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LAMPIRAN

Lampiran 1. Skema Kerja Penelitian

```
┌──────────┐      ┌──────────────┐      ┌──────────┐
│  Etanol  │      │ Etil Selulosa│      │  Aseton  │
└────┬─────┘      └──────┬───────┘      └────┬─────┘
     └──────────────────┬┴───────────────────┘
                        │
              ┌─────────────────────┐
              │  Campuran Polimer   │
              └──────────┬──────────┘
                         │  - Campuran eutektik (Mentol : Kamfer)
                         │  - PEG 400
              ┌─────────────────────┐
              │   Formula Film      │
              │     Forming         │
              └──────────┬──────────┘
                         │
              ┌─────────────────────┐
              │  Evaluasi Sediaan   │
              └──────────┬──────────┘
```

Uji Viskositas

Uji Permeabilitas Uap Air

Uji Permeasi Ex Vivo

Uji Waktu Pengeringan

Uji Bioadhesive

Uji Retensi

Analisis Data

Pembahasan dan Penarikan Kesimpulan
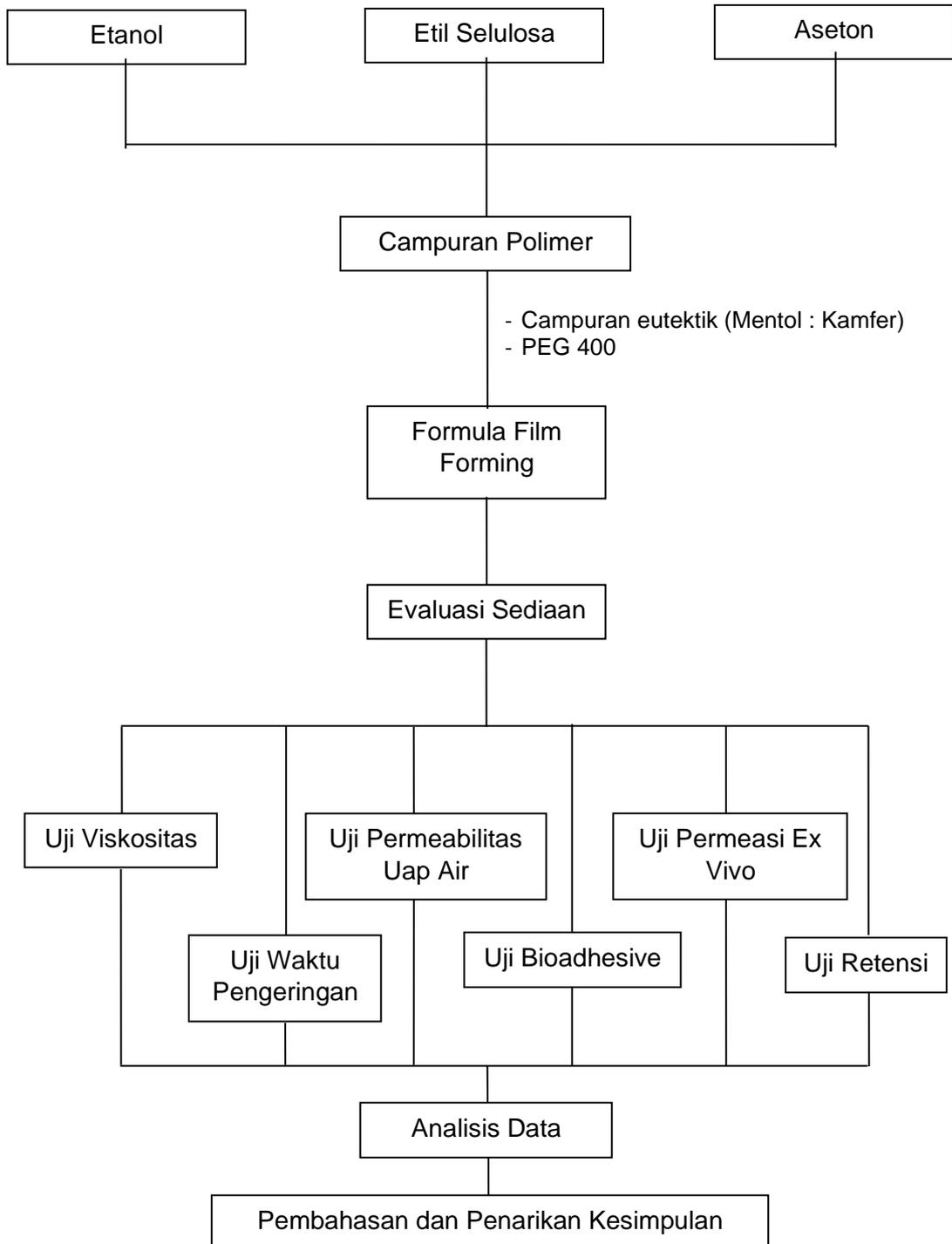
Lampiran 2. Panjang Gelombang Maksimum dan Kurva Baku

Lampiran 2.1. Panjang Gelombang Maksimum
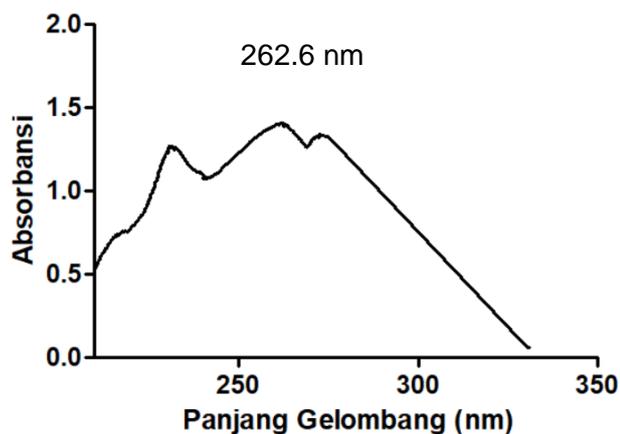
Gambar 13. Panjang gelombang maksimum

Lampiran 2.2 Kurva Baku
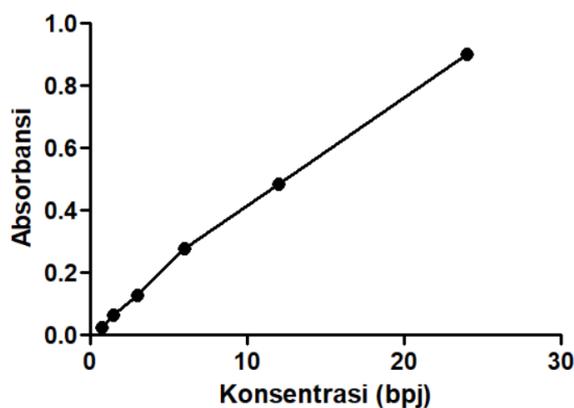
Gambar 14. Kurva baku Itraconazole

Lampiran 3. Perhitungan

   a. **Uji Bioadhesive**

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat x 981}}{1000 \text{ x luas area kulit}}$$

   Formula 1 (5%)

   Replikasi 1   : 15

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat x 981}}{\text{1000 x luas area kulit}}$$

$$= \frac{15 \text{ x } 981}{1000 \text{ x } 28,26}$$

$$= 415,84 \text{ N/m}^2$$

Replikasi 2   : 15

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat x 981}}{\text{1000 x luas area kulit}}$$

$$= \frac{15 \text{ x } 981}{1000 \text{ x } 28,26}$$

$$= 415,84 \text{ N/m}^2$$

Replikasi 3   : 20

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat x 981}}{\text{1000 x luas area kulit}}$$

$$= \frac{20 \text{ x } 981}{1000 \text{ x } 28,26}$$

$$= 554,46 \text{ N/m}^2$$

Formula 2 (10%)

Replikasi 1   : 30

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat x 981}}{\text{1000 x luas area kulit}}$$

$$= \frac{30 \text{ x } 981}{1000 \text{ x } 28,26}$$

$$= 831,69 \text{ N/m}^2$$

Replikasi 2   : 20

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat x 981}}{\text{1000 x luas area kulit}}$$

$$= \frac{20 \text{ x } 981}{1000 \text{ x } 28,26}$$

$$= 554,41 \text{ N/m}^2$$

Replikasi 3   : 15

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat x 981}}{\text{1000 x luas area kulit}}$$

$$= \frac{15 \times 981}{1000 \times 28,26}$$

$$= 415,84 \text{ N/m}^2$$

Formula 3 (15%)

Replikasi 1 : 30

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat} \times 981}{1000 \times \text{luas area kulit}}$$

$$= \frac{30 \times 981}{1000 \times 28,26}$$

$$= 831,69 \text{ N/m}^2$$

Replikasi 2 : 30

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat} \times 981}{1000 \times \text{luas area kulit}}$$

$$= \frac{30 \times 981}{1000 \times 28,26}$$

$$= 831,69 \text{ N/m}^2$$

Replikasi 3 : 20

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat} \times 981}{1000 \times \text{luas area kulit}}$$

$$= \frac{20 \times 981}{1000 \times 28,26}$$

$$= 554,46 \text{ N/m}^2$$

Formula 4 (20%)

Replikasi 1 : 30

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat} \times 981}{1000 \times \text{luas area kulit}}$$

$$= \frac{30 \times 981}{1000 \times 28,26}$$

$$= 831,69 \text{ N/m}^2$$

Replikasi 2 : 31

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat} \times 981}{1000 \times \text{luas area kulit}}$$

$$= \frac{31 \times 981}{1000 \times 28{,}26}$$

$$= 859{,}41 \text{ N/m}^2$$

Replikasi 3 : 22

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat} \times 981}{1000 \times \text{luas area kulit}}$$

$$= \frac{22 \times 981}{1000 \times 28{,}26}$$

$$= 609{,}90 \text{ N/m}^2$$

Formula 5 (25%)

Replikasi 1 : 30

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat} \times 981}{1000 \times \text{luas area kulit}}$$

$$= \frac{30 \times 981}{1000 \times 28{,}26}$$

$$= 831{,}69 \text{ N/m}^2$$

Replikasi 2 : 30

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat} \times 981}{1000 \times \text{luas area kulit}}$$

$$= \frac{30 \times 981}{1000 \times 28{,}26}$$

$$= 831{,}69 \text{ N/m}^2$$

Replikasi 3 : 32

$$\text{Kekuatan Biodhesive (N/m}^2) = \frac{\text{Berat} \times 981}{1000 \times \text{luas area kulit}}$$

$$= \frac{32 \times 981}{1000 \times 28{,}26}$$

$$= 887{,}13 \text{ N/m}^2$$

b. **Uji Permeasi**

1 mL formula tiap pengujian mengandung 10 mg itraconazole

Persamaan : $y = 0{,}0184x + 0{,}0374$

Dimana : y = serapan; x = konsentrasi

- Pada F1 Replikasi 1 jam 0,5 diperoleh serapan = 0,120

Sehingga, untuk mendapatkan konsentrasi :

0,120 $= 0,0184x + 0,0374$

X $= \dfrac{0,120 - 0,0374}{0,0184}$

X $= 4,489$ µg/mL

Konsentrasi dalam 1 mL = 4,489 x 1 = 4,489 µg/mL

Konsentrasi dalam 13 mL $= \dfrac{4,489130435 \text{ x } 13 \text{ mL x } 3}{1000} = 0,17$ mg

Faktor koreksi $= \dfrac{\text{Konsentrasi Jam Sebelumnya}}{1000}$ + Faktor koreksi jam sebelumnya

$= \dfrac{0 \text{ µg}}{1000} + 0$

$= 0$

Jumlah terpermeasi $=$ Konsentrasi dalam 13 mL + Faktor koreksi

$= 0,17$ mg + 0

$= 0,17$ mg

Kecepatan laju permeasi sediaan (fluks, J, µg/cm^{-2}/jam^{-1}) dihitung dengan rumus :

$$J = \dfrac{M}{S \text{ x } t}$$

Dimana :

J $=$ Fluks (µg/cm^{-2}/jam^{-1})
S $=$ Luas area difusi (cm^2)
M $=$ Jumlah zat yang terpermeasi (µg)
t $=$ Waktu (jam)

Maka,

$$J = \dfrac{0,00017 \text{ µg}}{4,9 \text{ cm x } 0,5 \text{ jam}} = 0,00006939 \text{ µg/cm}^2\text{/jam}^{-1}$$

c. **Uji Retensi**

Formula 1

Persamaan : y = 0,0184x + 0,0374

Dimana : y = serapan; x = konsentrasi

Pada F1 Replikasi 1, diperoleh serapan = 0,204

Sehingga, untuk mendapatkan konsentrasi :

0,204 = 0,0184x + 0,0374

$$X = \frac{0,204 - 0,0374}{0,0184}$$

X = 9,054 µg/mL

Jumlah ITZ yang teretensi = $\frac{14,33}{1000}$ x 10 mL = 0,090 mg dalam waktu 24 Jam.

Formula 2

Persamaan : y = 0,0184x + 0,0374

Dimana : y = serapan; x = konsentrasi

Pada F2 Replikasi 1, diperoleh serapan = 0,252

Sehingga, untuk mendapatkan konsentrasi :

0,252 = 0,0184x + 0,0374

$$X = \frac{0,252 - 0,0374}{0,0184}$$

X = 11,66 µg/mL

Jumlah ITZ yang teretensi = $\frac{11,66}{1000}$ x 10 mL = 0,116 mg dalam waktu 24 Jam.

Formula 3

Persamaan : y = 0,0184x + 0,0374

Dimana : y = serapan; x = konsentrasi

Pada F3 Replikasi 1, diperoleh serapan = 0,301

Sehingga, untuk mendapatkan konsentrasi :

0,301 = 0,0184x + 0,0374

$$X = \frac{0,301 - 0,0374}{0,0184}$$

X = 14,33 µg/mL

Jumlah ITZ yang teretensi = $\frac{14,33}{1000}$ x 10 mL = 0,143 mg dalam waktu 24 Jam.

Formula 4

Persamaan : y = 0,0184x + 0,0374

Dimana : y = serapan; x = konsentrasi

Pada F4 Replikasi 1, diperoleh serapan = 0,322

Sehingga, untuk mendapatkan konsentrasi :

0,322 = 0,0184x + 0,0374

$$X = \frac{0,322 - 0,0374}{0,0184}$$

X = 15,46 µg/mL

Jumlah ITZ yang teretensi = $\frac{15,46}{1000}$ x 10 mL = 0,154 mg dalam waktu 24 Jam.

Formula 5

Persamaan : y = 0,0184x + 0,0374

Dimana : y = serapan; x = konsentrasi

Pada F5 Replikasi 1, diperoleh serapan = 0,366

Sehingga, untuk mendapatkan konsentrasi :

0,366 = 0,0184x + 0,0374

$$X = \frac{0,366 - 0,0374}{0,0184}$$

X = 17,85 µg/mL

Jumlah ITZ yang teretensi = $\frac{17,85}{1000}$ x 10 mL = 0,178 mg dalam waktu 24 Jam.

Lampiran 4. Tabel Hasil Evaluasi

Lampiran 4.1 Hasil uji viskositas

Replikasi	F1	F2	F3	F4	F5
1	38400	39200	44000	68000	70400
2	39200	40000	45600	64000	72000
3	35200	41600	44800	69600	76000
Rata-rata ± SD	37600±1728,19	40266,67±997,77	44800±653,19	67200±2355,13	72800±2355,13

Lampiran 4.2 Hasil uji waktu pengeringan

Replikasi	F1	F2	F3	F4	F5
1	8,3	7,5	6,4	5,5	4,29
2	8,45	7,42	6,45	5,54	4,29
3	8,25	8,02	6,37	5,58	4,50
Rata-rata ± SD	8,33±0,08	7,64±0,26	6,40±0,03	5,54±0,03	4,42±0,09

Lampiran 4.3 Hasil uji bioadhesive

Replikasi	F1	F2	F3	F4	F5
1	415,84	831,69	831,69	831,69	831,69
2	415,84	554,46	831,69	859,41	831,69
3	554,46	415,84	554,46	609,90	887,13
Rata-rata ± SD	462,1±65,34	600,6±172,9	739,9±130,7	767,0±111,7	850,2±26,13

Lampiran 4.5 Hasil uji permeasi

a. Formula 1

Jam	Replikasi	Serapan	Konsentrasi (μg/ml)	1 ml (μg)	13 ml (mg)	Faktor koreksi	Jumlah Terpermeasi (mg)	Rata-rata±SD
	1	0,12	4,48	4,48	0,17	0	0,175	
0,25	2	0,125	4,76	4,76	0,18	0	0,185	0,183 ± 0,007
	3	0,127	4,86	4,86	0,18	0	0,189	
	1	0,247	11,39	11,39	0,44	0,004	0,448	
0,5	2	0,251	11,60	11,60	0,45	0,004	0,457	0,456 ± 0,006
	3	0,253	11,71	11,71	0,45	0,004	0,461	
	1	0,325	15,63	15,63	0,60	0,015	0,625	
0,75	2	0,326	15,68	15,68	0,61	0,016	0,628	0,628 ± 0,003
	3	0,328	15,79	15,79	0,61	0,016	0,632	
	1	0,347	16,82	16,82	0,65	0,031	0,687	
1	2	0,348	16,88	16,88	0,65	0,032	0,690	0,689 ± 0,001
	3	0,348	16,88	16,88	0,65	0,032	0,690	

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	1	0,346	16,77	16,77	0,65	0,048	0,702	
2	2	0,350	16,98	16,98	0,66	0,048	0,711	0,709 ± 0,006
	3	0,351	17,04	17,04	0,66	0,049	0,713	
	1	0,352	17,09	17,09	0,66	0,065	0,731	
3	2	0,357	17,36	17,36	0,67	0,065	0,743	0,740 ± 0,007
	3	0,358	17,42	17,42	0,67	0,066	0,745	
	1	0,358	17,42	17,42	0,67	0,082	0,761	
4	2	0,362	17,64	17,64	0,68	0,083	0,771	0,769 ± 0,007
	3	0,364	17,75	17,75	0,69	0,083	0,775	
	1	0,363	17,69	17,69	0,69	0,099	0,789	
5	2	0,368	17,96	17,96	0,70	0,100	0,801	0,799 ± 0,008
	3	0,370	18,07	18,07	0,70	0,101	0,806	
	1	0,373	18,23	18,23	0,71	0,117	0,828	
6	2	0,378	18,51	18,51	0,72	0,118	0,840	0,838 ± 0,008
	3	0,380	18,61	18,61	0,72	0,119	0,845	
	1	0,388	19,05	19,05	0,74	0,135	0,878	
7	2	0,389	19,10	19,10	0,74	0,137	0,882	0,881 ± 0,002
	3	0,389	19,10	19,10	0,74	0,130	0,883	

Jam	Replikasi	Serapan	Konsentrasi (µg/ml)	1 ml (µg)	13 ml (mg)	Faktor koreksi	Jumlah Terpermeasi (mg)	Rata-rata±SD
	1	0,390	19,16	19,16	0,74	0,154	0,901	
8	2	0,392	19,27	19,27	0,75	0,156	0,908	0,907 ± 0,004
	3	0,393	19,32	19,32	0,75	0,157	0,911	
	1	0,682	35,03	35,03	1,36	0,173	1,540	
24	2	0,683	35,08	35,08	1,36	0,175	1,544	1,545 ± 0,006
	3	0,687	35,30	35,30	1,37	0,176	1,553	

b. Formula 2

Jam	Replikasi	Serapan	Konsentrasi (µg/ml)	1 ml (µg)	13 ml (mg)	Faktor koreksi	Jumlah Terpermeasi (mg)	Rata-rata±SD
	1	0,110	3,94	3,94	0,153	0	0,153	
0,25	2	0,120	4,48	4,48	0,175	0	0,175	0,168 ± 0,012
	3	0,120	4,48	4,48	0,175	0	0,175	
	1	0,235	10,73	10,73	0,418	0,003	0,422	
0,5	2	0,240	11,01	11,01	0,429	0,004	0,433	0,431 ± 0,007
	3	0,242	11,11	11,11	0,433	0,004	0,438	

	1	0,315	15,08	15,08	0,588	0,014	0,603	
0,75	2	0,317	15,19	15,19	0,592	0,015	0,608	0,607 ± 0,003
	3	0,318	15,25	15,25	0,594	0,015	0,610	
	1	0,322	15,46	15,46	0,603	0,029	0,633	
1	2	0,326	15,68	15,68	0,611	0,030	0,642	0,640 ± 0,006
	3	0,327	15,73	15,73	0,613	0,030	0,644	
	1	0,332	16,01	16,01	0,624	0,045	0,669	
2	2	0,330	15,90	15,90	0,620	0,046	0,666	0,672 ± 0,007
	3	0,337	16,28	16,28	0,635	0,046	0,681	
	1	0,340	16,44	16,44	0,641	0,061	0,702	
3	2	0,345	16,71	16,71	0,651	0,062	0,714	0,711 ± 0,007
	3	0,346	16,77	16,77	0,654	0,062	0,716	
	1	0,342	16,55	16,55	0,645	0,077	0,723	
4	2	0,347	16,82	16,82	0,656	0,079	0,735	0,733 ± 0,009
	3	0,350	16,98	16,98	0,662	0,079	0,742	
	1	0,350	16,98	16,98	0,662	0,094	0,756	
5	2	0,352	17,09	17,09	0,666	0,095	0,762	0,763 ± 0,006
	3	0,355	17,26	17,26	0,673	0,096	0,769	

	1	0,360	17,53	17,53	0,683	0,111	0,795	
6	2	0,365	17,80	17,80	0,694	0,112	0,807	0,804 ± 0,008
	3	0,367	17,91	18,91	0,698	0,113	0,812	
	1	0,365	17,80	18,80	0,694	0,128	0,823	
7	2	0,370	18,07	18,07	0,704	0,130	0,835	0,835 ± 0,012
	3	0,375	18,34	18,34	0,715	0,131	0,847	
	1	0,370	18,07	18,07	0,704	0,146	0,851	
8	2	0,376	18,40	18,40	0,717	0,148	0,866	0,863 ± 0,010
	3	0,378	18,51	18,51	0,721	0,150	0,872	
	1	0,650	33,29	33,29	1,298	0,164	1,463	
24	2	0,652	33,40	33,40	1,302	0,167	1,469	1,468 ± 0,004
	3	0,652	33,40	33,40	1,302	0,168	1,471	

c. Formula 3

Jam	Replikasi	Serapan	Konsentrasi (µg/ml)	1 ml (µg)	13 ml (mg)	Faktor koreksi	Jumlah Terpermeasi (mg)	Rata-rata±SD

0,25	1	0,096	3,18	3,18	0,124	0	0,124	
	2	0,100	3,40	3,40	0,132	0	0,132	0,131 ± 0,006
	3	0,102	3,51	3,51	0,136	0	0,136	
0,5	1	0,207	9,21	9,21	0,359	0,003	0,362	
	2	0,211	9,43	9,43	0,367	0,003	0,371	0,370 ± 0,007
	3	0,214	9,59	9,59	0,374	0,003	0,377	
0,75	1	0,268	12,53	12,53	0,488	0,012	0,501	
	2	0,267	12,47	12,47	0,486	0,012	0,499	0,501 ± 0,002
	3	0,269	12,58	12,58	0,490	0,013	0,504	
1	1	0,291	13,78	13,78	0,537	0,024	0,562	
	2	0,294	13,94	13,94	0,543	0,025	0,569	0,568 ± 0,005
	3	0,296	14,05	14,05	0,548	0,025	0,573	
2	1	0,300	14,27	14,27	0,556	0,038	0,595	
	2	0,304	14,48	14,48	0,565	0,039	0,604	0,603 ± 0,007
	3	0,307	14,65	14,65	0,571	0,039	0,611	
3	1	0,315	15,08	15,08	0,588	0,052	0,641	
	2	0,320	15,35	15,35	0,598	0,053	0,652	0,651 ± 0,009
	3	0,323	15,52	15,52	0,605	0,054	0,659	

	1	0,317	15,19	15,19	0,592	0,068	0,660	
4	2	0,325	15,63	15,63	0,609	0,069	0,678	0,675 ± 0,012
	3	0,328	15,79	15,79	0,615	0,069	0,685	
	1	0,324	15,57	15,57	0,607	0,083	0,690	
5	2	0,329	15,84	15,84	0,618	0,084	0,702	0,699 ± 0,008
	3	0,330	15,90	15,90	0,620	0,085	0,705	
	1	0,326	15,68	15,68	0,611	0,098	0,710	
6	2	0,338	16,33	16,33	0,637	0,100	0,737	0,731 ± 0,018
	3	0,341	16,50	16,50	0,643	0,101	0,745	
	1	0,335	16,17	16,17	0,630	0,114	0,745	
7	2	0,340	16,44	16,44	0,641	0,116	0,758	0,757 ± 0,012
	3	0,345	16,71	16,71	0,651	0,118	0,770	
	1	0,340	16,44	16,44	0,641	0,130	0,772	
8	2	0,340	16,44	16,44	0,641	0,133	0,774	0,780 ± 0,011
	3	0,348	16,88	16,88	0,658	0,134	0,793	
	1	0,503	25,30	25,30	0,986	0,147	1,134	
24	2	0,509	25,63	25,63	0,999	0,149	1,149	1,145 ± 0,010
	3	0,510	25,68	25,68	1,001	0,151	1,153	

d. Formula 4

Jam	Replikasi	Serapan	Konsentrasi (µg/ml)	1 ml (µg)	13 ml (mg)	Faktor koreksi	Jumlah Terpermeasi (mg)	Rata-rata±SD
	1	0,063	1,39	1,39	0,054	0	0,054	
0,25	2	0,067	1,60	1,60	0,062	0	0,062	0,062 ± 0,007
	3	0,070	1,77	1,77	0,069	0	0,069	
	1	0,093	3,02	3,02	0,117	0,001	0,119	
0,5	2	0,097	3,23	3,23	0,126	0,001	0,127	0,125 ± 0,005
	3	0,097	3,23	3,23	0,126	0,001	0,128	
	1	0,112	4,05	4,05	0,158	0,004	0,162	
0,75	2	0,116	4,27	4,27	0,166	0,004	0,171	0,169 ± 0,005
	3	0,117	4,32	4,32	0,168	0,005	0,173	
	1	0,124	4,70	4,70	0,183	0,008	0,192	
1	2	0,127	4,86	4,86	0,189	0,009	0,199	0,199 ± 0,007
	3	0,131	5,08	5,08	0,198	0,009	0,207	

	1	0,137	5,41	5,41	0,211	0,013	0,224	
2	2	0,142	5,68	5,68	0,221	0,013	0,235	0,233 ± 0,008
	3	0,144	5,79	5,79	0,225	0,014	0,240	
	1	0,143	5,73	5,73	0,223	0,018	0,242	
3	2	0,147	5,95	5,95	0,232	0,019	0,251	0,250 ± 0,007
	3	0,149	6,06	6,06	0,236	0,020	0,256	
	1	0,146	5,90	5,90	0,230	0,024	0,254	
4	2	0,151	6,17	6,17	0,240	0,025	0,266	0,264 ± 0,009
	3	0,154	6,33	6,33	0,247	0,026	0,273	
	1	0,150	6,11	6,11	0,238	0,030	0,268	
5	2	0,153	6,28	6,28	0,245	0,031	0,276	0,275 ± 0,005
	3	0,154	6,33	6,33	0,247	0,032	0,279	
	1	0,162	6,77	6,77	0,264	0,036	0,300	
6	2	0,165	6,93	6,93	0,270	0,038	0,308	0,308 ± 0,007
	3	0,168	7,09	7,09	0,276	0,038	0,315	
	1	0,177	7,58	7,58	0,295	0,043	0,339	
7	2	0,180	7,75	7,75	0,302	0,045	0,347	0,346 ± 0,007
	3	0,183	7,91	7,91	0,308	0,046	0,354	

	Replikasi	Serapan	Konsentrasi	1 ml (µg)	13 ml (mg)	Faktor koreksi	Jumlah Terpermeasi	Rata-rata±SD
	1	0,189	8,23	8,23	0,321	0,050	0,372	
8	2	0,192	8,40	8,40	0,327	0,052	0,380	0,378 ± 0,006
	3	0,193	8,45	8,45	0,329	0,053	0,383	
	1	0,356	17,31	17,31	0,675	0,058	0,734	
24	2	0,355	17,26	17,26	0,673	0,061	0,734	0,742 ± 0,014
	3	0,366	17,85	17,85	0,696	0,062	0,758	

e. Formula 5

Jam	Replikasi	Serapan	Konsentrasi (µg/ml)	1 ml (µg)	13 ml (mg)	Faktor koreksi	Jumlah Terpermeasi (mg)	Rata-rata±SD
	1	0,062	1,33	1,33	0,052	0	0,052	
0,25	2	0,066	1,55	1,55	0,060	0	0,060	0,059 ± 0,006
	3	0,068	1,66	1,66	0,064	0	0,064	
	1	0,082	2,42	2,42	0,094	0,001	0,095	
0,5	2	0,086	2,64	2,64	0,103	0,001	0,104	0,102 ± 0,005
	3	0,087	2,69	2,69	0,105	0,001	0,106	

0,75	1	0,098	3,29	3,29	0,128	0,003	0,132	
	2	0,099	3,34	3,34	0,130	0,004	0,134	0,134 ± 0,002
	3	0,100	3,40	3,40	0,132	0,004	0,137	
1	1	0,101	3,45	3,45	0,134	0,007	0,141	
	2	0,104	3,61	3,61	0,141	0,007	0,148	0,148 ± 0,006
	3	0,107	3,78	3,78	0,147	0,007	0,155	
2	1	0,128	4,92	4,92	0,192	0,010	0,202	
	2	0,132	5,14	5,14	0,200	0,011	0,211	0,209 ± 0,006
	3	0,133	5,19	5,19	0,202	0,011	0,214	
3	1	0,133	5,19	5,19	0,202	0,015	0,218	
	2	0,138	5,46	5,46	0,213	0,016	0,229	0,227 ± 0,008
	3	0,140	5,57	5,57	0,217	0,016	0,234	
4	1	0,130	5,03	5,03	0,196	0,020	0,216	
	2	0,141	5,63	5,63	0,219	0,021	0,241	0,233 ± 0,014
	3	0,141	5,63	5,63	0,219	0,022	0,241	
5	1	0,152	6,22	6,22	0,242	0,025	0,268	
	2	0,157	6,50	6,50	0,253	0,027	0,280	0,278 ± 0,008
	3	0,159	6,60	6,60	0,257	0,027	0,285	

6	1	0,164	6,88	6,88	0,268	0,031	0,300	
	2	0,169	7,15	7,15	0,278	0,033	0,312	0,309 ± 0,008
	3	0,170	7,20	7,20	0,281	0,034	0,315	
7	1	0,169	7,15	7,15	0,278	0,038	0,317	
	2	0,174	7,42	7,42	0,289	0,041	0,330	0,328 ± 0,010
	3	0,177	7,58	7,58	0,295	0,041	0,337	
8	1	0,172	7,31	7,31	0,285	0,045	0,331	
	2	0,178	7,64	7,64	0,298	0,048	0,346	0,343 ± 0,010
	3	0,180	7,75	7,75	0,302	0,049	0,351	
24	1	0,293	13,89	13,89	0,541	0,053	0,595	
	2	0,297	14,10	14,10	0,550	0,056	0,606	0,604 ± 0,008
	3	0,299	14,21	14,21	0,554	0,057	0,611	

Lampiran 4.5 Hasil uji retensi

Formula (μg/ml)	Replikasi	Serapan	Konsentrasi	Jumlah ITZ teretensi setelah 24 jam (mg)	Rata-rata±SD (μg)
	1	0,204	9,05	0,090	
F1	2	0,204	9,05	0,090	93,62 ± 5,33
	3	0,221	9,97	0,099	
	1	0,252	11,66	0,116	
F2	2	0,255	11,82	0,118	117,71 ± 0,94
	3	0,255	11,82	0,118	
	1	0,301	14,32	0,143	
F3	2	0,302	14,38	0,143	143,62 ± 0,31
	3	0,302	14,38	0,143	
	1	0,322	15,46	0,154	
F4	2	0,324	15,57	0,155	155,94 ± 1,36
	3	0,327	15,73	0,157	
	1	0,366	17,85	0,178	
F5	2	0,366	17,85	0,178	181,66 ± 5,33
	3	0,383	17,78	0,187	

Lampiran 5. Data Hasil Analisis Statistika

1. Uji Viskositas

Oneway

ANOVA

Viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4964,667	4	1241,167	170,803	,000
Within Groups	72,667	10	7,267		
Total	5037,333	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Viskositas

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-3,33333	2,20101	,576	-10,5770	3,9104
	Formula 3	-9,00000*	2,20101	,015	-16,2437	-1,7563
	Formula 4	-37,00000*	2,20101	,000	-44,2437	-29,7563
	Formula 5	-44,00000*	2,20101	,000	-51,2437	-36,7563
Formula 2	Formula 1	3,33333	2,20101	,576	-3,9104	10,5770
	Formula 3	-5,66667	2,20101	,149	-12,9104	1,5770
	Formula 4	-33,66667*	2,20101	,000	-40,9104	-26,4230
	Formula 5	-40,66667*	2,20101	,000	-47,9104	-33,4230
Formula 3	Formula 1	9,00000*	2,20101	,015	1,7563	16,2437
	Formula 2	5,66667	2,20101	,149	-1,5770	12,9104
	Formula 4	-28,00000*	2,20101	,000	-35,2437	-20,7563
	Formula 5	-35,00000*	2,20101	,000	-42,2437	-27,7563
Formula 4	Formula 1	37,00000*	2,20101	,000	29,7563	44,2437
	Formula 2	33,66667*	2,20101	,000	26,4230	40,9104
	Formula 3	28,00000*	2,20101	,000	20,7563	35,2437
	Formula 5	-7,00000	2,20101	,059	-14,2437	,2437

Formula 5	Formula 1	44,00000*	2,20101	,000	36,7563	51,2437
	Formula 2	40,66667*	2,20101	,000	33,4230	47,9104
	Formula 3	35,00000*	2,20101	,000	27,7563	42,2437
	Formula 4	7,00000	2,20101	,059	-,2437	14,2437

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

2. Uji Waktu Pengeringan

Oneway

ANOVA

Waktu_pengeringan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29,784	4	7,446	279,713	,000
Within Groups	,266	10	,027		
Total	30,050	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Waktu_pengeringan

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	,68667*	,13322	,003	,2482	1,1251
	Formula 3	1,92667*	,13322	,000	1,4882	2,3651
	Formula 4	2,79333*	,13322	,000	2,3549	3,2318
	Formula 5	3,91333*	,13322	,000	3,4749	4,3518
Formula 2	Formula 1	-,68667*	,13322	,003	-1,1251	-,2482
	Formula 3	1,24000*	,13322	,000	,8016	1,6784
	Formula 4	2,10667*	,13322	,000	1,6682	2,5451
	Formula 5	3,22667*	,13322	,000	2,7882	3,6651
Formula 3	Formula 1	-1,92667*	,13322	,000	-2,3651	-1,4882
	Formula 2	-1,24000*	,13322	,000	-1,6784	-,8016
	Formula 4	,86667*	,13322	,001	,4282	1,3051
	Formula 5	1,98667*	,13322	,000	1,5482	2,4251

Formula 4	Formula 1	-2,79333*	,13322	,000	-3,2318	-2,3549
	Formula 2	-2,10667*	,13322	,000	-2,5451	-1,6682
	Formula 3	-,86667*	,13322	,001	-1,3051	-,4282
	Formula 5	1,12000*	,13322	,000	,6816	1,5584
Formula 5	Formula 1	-3,91333*	,13322	,000	-4,3518	-3,4749
	Formula 2	-3,22667*	,13322	,000	-3,6651	-2,7882
	Formula 3	-1,98667*	,13322	,000	-2,4251	-1,5482
	Formula 4	-1,12000*	,13322	,000	-1,5584	-,6816

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

3. Uji Bioadhesive

Kruskal-Wallis Test

Ranks

	Formula	N	Mean Rank
Bioadhesive	Formula 1	3	3,00
	Formula 2	3	5,83
	Formula 3	3	8,67
	Formula 4	3	10,50
	Formula 5	3	12,00
	Total	15	

Test Statistics[a,b]

	Uji Bioadhesive
Kruskal-Wallis H	8,512
df	4
Asymp. Sig.	,075

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Uji Bioadhesive

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound

Formula 1	Formula 2	2,68667*	,13300	,346	1,9546	2,1710
	Formula 3	2,19333*	,13300	,068	2,0847	2,2036
	Formula 4	2,79333*	,13300	,046	2,3549	3,6542
	Formula 5	2,61235*	,13300	,043	2,5047	4,6521
Formula 2	Formula 1	2,68667*	,13300	,346	-1,1251	-,2482
	Formula 3	1,24000*	,13300	,346	,8016	1,6784
	Formula 4	-2,10667*	,13300	,327	1,6682	2,5451
	Formula 5	3,22667*	,13300	,105	2,7882	3,6651
Formula 3	Formula 1	2,19333*	,13300	,068	-2,1719	-1,4882
	Formula 2	-1,24000*	,13300	,346	,0652	-,8016
	Formula 4	,86667*	,13300	,487	,4282	1,3051
	Formula 5	1,98667*	,13300	,197	1,5482	2,4251
Formula 4	Formula 1	-2,79333*	,13300	,046	-3,2318	-2,3549
	Formula 2	-2,10667*	,13300	,317	-2,5451	-1,6682
	Formula 3	-,86667*	,13300	,327	-1,3051	-,4282
	Formula 5	1,12000*	,13300	,487	,6816	1,5584
Formula 5	Formula 1	2,61235*	,13300	,043	-4,3518	-3,4749
	Formula 2	-3,22667*	,13300	,105	-3,6651	-2,7882
	Formula 3	-1,98667*	,13300	,197	-2,4251	-1,5482
	Formula 4	-1,12000*	,13300	,487	-1,5584	-,6816

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

4. Uji Permeasi
   Kruskal-Wallis Test

Ranks

	Formula	N	Mean Rank
Uji_Permeasi	Formula 1	3	14,00
	Formula 2	3	11,00
	Formula 3	3	8,00
	Formula 4	3	5,00
	Formula 5	3	2,00
	Total	15	

Test Statistics[a,b]

	Uji_Permeasi

Kruskal-Wallis H	13,500
df	4
Asymp. Sig.	,009

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Permeasi

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	2,06233*	,12300	,000	1,9043	2,1710
	Formula 3	2,19234*	,12300	,000	2,0822	2,2336
	Formula 4	2,44086*	,12300	,050	2,3211	3,5442
	Formula 5	2,61562*	,12300	,000	2,4333	4,2221
Formula 2	Formula 1	-2,06233*	,12300	,000	,1251	-,2482
	Formula 3	,13004*	,12300	,000	,8016	1,4784
	Formula 4	-2,15267*	,12300	,050	1,5682	1,5451
	Formula 5	3,20867*	,12300	,000	2,0882	3,6651
Formula 3	Formula 1	-2,19234*	,12300	,000	-1,1239	-1,4882
	Formula 2	-,13004*	,12300	,000	1,0652	-1,2343
	Formula 4	,85237*	,12300	,050	,2345	1,3051
	Formula 5	,42337*	,12300	,000	1,1121	2,4251
Formula 4	Formula 1	-2,44086*	,12300	,050	-3,2318	-2,3549
	Formula 2	-2,10667*	,12300	,050	-2,5451	-1,6682
	Formula 3	-,85237*	,12300	,050	-1,3051	-,4253
	Formula 5	,42633*	,12300	,050	,6816	1,5584
Formula 5	Formula 1	-2,61562*	,12300	,000	-4,3518	-3,4749
	Formula 2	-3,22667*	,12300	,000	-3,6651	-2,7882
	Formula 3	-,42337*	,12300	,000	-2,4251	-1,5482
	Formula 4	-,42633*	,12300	,050	-1,5584	-,6816

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

5. Uji Retensi
   Kruskal-Wallis Test

Ranks

Formula	N	Mean Rank

Uji_Retensi	Formula 1	3	2,00
	Formula 2	3	5,00
	Formula 3	3	8,00
	Formula 4	3	11,00
	Formula 5	3	14,00
	Total	15	

Test Statistics^{a,b}

|	Uji_Retensi
Kruskal-Wallis H	13,597
df	4
Asymp. Sig.	,009

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Retensi

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-,31233*	,01493	,043	-.2643	2,1120
	Formula 3	-,19234*	,01493	,043	-,2157	2,2226
	Formula 4	-,04086*	,01493	,046	-,1231	3,5232
	Formula 5	1,61562*	,01493	,043	-,0233	4,2221
Formula 2	Formula 1	-,31233*	,01493	,043	,1251	-,2482
	Formula 3	,21562*	,01493	,043	,1016	1,4384
	Formula 4	,15267*	,01493	,046	1,5782	1,5411
	Formula 5	1,20867*	,01493	,043	2,1232	3,5621
Formula 3	Formula 1	,19234*	,12300	,043	-1,1239	-1,4882
	Formula 2	,11562*	,12300	,043	,1652	-1,2343
	Formula 4	,10527*	,12300	,046	,0345	1,3051
	Formula 5	,10119*	,12300	,043	1,1121	2,4251
Formula 4	Formula 1	-,04086*	,12300	,046	-3,2418	-2,3549
	Formula 2	-,15267*	,12300	,046	-2,3251	-1,6682
	Formula 3	-,10527*	,12300	,046	-1,3221	-,4253
	Formula 5	,42633*	,12300	,046	,6816	1,5584

Formula 5	Formula 1	-1,61562[*]	,12300	,043	-4,3248	-3,4749
	Formula 2	-1,20867[*]	,12300	,043	-3,3171	-2,7882
	Formula 3	,10119[*]	,12300	,043	-2,5321	-1,5482
	Formula 4	,42633[*]	,12300	,046	-1,0084	-,6816

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

Lampiran 6. Gambar Penelitian
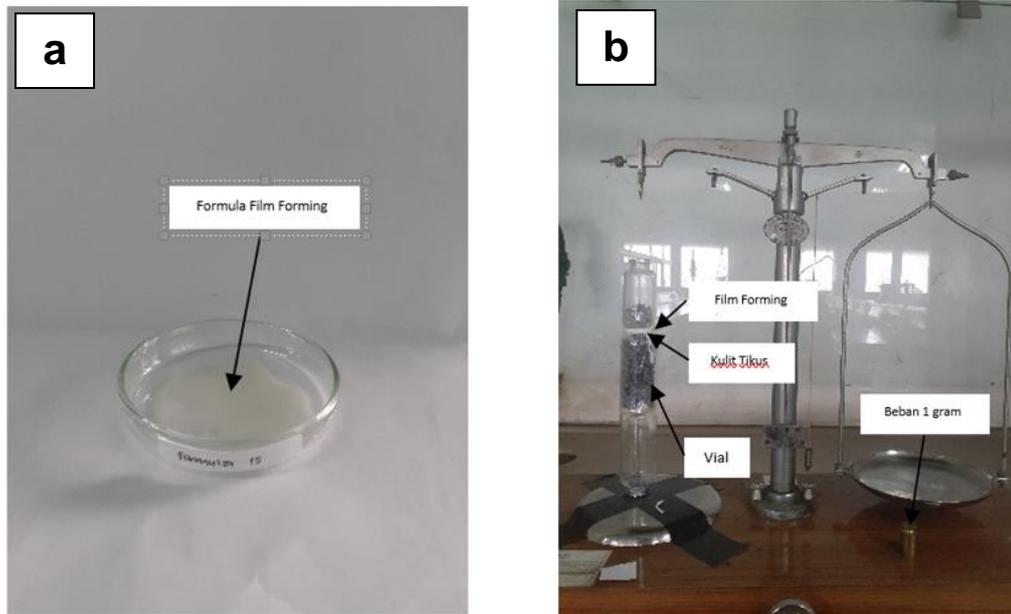
Gambar 14. (a) Gambar cawan petri pada pengujian waktu pengeringan (b) Gambar timbangan neraca pada pengujian kekuatan bioadhesive
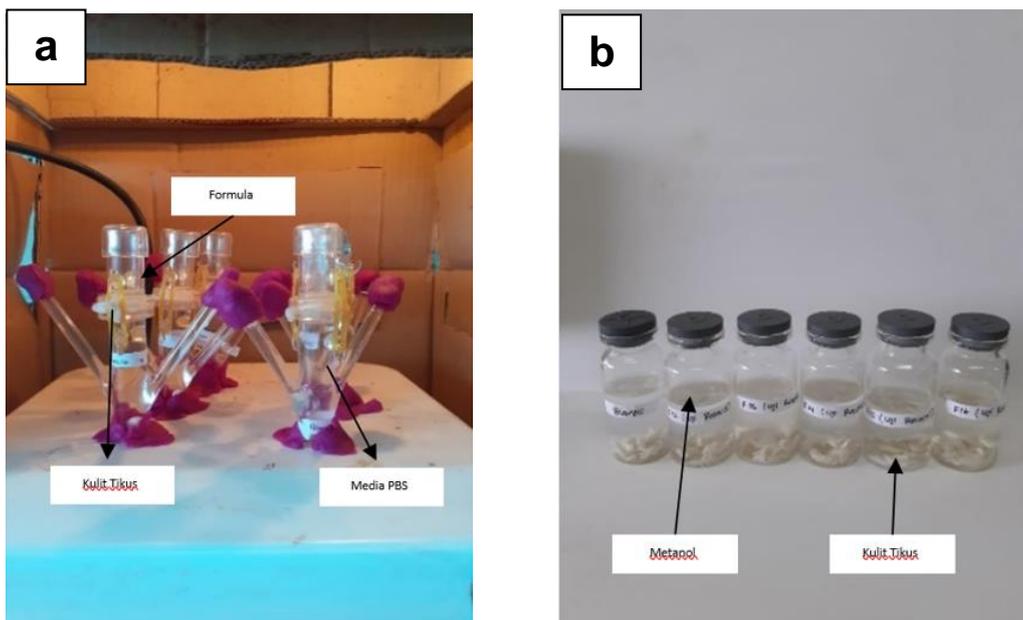
Gambar 15. (a) Gambar sel difusi Franz pada pengujian permeasi secara ex vivo (b) Gambar vial pada pengujian retensi