sampel ekstrak alga cokelat (*Sargassum polycystum*)

Sample Table - [Active]

	Sample ID	Type	Ex	Conc	WL698,5	Comments
6	Blanko1	Unknown		*****	0,062	
7	Blanko2	Unknown		*****	0,063	
8	Blanko3	Unknown		*****	0,059	
9	Vit C1 12 ppm	Unknown		*****	0,479	
10	Vit C2 12 ppm	Unknown		*****	0,474	
11	Vit C3 12 ppm	Unknown		*****	0,481	
12	Vit C1 16 ppm	Unknown		*****	0,565	
13	Vit C2 16 ppm	Unknown		*****	0,574	
14	Vit C3 16 ppm	Unknown		*****	0,582	
15	Vit C1 20 ppm	Unknown		*****	0,632	
16	Vit C2 20 ppm	Unknown		*****	0,676	
17	Vit C3 20 ppm	Unknown		*****	0,656	
18	Vit C1 24 ppm	Unknown		*****	0,730	
19	Vit C2 24 ppm	Unknown		*****	0,728	

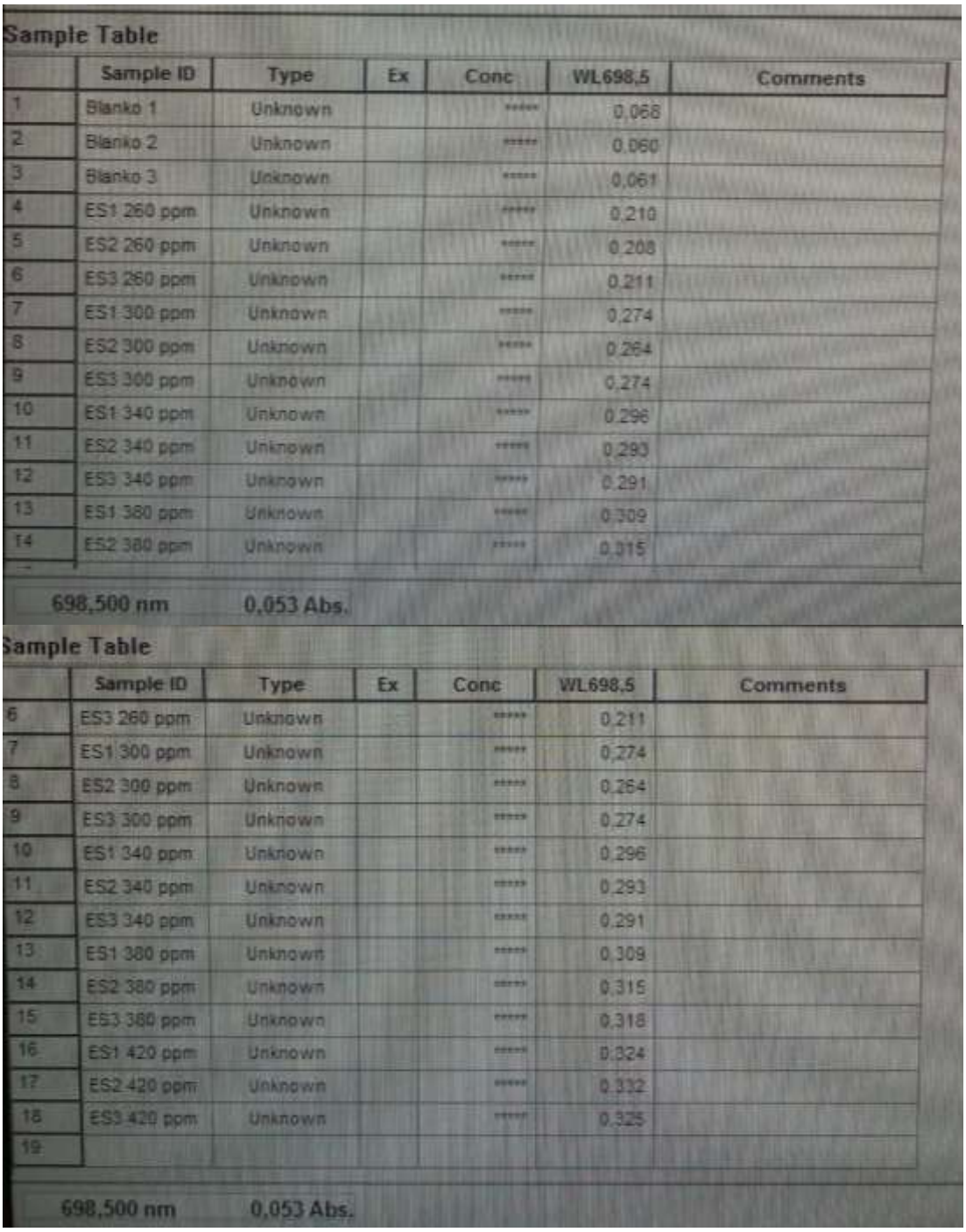
698,500 nm 1,328 Abs.

Sample Table - [Active]

	Sample ID	Type	Ex	Conc	WL698,5	Comments
11	Vit C3 12 ppm	Unknown		*****	0,481	
12	Vit C1 16 ppm	Unknown		*****	0,565	
13	Vit C2 16 ppm	Unknown		*****	0,574	
14	Vit C3 16 ppm	Unknown		*****	0,582	
15	Vit C1 20 ppm	Unknown		*****	0,632	
16	Vit C2 20 ppm	Unknown		*****	0,676	
17	Vit C3 20 ppm	Unknown		*****	0,656	
18	Vit C1 24 ppm	Unknown		*****	0,730	
19	Vit C2 24 ppm	Unknown		*****	0,728	
20	Vit C3 24 ppm	Unknown		*****	0,746	
21	Vit C1 28 ppm	Unknown		*****	0,827	
22	Vit C2 28 ppm	Unknown		*****	0,807	
23	Vit C3 28 ppm	Unknown		*****	0,836	
24						

698,500 nm 1,323 Abs.

Gambar 5. Nilai absorbansi larutan pembanding vitamin C



Sample Table

	Sample ID	Type	Ex	Conc	WL698,5	Comments
1	Blanko 1	Unknown		*****	0,068	
2	Blanko 2	Unknown		*****	0,060	
3	Blanko 3	Unknown		*****	0,061	
4	ES1 260 ppm	Unknown		*****	0,210	
5	ES2 260 ppm	Unknown		*****	0,208	
6	ES3 260 ppm	Unknown		*****	0,211	
7	ES1 300 ppm	Unknown		*****	0,274	
8	ES2 300 ppm	Unknown		*****	0,264	
9	ES3 300 ppm	Unknown		*****	0,274	
10	ES1 340 ppm	Unknown		*****	0,296	
11	ES2 340 ppm	Unknown		*****	0,293	
12	ES3 340 ppm	Unknown		*****	0,291	
13	ES1 380 ppm	Unknown		*****	0,309	
14	ES2 380 ppm	Unknown		*****	0,315	

698,500 nm 0,053 Abs.

Sample Table

	Sample ID	Type	Ex	Conc	WL698,5	Comments
6	ES3 260 ppm	Unknown		*****	0,211	
7	ES1 300 ppm	Unknown		*****	0,274	
8	ES2 300 ppm	Unknown		*****	0,264	
9	ES3 300 ppm	Unknown		*****	0,274	
10	ES1 340 ppm	Unknown		*****	0,296	
11	ES2 340 ppm	Unknown		*****	0,293	
12	ES3 340 ppm	Unknown		*****	0,291	
13	ES1 380 ppm	Unknown		*****	0,309	
14	ES2 380 ppm	Unknown		*****	0,315	
15	ES3 380 ppm	Unknown		*****	0,318	
16	ES1 420 ppm	Unknown		*****	0,324	
17	ES2 420 ppm	Unknown		*****	0,332	
18	ES3 420 ppm	Unknown		*****	0,325	
19						

698,500 nm 0,053 Abs.

Gambar 6. Nilai absorbansi larutan sampel ekstrak alga cokelat (*Sargassum polycystum*)

Lampiran 4. Dokumentasi penelitian

Gambar 7. Larutan stok sampel ekstrak alga cokelat (*Sargassum polycystum*)

Gambar 8. Larutan stok pembanding (Vitamin C)

Gambar 9. Reagen uji metode *Ferric Reducing Antioxidant Power* (FRAP)

Gambar 10. Larutan setelah penambahan reagen

Gambar 11. Larutan disentrifugasi selama 10 menit

Gambar 12. Alat spektrofotometer UV-Visible