

## DAFTAR PUSTAKA

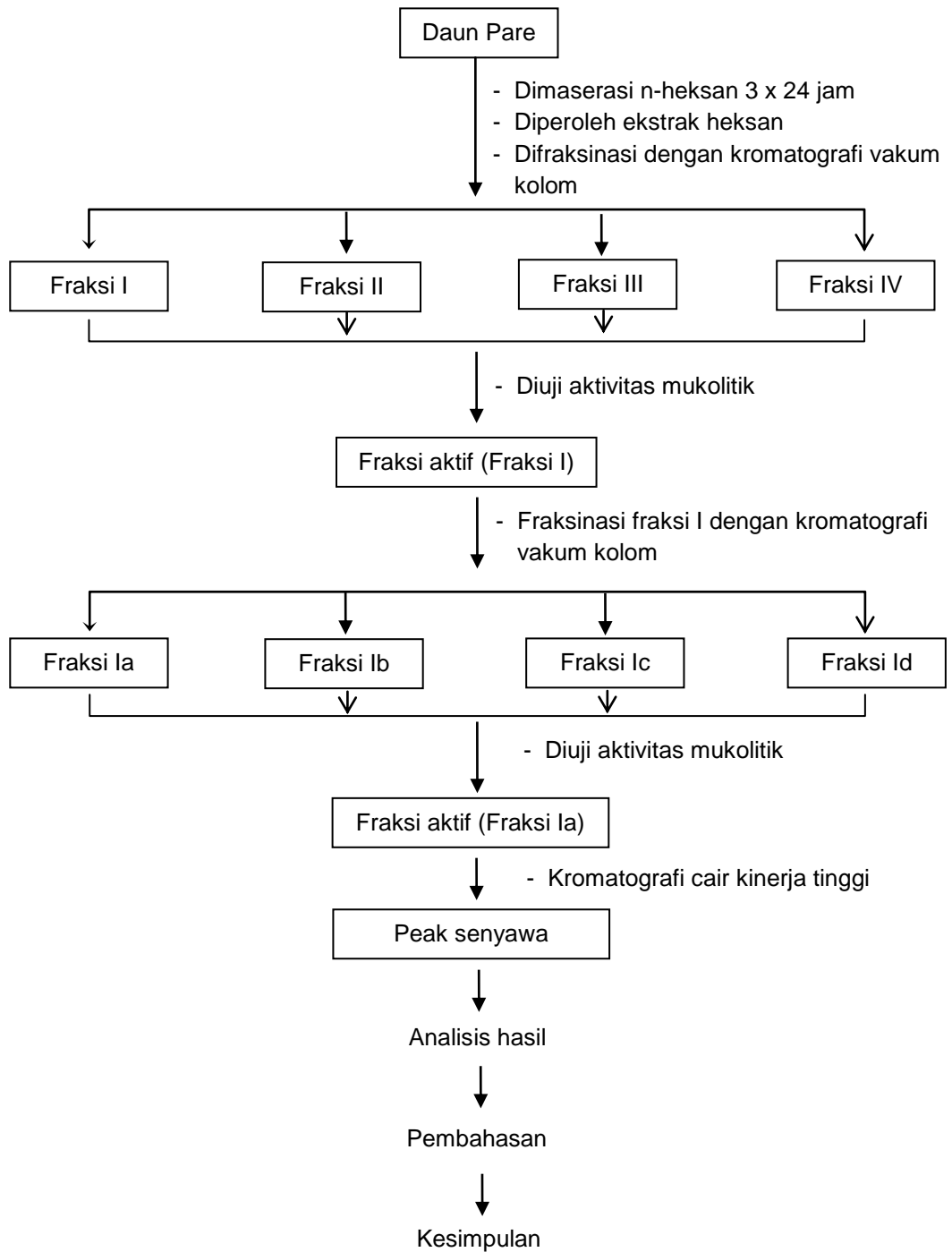
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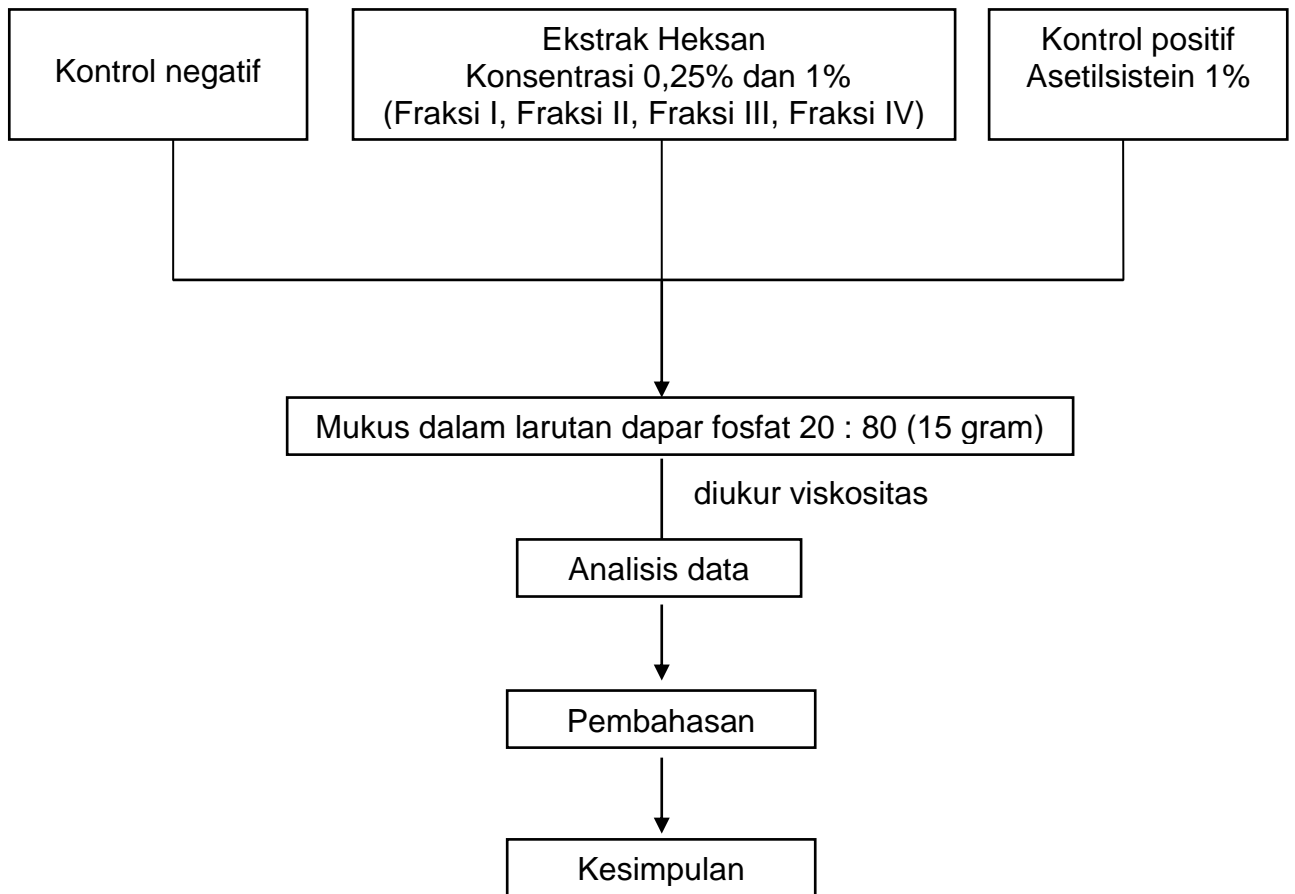
## LAMPIRAN I

### Skema Kerja



## LAMPIRAN II

### Skema Kerja Uji Aktivitas Mukolitik



### LAMPIRAN III

Perhitungan aktivitas mukolitik secara *in vitro* (viskositas) ekstrak heksan daun pare (*Momordica charantia* L.)

Tabel 5. Data waktu alir uji aktivitas mukolitik fraksi Ekstrak heksan

No	Sampel Uji	Data Waktu Alir (detik)			
		1	2	3	Rata-rata
1	Fraksi I 0,25 %	10,17	10,84	10,44	10,48
2	Fraksi I 1 %	10,74	10,92	10,92	10,86
3	Fraksi II 0,25 %	14,23	14,62	13,81	14,22
4	Fraksi II 1 %	15,54	18,34	17,83	17,24
5	Fraksi III 0,25 %	15,72	13,80	16,36	15,29
6	Fraksi III 1 %	14,87	15,48	15,58	15,31
7	Fraksi IV 0,25 %	15,09	15,41	15,81	15,44
8	Fraksi IV 1 %	13,98	14,15	13,89	14,01
9	Kontrol +	10,01	9,70	9,70	9,80
10	Kontrol -	15,35	18,02	20,90	18,09
11	Air Suling	8,35	8,50	8,58	8,48

Tabel 6. Data bobot jenis larutan uji fraksi ekstrak heksan

No	Sampel Uji	Bobot Jenis Larutan (gram/ml)			
		1	2	3	Rata-rata
1	Fraksi I 0,25 %	1,093	1,004	1,095	1,064
2	Fraksi I 1 %	1,000	1,090	1,004	1,031
3	Fraksi II 0,25 %	1,041	1,094	1,043	1,059
4	Fraksi II 1 %	1,050	1,044	1,054	1,049
5	Fraksi III 0,25 %	1,051	1,038	1,054	1,048
6	Fraksi III 1 %	1,052	1,035	1,038	1,042
7	Fraksi IV 0,25 %	1,005	1,005	1,005	1,005
8	Fraksi IV 1 %	1,051	1,038	1,054	1,048
9	Kontrol +	1,040	1,044	1,045	1,043
10	Kontrol -	1,098	1,004	1,007	1,036
11	Air Suling	1,042	1,040	1,045	1,042

Perhitungan bobot jenis (BJ) air pada suhu 37<sup>0</sup>C

$$\begin{aligned} \text{BJ} &= \frac{\text{Bobot air (g)} - \text{bobot piknometer kosong (g)}}{\text{Volume piknometer rata-rata (ml)}} \\ &= \frac{20,800 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,042 \end{aligned}$$

Bobot jenis air pada suhu 37<sup>0</sup>C adalah 1,042.

Diketahui bobot piknometer kosong : I = 9,667 g

$$\text{II} = 10,379 \text{ g}$$

Volume piknometer kosong : 10 ml

Perhitungan bobot jenis larutan uji yang mengandung fraksi heksan

$$\text{Bobot jenis mukus (37<sup>0</sup>C)} = \frac{\text{Bobot mukus (g)} - \text{bobot piknometer kosong (g)}}{\text{Volume piknometer rata-rata (ml)}}$$

Fraksi I 1%

$$\text{BJ} = \frac{\text{Bobot mukus (g)} - \text{bobot piknometer kosong (g)}}{\text{Volume piknometer rata-rata (ml)}}$$

$$\text{BJ} = \frac{19,669 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,000$$

$$\text{BJ} = \frac{21,277 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,090$$

$$\text{BJ} = \frac{19,708 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,004$$

Fraksi I 0,25%

$$BJ = \frac{21,306 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,093$$

$$BJ = \frac{19,710 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,004$$

$$BJ = \frac{21,324 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,095$$

Fraksi II 1%

$$BJ = \frac{20,879 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,050$$

$$BJ = \frac{20,110 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,044$$

$$BJ = \frac{20,916 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,054$$

Fraksi II 0,25%

$$BJ = \frac{20,072 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,041$$

$$BJ = \frac{21,319 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,094$$

$$BJ = \frac{20,098 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,043$$



Fraksi III 1%

$$BJ = \frac{20,900 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,052$$

$$BJ = \frac{20,013 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,035$$

$$BJ = \frac{20,045 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,038$$

Fraksi III 0,25%

$$BJ = \frac{20,886 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,051$$

$$BJ = \frac{20,042 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,038$$

$$BJ = \frac{20,918 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,054$$

Fraksi IV 1%

$$BJ = \frac{20,892 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,051$$

$$BJ = \frac{20,885 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,051$$

$$BJ = \frac{20,849 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,047$$

Fraksi IV 0,25%

$$BJ = \frac{19,720 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,005$$

$$BJ = \frac{19,718 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,005$$

$$BJ = \frac{19,714 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,005$$

Kontrol Positif

$$BJ = \frac{20,068 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,040$$

$$BJ = \frac{20,108 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,044$$

$$BJ = \frac{20,120 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,045$$

Kontrol Negatif

$$BJ = \frac{21,360 \text{ g} - 10,379 \text{ g}}{10 \text{ ml}} = 1,098$$

$$BJ = \frac{19,710 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,004$$

$$BJ = \frac{19,732 \text{ g} - 9,667 \text{ g}}{10 \text{ ml}} = 1,007$$

Perhitungan viskositas larutan uji pada suhu 37°C

$$\eta \text{ mukus} = \frac{\rho \text{ larutan uji } 37^{\circ}\text{C} \times t \text{ larutan uji } 37^{\circ}\text{C}}{\rho \text{ air } 37^{\circ}\text{C} \times t \text{ air } 37^{\circ}\text{C}} \times \eta \text{ air } 37^{\circ}\text{C}$$

Diketahui :

$$\eta \text{ air pada suhu } 37^{\circ}\text{C} = 0,692 \text{ cps}$$

$$t \text{ air} = 8,48 \text{ dtk}$$

$\eta$  Fraksi I 1%

$$\eta \text{ larutan uji} = \frac{1,000 \times 10,74}{1,042 \times 8,35} \times 0,692 = 0,854 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,090 \times 10,92}{1,040 \times 8,50} \times 0,692 = 0,931 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,004 \times 10,92}{1,045 \times 8,58} \times 0,692 = 0,846 \text{ cps}$$

$$\eta \text{ larutan uji rata-rata} = 0,877 \text{ cps}$$

$\eta$  Fraksi I 0,25%

$$\eta \text{ larutan uji} = \frac{1,093 \times 10,17}{1,042 \times 8,35} \times 0,692 = 0,883 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,004 \times 10,84}{1,040 \times 8,50} \times 0,692 = 0,851 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,095 \times 10,44}{1,045 \times 8,58} \times 0,692 = 0,882 \text{ cps}$$

$$\eta \text{ larutan uji rata-rata} = 0,872 \text{ cps}$$

η Fraksi II 1%

$$\eta \text{ larutan uji} = \frac{1,050 \times 15,54}{1,042 \times 8,35} \times 0,692 = 1,297 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,044 \times 18,34}{1,040 \times 8,50} \times 0,692 = 1,498 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,054 \times 17,83}{1,045 \times 8,58} \times 0,692 = 1,449 \text{ cps}$$

η larutan uji rata-rata = 1,415 cps

η Fraksi II 0,25%

$$\eta \text{ larutan uji} = \frac{1,041 \times 14,23}{1,042 \times 8,35} \times 0,692 = 1,177 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,094 \times 14,62}{1,040 \times 8,50} \times 0,692 = 1,251 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,043 \times 13,81}{1,045 \times 8,58} \times 0,692 = 1,111 \text{ cps}$$

η larutan uji rata-rata = 1,180 cps

η Fraksi III 1%

$$\eta \text{ larutan uji} = \frac{1,052 \times 14,87}{1,042 \times 8,35} \times 0,692 = 1,243 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,035 \times 15,48}{1,040 \times 8,50} \times 0,692 = 1,253 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,038 \times 15,58}{1,045 \times 8,58} \times 0,692 = 1,247 \text{ cps}$$

η larutan uji rata-rata = 1,248 cps

η Fraksi III 0,25%

$$\eta \text{ larutan uji} = \frac{1,051 \times 15,72}{1,042 \times 8,35} \times 0,692 = 1,313 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,038 \times 13,80}{1,040 \times 8,50} \times 0,692 = 1,121 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,054 \times 16,36}{1,045 \times 8,58} \times 0,692 = 1,330 \text{ cps}$$

η larutan uji rata-rata = 1,254 cps

η Fraksi IV 1%

$$\eta \text{ larutan uji} = \frac{1,051 \times 13,98}{1,042 \times 8,35} \times 0,692 = 1,168 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,038 \times 14,15}{1,040 \times 8,50} \times 0,692 = 1,149 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,054 \times 13,89}{1,045 \times 8,58} \times 0,692 = 1,129 \text{ cps}$$

η larutan uji rata-rata = 1,149 cps

η Fraksi IV 0,25%

$$\eta \text{ larutan uji} = \frac{1,005 \times 15,09}{1,042 \times 8,35} \times 0,692 = 1,205 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,005 \times 15,41}{1,040 \times 8,50} \times 0,692 = 1,211 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,005 \times 15,81}{1,045 \times 8,58} \times 0,692 = 1,225 \text{ cps}$$

η larutan uji rata-rata = 1,214 cps

η Kontrol Positif

$$\eta \text{ larutan uji} = \frac{1,040 \times 10,01}{1,042 \times 8,35} \times 0,692 = 0,827 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,044 \times 9,70}{1,040 \times 8,50} \times 0,692 = 0,792 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,045 \times 9,70}{1,045 \times 8,58} \times 0,692 = 0,782 \text{ cps}$$

η larutan uji rata-rata = 0,800 cps

η Kontrol Negatif

$$\eta \text{ larutan uji} = \frac{1,098 \times 15,35}{1,042 \times 8,35} \times 0,692 = 1,340 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,004 \times 18,02}{1,040 \times 8,50} \times 0,692 = 1,415 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,007 \times 20,90}{1,045 \times 8,58} \times 0,692 = 1,623 \text{ cps}$$

η larutan uji rata-rata = 1,459 cps

Tabel 7. Data waktu alir uji aktivitas mukolitik fraksi I Ekstrak heksan

No	Sampel Uji	Data Waktu Alir (detik)			
		1	2	3	Rata-rata
1	Subfraksi Ia 0,25 %	10,45	10,47	10,41	10,44
2	Subfraksi Ia 1 %	10,77	10,67	10,30	10,58
3	Subfraksi Ib 0,25 %	13,71	13,64	13,62	13,66
4	Subfraksi Ib 1 %	13,66	13,67	13,63	13,65
5	Subfraksi Ic 0,25 %	15,06	15,51	14,65	15,07
6	Subfraksi Ic 1 %	12,74	15,15	15,62	14,50
7	Subfraksi Id 0,25 %	12,68	13,38	13,51	13,19
8	Subfraksi Id 1 %	14,90	14,00	14,61	14,50
9	Kontrol +	10,77	10,52	10,89	10,73
10	Kontrol -	15,47	15,43	15,25	15,38
11	Air Suling	8,34	8,65	8,66	8,55

Tabel 8. Data bobot jenis larutan uji fraksi I ekstrak heksan

No	Sampel Uji	Bobot Jenis Larutan (gram/ml)			
		1	2	3	Rata-rata
1	Subfraksi Ia 0,25 %	1,091	1,001	1,092	1,061
2	Subfraksi Ia 1 %	1,003	1,090	1,049	1,047
3	Subfraksi Ib 0,25 %	1,000	1,092	1,004	1,032
4	Subfraksi Ib 1 %	1,091	0,999	1,090	1,060
5	Subfraksi Ic 0,25 %	1,046	1,047	1,051	1,048
6	Subfraksi Ic 1 %	1,041	1,049	1,042	1,044
7	Subfraksi Id 0,25 %	1,044	1,040	0,959	1,014
8	Subfraksi Id 1 %	1,039	1,039	1,039	1,039
9	Kontrol +	1,046	1,051	1,043	1,047
10	Kontrol -	1,001	1,091	1,040	1,044
11	Air Suling	1,041	1,031	1,042	1,038

Perhitungan bobot jenis (BJ) air pada suhu 37<sup>0</sup>C

$$BJ = \frac{\text{Bobot air (g)} - \text{bobot piknometer kosong (g)}}{\text{Volume piknometer rata-rata (ml)}}$$

$$= \frac{20,537 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,014$$

Bobot jenis air pada suhu 37<sup>0</sup>C adalah 1,042.

Diketahui bobot piknometer kosong : I = 9,683 g

$$II = 10,394 \text{ g}$$

Volume piknometer kosong : 10 ml

Perhitungan bobot jenis larutan uji yang mengandung fraksi heksan

$$\text{Bobot jenis mukus (37}^0\text{C)} = \frac{\text{Bobot mukus (g)} - \text{bobot piknometer kosong (g)}}{\text{Volume piknometer rata-rata (ml)}}$$

Subfraksi Ia 1%

$$BJ = \frac{\text{Bobot mukus (g)} - \text{bobot piknometer kosong (g)}}{\text{Volume piknometer rata-rata (ml)}}$$

$$BJ = \frac{19,714 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,003$$

$$BJ = \frac{21,295 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,090$$

$$BJ = \frac{20,882 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,049$$

Subfraksi Ia 0,25%

$$BJ = \frac{21,301 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,091$$

$$BJ = \frac{19,688 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,001$$

$$BJ = \frac{21,313 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,092$$

Subfraksi Ib 1%

$$BJ = \frac{21,304 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,091$$

$$BJ = \frac{19,673 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 0,999$$

$$BJ = \frac{21,292 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,090$$

Subfraksi Ib 0,25%



$$BJ = \frac{19,679 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,000$$

$$BJ = \frac{21,313 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,092$$

$$BJ = \frac{19,725 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,004$$

Subfraksi Ic 1%

$$BJ = \frac{20,097 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,041$$

$$BJ = \frac{20,879 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,049$$

$$BJ = \frac{20,107 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,042$$

Subfraksi Ic 0,25%

$$BJ = \frac{20,853 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,046$$

$$BJ = \frac{20,151 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,047$$

$$BJ = \frac{20,900 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,051$$

Subfraksi Id 1%

$$BJ = \frac{20,075 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,039$$

$$BJ = \frac{20,073 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,039$$

$$BJ = \frac{20,072 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,039$$

Subfraksi Id 0,25%

$$BJ = \frac{20,833 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,044$$

$$BJ = \frac{20,795 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,040$$

$$BJ = \frac{19,985 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 0,959$$

Kontrol Positif

$$BJ = \frac{20,143 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,046$$

$$BJ = \frac{20,908 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,051$$

$$BJ = \frac{20,112 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,043$$

Kontrol Negatif

$$BJ = \frac{19,689 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,001$$

$$BJ = \frac{21,308 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,091$$

$$BJ = \frac{20,080 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,040$$

Air

$$BJ = \frac{20,806 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,041$$

$$BJ = \frac{19,989 \text{ g} - 9,683 \text{ g}}{10 \text{ ml}} = 1,031$$

$$BJ = \frac{20,816 \text{ g} - 10,394 \text{ g}}{10 \text{ ml}} = 1,042$$

Perhitungan viskositas larutan uji pada suhu 37°C

$$\eta \text{ mukus} = \frac{\rho \text{ larutan uji } 37^\circ\text{C} \times t \text{ larutan uji } 37^\circ\text{C}}{\rho \text{ air } 37^\circ\text{C} \times t \text{ air } 37^\circ\text{C}} \times \eta \text{ air } 37^\circ\text{C}$$

Diketahui :

$$\eta \text{ air pada suhu } 37^\circ\text{C} = 0,692 \text{ cps}$$

$$t \text{ air} = 8,55 \text{ dtk}$$

$\eta$  Subfraksi Ia 1%

$$\eta \text{ larutan uji} = \frac{1,003 \times 10,77}{1,041 \times 8,34} \times 0,692 = 0,861 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,090 \times 10,67}{1,031 \times 8,65} \times 0,692 = 0,902 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,049 \times 10,30}{1,042 \times 8,66} \times 0,692 = 0,829 \text{ cps}$$

$$\eta \text{ larutan uji rata-rata} = 0,864 \text{ cps}$$

$\eta$  Subfraksi Ia 0,25%

$$\eta \text{ larutan uji} = \frac{1,091 \times 10,45}{1,041 \times 8,34} \times 0,692 = 0,909 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,001 \times 10,47}{1,031 \times 8,65} \times 0,692 = 0,813 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,092 \times 10,41}{1,042 \times 8,66} \times 0,692 = 0,872 \text{ cps}$$

$\eta$  larutan uji rata-rata = 0,865 cps

$\eta$  Subfraksi Ib 1%

$$\eta \text{ larutan uji} = \frac{1,091 \times 13,66}{1,041 \times 8,34} \times 0,692 = 1,188 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{0,999 \times 13,67}{1,031 \times 8,65} \times 0,692 = 1,060 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,090 \times 13,63}{1,042 \times 8,66} \times 0,692 = 1,139 \text{ cps}$$

$\eta$  larutan uji rata-rata = 1,129 cps

$\eta$  Subfraksi Ib 0,25%

$$\eta \text{ larutan uji} = \frac{1,000 \times 13,71}{1,041 \times 8,34} \times 0,692 = 1,093 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,092 \times 13,64}{1,031 \times 8,65} \times 0,692 = 1,156 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,004 \times 13,62}{1,042 \times 8,66} \times 0,692 = 1,049 \text{ cps}$$

$\eta$  larutan uji rata-rata = 1,099 cps

$\eta$  Subfraksi Ic 1%

$$\eta \text{ larutan uji} = \frac{1,041 \times 12,74}{1,041 \times 8,34} \times 0,692 = 1,057 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,049 \times 15,15}{1,031 \times 8,65} \times 0,692 = 1,233 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,042 \times 15,62}{1,042 \times 8,66} \times 0,692 = 1,248 \text{ cps}$$

$\eta$  larutan uji rata-rata = 1,179 cps

$\eta$  Subfraksi Ic 0,25%

$$\eta \text{ larutan uji} = \frac{1,046 \times 15,06}{1,041 \times 8,34} \times 0,692 = 1,256 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,047 \times 15,51}{1,031 \times 8,65} \times 0,692 = 1,260 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,051 \times 14,65}{1,042 \times 8,66} \times 0,692 = 1,181 \text{ cps}$$

$\eta$  larutan uji rata-rata = 1,232 cps

$\eta$  Subfraksi Id 1%

$$\eta \text{ larutan uji} = \frac{1,039 \times 14,90}{1,041 \times 8,34} \times 0,692 = 1,234 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,039 \times 14,00}{1,031 \times 8,65} \times 0,692 = 1,129 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,039 \times 14,61}{1,042 \times 8,66} \times 0,692 = 1,164 \text{ cps}$$

$\eta$  larutan uji rata-rata = 1,176 cps

$\eta$  Subfraksi Id 0,25%

$$\eta \text{ larutan uji} = \frac{1,044 \times 12,688}{1,041 \times 8,34} \times 0,692 = 1,055 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,040 \times 13,38}{1,031 \times 8,65} \times 0,692 = 1,080 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{0,959 \times 13,51}{1,042 \times 8,66} \times 0,692 = 0,994 \text{ cps}$$

$\eta$  larutan uji rata-rata = 1,043 cps

$\eta$  Kontrol Positif

$$\eta \text{ larutan uji} = \frac{1,046 \times 10,77}{1,041 \times 8,34} \times 0,692 = 0,898 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,051 \times 10,52}{1,031 \times 8,65} \times 0,692 = 0,858 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,043 \times 10,89}{1,042 \times 8,66} \times 0,692 = 0,871 \text{ cps}$$

$\eta$  larutan uji rata-rata = 0,876 cps

$\eta$  Kontrol Negatif

$$\eta \text{ larutan uji} = \frac{1,001 \times 15,47}{1,041 \times 8,34} \times 0,692 = 1,234 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,091 \times 15,43}{1,031 \times 8,65} \times 0,692 = 1,306 \text{ cps}$$

$$\eta \text{ larutan uji} = \frac{1,040 \times 15,25}{1,042 \times 8,66} \times 0,692 = 1,216 \text{ cps}$$

$\eta$  larutan uji rata-rata = 1,252 cps

**LAMPIRAN IV**  
**FOTO PENGUJIAN**



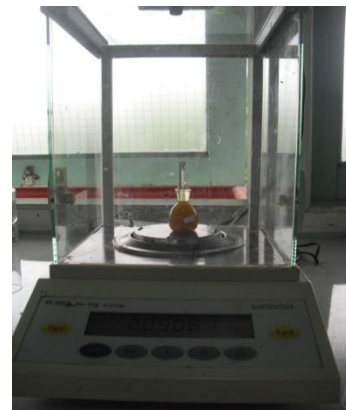
(a)



(b)



(c)



(d)

Keterangan: (a) Usus sapi , (b) Pengukuran waktu alir dengan viskometer Ostwald, (c) Sampel uji, (d) Pengukuran bobot jenis.

**LAMPIRAN V**  
**ANALISIS DATA**

Analisis Data Ekstrak Heksan

**Tests of Normality**

	Sampel	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Visko sitas	Kontrol Positif	.304	3	.	.907	3	.407
	Kontrol Negatif	.285	3	.	.931	3	.494
	F I 1%	.355	3	.	.820	3	.163
	F I 0.25%	.375	3	.	.773	3	.052
	F II 1%	.295	3	.	.920	3	.451
	F II 0.25%	.182	3	.	.999	3	.937
	F III 1%	.219	3	.	.987	3	.780
	F III 0.25%	.359	3	.	.811	3	.140
	F IV 1%	.177	3	.	1.000	3	.972
	F IV 0.25%	.269	3	.	.949	3	.567

a. Lilliefors Significance Correction

**Test of Homogeneity of Variances**

Viskositas

Levene Statistic	df1	df2	Sig.
4.812	9	20	.002

**Ranks**

		N	Mean Rank	Sum of Ranks
Viskositas - Sampel	Negative Ranks	30 <sup>a</sup>	15.50	465.00
	Positive Ranks	0 <sup>b</sup>	.00	.00
	Ties	0 <sup>c</sup>		
	Total	30		

a. Viskositas < Sampel

b. Viskositas > Sampel

c. Viskositas = Sampel

Analisis Data Fraksi I



**Tests of Normality**

	Sampel	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
	Kontrol Positif	.257	3	.	.961	3	.619
	Kontrol Negatif	.314	3	.	.893	3	.363
	F I 1 1%	.199	3	.	.995	3	.864
	F I 1 0.25%	.227	3	.	.983	3	.749
Visko sitas	F I 2 1%	.228	3	.	.982	3	.743
	F I 2 0.25%	.214	3	.	.990	3	.805
	F I 3 1%	.360	3	.	.809	3	.135
	F I 3 0.25%	.369	3	.	.788	3	.086
	F I 4 1%	.253	3	.	.964	3	.637
	F I 4 0.25%	.274	3	.	.945	3	.547

a. Lilliefors Significance Correction

**Test of Homogeneity of Variances**

Viskositas

Levene Statistic	df1	df2	Sig.
1.625	9	20	.175

**Viskositas**

Tukey HSD

Sampel	N	Subset for alpha = 0.05		
		1	2	3
F I 1 1%	3	.86400		
F I 1 0.25%	3	.86467		
Kontrol Positif	3	.87567		
F I 4 0.25%	3		1.04300	
F I 2 0.25%	3		1.09933	1.09933
F I 2 1%	3		1.12900	1.12900
F I 4 1%	3		1.17567	1.17567
F I 3 1%	3		1.17933	1.17933
F I 3 0.25%	3			1.23233
Kontrol Negatif	3			1.25200
Sig.		1.000	.149	.076

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

(I) Sampel		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Kontrol Positif	Kontrol Negatif	-.376333*	.045831	.000	-.53863	-.21404
	F_la 1%	.011667	.045831	1.000	-.15063	.17396
	F_la 0.25%	.011000	.045831	1.000	-.15129	.17329
	F_lb 1%	-.253333*	.045831	.001	-.41563	-.09104
	F_lb 0.25%	-.223667*	.045831	.003	-.38596	-.06137
	F_lc 1%	-.303667*	.045831	.000	-.46596	-.14137
	F_lc 0.25%	-.356667*	.045831	.000	-.51896	-.19437
	F_ld 1%	-.300000*	.045831	.000	-.46229	-.13771
	F_ld 0.25%	-.167333*	.045831	.040	-.32963	-.00504

Kontrol Negatif	Kontrol Positif	.376333*	.045831	.000	.21404	.53863
	F_la 1%	.388000*	.045831	.000	.22571	.55029
	F_la 0.25%	.387333*	.045831	.000	.22504	.54963
	F_lb 1%	.123000	.045831	.244	-.03929	.28529
	F_lb 0.25%	.152667	.045831	.076	-.00963	.31496
	F_lc 1%	.072667	.045831	.840	-.08963	.23496
	F_lc 0.25%	.019667	.045831	1.000	-.14263	.18196
	F_ld 1%	.076333	.045831	.801	-.08596	.23863
	F_ld 0.25%	.209000*	.045831	.006	.04671	.37129

F_la 1%	Kontrol Positif	-.011667	.045831	1.000	-.17396	.15063
	Kontrol Negatif	-.388000	.045831	.000	-.55029	-.22571
	F_la 0.25%	-.000667	.045831	1.000	-.16296	.16163
	F_lb 1%	-.265000	.045831	.000	-.42729	-.10271
	F_lb 0.25%	-.235333	.045831	.002	-.39763	-.07304
	F_lc 1%	-.315333	.045831	.000	-.47763	-.15304
	F_lc 0.25%	-.368333	.045831	.000	-.53063	-.20604
	F_ld 1%	-.311667	.045831	.000	-.47396	-.14937
	F_ld 0.25%	-.179000	.045831	.023	-.34129	-.01671

F_la 0.25%	Kontrol Positif	-.011000	.045831	1.000	-.17329	.15129
	Kontrol Negatif	-.387333	.045831	.000	-.54963	-.22504
	F_la 1%	.000667	.045831	1.000	-.16163	.16296
	F_lb 1%	-.264333	.045831	.000	-.42663	-.10204
	F_lb 0.25%	-.234667	.045831	.002	-.39696	-.07237
	F_lc 1%	-.314667	.045831	.000	-.47696	-.15237
	F_lc 0.25%	-.367667	.045831	.000	-.52996	-.20537
	F_ld 1%	-.311000	.045831	.000	-.47329	-.14871
	F_ld 0.25%	-.178333	.045831	.024	-.34063	-.01604

F_lb 1%	Kontrol Positif	.253333	.045831	.001	.09104	.41563
	Kontrol Negatif	-.123000	.045831	.244	-.28529	.03929
	F_la 1%	.265000	.045831	.000	.10271	.42729
	F_la 0.25%	.264333	.045831	.000	.10204	.42663
	F_lb 0.25%	.029667	.045831	1.000	-.13263	.19196
	F_lc 1%	-.050333	.045831	.979	-.21263	.11196
	F_lc 0.25%	-.103333	.045831	.455	-.26563	.05896
	F_ld 1%	-.046667	.045831	.987	-.20896	.11563
	F_ld 0.25%	.086000	.045831	.683	-.07629	.24829

F_lb 0.25%	Kontrol Positif	.223667	.045831	.003	.06137	.38596
	Kontrol Negatif	-.152667	.045831	.076	-.31496	.00963
	F_la 1%	.235333	.045831	.002	.07304	.39763
	F_la 0.25%	.234667	.045831	.002	.07237	.39696
	F_lb 1%	-.029667	.045831	1.000	-.19196	.13263
	F_lc 1%	-.080000	.045831	.759	-.24229	.08229
	F_lc 0.25%	-.133000	.045831	.169	-.29529	.02929
	F_ld 1%	-.076333	.045831	.801	-.23863	.08596
	F_ld 0.25%	.056333	.045831	.958	-.10596	.21863

F_lc 1%	Kontrol Positif	.303667	.045831	.000	.14137	.46596
	Kontrol Negatif	-.072667	.045831	.840	-.23496	.08963
	F_la 1%	.315333	.045831	.000	.15304	.47763
	F_la 0.25%	.314667	.045831	.000	.15237	.47696
	F_lb 1%	.050333	.045831	.979	-.11196	.21263
	F_lb 0.25%	.080000	.045831	.759	-.08229	.24229
	F_lc 0.25%	-.053000	.045831	.971	-.21529	.10929
	F_ld 1%	.003667	.045831	1.000	-.15863	.16596
	F_ld 0.25%	.136333	.045831	.149	-.02596	.29863

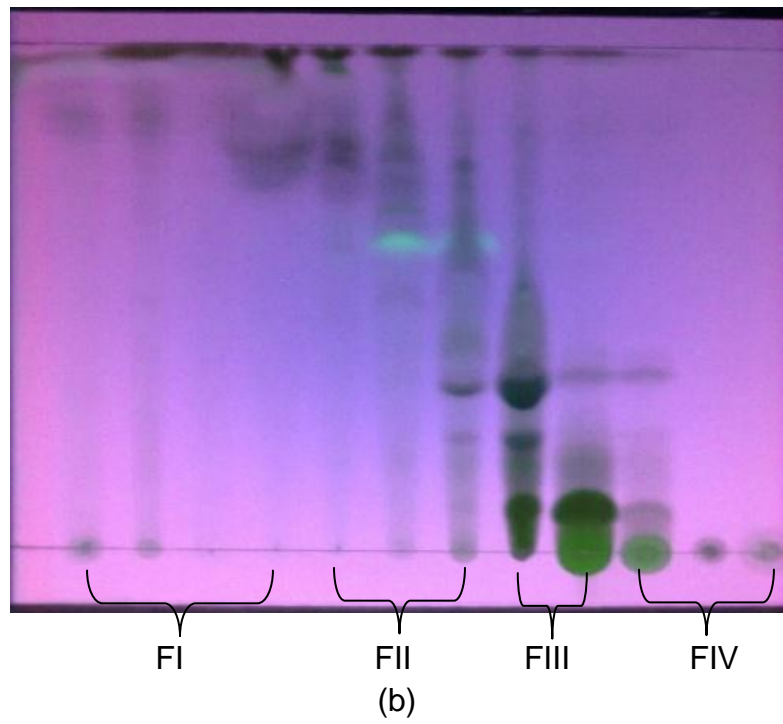
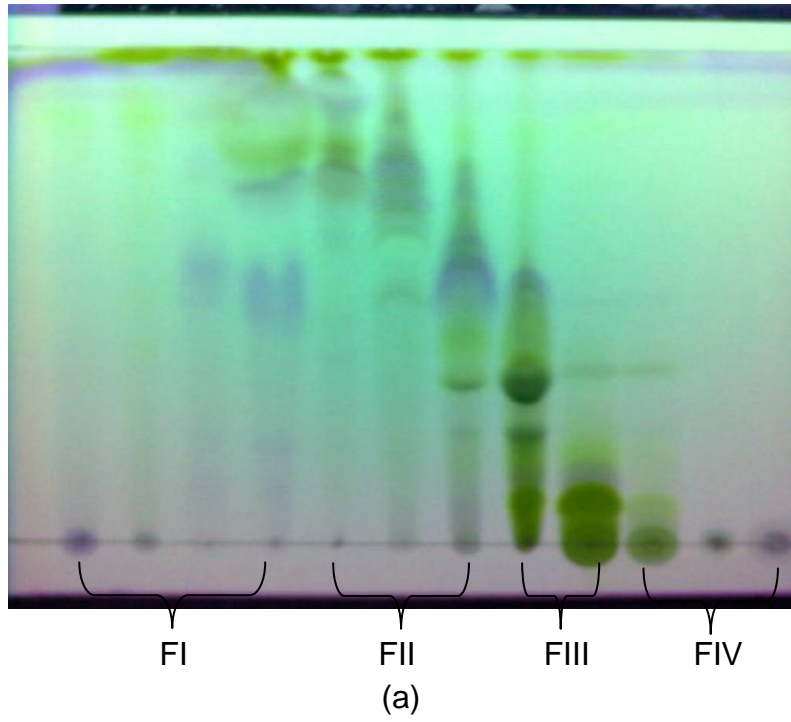
F_lc 0.25%	Kontrol Positif	.356667	.045831	.000	.19437	.51896
	Kontrol Negatif	-.019667	.045831	1.000	-.18196	.14263
	F_la 1%	.368333	.045831	.000	.20604	.53063
	F_la 0.25%	.367667	.045831	.000	.20537	.52996
	F_lb 1%	.103333	.045831	.455	-.05896	.26563
	F_lb 0.25%	.133000	.045831	.169	-.02929	.29529
	F_lc 1%	.053000	.045831	.971	-.10929	.21529
	F_ld 1%	.056667	.045831	.957	-.10563	.21896
	F_ld 0.25%	.189333	.045831	.015	.02704	.35163

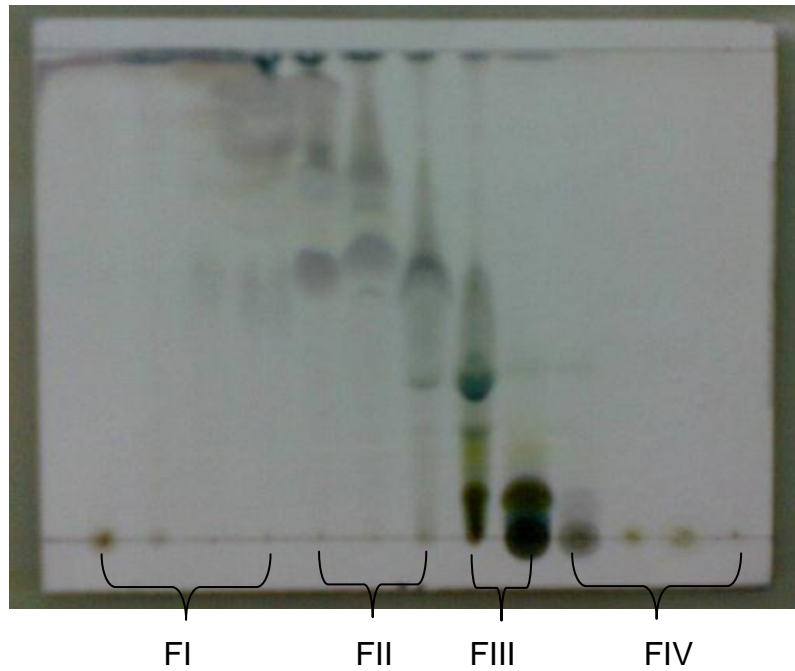
F_Id 1%	Kontrol Positif	.300000*	.045831	.000	.13771	.46229
	Kontrol Negatif	-.076333	.045831	.801	-.23863	.08596
	F_Ia 1%	.311667*	.045831	.000	.14937	.47396
	F_Ia 0.25%	.311000*	.045831	.000	.14871	.47329
	F_Ib 1%	.046667	.045831	.987	-.11563	.20896
	F_Ib 0.25%	.076333	.045831	.801	-.08596	.23863
	F_Ic 1%	-.003667	.045831	1.000	-.16596	.15863
	F_Ic 0.25%	-.056667	.045831	.957	-.21896	.10563
	F_Id 0.25%	.132667	.045831	.171	-.02963	.29496

F_Id 0.25%	Kontrol Positif	.167333*	.045831	.040	.00504	.32963
	Kontrol Negatif	-.209000*	.045831	.006	-.37129	-.04671
	F_Ia 1%	.179000*	.045831	.023	.01671	.34129
	F_Ia 0.25%	.178333*	.045831	.024	.01604	.34063
	F_Ib 1%	-.086000	.045831	.683	-.24829	.07629
	F_Ib 0.25%	-.056333	.045831	.958	-.21863	.10596
	F_Ic 1%	-.136333	.045831	.149	-.29863	.02596
	F_Ic 0.25%	-.189333*	.045831	.015	-.35163	-.02704
	F_Id 1%	-.132667	.045831	.171	-.29496	.02963

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

LAMPIRAN VI



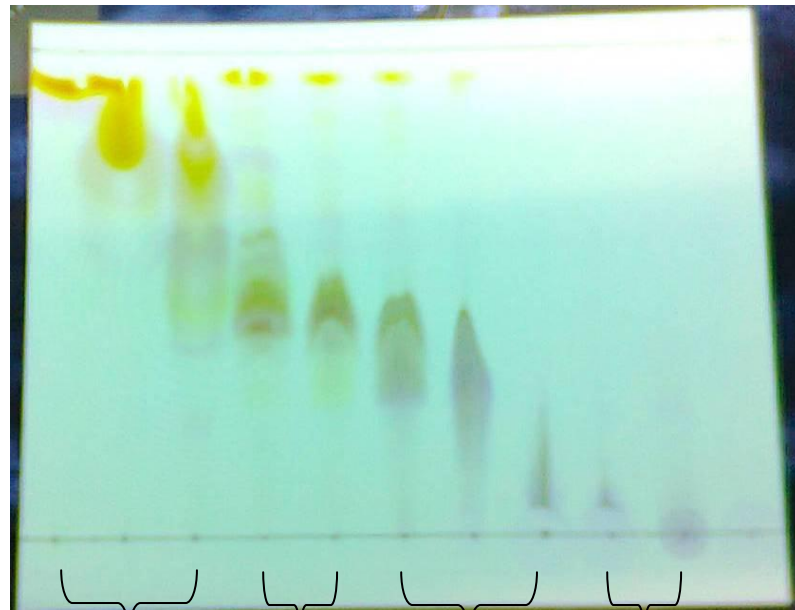


(c)

Gambar 5. Profil kromatografi lapis tipis ekstrak heksan daun pare (*Momordica charantia* L.) Keterangan: (a) Visualisasi dengan UV 254 nm, (b) visualisasi dengan UV 366 nm, (c) visualisasi setelah penyemprotan H<sub>2</sub>SO<sub>4</sub> 10%. Fase diam silika gel, fase gerak heksan-etilasetat 5 : 1.



LAMPIRAN VII



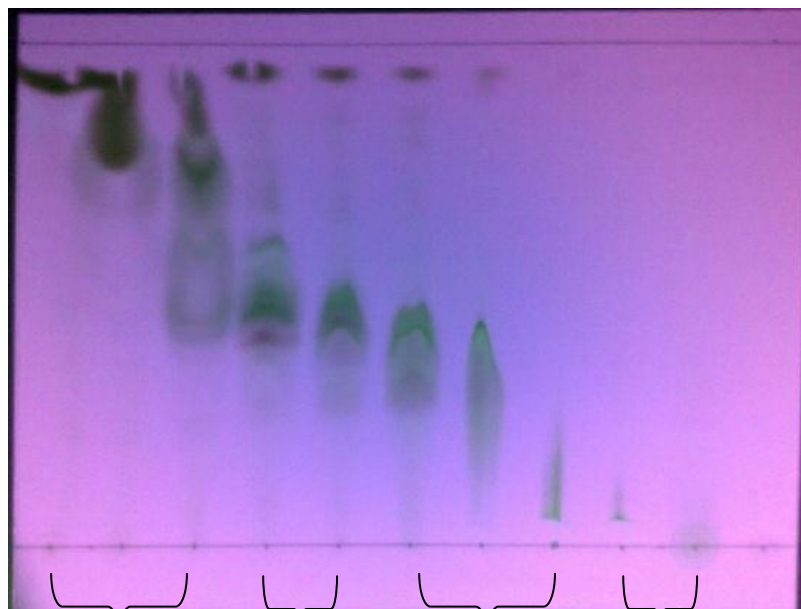
FI-a

FI-b

FI-c

FI-d

(a)



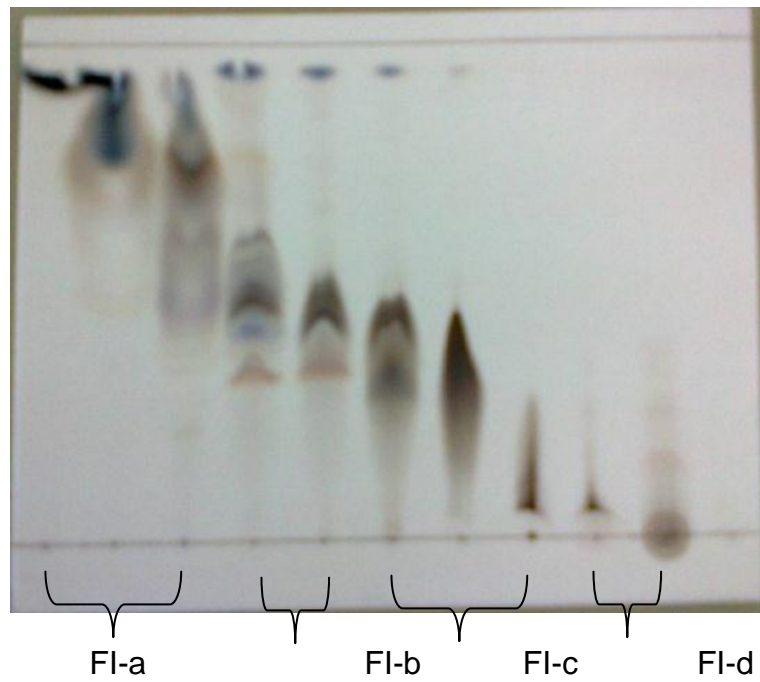
FI-a

FI-b

FI-c

FI-d

(b)

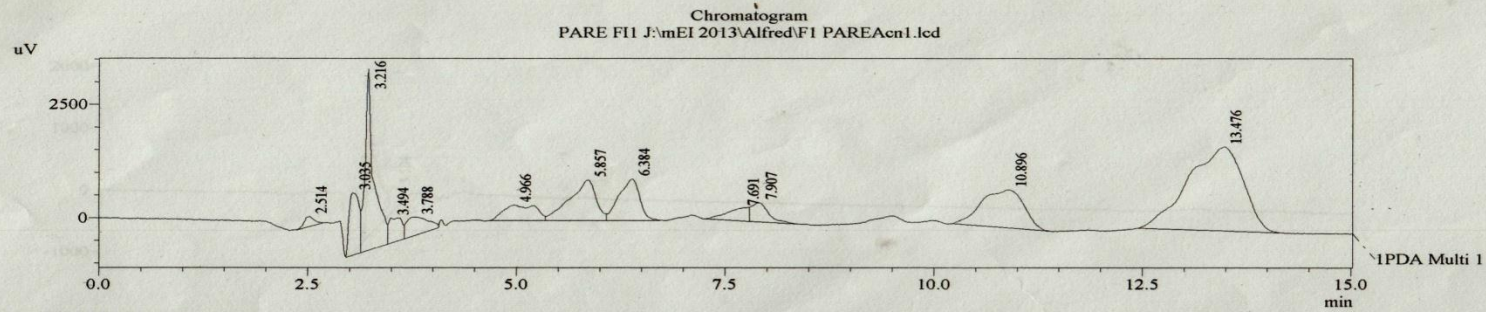


(c)

Gambar 6. Profil kromatografi lapis tipis fraksi I ekstrak heksan daun pare (*Momordica charantia* L.). Keterangan: (a) Visualisasi dengan UV 254 nm, (b) visualisasi dengan UV 366 nm, (c) visualisasi setelah penyemprotan  $H_2SO_4$  10%. Fase diam silika gel, fase gerak heksan-etilasetat 7 : 1.

## LAMPIRAN VIII

### PROFIL KCKT

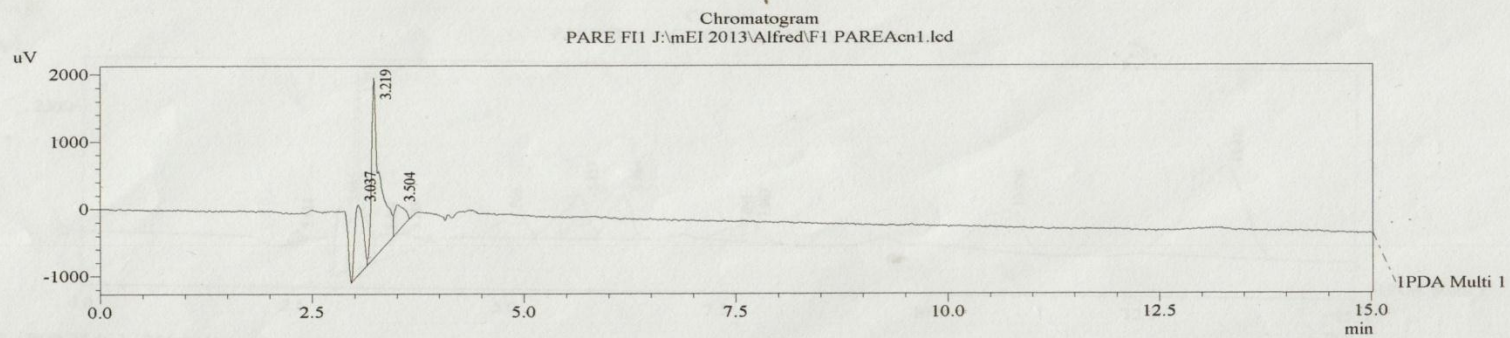


#### Quantitative Results

ID#	Name	Ret. Time	Area	Height	Conc.
1	RT2.514	2.514	1849	219	0.000
2	RT3.035	3.035	11549	1388	0.000
3	RT3.216	3.216	28676	4010	0.000
4	RT3.494	3.494	5772	557	0.000
5	RT3.788	3.788	7235	405	0.000
6	RT4.966	4.966	9273	344	0.000
7	RT5.857	5.857	19620	892	0.000
8	RT6.384	6.384	15735	914	0.000
9	RT7.691	7.691	5385	279	0.000
10	RT7.907	7.907	5900	427	0.000
11	RT10.896	10.896	29654	839	0.000
12	RT13.476	13.476	85995	1851	0.000

#### Sample Information

Acquired by : Admin  
 Sample Name : PARE F11  
 Sample ID : PARE F11  
 Tray# : 1  
 Vial# : 47  
 Injection Volume : 10 uL  
 Data Filename : F1 PAREAcn1.lcd  
 Method Filename : PAREAcn 254.lcm  
 Batch Filename : 24 MEI.lcb  
 Report Filename : Default.lcr  
 Date Acquired : 5/25/2013 4:48:44 PM  
 Data Processed : 5/27/2013 12:36:25 PM  
 fase gerak = Acn ; Air = 80 ; 20  
 flow rate = 0.5 ml/min  
 detektor : PDA  
 Kolom : Shim-Pack Vp-Ods  
 Suhu Kolom ; 40 oC  
 Operator : ismail



1 PDA Multi 1 / 366nm 4nm

Quantitative Results

PDA					
ID#	Name	Ret. Time	Area	Height	Conc.
1	RT3.037	3.037	7174	1053	0.000
2	RT3.219	3.219	17933	2690	0.000
3	RT3.504	3.504	3107	411	0.000

Sample Information

Acquired by : Admin  
 Sample Name : PARE FI1  
 Sample ID : PARE FI1  
 Tray# : 1  
 Vail# : 47  
 Injection Volume : 10 uL  
 Data Filename : F1 PAREAcn1.lcd  
 Method Filename : PAREacn 366.lcm  
 Batch Filename : 24 MEI.lcb  
 Report Filename : Default.lcr  
 Date Acquired : 5/25/2013 4:48:44 PM  
 Data Processed : 5/27/2013 12:39:44 PM  
 fase gerak = Acn ; Air = 80 ;20  
 flow rate = 0.5 ml/min  
 detektor : PDA  
 Kolom : Shim-Pack Vp-Ods  
 Suhu Kolom : 40 oC  
 Operator : ismail