

LAMPIRAN

Lampiran 1. Determinasi Tanaman Ranti Hitam (*Solanum nigrum* L.)



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Nomor : 670/11.CO2.2/PL/2019.
Hal : Determinasi tumbuhan

8 Februari 2019

Kepada Yth.
Ketua
Sekolah Tinggi Farmasi Bandung
Jl. Soekarno Hatta No. 754
Bandung

Memperhatikan surat permintaan Saudara dalam surat No. 1311/WKI-SI/XI/2018 tanggal 1 November 2018 mengenai determinasi tumbuhan, dengan ini kami sampaikan bahwa setelah dilakukan determinasi oleh staf kami, sampel tumbuhan yang dibawa oleh Sdr. Dilla Nurul Fatimah (NPM : 13171013), adalah :

Divisi	: Magnoliophyta
Kelas	: Magnoliopsida (Dicots)
Anak kelas	: Asteridae
Bangsa	: Solanales
Nama suku / familia	: Solanaceae
Nama jenis / species	: <i>Solanum nigrum</i> L.
Sinonim	: <i>Solanum humile</i> Lam.
Nama umum	: Nightshade (Inggris), leunca (Indonesia).
Buku acuan	: 1. Cronquist, A. 1981. An Integrated System of Classification of Flowering Plants. Columbia University Press, New York. pp. Xiii – Xviii. 2. Backer, C.A. & Bakhuizen van den Brink, Jr., R.C. 1965. Flora of Java. Vol. II. N.V.P. Noordhoff – Groningen, the Netherland. pp. 471. 3. Flora of China Editorial Committee. 1994. Flora of China 17 (Verbenaceae through Solanaceae). In: Wu, C.Y., Raven, P.H., & Hong, D.Y. (eds.). Flora of China. Science Press & Missouri Botanical Garden Press, Beijing & St. Louis. pp. 1 – 378.

Demikian yang kami sampaikan. Atas perhatian dan kerjasama yang diberikan, kami ucapkan terima kasih.



Tembusan:
Dekan SITH ITB, sebagai laporan.

Lampiran 2. Perhitungan Kadar Air Metode Gravimetri

$$\% \text{ Kadar air} = \frac{\text{Bobot awal} - \text{bobot akhir}}{\text{bobot awal}} \times 100\%$$

Hasil yang didapat:

Bobot awal = 51,037g

Bobot akhir = 50,0202g

$$\% \text{ Kadar air} = \frac{51,037 - 50,0202}{51,037} \times 100\% = 1,9994\%$$

Lampiran 3. Perhitungan Rendemen Ekstrak dan Fraksi Etil Asetat Buah Ranti Hitam

1. Ekstrak Etanol Buah Ranti Hitam

Diketahui:

Bobot serbuk simplisia = 570g

Bobot hasil ekstraksi = 99.837g

$$\% \text{ Rendemen} = \frac{\text{Bobot hasil ekstraksi}}{\text{bobot simplisia}} \times 100\%$$

$$\% \text{ Rendemen} = \frac{99.837}{570} \times 100\% = 17,5152\%$$

2. Fraksi Etil Asetat Buah Ranti Hitam

Diketahui:

Bobot ekstrak = 50g

Bobot hasil fraksi = 18,7232g

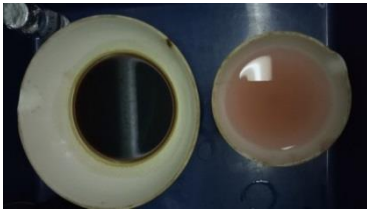
$$\% \text{ Rendemen} = \frac{\text{Bobot hasil fraksi}}{\text{bobot ekstrak}} \times 100\%$$

$$\% \text{ Rendemen} = \frac{18,7232}{50} \times 100\% = 37,4464\%$$

Lampiran 4. Fermentasi Kombucha Sari Buah Ranti Hitam



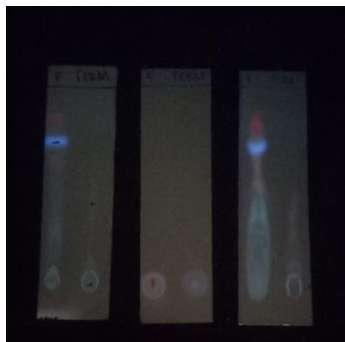
Lampiran 5. Analisis Alkaloid Total Metode Gravimetri



Hasil analisis alkaloid total metode gravimetri



Hasil penapisan fitokimia positif alkaloid dengan larutan Dragendorf dan Mayer.



Hasil analisis kualitatif alkaloid secara KLT.

Lampiran 6. Analisis Uji pH

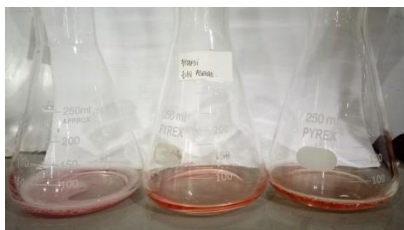


Buffer pH 4, 7 dan 9



pH Mettler Toledo

Lampiran 7. Analisis Total Asam



Fraksi Etil Asetat Sebelum
Fermentasi



Fraksi Etil Asetat Setelah
Fermentasi

Perhitungan Standarisasi Asam Oksalat:

Asam Oksalat = NaOH

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$10 \times 0,1 = 9 \times N_2$$

$$N_{\text{NaOH}} = 0,1 \text{ N}$$

$$\% \text{ Titik Akhir Titrai} = \frac{V \times N \times P \times BM}{\text{bobot sampel}} \times 100\%$$

$$\% \text{ Titik Akhir Titrai Fraksi} = \frac{2,5 \times 0,1 \times 25 \times 60,05}{10 \times 1000} \times 100\% = 3,75\%$$

$$\begin{aligned} \% \text{ Titik Akhir Titrai Fermentasi} &= \frac{7,4 \times 0,1 \times 25 \times 60,05}{10 \times 1000} \times 100\% \\ &= 11,11\% \end{aligned}$$

Lampiran 8. Analisis Total Fenol



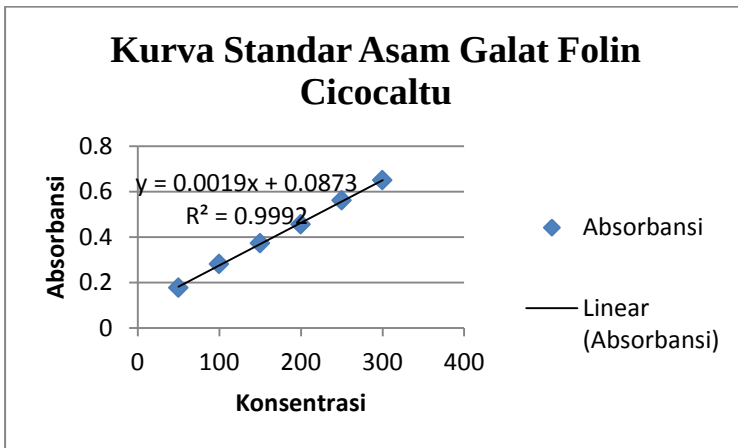
Standar Asam Galat



Hasil Analisis Total Fenol Fraksi Setelah dan Sebelum Fermentasi

Perhitungan standar asam galat:

Konsentrasi (ppm)	Absorbansi
50	0.177
100	0.281
150	0.372
200	0.456
250	0.561
300	0.65



Kurva Standar Asam Galat

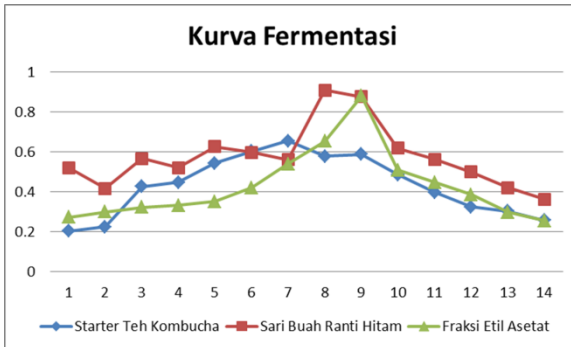
1. Fraksi etil asetat sebelum fermentasi :

$$\text{Kadar fenolik} = \frac{344,05}{60} \times \frac{10}{1000} 100\% = 5,73\% \sim 5,73 \text{ GAE/g}$$

2. Fraksi etil asetat setelah fermentasi :

$$\text{Kadar fenolik} = \frac{80,89}{60} \times \frac{10}{1000} 100\% = 1,35\% \sim 1,35 \text{ GAE/g}$$

Lampiran 9. Kurva Pertumbuhan Kombucha



Data Absorbansi Pertumbuhan Bakteri Kombucha Pada $\lambda 525$ nm

Hari ke-	Starter Teh Kombucha	Fraksi Etil Asetat
1	0.203	0.273
2	0.225	0.3
3	0.427	0.323
4	0.448	0.332
5	0.544	0.352
6	0.603	0.421
7	0.656	0.54
8	0.579	0.654
9	0.589	0.88
10	0.486	0.509
11	0.397	0.448
12	0.325	0.387
13	0.303	0.298
14	0.258	0.256

Lampiran 10. Fraksinasi

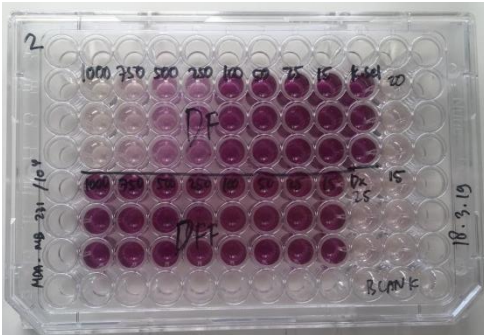


Metanol : air dan
n-heksan

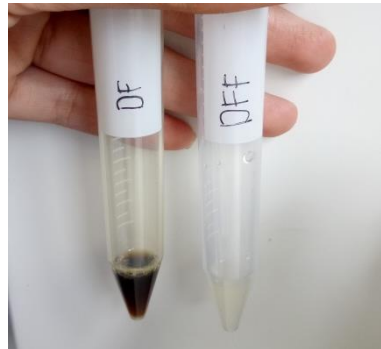


Metanol : air dan
etil asetat

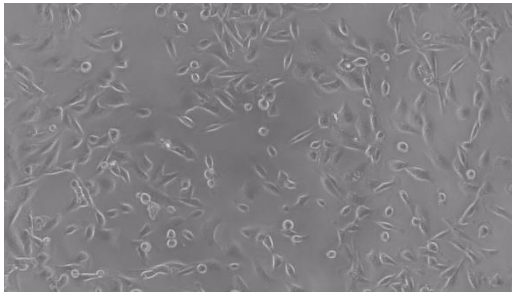
Lampiran 11. Uji MTT



Wellplate



Sampel Fraksi etil asetat sebelum dan sesudah fermentasi untuk uji sitotoksik



Lini Sel Kanker Payudara MDA-MB 231

Lampiran 12. Absorbansi Hasil Uji MTT Sebelum Fermentasi

Konsentrasi (ppm)	1000	750	500	250	100	50	25	15	K.Sel	Blanko
Fraksi Etil Astat Sebelum Fermentasi	0.118	0.195	0.39	0.371	1.229	1.372	1.621	1.594	1.449	0.09
	0.122	0.196	0.334	0.566	1.24	1.375	1.461	1.544	1.321	0.094
	0.119	0.184	0.352	0.436	1.21	1.323	1.463	1.543	1.317	0.093
Rata-rata	0.119	0.191	0.358	0.457	1.226	1.356	1.515	1.560	1.362	0.092

*Perhitungan % inhibisi Sebelum Fermentasi

$$1) \quad 1000 \text{ ppm} : \frac{(1.362-0.092)-(0.119-0.092)}{(1.362-0.092)} \times 100\% = 97.874\%$$

$$2) \quad 750 \text{ ppm} : \frac{(1.362-0.092)-(0.191-0.092)}{(1.362-0.092)} \times 100\% = 92.178\%$$

$$3) \quad 500 \text{ ppm} : \frac{(1.362-0.092)-(0.358-0.092)}{(1.362-0.092)} \times 100\% = 79.028\%$$

$$4) \quad 250 \text{ ppm} : \frac{(1.362-0.092)-(0.457-0.092)}{(1.362-0.092)} \times 100\% = 71.233\%$$

$$5) \quad 100 \text{ ppm} : \frac{(1.362-0.092)-(1.226-0.092)}{(1.362-0.092)} \times 100\% = 10.708\%$$

$$6) \quad 50 \text{ ppm} : \frac{(1.362-0.092)-(1.356-0.092)}{(1.362-0.092)} \times 100\% = 0.446\%$$

$$7) \quad 25 \text{ ppm} : \frac{(1.362-0.092)-(1.515-0.092)}{(1.362-0.092)} \times 100\% = -12.020\%$$

$$8) \quad 15 \text{ ppm} : \frac{(1.362-0.092)-(1.560-0.092)}{(1.362-0.092)} \times 100\% = -15.590\%$$

Lampiran 13. Absorbansi Hasil Uji MTT Setelah Fermentasi

Konsentrasi (ppm)	1000	750	500	250	100	50	25	15	K.Sel	Blanko
Fraksi Etil Astat Setelah Fermentasi	1.478	1.447	1.465	1.538	1.578	1.626	1.575	1.676	1.449	0.09
	1.476	1.476	1.554	1.597	1.578	1.549	1.605	1.572	1.321	0.094
	1.475	1.408	1.443	1.504	1.576	1.519	1.581	1.611	1.317	0.093
Rata-rata	1.476	1.443	1.487	1.546	1.577	1.564	1.578	1.619	1.362	0.092

*Perhitungan % inhibisi Sebelum Fermentasi

$$1) \quad 1000 \text{ ppm} : \frac{(1.362-0.092)-(1.476-0.092)}{(1.362-0.092)} \times 100\% = -8.97\%$$

$$2) \quad 750 \text{ ppm} : \frac{(1.362-0.092)-(1.443-0.092)}{(1.362-0.092)} \times 100\% = -6.40\%$$

$$3) \quad 500 \text{ ppm} : \frac{(1.362-0.092)-(1.487-0.092)}{(1.362-0.092)} \times 100\% = -9.84\%$$

$$4) \quad 250 \text{ ppm} : \frac{(1.362-0.092)-(1.546-0.092)}{(1.362-0.092)} \times 100\% = -14.48\%$$

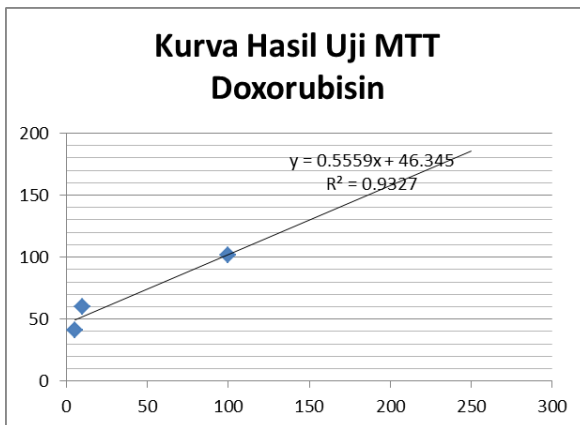
$$5) \quad 100 \text{ ppm} : \frac{(1.362-0.092)-(1.577-0.092)}{(1.362-0.092)} \times 100\% = -16.92\%$$

$$6) \quad 50 \text{ ppm} : \frac{(1.362-0.092)-(1.564-0.092)}{(1.362-0.092)} \times 100\% = -15.93\%$$

$$7) \quad 25 \text{ ppm} : \frac{(1.362-0.092)-(1.578-0.092)}{(1.362-0.092)} \times 100\% = -17.69\%$$

$$8) \quad 15 \text{ ppm} : \frac{(1.362-0.092)-(1.619-0.092)}{(1.362-0.092)} \times 100\% = -20.26\%$$

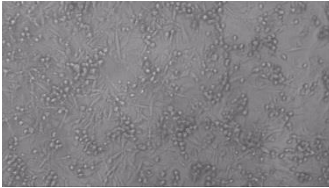
Lampiran 14. Kurva Uji Sitotoksik Doxorubisin



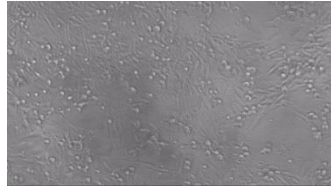
Nilai IC₅₀ Doxorubisin

Persamaan Linear	Nilai IC ₅₀
$y = 0.5559x + 46.345$	$IC_{50} = \frac{50 - 46.345}{0.5559} = 6.57 \text{ ppm}$

Lampiran 15. Lini Sel Kanker Payudara MDA-MB 231Fraksi Etil Asetat di
Bawah Mikroskop *Inverted*



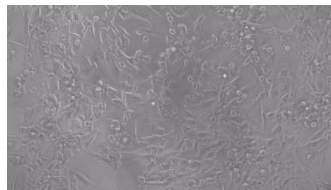
15 ppm



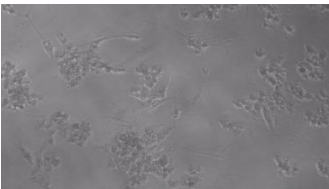
25 ppm



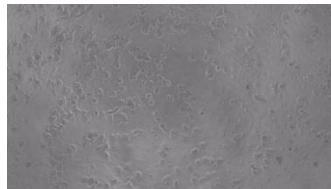
50 ppm



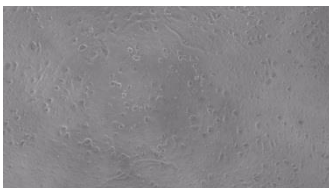
100 ppm



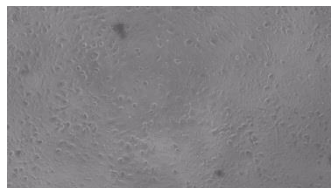
250 ppm



500 ppm



750 ppm



1000 ppm