DAFTAR PUSTAKA

Aji, A., Bahri, S., & Tantalia, T. (2018). Pengaruh Waktu Ekstraksi Dan Konsentrasi HCl untuk Pembuatan Pektin dari Kulit Jeruk Bali (Citrus maxima). *Jurnal Teknologi Kimia Unimal*, *6*(1), 33-44.

Alen, Y., Agresa, F. L., & Yuliandra, Y. (2017). Analisis Kromatografi Lapis Tipis (KLT) dan Aktivitas Antihiperurisemia Ekstrak Rebung Schizostachyum brachycladum Kurz (Kurz) pada Mencit Putih Jantan. Jurnal Sains Farmasi & Klinis, 3(2), 146-152.

Backer, CA., van den Brink, R.C. Bakhuizen Jr. 1965. Flora of Java Vol II. Noordhoff-Groningen. The Netherlands.

Badaring, D. R., Sari, S. P. M., Nurhabiba, S., Wulan, W., & Lembang, S. A. R. (2020). Uji Ekstrak Daun Maja (Aegle marmelos L.) terhadap Pertumbuhan Bakteri Escherichia coli dan Staphylococcus aureus. Indonesian Journal of Fundamental Sciences, 6(1), 16-26.

Chairunnisa, S., Wartini, N. M., & Suhendra, L. (2019). Pengaruh suhu dan waktu maserasi terhadap karakteristik ekstrak daun bidara (Ziziphus mauritiana L.) sebagai Sumber Saponin. Jurnal Rekayasa Dan Manajemen Agroindustri ISSN, 2503, 488X.

Cretton, S., Breant, L., Pourrez, L., Ambuehl, C., Marcourt, L., Ebrahimi, S. N., ... & Christen, P. (2014). Antitrypanosomal quinoline alkaloids from the roots of Waltheria indica. *Journal of natural products*, *77*(10), 2304-2311.

Dewi, N. L. A. (2018). Pemisahan, isolasi, dan identifikasi senyawa saponin dari herba pegagan (Centella asiatica L. Urban). Jurnal Farmasi Udayana, 7(2), 68-76.

Dini, I. 2012. Metode Isolasi Senyawa Bioaktif pada Tumbuhan Paliasa (Kleinhovia hospita Linn.). Chemica: Jurnal Ilmiah Kimia dan Pendidikan Kimia, 13(2), 11-16.

Djarwis, D. 2004. Teknik Penelitian Kimia Organik Bahan Alam. Universitasa Andalas, Sumatera Barat

Endah, S. R. N. (2017). Pembuatan Ekstrak Etanol dan Penapisan Fitokimia Ekstrak Etanol Kulit Batang Sintok (Cinnamomun Sintoc Bl.). Jurnal Hexagro, 1(2), 292610.

Gaffar, I., & Mamahit, L. P. 2019. Satu senyawa steroid dari kulit batang tumbuhan paliasa (Kleinhovia hospita L.) asal Sulawesi Selatan. CHEMISTRY PROGRESS, 3(1), 24-28.

Hardiana, E., Rante, H., & Yulianty, R. Isolasi Fungi Endofit Penghasil Senyawa Antibakteri Dari *Melochia umbellata* (Houtt) Stapf Var. deglabrata.

Husna, F., & MITA, S. R. (2020). Identifikasi Bahan Kimia Obat dalam Obat Tradisional Stamina Pria dengan Metode Kromatografi Lapis Tipis. Farmaka, 18(2), 16-25.

Lau, S. H. A., & Wuru, A. F. 2018. Identifikasi Fitokimia Ekstrak Metanol Daun Paliasa (Melochiaumbellata (Houtt) Stapf) Dari Desa Renggarasi Dengan Metode Kromatografi Lapis Tipis (Klt). Jurnal Farmasi Sandi Karsa, 4(7), 29-33.

Liang, C., Yang, L., Shao, Y., Zhu, X., Zhao, H., Chen, B.,& Sun, R. 2019. Broad-spectrum antifungal activity of dichloromethane extract of Waltheria indica stems and isolated compounds. Industrial Crops and Products, 142, 111855.

Paramita, S. (2016). Tahongai (Kleinhovia hospita L.): Review Sebuah Tumbuhan Obat Dari Kalimantan Timur. Indonesian Journal of Plant Medicine, 9(1), 29-36.

Purwandari, R., Subagiyo, S., & Wibowo, T. (2018). Uji aktivitas antioksidan ekstrak daun jambu biji. Walisongo Journal of Chemistry, 1(2), 66-71.

Rahim, A., Saito, Y., Fukuyoshi, S., Miyake, K., Goto, M., Chen, C. H., ... & Nakagawa-Goto, K. 2020. Paliasanines A–E, 3, 4-Methylenedioxyquinoline Alkaloids Fused with a Phenyl-14-oxabicyclo [3.2. 1] octane Unit from Melochia umbellata var. deglabrata. Journal of natural products, 83(10), 2931-2939.

Rosamah, Enih. 2019. Kromatografi Lapis Tipis: Metode Sederahana dalam Analisis Kimia Tumbuhan Berkayu. Mulawarman University Press. Samarinda

Sampaio, O. M., de Castro Lima, M. M., Veiga, T. A. M., King-Díaz, B., & Lotina-Hennsen, B. 2016. Evaluation of antidesmone alkaloid as a photosynthesis inhibitor. Pesticide Biochemistry and Physiology, 134, 55-62.

Usman, U. 2015. Potensi Senyawa Metabolit Sekunder Dari Kulit Batang Melochia umbellata (Houtt) Stapf var. deglabrata paliasa) Sebagai Anti-Tuberkulosis. Jurnal Sains dan Kesehatan, 1(4), 188-194.

Utami, N. F., Sutanto, S., Nurdayanty, S. M., & Suhendar, U. 2020. Pengaruh Berbagai Metode Ekstraksi Pada Penentuan Kadar Flavonoid Ekstrak Etanol Daun Iler (Plectranthus scutellarioides). FITOFARMAKA: Jurnal Ilmiah Farmasi, 10(1), 76-83.

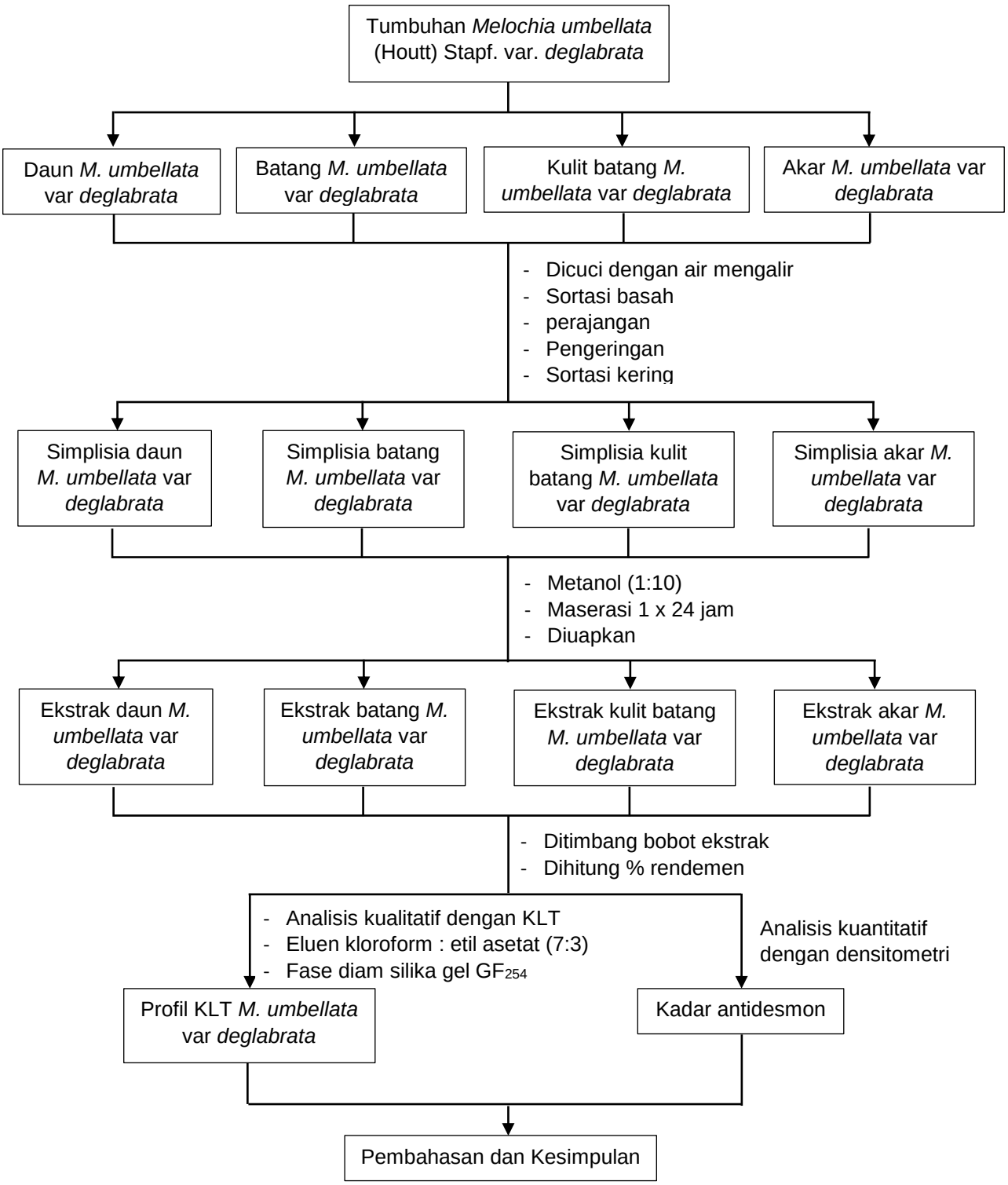
Wulandari, Lestyo. 2011. Kromatografi Lapis Tipis. Jember : PT. Taman Kampus Presindo

Yu, X., Zhu, X., Zhou, Y., Li, Q., Hu, Z., Li, T., ... & Sun, R. 2019. Discovery of N-aryl-pyridine-4-ones as novel potential agrochemical fungicides and bactericides. Journal of agricultural and food chemistry, 67(50), 13904-13913.

Zulharmitta, Z., Kasypiah, U., & Rivai, H. (2017). Pembuatan Dan Karakterisasi Ekstrak Kering Daun Jambu Biji (Psidium guajava L.). Jurnal Farmasi Hige*a*, *4*(2), 147-157.

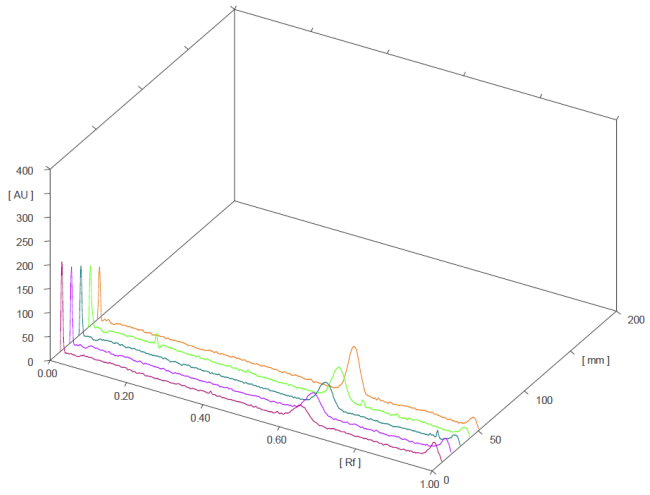
LAMPIRAN

Lampiran 1. Skema Kerja

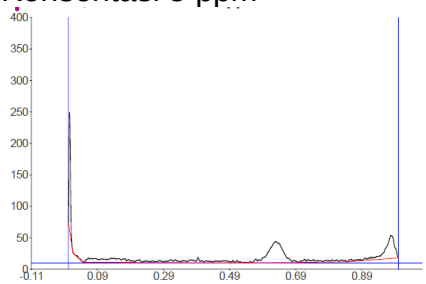


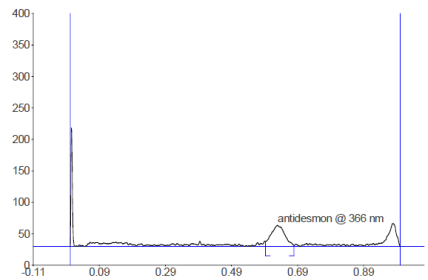
Lampiran 2. Data Hasil *TLC Scanner* UV 366

Lampiran 2.1 Data Hasil *TLC Scanner* Baku Antidesmone



1. Konsentasi 5 ppm





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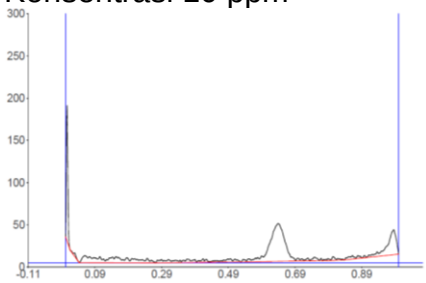
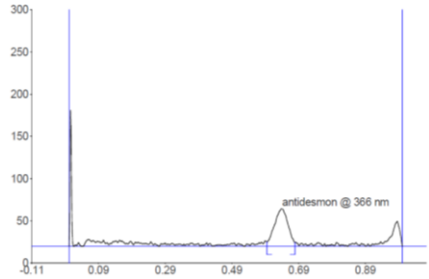
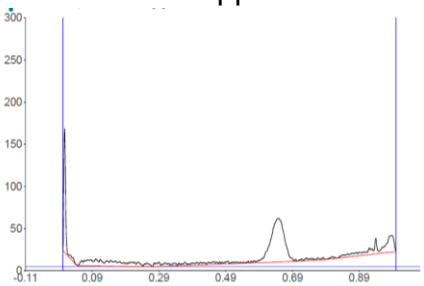
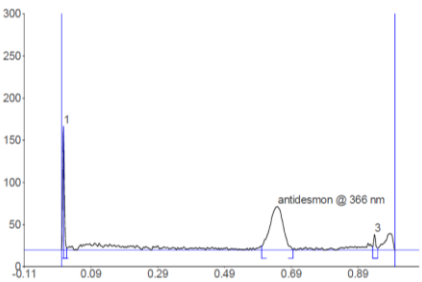


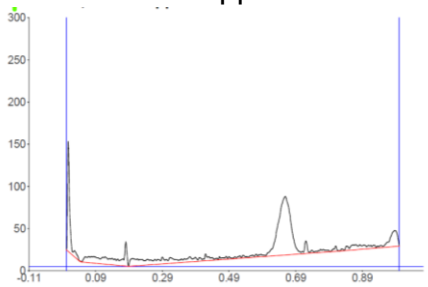


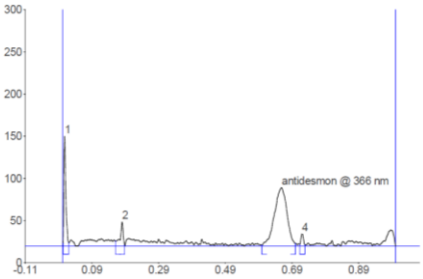
3. Konsentrasi 15 ppm



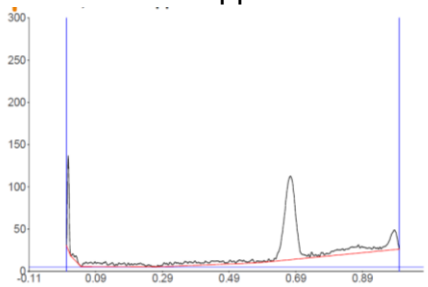


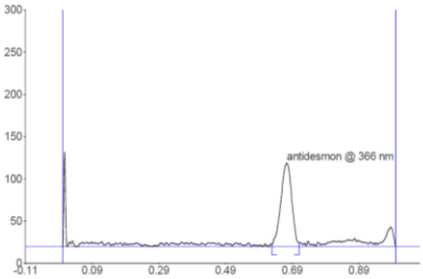
4. Konsentrasi 20 ppm



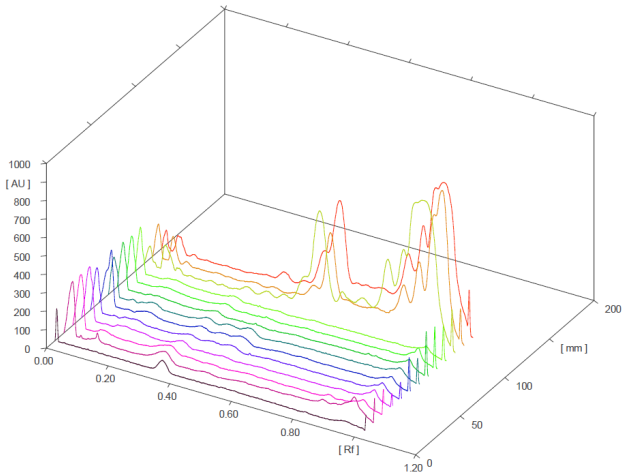


5. Konsentrasi 25 ppm



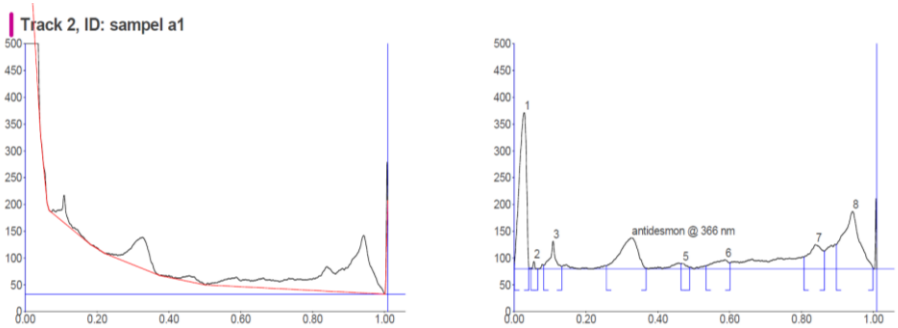


Lampiran 2.2 Data Hasil *TLC Scanner* Baku dan Sampel

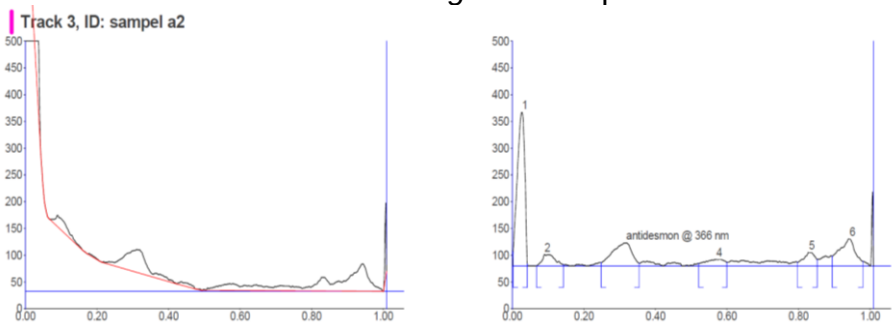


Kode sampel	Nilai Rf	Luas area (AUC)
1	0.35	1717.0
2	0.33	2783.2
3	0.32	2341.2
4	0.33	2663,2
5	0.32	1424.6
6	0.33	1240.8
7	0,32	1177,2
8	0.32	1958,8
9	0.32	1923.6
10	0.32	2435.2
11	0.34	2952.3
12	0.33	2415.8
13	0.34	2743.5

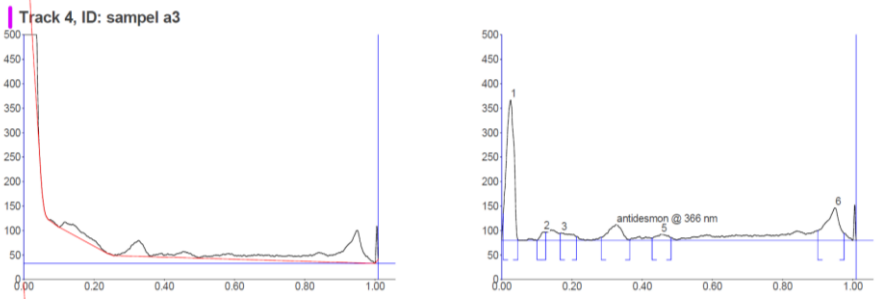
1. Ekstrak akar *M. umbellata* var *deglabrata* replikasi 1



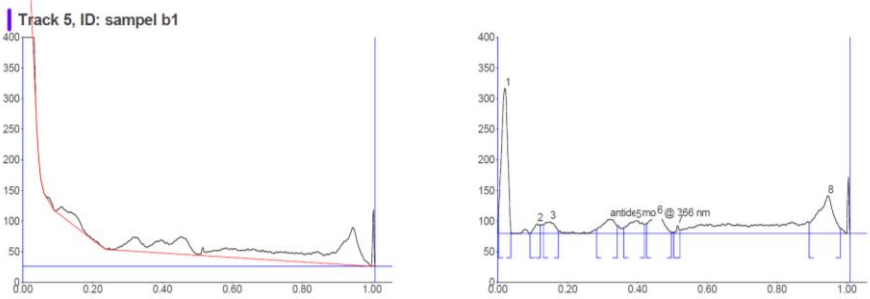
2. Ekstrak akar *M. umbellata* var *deglabrata* replikasi 2



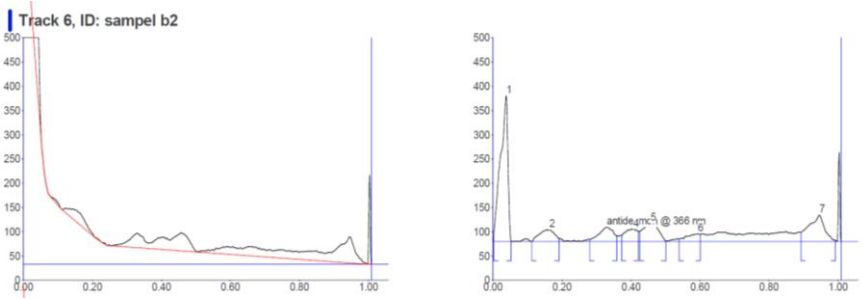
3. Ekstrak akar *M. umbellata* var *deglabrata* replikasi 3



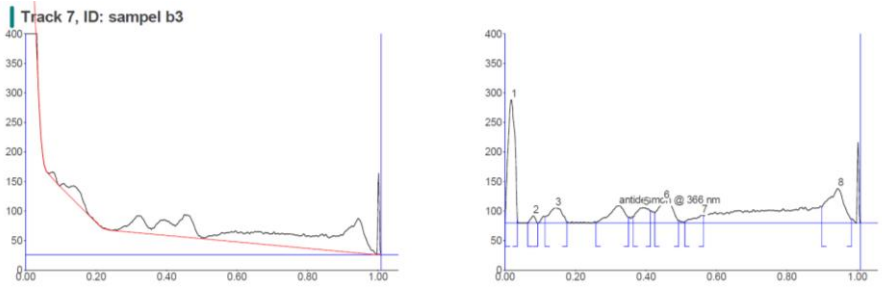
4. Ekstrak batang *M. umbellata* var *deglabrata* replikasi 1



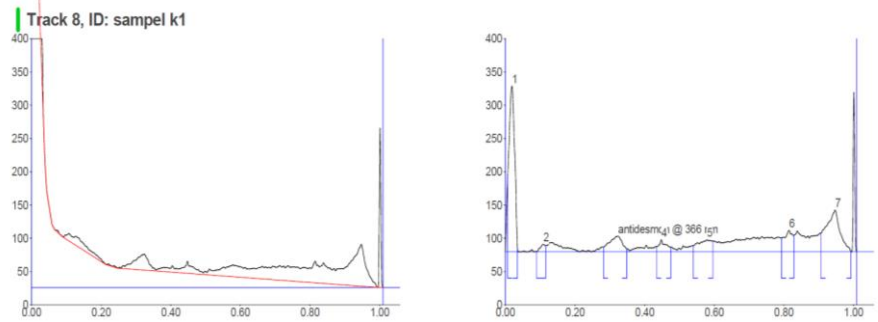
5. Ekstrak batang *M. umbellata* var *deglabrata* replikasi 2



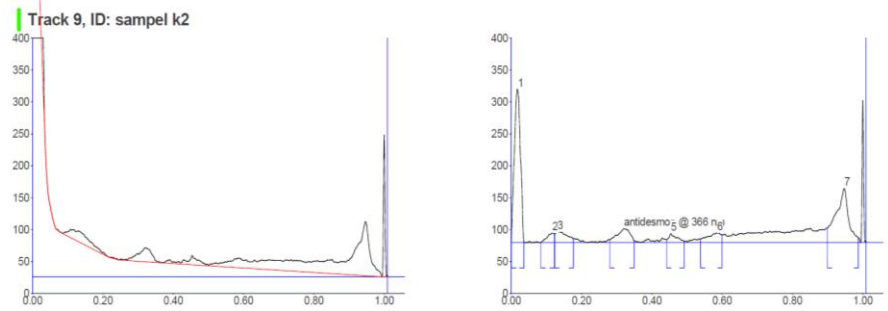
6. Ekstrak batang *M. umbellata* var *deglabrata* replikasi 3



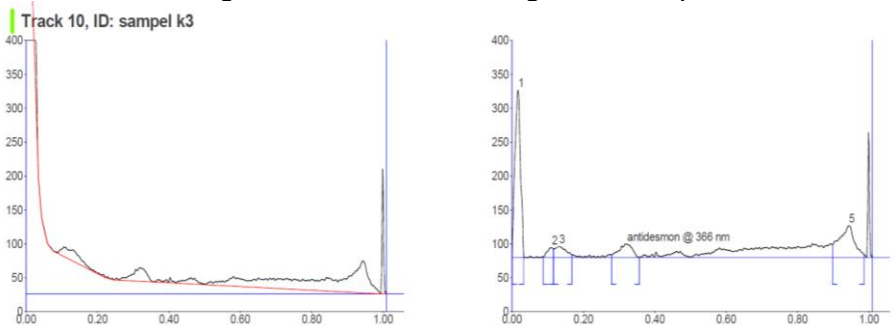
7. Ekstrak kulit batang *M. umbellata* var *deglabrata* replikasi 1



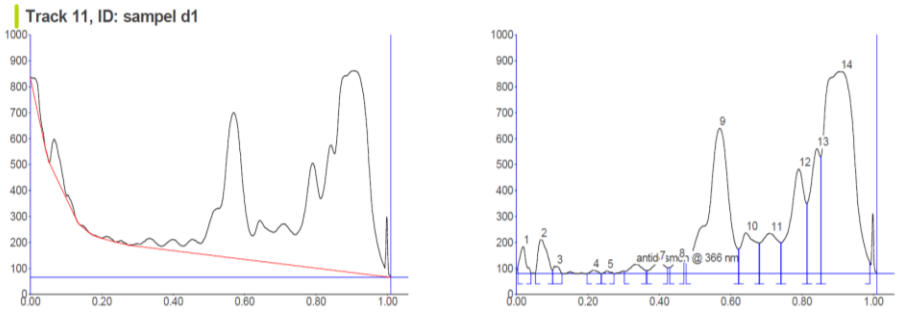
8. Ekstrak kulit batang *M. umbellata* var *deglabrata* replikasi 2



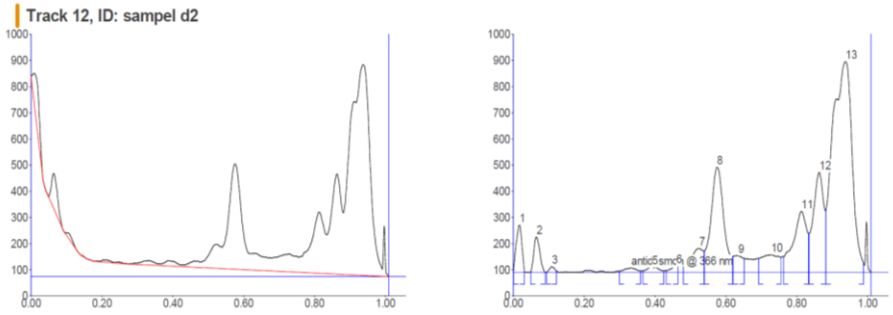
9. Ekstrak kulit batang *M. umbellata* var *deglabrata* replikasi 3



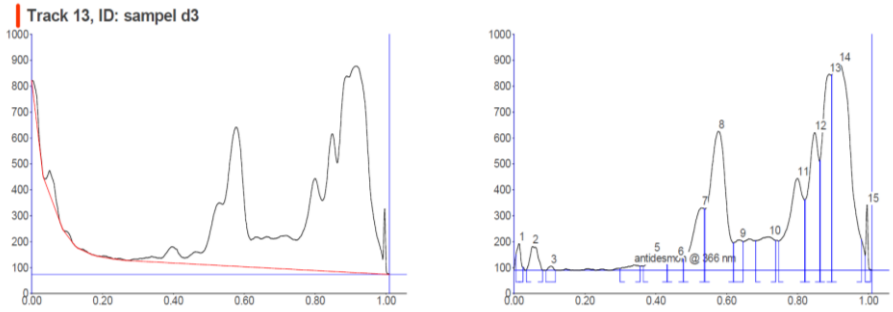
10. Ekstrak daun *M. umbellata* var *deglabrata* replikasi 1



11. Ekstrak daun *M. umbellata* var *deglabrata* replikasi 2



12. Ekstrak daun *M. umbellata* var *deglabrata* replikasi 3



Lampiran 3. Perhitungan

Lampiran 3.1 Persen Rendemen

Ekstrak akar

A1 = % $\mathbf{rendemen} = \frac{\mathbf{Bobot\ Akhir}}{\mathbf{Bobot\ Awal}}$ x 100%

$= \frac{\mathbf{124,73-123,50}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,23}}{\mathbf{10}}$ x 100% = 12.3%

A2 = % $\mathbf{rendemen} = \frac{\mathbf{128,73-127,21}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,52}}{\mathbf{10}}$ x 100% = 15,2%

A3 = % $\mathbf{rendemen} = \frac{\mathbf{99,44-97,62}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,82}}{\mathbf{10}}$ x 100% = 18,2%

Ekstrak batang

B1 = % $\mathbf{rendemen} = \frac{\mathbf{118,48-117,81}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,13}}{\mathbf{10}}$ x 100% = 11,3%

B2 = % $\mathbf{rendemen} = \frac{\mathbf{125,35-124,72}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,24}}{\mathbf{10}}$ x 100% = 12,4%

B3 = % $\mathbf{rendemen} = \frac{\mathbf{119,27-118,60}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,18}}{\mathbf{10}}$ x 100% = 11,8%

Ekstrak kulit batang

K1 = % $\mathbf{rendemen} = \frac{\mathbf{130,84-128,15}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,89}}{\mathbf{10}}$ x 100% = 18,9%

K2 = % $\mathbf{rendemen} = \frac{\mathbf{121,72-119,02}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,82}}{\mathbf{10}}$ x 100% = 18,2%

K3 = % $\mathbf{rendemen} = \frac{\mathbf{120,73-118,05}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,68}}{\mathbf{10}}$ x 100% = 16,8%

Ekstrak daun

D1 = % $\mathbf{rendemen} = \frac{\mathbf{120,23-118,18}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{2,05}}{\mathbf{10}}$ x 100% = 20,5%

D2 = % $\mathbf{rendemen} = \frac{\mathbf{120,50-118,47}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{2,03}}{\mathbf{10}}$ x 100% = 20,3%

D3 = % $\mathbf{rendemen} = \frac{\mathbf{120,45-118,52}}{\mathbf{10}}$ x 100%

$= \frac{\mathbf{1,93}}{\mathbf{10}}$ x 100% = 19,3%

Lampiran 3.2 Kadar Antidesmone KLT-Densitomentri

Persamaan : y = 88,548x + 854,9

y = luas area / AUC

x = konsentrasi

Ekstrak akar

- Replikasi 1

  AUC = 2783,2

  y = 88,548x + 854,9

  2783,2 = 88,548x + 854,9

  x = $\frac{2783,2-854,9}{88,548}$

= 21,777 ppm

Kadar = $\frac{21,777}{40000}$ x 100%

= 0,054%

- Replikasi 2

AUC = 2341,2

y = 88,548x + 854,9

2341,2 = 88,548x + 854,9

x = $\frac{2341,2-854,9}{88,548}$

= 16,785 ppm

Kadar = $\frac{16,785}{40000}$ x 100%

= 0,042%

- Replikasi 3

AUC = 1836,1

y = 88,548x + 854,9

1836,1 = 88,548x + 854,9

x = $\frac{1836,1-854,9}{88,548}$

= 11,081 ppm

Kadar = $\frac{11,081}{40000}$ x 100%

= 0,028%

Ekstrak batang

- Replikasi 1

AUC = 1820,3

y = 88,548x + 854,9

1820,3 = 88,548x + 854,9

x $= \frac{1820,3-854,9}{88,548}$

= 10,903 ppm

Kadar $= \frac{10,903}{40000}$ x 100%

= 0,027%

- Replikasi 2

AUC = 1424,6

y = 88,548x + 854,9

1424,6 = 88,548x + 854,9

x $= \frac{1424,6-854,9}{88,548}$

= 6,434 ppm

Kadar $= \frac{6,434}{40000}$ x 100%

= 0,016%

- Replikasi 3

AUC = 1240,8

y = 88,548x + 854,9

1240,8 = 88,548x + 854,9

x $= \frac{1240,8-854,9}{88,548}$

= 4,358 ppm

Kadar $= \frac{4,358}{40000}$ x 100%

= 0,011%

Ekstrak kulit batang

- Replikasi 1

AUC = 1213,4

y = 88,548x + 854,9

1213,4 = 88,548x + 854,9

x $= \frac{1213,4-854,9}{88,548}$

= 4,049 ppm

Kadar = $\frac{4,049}{40000}$ x 100%

= 0,010%

- Replikasi 2

AUC = 1923,6

y = 88,548x + 854,9

1923,6 = 88,548x + 854,9

x = $\frac{1923,6-854,9}{88,548}$

= 12,069 ppm

Kadar = $\frac{12,069}{40000}$ x 100%

= 0,030%

- Replikasi 3

AUC = 2435,2

y = 88,548x + 854,9

2435,2 = 88,548x + 854,9

x = $\frac{2435,2-854,9}{88,548}$

= 17,847 ppm

Kadar = $\frac{17,847}{40000}$ x 100%

= 0,045%

Ekstrak daun

- Replikasi 1

AUC = 2952,3

y = 88,548x + 854,9

2952,3 = 88,548x + 854,9

x = $\frac{2952,3-854,9}{88,548}$

= 23,687 ppm

Kadar $= \frac{23,687}{40000}$ x 100%

= 0,059%

- Replikasi 2

AUC = 2415,8

y = 88,548x + 854,9

2415,8 = 88,548x + 854,9

x $= \frac{2415,8-854,9}{88,548}$

= 17,628 ppm

Kadar $= \frac{17,628}{40000}$ x 100%

= 0,044%

- Replikasi 3

AUC = 2743,5

y = 88,548x + 854,9

2743,5 = 88,548x + 854,9

x $= \frac{2743,5-854,9}{88,548}$

= 21,329 ppm

Kadar $= \frac{21,329}{40000}$ x 100%

= 0,053%

Lampiran 4. Analisis Statistik

Tests of Normality

	bagian tumbuhan	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
kadar	akar	.292	3	.	.923	3	.463
	batang	.276	3	.	.942	3	.537
	kulit batang	.364	3	.	.800	3	.114
	daun	.219	3	.	.987	3	.780

a. Lilliefors Significance Correction

ANOVA

kadar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.003	3	.001	22.232	.000
Within Groups	.000	8	.000		
Total	.003	11			

Multiple Comparisons

Dependent Variable: kadar

Tukey HSD

(I) bagian tumbuhan	(J) bagian tumbuhan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
akar	batang	.037000*	.005467	.001*	.01949	.05451
	kulit batang	.013667	.005467	.134	-.00384	.03117
	daun	-.003000	.005467	.944	-.02051	.01451
batang	akar	-.037000*	.005467	.001*	-.05451	-.01949
	kulit batang	-.023333*	.005467	.012	-.04084	-.00583
	daun	-.040000*	.005467	.000*	-.05751	-.02249
kulit batang	akar	-.013667	.005467	.134	-.03117	.00384
	batang	.023333*	.005467	.012	.00583	.04084
	daun	-.016667	.005467	.062	-.03417	.00084
daun	akar	.003000	.005467	.944	-.01451	.02051
	batang	.040000*	.005467	.000*	.02249	.05751
	kulit batang	.016667	.005467	.062	-.00084	.03417

*. The mean difference is significant at the 0.05 level.

Lampiran 5. Dokumentasi Penelitian

Gambar 1. Pengambilan Sampel

Gambar 2. Pencucian sampel

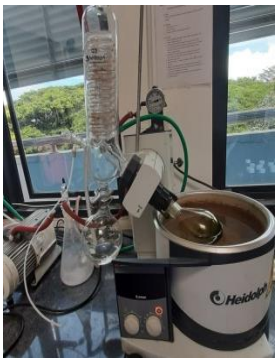
Gambar 3. Pengeringan Sampel

Gambar 4. Penyerbukan Sampel

Gambar 5. Penimbangan Sampel

Gambar 6. Proses Ekstraksi Maserasi

Gambar 7. Penyaringan Sampel



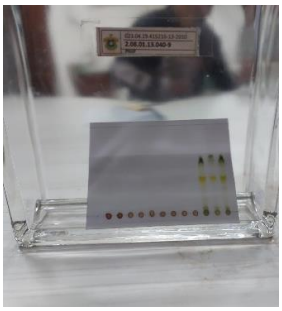
Gambar 8. Proses Penguapan

Gambar 9. Ekstrak Kental

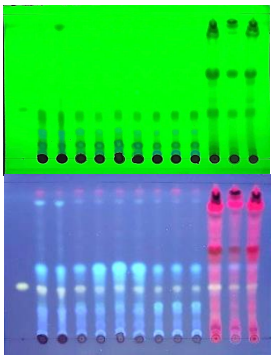
Gambar 10. Penimbangan Ekstrak Kental

Gambar 11. Proses Pembuatan Larutan Uji

Gambar 12. Proses KLT-Densitometri



Gambar 13. Proses Elusi Lempeng KLT



Gambar 14. Hasil KLT UV 366 & 254 nm

Gambar 15. Analisis Lempeng KLT dengan TLC Scanner