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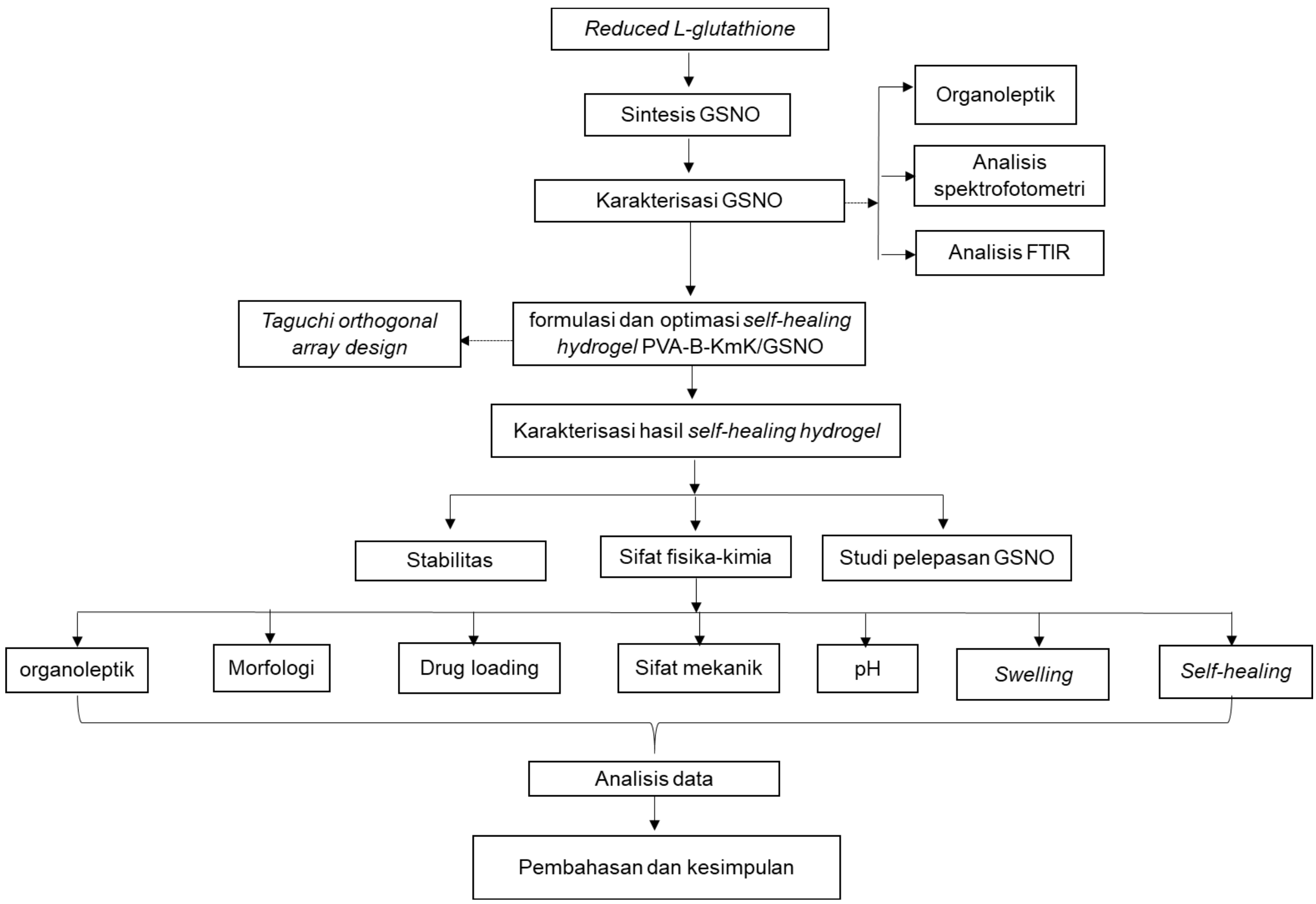
LAMPIRAN

Lampiran 1. Skema Kerja Penelitian

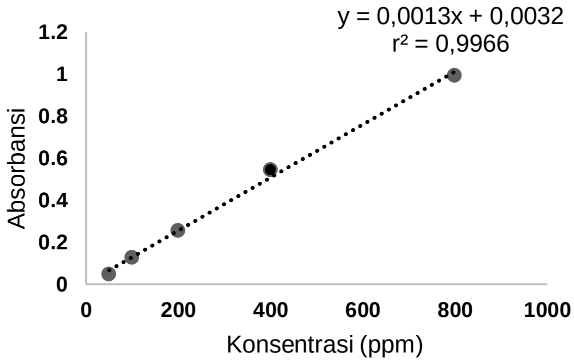


Lampiran 2. Penetapan Kurva Baku dan Pengukuran Kadar GSNO dalam *Self-Healing Hydrogel* PVA-B-KmK/GSNO

a. Penetapan Kurva Baku GSNO

Tabel 9.Kurva baku GSNO

Konsentrasi	Absorbansi
800	0,996
400	0,545
200	0,257
100	0,127
50	0,048



b. Pengukuran Kadar GSNO

Tabel 10. Kadar GSNO dalam *self-healing hydrogel* PVA-B-KmK/GSNO

Formula	Absorbansi	%Kadar	Rata-rata ± SD (%)
F1	0,197	93,17	90,61 ± 2,27
	0,88	88,85	
	0,190	89,81	
F4	0,203	96,06	93,81 ± 2,00
	0,197	93,17	
	0,195	92,21	
F7	0,208	98,46	97,34 ± 1,21
	0,203	96,06	
	0,206	97,50	

Lampiran 3. Hasil Uji Sifat Mekanik *Self-Healing* Sediaan *Self-Healing Hydrogel* PVA-B-KmK dan PVA-B-KmK/GSNO

Tabel 11. Nilai *Tensile stress-strain* dan modulus Young *self-healing hydrogel* PVA-B-KmK dan PVA-B-KmK/GSNO

Formula	*Tensile stress* (kPa)	*Tensile strain* (%)	Modulus young (kPa)
F1K	6,5	712,5	0,91
F4K	9,5	825	1,15
F7K	15,5	975	1,59
F1	1,25	530	0,24
F4	5	695	0,72
F7	12,75	827,5	1,52

Lampiran 4. Hasil Uji Waktu *Self-Healing* Sediaan *Self-Healing Hydrogel* PVA-B-KmK dan PVA-B-KmK/GSNO

Tabel 12. Waktu *self-healing* sediaan *self-healing hydrogel* PVA-B-KmK dan PVA-B-KmK/GSNO

Formula	Waktu (menit, detik)	Rata-rata ± SD (menit)
	14,35	
F1K	11,22	11,62 ± 2,55
	9,30	
	24,15	
F4K	27,55	25,67 ± 1,73
	25,31	
	52,46	
F7K	45,16	48,22 ± 3,79
	47,03	
	12,32	
F1	14,40	13,95 ± 1,45
	15,12	
	26,15	
F4	28,52	26,40 ± 2,00
	24,54	
	40,38	
F7	43,21	40,57 ± 2,55
	38,12	

Lampiran 5. Hasil Uji Swelling Sediaan *Self-Healing Hydrogel* PVA-B-KmK dan PVA-B-KmK/GSNO

Tabel 13. Persentase rasio *swelling* sediaan *self-healing hydrogel* GSNO

Waktu (jam)	Rasio Swelling (%)					
ke-	F1K	F4K	F7K	F1	F4	F7
	25,06	7,12	5,94	14,95	8,18	1,82
0,25	34,57	7,22	13,35	2,75	3,88	5,45
	18,17	5,38	20,99	6,73	1,89	4,67
	27,89	13,10	19,50	12,04	20,19	3,00
0,5	30,64	3,81	26,96	12,26	13,46	4,67
	28,82	6,79	15,28	11,54	6,80	8,57
	32,06	19,02	6,03	20,95	14,00	12,61
1	30,37	18,73	15,78	20,19	22,77	7,27
	30,52	9,89	50,10	19,42	21,15	11,11
	38,21	24,23	27,64	15,69	24,27	12,73
2	23,28	5,52	30,99	26,92	26,21	15,09
	33,14	36,33	16,53	24,51	27,72	14,15
	40,51	39,01	21,57	38,68	14,71	15,60
3	31,95	25,55	38,76	35,58	27,00	7,84
	34,47	30,93	28,65	26,92	42,00	34,00
	49,35	61,58	33,43	29,41	33,00	21,90
4	39,64	61,14	21,35	29,81	46,08	43,40
	45,51	33,46	36,30	49,52	30,10	19,00
	57,20	47,87	41,73	55,24	33,96	34,55
24	89,42	64,01	33,50	79,82	57,84	49,02
	47,20	51,27	41,14	33,33	35,29	31,00

Lampiran 6. Hasil Uji Stabilitas Kandungan Obat *Self-Healing Hydrogel* PVA-B-KmK/GSNO

Tabel 14. Data uji stabilitas kandungan GSNO dalam *self-healing hydrogel* PVA-B-KmK/GSNO pada suhu (−20°C)

Formula	Hari ke							
	7		14		21		28	
	Abs	%kandungan obat	Abs	%kandungan obat	Abs	%kandungan obat	Abs	%kandungan obat
F1	0,166	78,27	0,124	58,08	0,098	45,58	0,072	33,08
	0,160	75,38	0,128	60,00	0,094	43,65	0,069	31,63
	0,158	74,42	0,125	58,56	0,094	43,65	0,078	35,96
Rata-rata ± SD (%)		76,03 ± 2,00		58,88 ± 1,00		44,29 ± 1,11		33,56 ± 2,20
F4	0,181	85,48	0,125	58,56	0,113	52,79	0,099	46,06
	0,178	84,04	0,131	61,44	0,115	53,75	0,100	46,54
	0,183	86,44	0,128	60,00	0,115	53,75	0,105	48,94
Rata-rata ± SD (%)		85,32 ± 1,21		60,00 ± 1,44		53,43 ± 0,56		47,18 ± 1,55
F7	0,182	85,96	0,154	72,50	0,123	57,60	0,091	42,21
	0,175	82,60	0,147	69,13	0,115	53,75	0,094	43,65
	0,185	87,40	0,150	70,58	0,117	54,71	0,088	40,77
Rata-rata ± SD (%)		85,32 ± 2,47		70,74 ± 1,69		55,35 ± 2,00		42,21 ± 1,44

Tabel 15. Data uji stabilitas kandungan GSNO dalam *self-healing hydrogel* PVA-B-KmK/GSNO pada suhu (5°C)

Formula	Hari ke							
	7		14		21		28	
	Abs	%kandungan obat	Abs	%kandungan obat	Abs	%kandungan obat	Abs	%kandungan obat
F1	0,121	56,63	0,098	45,58	0,070	32,12	0,046	20,58
	0,118	5519	0,091	42,21	0,073	33,56	0,040	17,69
	0,126	59,04	0,100	46,54	0,070	32,12	0,048	21,54
Rata-rata ± SD (%)		56,96 ± 1,94		44,78 ± 2,27		32,60 ± 0,83		19,94 ± 2,00
F4	0,119	55,67	0,090	41,73	0,078	35,96	0,054	24,42
	0,25	58,56	0,084	38,85	0,075	34,52	0,058	26,35
	0,116	54,23	0,084	38,85	0,082	37,88	0,054	24,42
Rata-rata ± SD (%)		56,15 ± 2,20		39,81 ± 1,67		36,12 ± 1,69		25,06 ± 1,11
F7	0,136	63,85	0,102	47,50	0,074	34,04	0,065	29,71
	0,128	60,00	0,098	45,58	0,077	35,48	0,060	27,31
	0,130	60,96	0,102	47,50	0,083	38,37	0,068	31,15
Rata-rata ± SD (%)		61,60 ± 2,00		46,86 ± 1,11		35,96 ± 2,20		29,39 ± 1,94

Tabel 16. Data uji stabilitas kandungan GSNO dalam *self-healing hydrogel* PVA-B-KmK/GSNO pada suhu (25°C)

Formula	Hari ke							
	7		14		21		28	
	Abs	%kandungan obat	Abs	%kandungan obat	Abs	%kandungan obat	Abs	%kandungan obat
	0,087	40,29	0,059	26,83	0,034	14,81	0,000	0,000
F1	0,089	41,25	0,057	25,87	0,028	11,92	0,000	0,000
	0,087	40,29	0,044	19,62	0,036	15,77	0,000	0,000
Rata-rata ± SD (%)		40,61 ± 0,56		24,10 ± 3,92		14,17 ± 2,00		0,000
	0,097	45,10	0,038	16,73	0,027	11,44	0,000	0,000
F4	0,100	46,54	0,035	15,29	0,021	8,56	0,000	0,000
	0,092	42,69	0,041	18,17	0,029	12,40	0,000	0,000
Rata-rata ± SD (%)		44,78 ± 1,94		16,73 ± 1,44		10,80 ± 2,00		0,000
	0,059	26,83	0,026	10,96	0,020	8.08	0,000	0,000
F7	0,051	22,98	0,032	13,85	0,018	7,12	0,000	0,000
	0,053	23,94	0,028	11,92	0,025	10,48	0,000	0,000
Rata-rata ± SD (%)		24,58 ± 2,00		12,24 ± 1,47		8,56 ± 1,73		0,000

Lampiran 7. Hasil Uji Pelepasan Obat

Tabel 17. Data uji pelepasan In vitro F1

Waktu (Jam)	Abs	konsentrasi (µg/mL)	Faktor pengenceran	100 mL (µg/mL)	Faktor koreksi	GSNO yang terlepas (mg)	% release	Rata-rata ± SD (%)
	0,058	42,15	1	4,22	0	4,22	4,65	
	0,054	39,08	1	3,91	0	3,91	4,31	
0,25	0,054	39,08	1	3,91	0	3,91	4,31	4,43 ± 0,20
	0,085	62,92	1	6,29	0,04	6,33	6,99	
	0,089	66,00	1	6,60	0,04	6,64	7,33	
0,5	0,093	69,08	1	6,91	0,04	6,95	7,67	7,33 ± 0,34
	0,159	119,85	1	11,98	0,11	12,09	13,34	
	0,162	122,15	1	12,22	0,11	12,32	13,60	
1	0,167	126,00	1	12,60	0,11	12,71	14,03	13,65 ± 0,34
	0,209	158,31	1	15,83	0,22	16,06	17,72	
	0,217	164,46	1	16,45	0,23	16,67	18,40	
2	0,221	167,54	1	16,75	0,23	16,99	18,75	18,29 ± 0,52
	0,242	183,69	1	18,37	0,38	18,75	20,70	
	0,245	186,00	1	18,60	0,39	18,99	20,96	
3	0,242	183,69	1	18,37	0,40	18,77	20,72	20,79 ± 0,15
	0,257	195,23	1	19,52	0,57	20,09	22,17	
	0,261	198,31	1	19,83	0,58	20,41	22,52	
4	0,257	195,23	1	19,52	0,59	20,11	22,19	22,30 ± 0,20
	0,261	198,31	1	19,83	0,76	20,59	22,73	
5	0,271	206,00	1	20,60	0,78	21,38	23,59	23,42 ± 0,62

Waktu (Jam)	Abs	konsentrasi (μg/mL)	Faktor pengenceran	100 mL (μg/mL)	Faktor koreksi	GSNO yang terlepas (mg)	% release	Rata-rata ± SD (%)
	0,275	209,08	1	20,91	0,78	21,69	23,94	
	0,280	212,92	1	21,29	0,96	22,25	24,56	
	0,281	213,69	1	21,37	0,98	22,35	24,67	
6	0,284	216,00	1	21,60	0,99	22,59	24,93	24,72 ± 0,19
	0,299	227,54	1	22,75	1,17	23,93	26,41	
	0,294	223,69	1	22,37	1,20	23,56	26,01	
7	0,296	225,23	1	22,52	1,21	23,73	26,19	26,20 ± 0,20
	0,309	235,23	1	23,52	1,40	24,92	27,51	
	0,300	228,31	1	22,83	1,42	24,25	26,76	
8	0,311	236,77	1	23,68	1,43	25,11	27,71	27,33 ± 0,50
	0,321	244,46	1	24,45	1,64	26,08	28,79	
	0,323	246,00	1	24,60	1,65	26,25	28,97	
24	0,320	243,69	1	24,37	1,67	26,04	28,74	28,83 ± 0,12

Tabel 18. Data uji pelepasan In vitro F4

Waktu (Jam)	Abs	konsentrasi (µg/mL)	Faktor pengenceran	100 mL (µg/mL)	Faktor koreksi	GSNO yang terlepas (mg)	% release	Rata-rata ± SD (%)
	0,074	54,46	1	5,45	0,00	5,45	5,81	
	0,072	52,92	1	5,29	0,00	5,29	5,64	
0,25	0,078	57,54	1	5,75	0,00	5,75	6,13	5,86 ± 0,25
	0,098	72,92	1	7,29	0,05	7,35	7,83	
	0,105	78,31	1	7,83	0,05	7,88	8,40	
0,5	0,102	76,00	1	7,60	0,06	7,66	8,16	8,13 ± 0,29
	0,16	120,62	1	12,06	0,13	12,19	12,99	
	0,168	126,77	1	12,68	0,13	12,81	13,65	
1	0,17	128,31	1	12,83	0,13	12,96	13,82	13,49 ± 0,44
	0,198	149,85	1	14,98	0,25	15,23	16,24	
	0,205	155,23	1	15,52	0,26	15,78	16,82	
2	0,208	157,54	1	15,75	0,26	16,02	17,07	16,71 ± 0,43
	0,28	212,92	1	21,29	0,40	21,69	23,12	
	0,285	216,77	1	21,68	0,41	22,09	23,55	
3	0,282	214,46	1	21,45	0,42	21,87	23,31	23,33 ± 0,21
	0,288	219,08	1	21,91	0,61	22,52	24,01	
	0,29	220,62	1	22,06	0,63	22,69	24,19	
4	0,292	222,15	1	22,22	0,63	22,85	24,36	24,19 ± 0,18
	0,295	224,46	1	22,45	0,83	23,28	24,81	
	0,3	228,31	1	22,83	0,85	23,68	25,25	
5	0,297	226,00	1	22,60	0,86	23,46	25,01	25,02 ± 0,22
	0,303	230,62	1	23,06	1,05	24,12	25,71	
6	0,308	234,46	1	23,45	1,08	24,53	26,15	25,92 ± 0,22

Waktu (Jam)	Abs	konsentrasi (µg/mL)	Faktor pengenceran	100 mL (µg/mL)	Faktor koreksi	GSNO yang terlepas (mg)	% release	Rata-rata ± SD (%)
	0,305	232,15	1	23,22	1,08	24,30	25,90	
	0,309	235,23	1	23,52	1,28	24,81	26,45	
	0,314	239,08	1	23,91	1,31	25,22	26,89	
7	0,314	239,08	1	23,91	1,31	25,22	26,89	26,74 ± 0,25
	0,317	241,38	1	24,14	1,52	25,66	27,35	
	0,314	239,08	1	23,91	1,55	25,46	27,14	
8	0,322	245,23	1	24,52	1,55	26,08	27,80	27,43 ± 0,34
	0,355	270,62	1	27,06	1,76	28,82	30,73	
	0,345	262,92	1	26,29	1,79	28,08	29,94	
24	0,35	266,77	1	26,68	1,80	28,48	30,36	30,34 ± 0,39

Tabel 19. Data uji pelepasan In vitro F7

Waktu (Jam)	Abs	konsentrasi (µg/mL)	Faktor pengenceran	100 mL (µg/mL)	Faktor koreksi	GSNO yang terlepas (mg)	% release	Rata-rata ± SD (%)
	0,070	51,38	1	5,14	0,00	5,14	5,28	
	0,068	49,85	1	4,98	0,00	4,98	5,12	
0,25	0,065	47,54	1	4,75	0,00	4,75	4,88	5,10 ± 0,20
	0,115	86,00	1	8,60	0,05	8,65	8,89	
	0,117	87,54	1	8,75	0,05	8,80	9,05	
0,5	0,117	87,54	1	8,75	0,05	8,80	9,04	8,99 ± 0,09
	0,123	92,15	1	9,22	0,14	9,35	9,61	
	0,123	91,85	1	9,18	0,14	9,32	9,58	
1	0,125	93,69	1	9,37	0,14	9,50	9,77	9,65 ± 0,10
	0,207	156,77	1	15,68	0,23	15,91	16,34	
	0,203	153,69	1	15,37	0,23	15,60	16,03	
2	0,203	153,69	1	15,37	0,23	15,60	16,03	16,13 ± 0,18
	0,247	187,54	1	18,75	0,39	19,14	19,67	
	0,252	191,38	1	19,14	0,38	19,52	20,06	
3	0,254	192,92	1	19,29	0,38	19,67	20,21	19,98 ± 0,28
	0,250	189,85	1	18,98	0,57	19,56	20,09	
	0,256	194,46	1	19,45	0,57	20,02	20,57	
4	0,260	197,54	1	19,75	0,58	20,33	20,89	20,52 ± 0,40
	0,271	206,00	1	20,60	0,76	21,36	21,95	
	0,276	209,85	1	20,98	0,77	21,75	22,35	
5	0,276	209,85	1	20,98	0,77	21,76	22,35	22,22 ± 0,23
	0,290	220,62	1	22,06	0,97	23,03	23,66	
6	0,295	224,46	1	22,45	0,98	23,42	24,07	23,80 ± 0,23

Waktu (Jam)	Abs	konsentrasi (µg/mL)	Faktor pengenceran	100 mL (µg/mL)	Faktor koreksi	GSNO yang terlepas (mg)	% release	Rata-rata ± SD (%)
	0,290	220,62	1	22,06	0,98	23,04	23,68	
	0,313	238,31	1	23,83	1,19	25,02	25,71	
	0,308	234,46	1	23,45	1,20	24,65	25,33	
7	0,308	234,46	1	23,45	1,20	24,65	25,33	25,45 ± 0,22
	0,315	239,85	1	23,98	1,43	25,41	26,11	
	0,313	238,31	1	23,83	1,44	25,27	25,96	
8	0,318	242,15	1	24,22	1,44	25,65	26,36	26,14 ± 0,20
	0,336	256,00	1	25,60	1,67	27,27	28,02	
	0,328	249,85	1	24,98	1,68	26,66	27,39	
24	0,330	251,38	1	25,14	1,68	26,82	27,55	27,65 ± 0,32

Lampiran 8. Perhitungan

Lampiran 8.1 Contoh Perhitungan Kandungan Obat *Self-Healing Hydrogel* PVA-B-KmK/GSNO pada Formula 1 Replikasi 1

40 mg sediaan *self-healing hydrogel*

↓ dilarutkan

10 mL aquadest (diukur absorbansinya)

Diketahui :

- Absorbansi F1 replikasi = 0,190
- Berat *self-healing hydrogel* yang ditimbang = 40 mg/10 mL = 4 mg/mL
- Persamaan Kurva baku y= 0,0013x + 0,0032

Maka ,

0,190 = 0,0013x + 0,0032

x $= \frac{0190 - 00032}{00013}$

x = 143,69 µg/mL

jumlah GSNO dalam formula 1 $= \frac{\text{x. fp. 10 mL}}{\text{Berat yang ditimbang}}$

$= \frac{143{,}69\,\mu g/mL . 1 . 10\ mL}{40\ mg}$

= 35,92 µg/mg (35,92 µg/4 mg sediaan)

% kandungan obat $= \frac{35{,}92}{40} \times 100\%$

= 89,8 %

Lampiran 8.2 Contoh Perhitungan Pelepasan Obat *Self-Healing Hydrogel* PVA-B-KmK/GSNO pada Formula 1 Replikasi 1

Berdasarkan persamaan garis regresi kurva baku :

y = 0,0013x + 0,0032

x adalah konsentrasi

y adalah serapan

sehingga x= $\frac{y-a}{b}$ misal pelepasan *self-healing hydrogel* 0,25 jam replikasi 1

maka, konsentrasi ditentukan berdasarkan hitungan :

x= $\frac{0{,}059-0{,}0032}{0{,}0013}$ = 42,15 µg/ mL

konsentrasi dalam 100 mL = $\frac{42{,}15\ \mu g/\ mL\ .1.100mL}{1000}$ = 4,215 mg

GSNO yang dilepaskan = konsentrasi dalam 100 ml + faktor koreksi

= 4,215 mg + 0

=4,215 mg

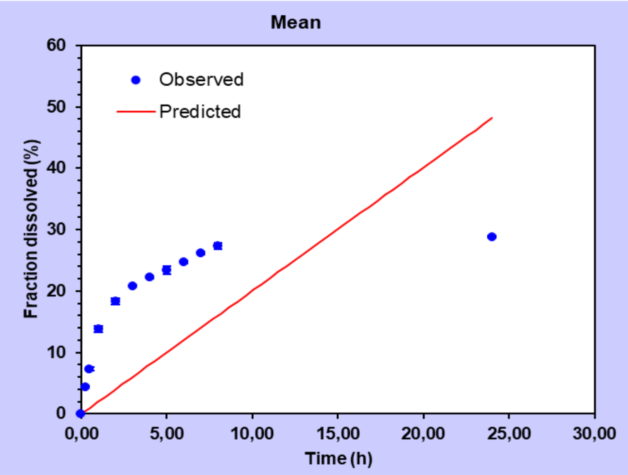
% pelepasan GSNO = $\frac{4{,}215\ mg}{090{,}61} \times 100$

= 4,43 %

Lampiran 9. Kinetika Pelepasan *Self-healing Hydrogel* F1

Goodness of Fit

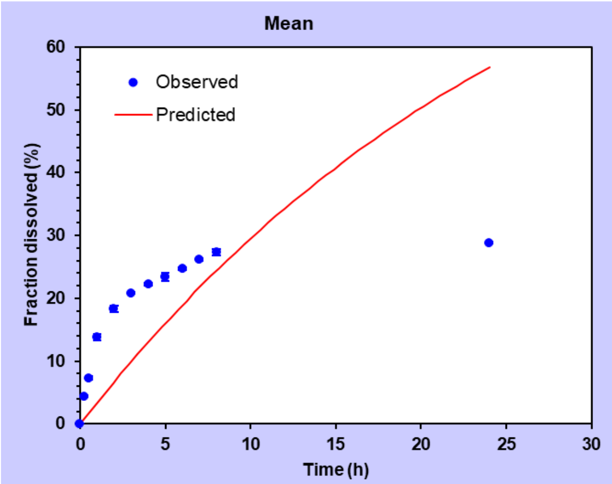
Parameter	R1	R2	R3
N_observed	12,00	12,00	12,00
DF	11,00	11,00	11,00
R_obs-pre	0,68	0,67	0,66
Rsqr	-0,74	-0,78	-0,83
Rsqr_adj	-0,74	-0,78	-0,83
MSE	160,19	163,50	169,45
MSE_root	12,66	12,79	13,02
Weighting	1,00	1,00	1,00
SS	1762,13	1798,48	1863,91
WSS	1762,13	1798,48	1863,91
AIC	91,69	91,94	92,37
MSC	-1,10	-1,13	-1,17



Gambar 20. Hasil analisis model kinetika orde nol *self-healing hydrogel* F1

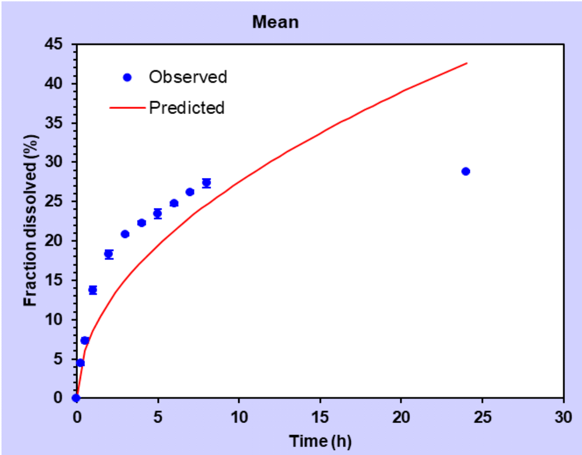
Goodness of Fit

Parameter	R1	R2	R3
N_observed	12,00	12,00	12,00
DF	11,00	11,00	11,00
R_obs-pre	0,76	0,76	0,75
Rsqr	-0,33	-0,37	-0,40
Rsqr_adj	-0,33	-0,37	-0,40
MSE	122,64	125,52	129,75
MSE_root	11,07	11,20	11,39
Weighting	1,00	1,00	1,00
SS	1349,03	1380,73	1427,28
WSS	1349,03	1380,73	1427,28
AIC	88,49	88,76	89,16
MSC	-0,84	-0,87	-0,91



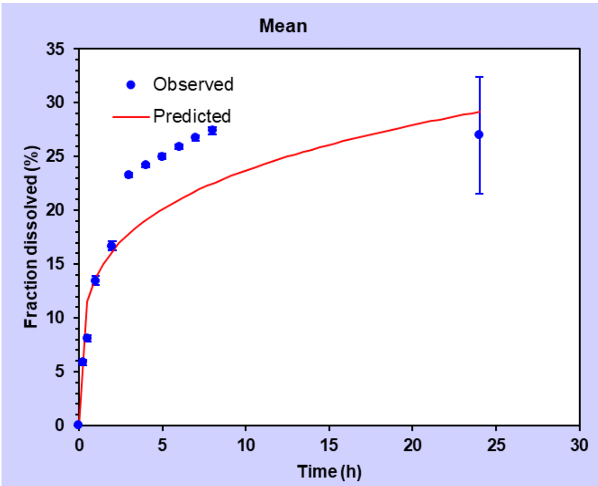
Gambar 21. Hasil analisis model kinetika orde satu *self-healing hydrogel* F1

Goodness of Fit			
Parameter	**R1**	**R2**	**R3**
N_observed	12,00	12,00	12,00
DF	11,00	11,00	11,00
R_obs-pre	0,89	0,89	0,88
Rsqr	0,67	0,65	0,63
Rsqr_adj	0,67	0,65	0,63
MSE	30,77	31,98	34,14
MSE_root	5,55	5,66	5,84
Weighting	1,00	1,00	1,00
SS	338,50	351,81	375,53
WSS	338,50	351,81	375,53
AIC	71,89	72,36	73,14
MSC	0,55	0,50	0,43



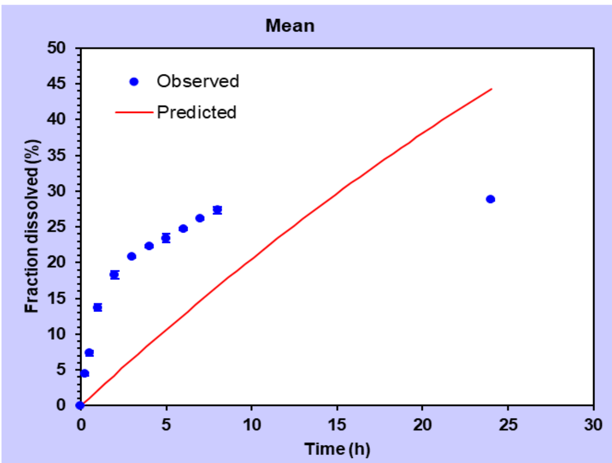
Gambar 22. Hasil analisis model kinetika Higuchi *self-healing hydrogel* F1

Goodness of Fit			
Parameter	**R1**	**R2**	**R3**
N_observed	12,00	12,00	12,00
DF	10,00	10,00	10,00
R_obs-pre	0,87	0,95	0,96
Rsqr	0,72	0,84	0,85
Rsqr_adj	0,69	0,83	0,84
MSE	26,56	16,95	16,06
MSE_root	5,15	4,12	4,01
Weighting	1,00	1,00	1,00
SS	265,55	169,46	160,56
WSS	265,55	169,46	160,56
AIC	70,98	65,59	64,94
MSC	0,51	1,10	1,15



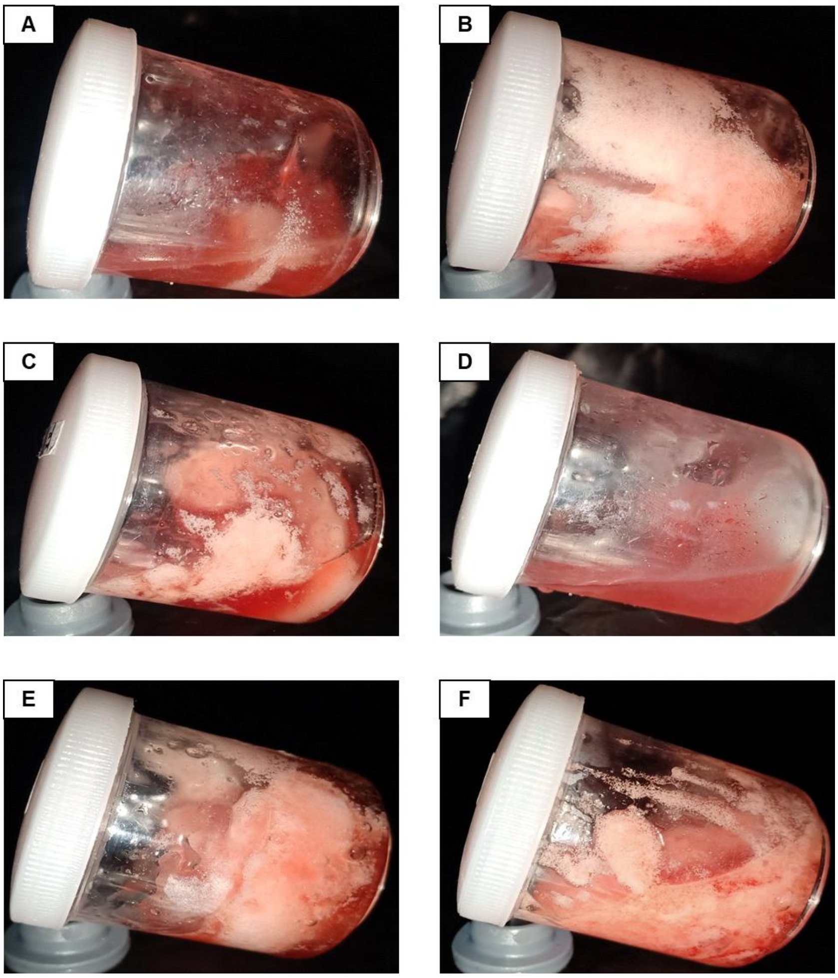
Gambar 23. Hasil analisis model kinetika Korsmeyer peppas *self-healing hydrogel* F1

Goodness of Fit			
Parameter	**R1**	**R2**	**R3**
N_observed	12,00	12,00	12,00
DF	11,00	11,00	11,00
R_obs-pre	0,72	0,71	0,70
Rsqr	-0,50	-0,54	-0,59
Rsqr_adj	-0,50	-0,54	-0,59
MSE	138,34	141,50	146,81
MSE_root	11,76	11,90	12,12
Weighting	1,00	1,00	1,00
SS	1521,76	1556,50	1614,95
WSS	1521,76	1556,50	1614,95
AIC	89,93	90,20	90,64
MSC	-0,96	-0,99	-1,03

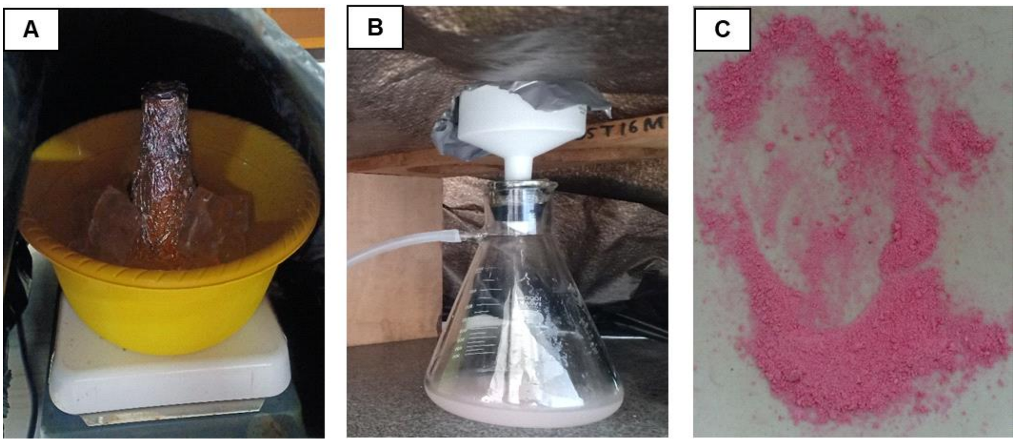


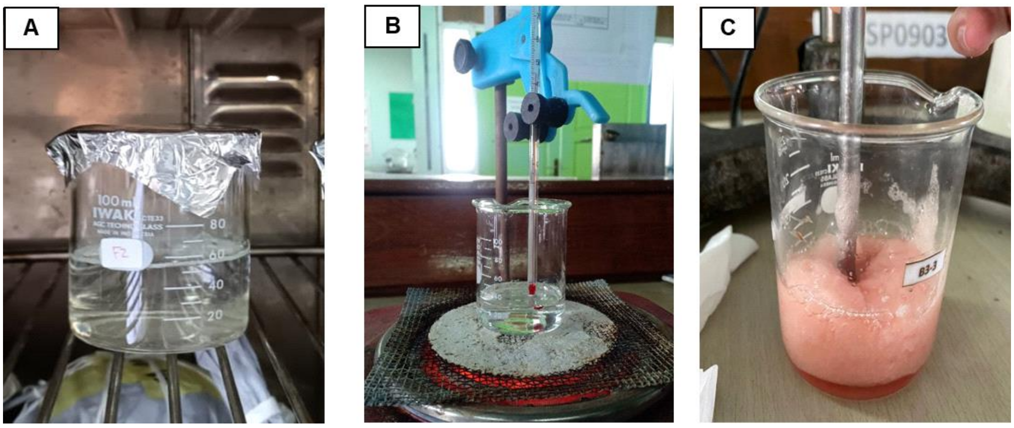
Gambar 24. Hasil analisis model kinetika Hixson-Crowel *self-healing hydrogel* F1

Lampiran 10. Dokumentasi



Gambar 25. Formula yang tidak membentuk *self-healing hydrogel* : F2 (A), F3 (B), F5 (C), F6 (D), F8 (E) dan F9 (F).





Gambar 26. Formulasi *self-healing hydrogel*. A PVA dilarutkan dengan Oven 90°C, B boraks dilarutkan pada suhu 90°C, C Pencampuran dengan homogenizer PVA, KmK, GSNO dan boraks.

Lampiran 11. Data Hasil Analisis Statistika

Lampiran 11.1 Uji kandungan GSNO dalam *self-healing hydrogel*

Uji Normalitas

Tests of Normality

	Self-healing hydrogel	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
Drug Loading	F1	,304	3	.	,907	3	,407
	F4	,293	3	.	,923	3	,462
	F7	,219	3	.	,987	3	,780

a. Lilliefors Significance Correction

Uji One Way Anova

ANOVA

Drug Loading

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	67,992	2	33,996	9,603	,013
Within Groups	21,242	6	3,540		
Total	89,233	8			

Uji Post Hoc

Multiple Comparisons

Dependent Variable: Drug Loading
Tukey HSD

(I) Self-healing hydrogel	(J) Self-healing hydrogel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
F1	F4	-3,20333	1,53629	,173	-7,9171	1,5104
	F7	-6,73000*	1,53629	,011	-11,4438	-2,0162
F4	F1	3,20333	1,53629	,173	-1,5104	7,9171
	F7	-3,52667	1,53629	,133	-8,2404	1,1871
F7	F1	6,73000*	1,53629	,011	2,0162	11,4438
	F4	3,52667	1,53629	,133	-1,1871	8,2404

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

Lampiran 11.2 Uji pH *self-healing hydrogel*

Uji Normalitas

Tests of Normality

	Self-healing hydrogel	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
pH sediaan	F1	,276	3	.	,942	3	,537
	F4	,219	3	.	,987	3	,780
	F7	,385	3	.	,750	3	,000
	F1K	,253	3	.	,964	3	,637
	F4K	,385	3	.	,750	3	,000
	F7K	,292	3	.	,923	3	,463

a. Lilliefors Significance Correction

Uji Kruskal-Wallis

Test Statistics[a,b]

	pH sediaan
Kruskal-Wallis H	16,285
df	5
Asymp. Sig.	,006

a. Kruskal Wallis Test

b. Grouping Variable: Self-healing hydrogel

Lampiran 11.3 Uji waktu *self-healing*

Uji Normalitas

Tests of Normality

	Self-healing hydrogel	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
self-healing	F1	,289	3	.	,927	3	,478
	F4	,188	3	.	,998	3	,913
	F7	,196	3	.	,996	3	,876
	F1K	,230	3	.	,981	3	,737
	F4K	,249	3	.	,967	3	,654
	F7K	,290	3	.	,927	3	,476

a. Lilliefors Significance Correction

Uji One Way Anova

ANOVA

self-healing

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3119,182	5	623,836	102,336	,000
Within Groups	73,152	12	6,096		
Total	3192,334	17			

Uji Post Hoc

Multiple Comparisons

Dependent Variable: self-healing

Tukey HSD

(I) Self-healing hydrogel	(J) Self-healing hydrogel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F4	-12,56000*	2,01593	,000	-19,3314	-5,7886
	F7	-26,62400*	2,01593	,000	-33,3954	-19,8526
	F1K	2,32333	2,01593	,850	-4,4480	9,0947
	F4K	-11,72333*	2,01593	,001	-18,4947	-4,9520
	F7K	-34,27000*	2,01593	,000	-41,0414	-27,4986
F4	F1	12,56000*	2,01593	,000	5,7886	19,3314
	F7	-14,06400*	2,01593	,000	-20,8354	-7,2926
	F1K	14,88333*	2,01593	,000	8,1120	21,6547
	F4K	,83667	2,01593	,998	-5,9347	7,6080
	F7K	-21,71000*	2,01593	,000	-28,4814	-14,9386
F7	F1	26,62400*	2,01593	,000	19,8526	33,3954
	F4	14,06400*	2,01593	,000	7,2926	20,8354
	F1K	28,94733*	2,01593	,000	22,1760	35,7187
	F4K	14,90067*	2,01593	,000	8,1293	21,6720
	F7K	-7,64600*	2,01593	,024	-14,4174	-,8746
F1K	F1	-2,32333	2,01593	,850	-9,0947	4,4480
	F4	-14,88333*	2,01593	,000	-21,6547	-8,1120
	F7	-28,94733*	2,01593	,000	-35,7187	-22,1760
	F4K	-14,04667*	2,01593	,000	-20,8180	-7,2753
	F7K	-36,59333*	2,01593	,000	-43,3647	-29,8220
F4K	F1	11,72333*	2,01593	,001	4,9520	18,4947
	F4	-,83667	2,01593	,998	-7,6080	5,9347
	F7	-14,90067*	2,01593	,000	-21,6720	-8,1293
	F1K	14,04667*	2,01593	,000	7,2753	20,8180
	F7K	-22,54667*	2,01593	,000	-29,3180	-15,7753
F7K	F1	34,27000*	2,01593	,000	27,4986	41,0414
	F4	21,71000*	2,01593	,000	14,9386	28,4814
	F7	7,64600*	2,01593	,024	,8746	14,4174
	F1K	36,59333*	2,01593	,000	29,8220	43,3647
	F4K	22,54667*	2,01593	,000	15,7753	29,3180

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

Lampiran 11.4 Uji pelepasan GSNO dari *self-healing hydrogel*

Uji Normalitas

Tests of Normality

	Self-healing hydrogel	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
% pelepasan obat	F1	,307	3	.	,904	3	,398
	F4	,183	3	.	,999	3	,930
	F7	,290	3	.	,925	3	,471

a. Lilliefors Significance Correction

Uji One Way Anova

ANOVA

% pelepasan obat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10,909	2	5,454	58,838	,000
Within Groups	,556	6	,093		
Total	11,465	8			

Uji Post Hoc

Multiple Comparisons

Dependent Variable: % pelepasan obat

Tukey HSD

(I) Self-healing hydrogel	(J) Self-healing hydrogel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F4	-1,51000*	,24860	,002	-2,2728	-,7472
	F7	1,18000*	,24860	,008	,4172	1,9428
F4	F1	1,51000*	,24860	,002	,7472	2,2728
	F7	2,69000*	,24860	,000	1,9272	3,4528
F7	F1	-1,18000*	,24860	,008	-1,9428	-,4172
	F4	-2,69000*	,24860	,000	-3,4528	-1,9272

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

Lampiran 11.5 Uji *swelling self-healing hydrogel*

Uji Normalitas

Tests of Normality

	Self-healing hydrogel	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Rasio Swelling	F1	,182	3	.	,999	3	,937
	F4	,368	3	.	,792	3	,095
	F7	,315	3	.	,891	3	,357
	F1K	,298	3	.	,915	3	,437
	F4K	,309	3	.	,900	3	,384
	F7K	,362	3	.	,803	3	,123

a. Lilliefors Significance Correction

Uji One Way Anova

ANOVA

Rasio Swelling

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1765,485	5	353,097	1,522	,255
Within Groups	2784,750	12	232,062		
Total	4550,235	17			

Uji Post Hoc

Multiple Comparisons

Dependent Variable: Rasio Swelling

Tukey HSD

(I) Self-healing hydrogel	(J) Self-healing hydrogel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F4	13,76667	12,43818	,870	-28,0122	55,5455
	F7	17,94000	12,43818	,703	-23,8389	59,7189
	F1K	-8,47667	12,43818	,981	-50,2555	33,3022
	F4K	1,74667	12,43818	1,000	-40,0322	43,5255
	F7K	17,34000	12,43818	,730	-24,4389	59,1189
F4	F1	-13,76667	12,43818	,870	-55,5455	28,0122
	F7	4,17333	12,43818	,999	-37,6055	45,9522
	F1K	-22,24333	12,43818	,507	-64,0222	19,5355
	F4K	-12,02000	12,43818	,920	-53,7989	29,7589
	F7K	3,57333	12,43818	1,000	-38,2055	45,3522
F7	F1	-17,94000	12,43818	,703	-59,7189	23,8389
	F4	-4,17333	12,43818	,999	-45,9522	37,6055
	F1K	-26,41667	12,43818	,338	-68,1955	15,3622
	F4K	-16,19333	12,43818	,779	-57,9722	25,5855
	F7K	-,60000	12,43818	1,000	-42,3789	41,1789
F1K	F1	8,47667	12,43818	,981	-33,3022	50,2555
	F4	22,24333	12,43818	,507	-19,5355	64,0222
	F7	26,41667	12,43818	,338	-15,3622	68,1955
	F4K	10,22333	12,43818	,958	-31,5555	52,0022
	F7K	25,81667	12,43818	,359	-15,9622	67,5955
F4K	F1	-1,74667	12,43818	1,000	-43,5255	40,0322
	F4	12,02000	12,43818	,920	-29,7589	53,7989
	F7	16,19333	12,43818	,779	-25,5855	57,9722
	F1K	-10,22333	12,43818	,958	-52,0022	31,5555
	F7K	15,59333	12,43818	,803	-26,1855	57,3722
F7K	F1	-17,34000	12,43818	,730	-59,1189	24,4389
	F4	-3,57333	12,43818	1,000	-45,3522	38,2055
	F7	,60000	12,43818	1,000	-41,1789	42,3789
	F1K	-25,81667	12,43818	,359	-67,5955	15,9622
	F4K	-15,59333	12,43818	,803	-57,3722	26,1855