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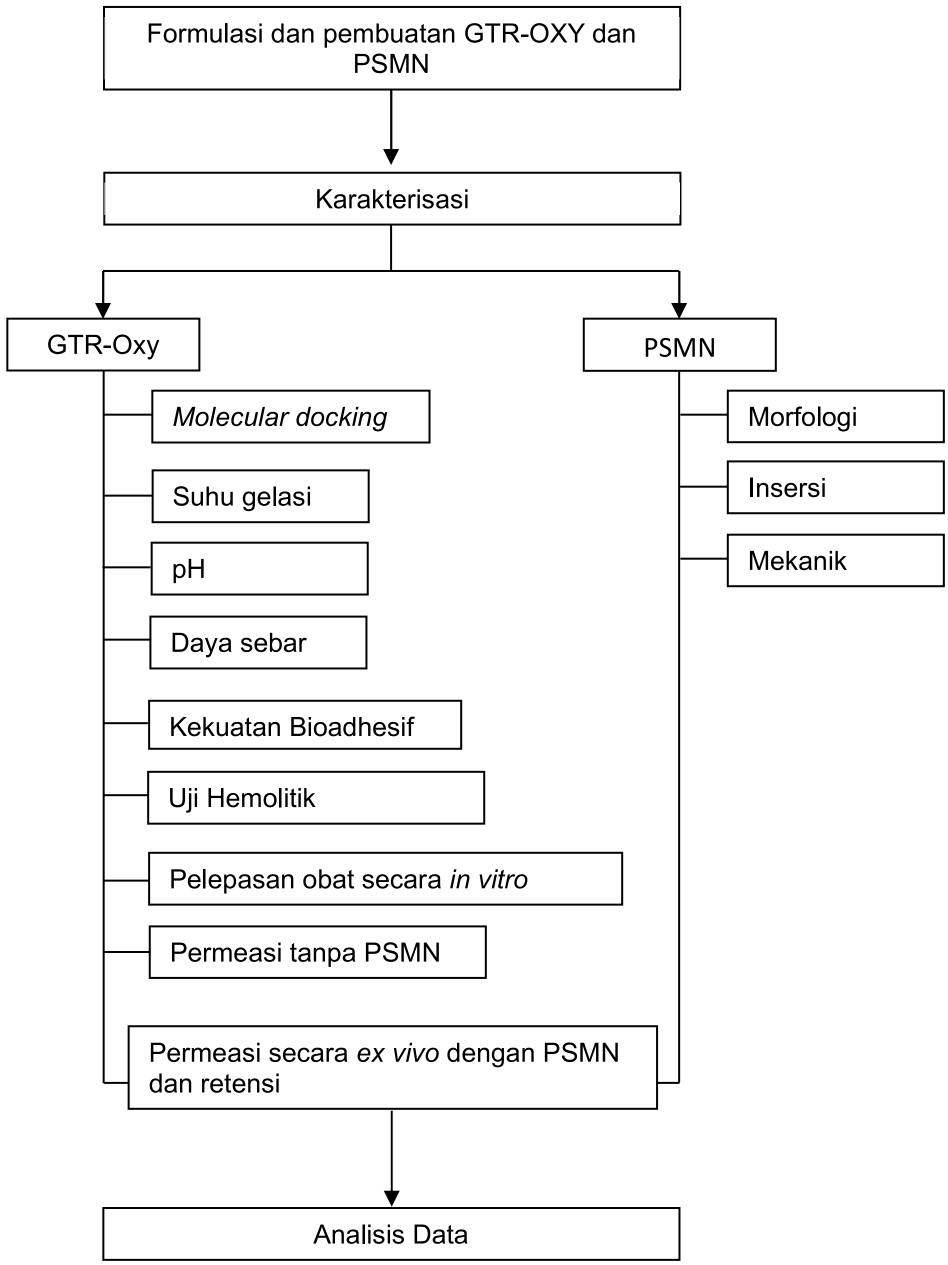
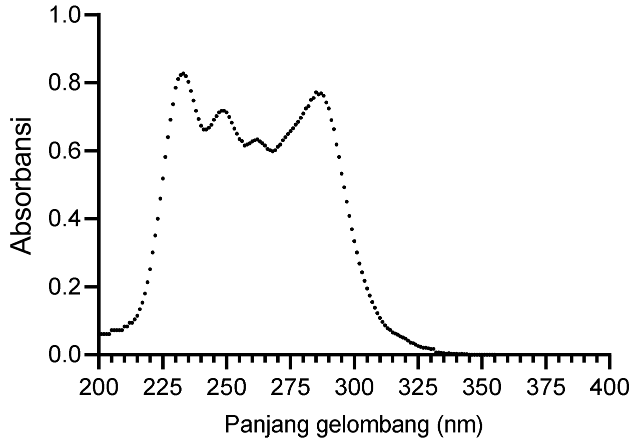
LAMPIRAN

Lampiran 1. Skema kerja



Lampiran 2. Panjang gelombang maksimum dan kurva baku

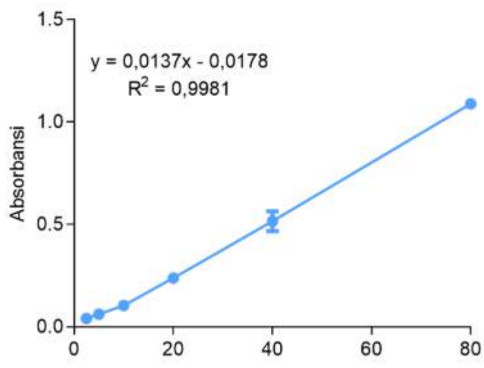
1. Pencarian panjang gelombang maximum



Hasil pemindaian panjang gelombang max *Oxypurinol* dalam PBS pH 7,4

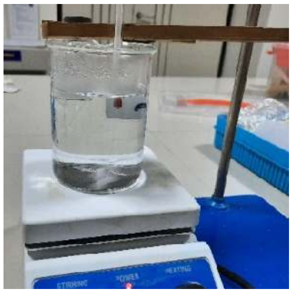
Kurva Baku *Oxypurinol* dalam PBS pH 7,4

Konsentrasi (bpj)	Absorbansi rata-rata	SD
80	1,089	0,023
40	0,516	0,048
20	0,238	0,013
10	0,104	0,009
5	0,061	0,006
2,5	0,041	0,004



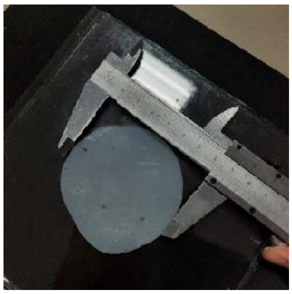
Persamaan garis kurva baku *Oxypurinol* dalam PBS pH 7,4

Lampiran 3. Dokumentasi penelitian



Pengukuran suhu gelasi GTH-OXY

Pengukuran pH GTH-OXY

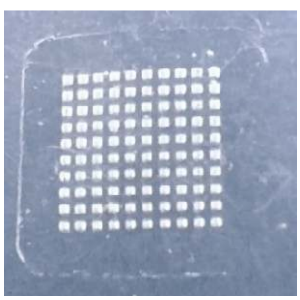


Pengukuran daya sebar GTH-OXY

Pelepasan obat secara *In vitro*

Permeasi GTH-OXY secara *in vitro*

Permeasi GTH-OXY secara *ex vivo*



Uji Insersi PSMN pada Parafilm®

Pengukuran OXY menggunakan spektrofotometer

Lampiran 4. Perhitungan

a. **Perhitungan bahan gel termosensitif-OXY**

G1 dibuat dalam 20 mL, berikut perhitungan untuk mengetahui jumlah bahan:

- Pluronic® F127 : 19% = $\frac{19}{100} \times 20$ g = 3,8 g
- Pluronic® F68 : 6,7%= $\frac{6,7}{100} \times 20$ g = 1,34 g
- *Oxypurinol* : 1% = $\frac{1}{100} \times 20$ g = 0,2 g
- Aquadest : = 20 - (3,8 + 1,34 + 0,2) = 14,66 g

b. **Perhitungan bahan *Polymeric Solid Microneedles***

Untuk 1 MN = 1 gram formula, berikut perhitungan untuk mengetahui jumlah bahan:

- PVA : 5% = $\frac{5}{100} \times 1$ g = 0,05 g
- PVP : 15% = $\frac{15}{100} \times 1$ g = 0,15 g
- Asam sitrat : 1% = $\frac{1}{100} \times 1$ g = 0,01 g
- Aquadest : = 1 – (0,05+0,15+0,01) = 0,79 g

c. **Contoh perhitungan pelepasan obat secara *in vitro***

Diketahui persamaan garis linear *Oxypurinol* dalam PBS pH 7,4 adalah

y = 0,0137x – 0,0178.

Ket:

y = serapan / absorbansi

x = konsentrasi

- G1 – Replikasi 1, jam ke-24 diperoleh serapan 0,811.
- Faktor pengenceran adalah 4.

Sehingga perhitungan konsentrasi adalah sebagai berikut:

$$x = \frac{y+a}{b}$$

$$x = \frac{0,811+0,0178}{0,0137} = 60,496 \text{ bpj}$$

Konsentrasi dalam 1 mL = 60,496 bpj × 1 × 4
= **241,984 mg**

Konsentrasi dalam 2,5 mL = 241,984 bpj × 2,5
= **604,964 mg**

Faktor koreksi = Konsentrasi jam sebelumnya + faktor koreksi jam sebelumnya
= 47,431 mg + 426,730 mg
= **474,161 mg**

Jumlah pelepasan obat (mg) = Konsentrasi dalam 2,5 mL + faktor koreksi

$$= \frac{(604,964 + 474,161)}{1000}$$

= 1,032 mg

d. Contoh perhitungan permeasi obat secara *ex vivo*

Diketahui persamaan garis linear *Oxypurinol* dalam PBS pH 7,4 adalah

y = 0,0137x – 0,0178.

Ket:

y = serapan / absorbansi

x = konsentrasi

- G1 – Replikasi 1, jam ke-24 diperoleh serapan 0,958.

Sehingga perhitungan konsentrasi adalah sebagai berikut:

$$x = \frac{y+a}{b}$$

$$x = \frac{0,958+0,0178}{0,0137} = 71,226 \text{ bpj}$$

Konsentrasi dalam 1 mL = 71,226 bpj × 1
= **71,226 mg**

Konsentrasi dalam 13 mL = 71,226 bpj × 13
= **925,942 mg**

Faktor koreksi = Konsentrasi jam sebelumnya + faktor koreksi jam sebelumnya
= 62,102 mg + 175,708 mg
= **237,810 mg**

Jumlah pelepasan obat (mg) = Konsentrasi dalam 13 mL+ faktor koreksi

$$= \frac{(925,942 + 237,810)}{1000}$$

= 1,102 mg

Jumlah pelepasan obat perluas area kulit = $\frac{1,102}{1,89}$ = 0,583 mg/cm^2

Lampiran 5. Analisis Statistik

a. Suhu gelasi

1. **Tests of Normality**

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
G1	.175	3	.	1.000	3	1.000
G2	.292	3	.	.923	3	.463
G3	.175	3	.	1.000	3	1.000
G4	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

b. pH

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
G1	.178	3	.	1.000	3	.959
G2	.176	3	.	1.000	3	.985
G3	.381	3	.	.760	3	.021
G4	.252	3	.	.965	3	.643

a. Lilliefors Significance Correction

Test Statistics[a,b]

	pH sediaan
Kruskal-Wallis H	7.192
df	3
Asymp. Sig.	.066

a. Kruskal Wallis Test
b. Grouping Variable: Formula

c. Daya sebar

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
G1	.177	3	.	1.000	3	.968
G2	.384	3	.	.751	3	.003
G3	.260	3	.	.958	3	.608
G4	.326	3	.	.874	3	.307

a. Lilliefors Significance Correction

Test Statistics[a,b]

	Daya sebar
Kruskal-Wallis H	9.462
df	3
Asymp. Sig.	.024

a. Kruskal Wallis Test
b. Grouping Variable: Formula

d. Kekuatan bioadhesif

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
G1	.219	3	.	.987	3	.780
G2	.219	3	.	.987	3	.780
G3	.253	3	.	.964	3	.637
G4	.385	3	.	.750	3	.000

a. Lilliefors Significance Correction

Independent-Samples Kruskal-Wallis Test Summary

Total N	12
Test Statistic	7,476[a,b]
Degree Of Freedom	3
Asymptotic Sig.(2-sided test)	.058

a. The test statistic is adjusted for ties.
b. Multiple comparisons are not performed because the overall test does not show significant differences across samples.

e. Permeasi secara *in vitro*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
G1	.286	3	.	.930	3	.490
G2	.182	3	.	.999	3	.935
G3	.307	3	.	.904	3	.398
G4	.247	3	.	.969	3	.662

a. Lilliefors Significance Correction

Multiple Comparisons

Dependent Variable: Permeasi *In vitro*
Tukey HSD

		Sig.	95% Confidence Interval

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error		Lower Bound	Upper Bound
G1	G2	-.002333	.018868	.999	-.06276	.05809
	G3	-.025667	.018868	.554	-.08609	.03476
	G4	-.187333*	.018868	.000	-.24776	-.12691
G2	G1	.002333	.018868	.999	-.05809	.06276
	G3	-.023333	.018868	.623	-.08376	.03709
	G4	-.185000*	.018868	.000	-.24542	-.12458
G3	G1	.025667	.018868	.554	-.03476	.08609
	G2	.023333	.018868	.623	-.03709	.08376
	G4	-.161667*	.018868	.000	-.22209	-.10124
G4	G1	.187333*	.018868	.000	.12691	.24776
	G2	.185000*	.018868	.000	.12458	.24542
	G3	.161667*	.018868	.000	.10124	.22209

*. The mean difference is significant at the 0,05 level.

f. Permeasi secara *ex vivo*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
G1	.217	3	.	.988	3	.792
G2	.191	3	.	.997	3	.900
G3	.342	3	.	.844	3	.226
G4	.328	3	.	.870	3	.294

a. Lilliefors Significance Correction

g. Perbandingan permeasi antar *In vitro* dan *Ex vivo*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
G1I	.286	3	.	.930	3	.490
G1E	.217	3	.	.988	3	.792
G2I	.182	3	.	.999	3	.935
G2E	.191	3	.	.997	3	.900
G3I	.307	3	.	.904	3	.398
G3E	.342	3	.	.844	3	.226
G4I	.247	3	.	.969	3	.662
G4E	.328	3	.	.870	3	.294

a. Lilliefors Significance Correction

h. Retensi kulit

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
G1	.345	3	.	.839	3	.213
G2	.231	3	.	.980	3	.732
G3	.352	3	.	.825	3	.176
G4	.320	3	.	.883	3	.332

a. Lilliefors Significance Correction

ANOVA

Retensi kulit

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.650	3	.550	87.009	.000
Within Groups	.051	8	.006		
Total	1.700	11			