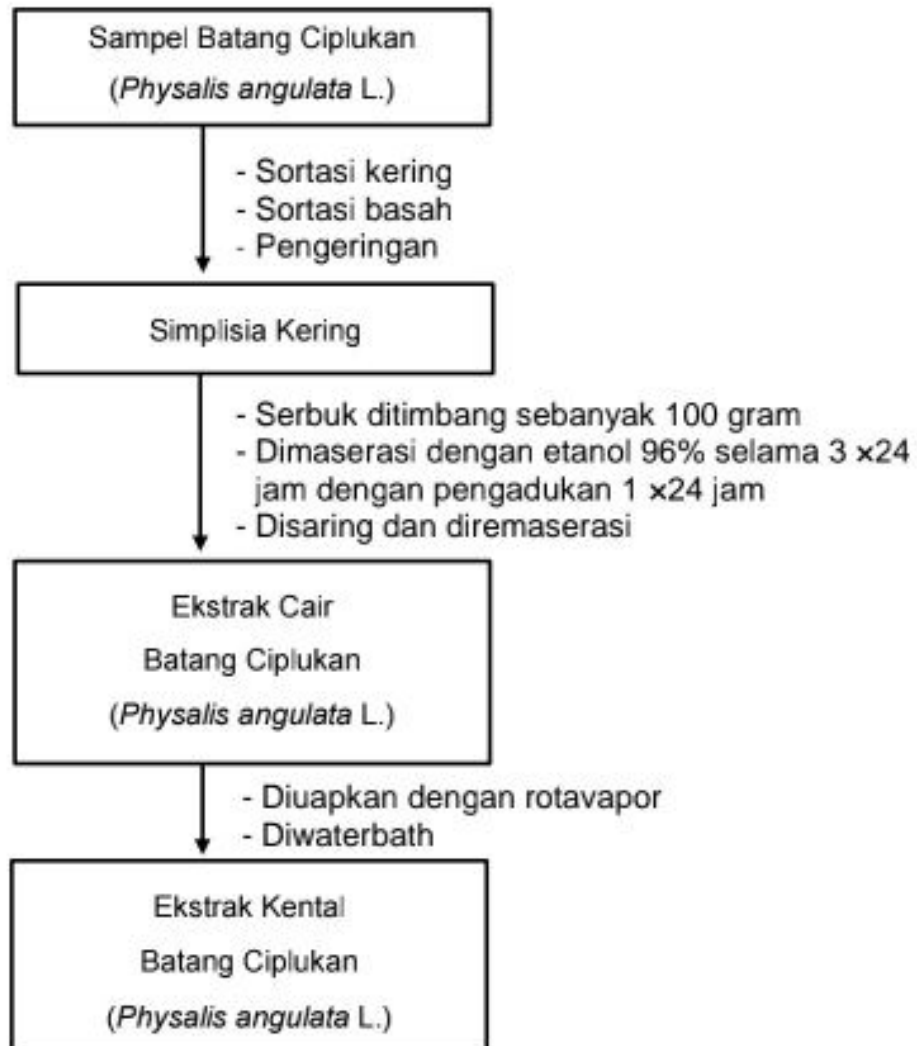
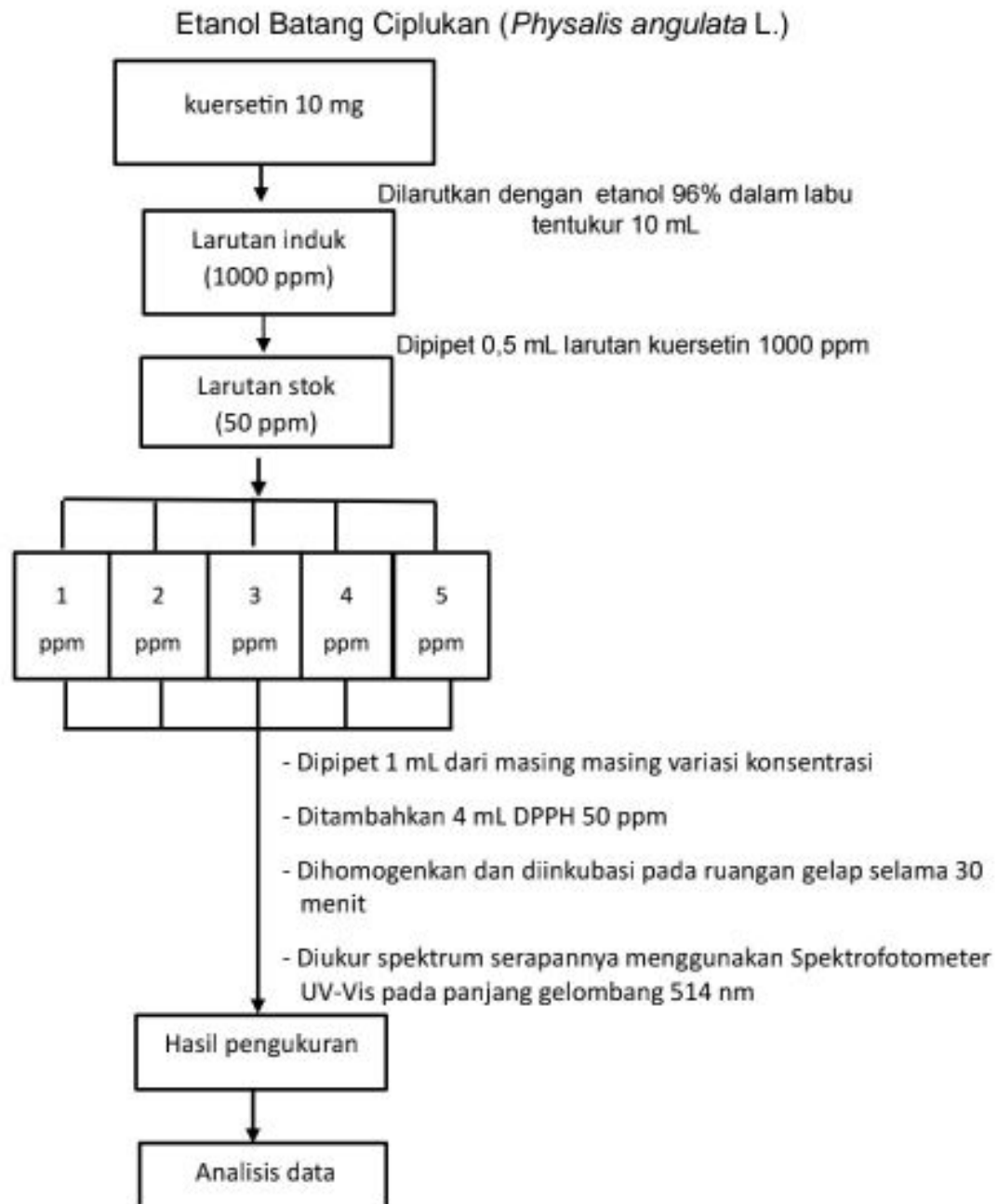


LAMPIRAN

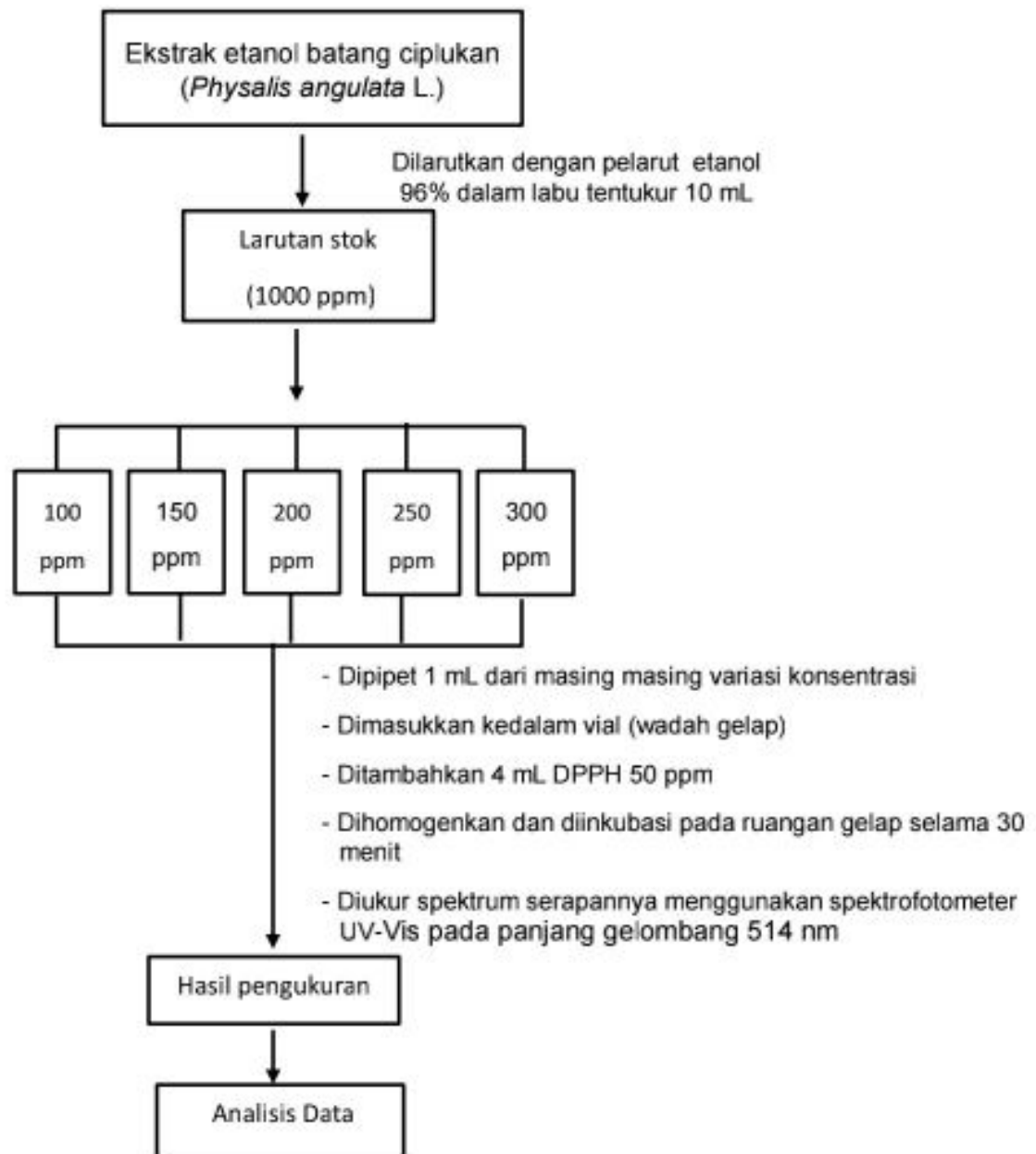
Lampiran 1. Skema Kerja Ekstraksi Sampel



Lampiran 2. Analisis Antioksidan Pembanding Kuersetin dan Ekstrak



Gambar 5. Skema Kerja Analisis Antioksidan Pembanding Kuersetin



Gambar 6. Skema Kerja Analisis Antioksidan Ekstrak Etanol Batang Ciplukan (*Physalis angulata* L.)

Lampiran 3. Perhitungan Penelitian

a. Perhitungan Persen Rendamen Ekstrak Etanol Batang Ciplukan

(*Physalis angulata* L.)

$$\% \text{ Rendamen} = \frac{\text{Berat ekstrak kental (g)}}{\text{Berat simplisia awal (g)}} \times 100$$

$$\% \text{ Rendamen} = \frac{10,654 \text{ g}}{100 \text{ g}} \times 100$$

$$\% \text{ Rendamen} = 10,654 \%$$

b. Pembuatan Larutan Pembanding Kuersetin Beberapa Seri

Konsentrasi

- Pembuatan larutan stok 50 ppm

$$\text{ppm} = \frac{\text{Berat yang akan ditimbang (mg)}}{\text{Volume pelarut yang digunakan (L)}}$$

$$1000 \text{ ppm} = \frac{10 \text{ mg}}{0,01 \text{ L}}$$

$$V_1 \cdot M_1 = V_2 \cdot M_2$$

$$1000 \text{ ppm} \cdot V_1 = 50 \text{ ppm} \cdot 10 \text{ mL}$$

$$V_1 = \frac{500}{1000} = 0,5 \text{ mL}$$

- Larutan konsentrasi 1 ppm

$$V_1 \cdot M_1 = V_2 \cdot M_2$$

$$V_1 \cdot 50 \text{ ppm} = 10 \text{ mL} \cdot 1 \text{ ppm}$$

$$V_1 = \frac{10}{50} = 0,2 \text{ mL}$$

- Larutan konsentrasi 2 ppm

$$V_1 \cdot M_1 = V_2 \cdot M_2$$

$$V_1 \cdot 50 \text{ ppm} = 10 \text{ mL} \cdot 2 \text{ ppm}$$

$$V1 = \frac{20}{50} = 0,4 \text{ mL}$$

- Larutan konsentrasi 3 ppm

$$V1 \cdot M1 = V2 \cdot M2$$

$$V1 \cdot 50 \text{ ppm} = 10 \text{ mL} \cdot 3 \text{ ppm}$$

$$V1 = \frac{30}{50} = 0,6 \text{ mL}$$

- Larutan konsentrasi 4 ppm

$$V1 \cdot M1 = V2 \cdot M2$$

$$V1 \cdot 50 \text{ ppm} = 10 \text{ mL} \cdot 4 \text{ ppm}$$

$$V1 = \frac{40}{50} = 0,8 \text{ mL}$$

- Larutan konsentrasi 5 ppm

$$V1 \cdot M1 = V2 \cdot M2$$

$$V1 \cdot 50 \text{ ppm} = 10 \text{ mL} \cdot 5 \text{ ppm}$$

$$V1 = \frac{50}{50} = 1 \text{ mL}$$

c. Perhitungan % Inhibisi dan IC_{50} Pembanding Kuersetin

$$\% \text{ Inhibisi} = \frac{\text{Abs. Blanko} - \text{Abs. Sampel}}{\text{Abs. Blanko}} \times 100\%$$

- Larutan konsentrasi 1 ppm = $\frac{0,944 - 0,832}{0,944} \times 100\% = 11,864 \%$

- Larutan konsentrasi 2 ppm = $\frac{0,944 - 0,770}{0,944} \times 100 \% = 18,432 \%$

- Larutan konsentrasi 3 ppm = $\frac{0,944 - 0,696}{0,944} \times 100 \% = 26,271 \%$

- Larutan konsentrasi 4 ppm = $\frac{0,944 - 0,646}{0,944} \times 100 \% = 31,567 \%$

- Larutan konsentrasi 5 ppm = $\frac{0,944 - 0,600}{0,944} \times 100 \% = 36,440 \%$

- Persamaan Regresi Pembanding Kuersetin

$$y = + bx$$

$$y = 6,2287 + 6,2287x$$

$$R^2 = 0,9916$$

$$r = 0,9557$$

$$IC_{50} = \frac{50 - 6,2287}{6,2287}$$

$$IC_{50} = \frac{43,771}{6,2287}$$

$$IC_{50} = 7,027 \text{ ppm (sangat kuat)}$$

- d. Pembuatan Larutan Ekstrak Etanol Batang Ciplukan (*Physalis angulata* L.) dengan beberapa seri konsentrasi

- Larutan konsentrasi 100 ppm

$$V1 \cdot M1 = V2 \cdot M2$$

$$V1 \cdot 1000 \text{ ppm} = 5 \text{ mL} \cdot 100 \text{ ppm}$$

$$V1 = \frac{500}{1000} = 0,5 \text{ mL}$$

- Larutan konsentrasi 150 ppm

$$V1 \cdot M1 = V2 \cdot M2$$

$$V1 \cdot 1000 \text{ ppm} = 5 \text{ mL} \cdot 150 \text{ ppm}$$

$$V1 = \frac{750}{1000} = 0,75 \text{ mL}$$

- Larutan konsentrasi 200 ppm

$$V1 \cdot M1 = V2 \cdot M2$$

$$V1 \cdot 1000 \text{ ppm} = 5 \text{ mL} \cdot 200 \text{ ppm}$$

$$V1 = \frac{1.000}{1000} = 1 \text{ mL}$$

- Larutan konsentrasi 250 ppm

$$V1 \cdot M1 = V2 \cdot M2$$

$$V1 \cdot 1000 \text{ ppm} = 5 \text{ mL} \cdot 250 \text{ ppm}$$

$$V1 = \frac{1250}{1000} = 1,25 \text{ mL}$$

- Larutan konsentrasi 300 ppm

$$V1 \cdot M1 = V2 \cdot M2$$

$$V1 \cdot 1000 \text{ ppm} = 5 \text{ mL} \cdot 300 \text{ ppm}$$

$$V1 = \frac{1.500}{1000} = 1,5 \text{ mL}$$

- e. Perhitungan % Inhibisi dan IC_{50} Ekstrak Etanol Batang Ciplukan (*Physalis angulata* L.)

$$\% \text{ Inhibisi} = \frac{\text{Abs. Blanko} - \text{Abs. Sampel}}{\text{Abs. Blanko}} \times 100\%$$

- Larutan konsentrasi 100 ppm = $\frac{0,942 - 0,507}{0,942} \times 100 \% = 46,178 \%$
- Larutan konsentrasi 150 ppm = $\frac{0,942 - 0,488}{0,942} \times 100 \% = 48,195 \%$
- Larutan konsentrasi 200 ppm = $\frac{0,942 - 0,470}{0,942} \times 100 \% = 50,106 \%$
- Larutan konsentrasi 250 ppm = $\frac{0,942 - 0,448}{0,942} \times 100 \% = 52,441 \%$
- Larutan konsentrasi 300 ppm = $\frac{0,942 - 0,425}{0,942} \times 100 \% = 54,883 \%$
- Persamaan Regresi Ekstrak Etanol Batang Ciplukan (*Physalis angulata* L.)
 $y = a + bx$
 $y = 41,698 + 0,0433x$
 $R^2 = 0,9972$
 $r = 0,9985$

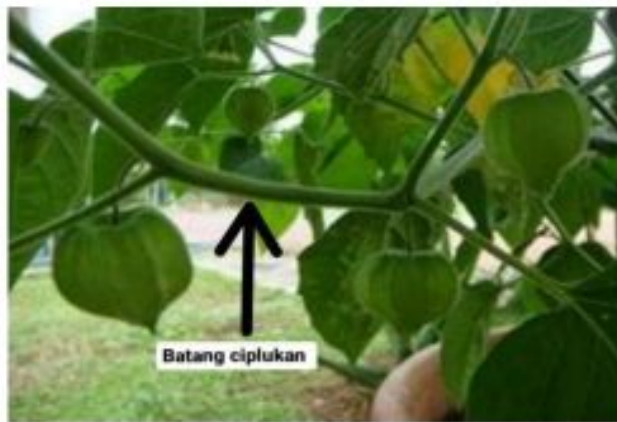
$$IC_{50} = \frac{50 - 41,698}{0,0433}$$

$$IC_{50} = \frac{8,302}{0,0433} = 191,732 \text{ ppm (lemah)}$$

Lampiran 4. Foto Tumbuhan Ciplukan

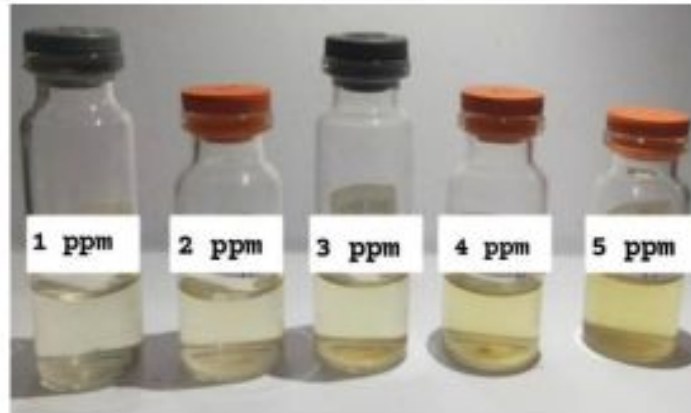


Gambar 7. Tumbuhan Ciplukan (*Physalis angulata* L.)

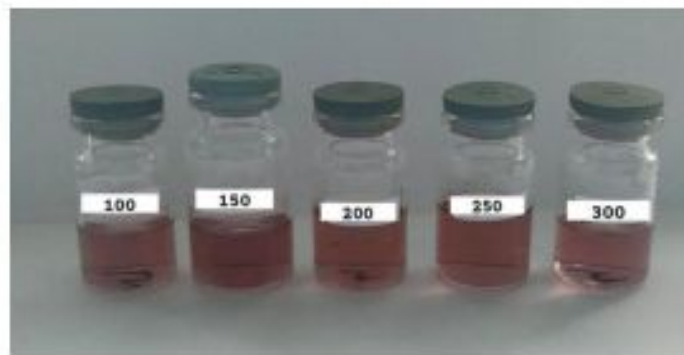


Gambar 8. Batang Ciplukan (*Physalis angulata* L.)

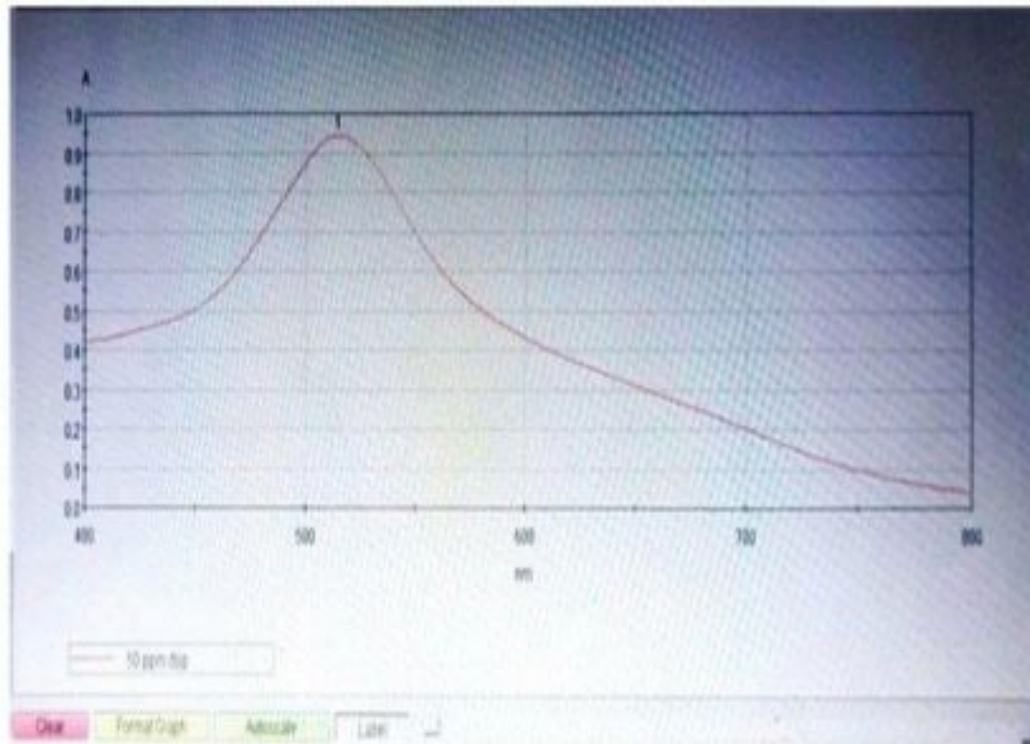
Lampiran 5. Foto Pembuatan Larutan Pembanding Kuersetin dan Ekstrak Etanol Batang Ciplukan (*Physalis angulata* L.)



Gambar 9. Seri Konsentrasi dan Pengujian Antioksidan Pembanding Kuersetin (*Physalis angulata* L.)
(Sumber : Dokumen Pribadi)



Gambar 10. Seri Konsentrasi Ekstrak Etanol Batang Ciplukan (*Physalis angulata* L.)
(Sumber : Dokumentasi Pribadi)

Lampiran 6. Spektrum Panjang Gelombang Maksimum DPPH 514 nm

Gambar 11. Spektrum Panjang Gelombang Maksimum DPPH
514 nm
(Sumber : Dokumen Pribadi)

Lampiran 7. Seperangkat Alat Rotari Vacuum Evaporator (*Ika RV 10 basic*) dan Seperangkat Alat Spektrofotometer UV-Vis (*Genesys 10SUV-Vis*)



Gambar 12. Seperangkat Alat Rotavapor (*Ika® RV 10 basic*)
(Sumber : Dokumen Pribadi)



Gambar 13. Seperangkat Alat Spektrofotometer UV-Vis
(*Genesys 10SUV-Vis*)
(Sumber : Dokumen Pribadi)