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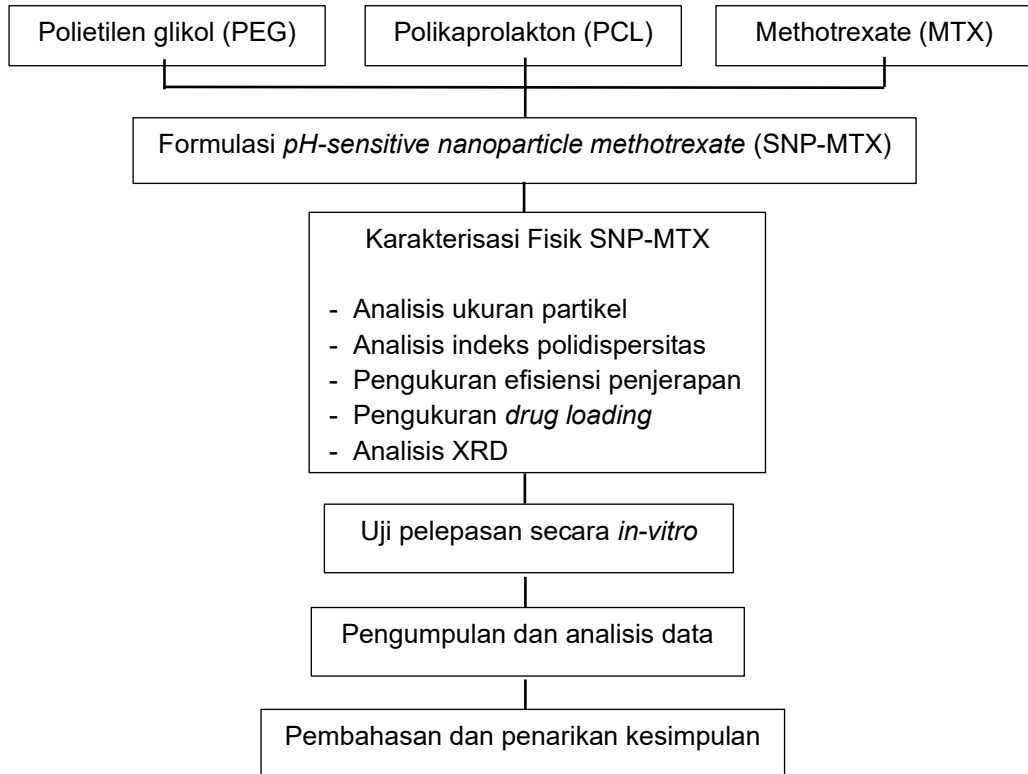
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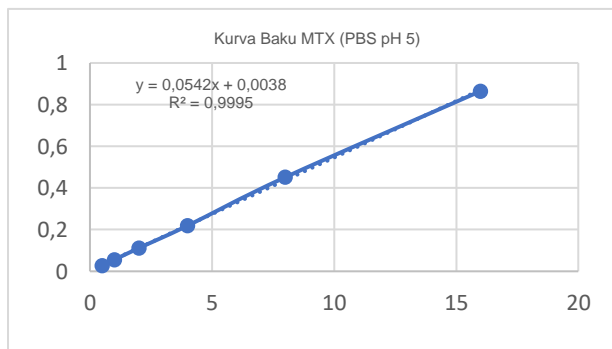
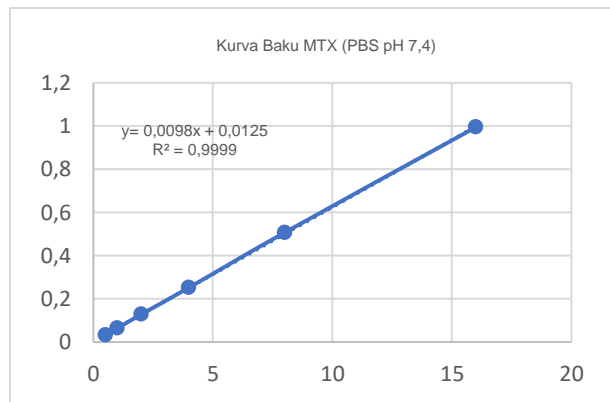
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LAMPIRAN

Lampiran 1. Skema kerja penelitian



Lampiran 2. Panjang gelombang maksimum dan kurva baku MTX



Gambar 8. Panjang gelombang maksimum dan kurva baku MTX

Lampiran 3. Data hasil pengujian

Lampiran 3.1 Kurva baku MTX

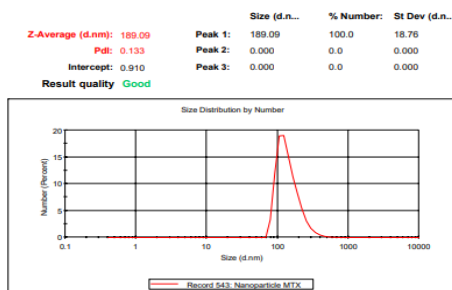
Tabel 2. Kurva baku MTX dalam PBS pH 7,4

Konsentrasi (bpj)	y1	y2	y3	\bar{x}
16	1,065	0,907	1,011	0,99445
8	0,554	0,461	0,505	0,50669474
4	0,272	0,230	0,254	0,25199693
2	0,136	0,115	0,133	0,12799846
1	0,068	0,058	0,067	0,06399923
0,5	0,034	0,029	0,033	0,03199962

Tabel 3. Kurva baku MTX dalam PBS pH 5

Konsentrasi (bpj)	y1	y2	y3	\bar{x}
16	0,927	0,789	0,880	0,8651715
8	0,482	0,433	0,440	0,45157963
4	0,236	0,200	0,221	0,21923733
2	0,118	0,100	0,116	0,11135866
1	0,059	0,050	0,058	0,05567933
0,5	0,030	0,025	0,029	0,02783967

Lampiran 3.2 Uji ukuran partikel dan indeks polidispersitas



Gambar 9. Hasil uji ukuran partikel (SNP4) menggunakan instrumen PSA

Tabel 4. Hasil uji ukuran partikel dan indeks polidispersitas (IDP)

Formula	Ukuran Partikel (nm)	IDP
SNP-1	102,98 ± 9,23	0,139 ± 0,01
SNP-2	143,21 ± 11,23	0,143 ± 0,01
SNP-3	177,17 ± 12,03	0,129 ± 0,01
SNP-4	189,09 ± 12,31	0,133 ± 0,01
SNP-5	231,65 ± 18,09	0,187 ± 0,01

Lampiran 3.3 Uji efisiensi penyerapan

Tabel 5. Hasil uji efisiensi penyerapan (EP)

Formula	Absorbansi	Jumlah ($\mu\text{g}/40\text{ ml}$)	Jumlah (mg)	EP (%)	Rata-rata (%)	SD
SNP-1	0,783	78622,45	78,62	21,38	19,9	1,2
	0,795	79846,94	79,85	20,15		
	0,812	81581,63	81,58	18,42		
SNP-2	0,655	65561,22	65,56	34,44	30,9	2,9
	0,69	69132,65	69,13	30,87		
	0,724	72602,04	72,60	27,40		
SNP-3	0,512	50969,39	50,97	49,03	44,1	4,0
	0,561	55969,39	55,97	44,03		
	0,608	60765,31	60,77	39,23		
SNP-4	0,29	28316,33	28,32	71,68	65,4	5,0
	0,354	34846,94	34,85	65,15		
	0,41	40561,22	40,56	59,44		
SNP-5	0,255	24744,90	24,74	75,26	68,1	5,8
	0,326	31989,80	31,99	68,01		
	0,394	38928,57	38,93	61,07		

Lampiran 3.4 Uji *drug loading*

Tabel 6. Hasil uji *drug loading* (DL)

Formula	Absorbansi	Jumlah (mg)	DL (%)	Rata-rata (%)	SD
SNP-1	0,764	2,45	24,54	27,09	2,09
	0,841	2,71	27,05		
	0,921	2,97	29,67		
SNP-2	0,715	2,29	22,94	23,09	1,98
	0,796	2,56	25,58		
	0,648	2,08	20,75		
SNP-3	0,706	2,26	22,64	22,63	2,01
	0,63	2,02	20,16		
	0,781	2,51	25,09		
SNP-4	0,788	2,53	25,32	25,09	2,21
	0,86	2,77	27,67		
	0,695	2,23	22,29		
SNP-5	0,635	2,03	20,33	20,34	1,83
	0,704	2,26	22,58		
	0,567	1,81	18,11		

Lampiran 3.5 Uji pelepasan secara *in-vitro*

Tabel 7. Hasil uji pelepasan SNP-MTX (SNP-4) secara *in-vitro* pada media PBS pH 7,4

Waktu (Jam)	Absorbansi	Konsentrasi ($\mu\text{g/ml}$)	1 ml (μg)	Faktor pengenceran	100 ml (mg)	Faktor koreksi	MTX terlepas (mg)	Rata-rata (μg)	SD	MTX terlepas (%)
0,5	0,065	5,36	5,36	1	0,54	0,00	0,54	0,54	0,05	0,54
	0,06	4,85	4,85	1	0,48	0,00	0,48			0,48
	0,07	5,87	5,87	1	0,59	0,00	0,59			0,59
1	0,106	9,54	9,54	1	0,95	0,01	0,96	0,98	0,10	0,96
	0,119	10,87	10,87	1	1,09	0,01	1,10			1,10
	0,099	8,83	8,83	1	0,88	0,01	0,89			0,89
2	0,15	14,03	14,03	1	1,40	0,02	1,43	1,43	0,14	1,43
	0,136	12,60	12,60	1	1,26	0,02	1,28			1,28
	0,164	15,46	15,46	1	1,55	0,02	1,57			1,57
3	0,257	24,95	24,95	1	2,49	0,05	2,54	2,54	0,25	2,54
	0,28	27,30	27,30	1	2,73	0,05	2,78			2,78
	0,232	22,40	22,40	1	2,24	0,05	2,29			2,29
4	0,405	40,05	40,05	1	4,01	0,09	4,09	4,09	0,40	4,09
	0,444	44,03	44,03	1	4,40	0,09	4,50			4,50
	0,366	36,07	36,07	1	3,61	0,08	3,69			3,69
5	0,582	58,11	58,11	1	5,81	0,15	5,96	5,43	0,53	5,96
	0,531	52,91	52,91	1	5,29	0,15	5,44			5,44
	0,48	47,70	47,70	1	4,77	0,13	4,90			4,90

Lanjutan tabel

Waktu (Jam)	Absorbansi	Konsentrasi (µg/ml)	1 ml (µg)	Faktor pengenceran	100 ml (mg)	Faktor koreksi	MTX terlepas (mg)	Rata-rata (µg)	SD	MTX terlepas (%)
6	0,812	81,58	81,58	1	8,16	0,23	8,39	7,65	0,75	8,39
	0,741	74,34	74,34	1	7,43	0,22	7,66			7,66
	0,669	66,99	66,99	1	6,70	0,20	6,90			6,90
7	0,548	54,64	54,64	2	10,93	0,28	11,21	10,22	1,00	11,21
	0,451	44,74	44,74	2	8,95	0,27	9,22			9,22
	0,502	49,95	49,95	2	9,99	0,25	10,24			10,24
8	0,589	58,83	58,83	2	11,77	0,34	12,11	12,09	1,18	12,11
	0,531	52,91	52,91	2	10,58	0,32	10,90			10,90
	0,647	64,74	64,74	2	12,95	0,31	13,26			13,26
12	0,771	77,40	77,40	2	15,48	0,42	15,90	17,65	1,73	15,90
	0,941	94,74	94,74	2	18,95	0,41	19,36			19,36
	0,859	86,38	86,38	2	17,28	0,40	17,67			17,67
24	0,422	41,79	41,79	4	16,71	0,46	17,17	19,02	1,86	17,18
	0,513	51,07	51,07	4	20,43	0,47	20,89			20,89
	0,467	46,38	46,38	4	18,55	0,44	19,00			19,00

Tabel 8. Hasil uji pelepasan SNP-MTX (SNP-4) secara *in-vitro* pada media PBS pH 5

Waktu (Jam)	Absorbansi	Konsentrasi (µg/ml)	1 ml (µg)	Faktor pengenceran	100 ml (mg)	Faktor koreksi	MTX terlepas (mg)	Rata-rata (µg)	SD	MTX terlepas (%)
0,5	0,101	9,03	9,03	1	0,90		0,90	0,89	0,09	0,90
	0,108	9,74	9,74	1	0,97	0,00	0,97			0,97
	0,091	8,01	8,01	1	0,80	0,00	0,80			0,80
1	0,234	22,60	22,60	1	2,26	0,02	2,28	2,09	0,20	2,28
	0,195	18,62	18,62	1	1,86	0,02	1,88			1,88
	0,216	20,77	20,77	1	2,08	0,02	2,10			2,10
2	0,553	55,15	55,15	1	5,52	0,08	5,59	5,09	0,50	5,59
	0,457	45,36	45,36	1	4,54	0,06	4,60			4,60
	0,504	50,15	50,15	1	5,02	0,07	5,09			5,09
3	0,732	73,42	73,42	1	7,34	0,15	7,49	8,32	0,82	7,49
	0,814	81,79	81,79	1	8,18	0,15	8,32			8,32
	0,892	89,74	89,74	1	8,97	0,16	9,14			9,14
4	0,536	53,42	53,42	2	10,68	0,20	10,89	12,08	1,18	10,89
	0,595	59,44	59,44	2	11,89	0,21	12,09			12,09
	0,651	65,15	65,15	2	13,03	0,23	13,26			13,26
5	0,846	85,05	85,05	2	17,01	0,29	17,30	17,23	1,69	17,30
	0,758	76,07	76,07	2	15,21	0,28	15,50			15,50
	0,922	92,81	92,81	2	18,56	0,32	18,88			18,88
6	0,474	47,09	47,09	4	18,84	0,34	19,17	21,34	2,09	19,17
	0,576	57,50	57,50	4	23,00	0,34	23,34			23,34
	0,53	52,81	52,81	4	21,12	0,37	21,49			21,49

Lanjutan tabel

Waktu (Jam)	Absorbansi	Konsentrasi ($\mu\text{g/ml}$)	1 ml (μg)	Faktor pengenceran	100 ml (mg)	Faktor koreksi	MTX terlepas (mg)	Rata-rata (μg)	SD	MTX terlepas (%)
7	0,498	49,54	49,54	8	39,63	0,39	40,02	37,33	3,67	40,02
	0,414	40,97	40,97	8	32,78	0,38	33,16			33,16
	0,483	48,01	48,01	8	38,41	0,42	38,83			38,83
8	0,598	59,74	59,74	8	47,80	0,45	48,24	48,33	4,72	48,24
	0,542	54,03	54,03	8	43,22	0,43	43,66			43,66
	0,657	65,77	65,77	8	52,61	0,49	53,10			53,10
12	0,679	68,01	68,01	8	54,41	0,51	54,92	60,54	5,92	54,92
	0,741	74,34	74,34	8	59,47	0,51	59,98			59,98
	0,823	82,70	82,70	8	66,16	0,57	66,73			66,73
24	0,664	66,48	66,48	16	106,37	0,58	106,95	97,43	9,56	106,95
	0,547	54,54	54,54	16	87,27	0,56	87,83			87,83
	0,606	60,56	60,56	16	96,90	0,63	97,53			97,53

Lampiran 4. Perhitungan

Lampiran 4.1 Efisiensi penjerapan

Contoh perhitungan efisiensi penjerapan untuk formula SNP4 replikasi 1

- Perhitungan kadar obat bebas dalam mg/40 mL

$$y = 0,0098x + 0,0125$$

$$x = \frac{(y-a)}{b} \times \frac{(\text{volume sampel} \times \text{faktor pengenceran})}{\text{faktor konversi}}$$

$$x = \frac{(0,29-0,0125)}{0,0098} \times \frac{(40 \times 25)}{1000}$$

$$x = \frac{0,2775}{0,0098} \times 1$$

$$x = 28,32 \text{ mg/40mL}$$

- Perhitungan efisiensi penjerapan

$$\% \text{ EP} = \frac{\text{Total obat} - \text{Obat bebas}}{\text{Total obat}} \times 100\%$$

$$\% \text{ EP} = \frac{100 \text{ mg} - 28,32 \text{ mg}}{100 \text{ mg}} \times 100\%$$

$$\% \text{ EP} = \frac{71,68 \text{ mg}}{100 \text{ mg}} \times 100\%$$

$$\% \text{ EP} = 71,68\%$$

Lampiran 4.2 Drug loading

Contoh perhitungan drug loading untuk formula SNP4 replikasi 1

- Perhitungan kadar obat yang terenkapsulasi dalam mg

$$y = 0,0098x + 0,0125$$

$$x = \frac{(y-a)}{b} \times \frac{(\text{volume sampel} \times \text{faktor pengenceran})}{\text{faktor konversi}}$$

$$x = \frac{(0,788-0,0125)}{0,0098} \times \frac{(1 \times 32)}{1000}$$

$$x = \frac{0,7755}{0,0098} \times 0,032$$

$$x = 2,532 \text{ mg}$$

- Perhitungan *drug loading*

$$\% \text{ DL} = \frac{\text{Obat yang terenkapsulasi}}{\text{Bobot total SNP-MTX}} \times 100\%$$

$$\% \text{ DL} = \frac{2,532 \text{ mg}}{10 \text{ mg}} \times 100\%$$

$$\% \text{ DL} = 25,32\%$$

Lampiran 4.3 Uji pelepasan secara *In-vitro* SNP-MTX

Perhitungan jumlah MTX terlepas pada jam ke-24 dari SNP-MTX (SNP4) di media PBS pH 7,4 replikasi 1

- Persamaan: $y = 0,0098x + 0,0125$
- Absorbansi MTX jam ke-0,5 replikasi 1: 0,422

$$y = 0,0098x + 0,0125$$

$$0,422 = 0,0098x + 0,0125$$

$$x = \frac{0,422 - 0,0125 \text{ mg}}{0,0098 \text{ mg}} \times \text{faktor koreksi}$$

$$x = \frac{0,422 - 0,0125 \text{ mg}}{0,0098 \text{ mg}} \times 4$$

$$x = 167,143 \mu\text{g/mL}$$

- Konsentrasi dalam 1 mL = 167,143 $\mu\text{g/mL}$
- Konsentrasi dalam 100 mL = 167,143 $\mu\text{g/mL} \times 100 \text{ mL}$
- Jumlah obat yang terlepas = 16,714 mg/100 mL

$$\begin{aligned} \text{Faktor koreksi} &= \frac{\text{konsentrasi jam sebelumnya}}{1000} + \text{faktor koreksi jam sebelumnya} \\ &= \frac{41,79}{1000} + 0,42 = 0,46 \end{aligned}$$

$$\begin{aligned} \text{Jumlah MTX terlepas} &= \text{konsentrasi dalam 100 mL} + \text{faktor koreksi} \\ &= 16,71 + 0,46 \\ &= 17,17 \text{ mg} \end{aligned}$$

$$\text{Persen MTX terlepas} = \frac{\text{Jumlah MTX terlepas}}{\text{Jumlah total MTX}} \times 100\%$$

$$\text{Persen MTX terlepas} = \frac{17,17 \text{ mg}}{100 \text{ mg}} \times 100\%$$

$$\text{Persen MTX terlepas} = 17,17\%$$

Lampiran 5. Data hasil uji analisis statistika

Lampiran 5.1 Uji ukuran partikel

Tests of Normality							
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
Ukuran	SNP1	.175	3	.	1.000	3	1.000
Partikel	SNP2	.175	3	.	1.000	3	1.000
	SNP3	.361	3	.	.807	3	.130
	SNP4	.362	3	.	.804	3	.125
	SNP5	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

One-way ANOVA					
Ukuran Partikel					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	304431201.600	4	76107800.400	2.216	.140
Within Groups	343437078.000	10	34343707.800		
Total	647868279.600	14			

Multiple Comparisons							
Dependent Variable: Ukuran Partikel							
	(I)	(J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
	Formula	Formula				Lower Bound	Upper Bound
Tukey HSD	SNP1	SNP2	-4023.00000	4784.95613	.912	-19770.6837	11724.6837
		SNP3	-1743.00000	4784.95613	.996	-17490.6837	14004.6837
		SNP4	-2569.00000	4784.95613	.981	-18316.6837	13178.6837
		SNP5	-12867.00000	4784.95613	.126	-28614.6837	2880.6837
SNP2	SNP1	SNP3	4023.00000	4784.95613	.912	-11724.6837	19770.6837
		SNP3	2280.00000	4784.95613	.988	-13467.6837	18027.6837
		SNP4	1454.00000	4784.95613	.998	-14293.6837	17201.6837
		SNP5	-8844.00000	4784.95613	.400	-24591.6837	6903.6837
SNP3	SNP1	SNP2	1743.00000	4784.95613	.996	-14004.6837	17490.6837
		SNP2	-2280.00000	4784.95613	.988	-18027.6837	13467.6837
		SNP4	-826.00000	4784.95613	1.000	-16573.6837	14921.6837

		SNP5	-11124.00000	4784.95613	.214	-26871.6837	4623.6837
	SNP4	SNP1	2569.00000	4784.95613	.981	-13178.6837	18316.6837
		SNP2	-1454.00000	4784.95613	.998	-17201.6837	14293.6837
		SNP3	826.00000	4784.95613	1.00	-14921.6837	16573.6837
					0		
		SNP5	-10298.00000	4784.95613	.272	-26045.6837	5449.6837
	SNP5	SNP1	12867.00000	4784.95613	.126	-2880.6837	28614.6837
		SNP2	8844.00000	4784.95613	.400	-6903.6837	24591.6837
		SNP3	11124.00000	4784.95613	.214	-4623.6837	26871.6837
		SNP4	10298.00000	4784.95613	.272	-5449.6837	26045.6837
Games	SNP1	SNP2	-4023.00000*	839.25721	.042	-7827.6231	-218.3769
-		SNP3	-1743.00000	5114.20838	.995	-40134.0725	36648.0725
Howell		SNP4	-2569.00000	5464.17045	.983	-43711.3159	38573.3159
		SNP5	-	1172.52008	.007	-19124.0077	-6609.9923
			12867.00000*				
	SNP2	SNP1	4023.00000*	839.25721	.042	218.3769	7827.6231
		SNP3	2280.00000	5127.52643	.986	-35773.4801	40333.4801
		SNP4	1454.00000	5476.63753	.998	-39368.8021	42276.8021
		SNP5	-8844.00000*	1229.31010	.016	-14904.9876	-2783.0124
	SNP3	SNP1	1743.00000	5114.20838	.995	-36648.0725	40134.0725
		SNP2	-2280.00000	5127.52643	.986	-40333.4801	35773.4801
		SNP4	-826.00000	7446.09517	1.00	-34005.1933	32353.1933
					0		
		SNP5	-11124.00000	5192.49247	.426	-47684.9282	25436.9282
	SNP4	SNP1	2569.00000	5464.17045	.983	-38573.3159	43711.3159
		SNP2	-1454.00000	5476.63753	.998	-42276.8021	39368.8021
		SNP3	826.00000	7446.09517	1.00	-32353.1933	34005.1933
					0		
		SNP5	-10298.00000	5537.50931	.511	-49689.9072	29093.9072
	SNP5	SNP1	12867.00000*	1172.52008	.007	6609.9923	19124.0077
		SNP2	8844.00000*	1229.31010	.016	2783.0124	14904.9876
		SNP3	11124.00000	5192.49247	.426	-25436.9282	47684.9282
		SNP4	10298.00000	5537.50931	.511	-29093.9072	49689.9072

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

Lampiran 5.2 Uji Indeks polidispersitas

Tests of Normality							
	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Indeks	SNP1	.175	3	.	1.000	3	1.000
Polidispe	SNP2	.175	3	.	1.000	3	1.000
rsitas	SNP3	.175	3	.	1.000	3	1.000
	SNP4	.175	3	.	1.000	3	1.000
	SNP5	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

One-way ANOVA

Indeks Polidispersitas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6590.400	4	1647.600	16.476	.000
Within Groups	1000.000	10	100.000		
Total	7590.400	14			

Multiple Comparisons

Dependent Variable: Indeks Polidispersitas

	(I)	(J)	Mean		Sig.	95% Confidence Interval	
			Difference	Std.		Lower	Upper
	Formula	Formula	(I-J)	Error		Bound	Bound
Tukey	SNP1	SNP2	-4.00000	8.16497	.987	-30.8716	22.8716
HSD		SNP3	10.00000	8.16497	.738	-16.8716	36.8716
		SNP4	6.00000	8.16497	.943	-20.8716	32.8716
		SNP5	-48.00000*	8.16497	.001	-74.8716	-21.1284
	SNP2	SNP1	4.00000	8.16497	.987	-22.8716	30.8716
		SNP3	14.00000	8.16497	.467	-12.8716	40.8716
		SNP4	10.00000	8.16497	.738	-16.8716	36.8716
		SNP5	-44.00000*	8.16497	.002	-70.8716	-17.1284
	SNP3	SNP1	-10.00000	8.16497	.738	-36.8716	16.8716
		SNP2	-14.00000	8.16497	.467	-40.8716	12.8716

		SNP4	-4.00000	8.16497	.987	-30.8716	22.8716
		SNP5	-58.00000*	8.16497	.000	-84.8716	-31.1284
	SNP4	SNP1	-6.00000	8.16497	.943	-32.8716	20.8716
		SNP2	-10.00000	8.16497	.738	-36.8716	16.8716
		SNP3	4.00000	8.16497	.987	-22.8716	30.8716
		SNP5	-54.00000*	8.16497	.000	-80.8716	-27.1284
	SNP5	SNP1	48.00000*	8.16497	.001	21.1284	74.8716
		SNP2	44.00000*	8.16497	.002	17.1284	70.8716
		SNP3	58.00000*	8.16497	.000	31.1284	84.8716
		SNP4	54.00000*	8.16497	.000	27.1284	80.8716
Games-	SNP1	SNP2	-4.00000	8.16497	.984	-40.2982	32.2982
Howell		SNP3	10.00000	8.16497	.743	-26.2982	46.2982
		SNP4	6.00000	8.16497	.937	-30.2982	42.2982
		SNP5	-48.00000*	8.16497	.019	-84.2982	-11.7018
	SNP2	SNP1	4.00000	8.16497	.984	-32.2982	40.2982
		SNP3	14.00000	8.16497	.513	-22.2982	50.2982
		SNP4	10.00000	8.16497	.743	-26.2982	46.2982
		SNP5	-44.00000*	8.16497	.026	-80.2982	-7.7018
	SNP3	SNP1	-10.00000	8.16497	.743	-46.2982	26.2982
		SNP2	-14.00000	8.16497	.513	-50.2982	22.2982
		SNP4	-4.00000	8.16497	.984	-40.2982	32.2982
		SNP5	-58.00000*	8.16497	.010	-94.2982	-21.7018
	SNP4	SNP1	-6.00000	8.16497	.937	-42.2982	30.2982
		SNP2	-10.00000	8.16497	.743	-46.2982	26.2982
		SNP3	4.00000	8.16497	.984	-32.2982	40.2982
		SNP5	-54.00000*	8.16497	.013	-90.2982	-17.7018
	SNP5	SNP1	48.00000*	8.16497	.019	11.7018	84.2982
		SNP2	44.00000*	8.16497	.026	7.7018	80.2982
		SNP3	58.00000*	8.16497	.010	21.7018	94.2982
		SNP4	54.00000*	8.16497	.013	17.7018	90.2982

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

Lampiran 5.3 Uji efisiensi penyerapan

Tests of Normality							
	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Efisiensi	SNP1	.175	3	.	1.000	3	1.000
Penyerapan	SNP2	.358	3	.	.814	3	.148
	SNP3	.175	3	.	1.000	3	1.000
	SNP4	.175	3	.	1.000	3	1.000
	SNP5	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

One-way ANOVA

Efisiensi Penyerapan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	63505101.600	4	15876275.400	18.896	.000
Within Groups	8401788.000	10	840178.800		
Total	71906889.600	14			

Multiple Comparisons

Dependent Variable: Efisiensi Penyerapan

	(I)	(J)	Mean	Std. Error	Sig.	95% Confidence Interval	
			Difference (I-J)			Lower Bound	Upper Bound
	Formula	Formula					
Tukey	SNP1	SNP2	-165.00000	748.41112	.999	-2628.0825	2298.0825
		SNP3	-2411.00000	748.41112	.056	-4874.0825	52.0825
		SNP4	-4545.00000*	748.41112	.001	-7008.0825	-2081.9175
		SNP5	-4811.00000*	748.41112	.001	-7274.0825	-2347.9175
HSD	SNP2	SNP1	165.00000	748.41112	.999	-2298.0825	2628.0825
		SNP3	-2246.00000	748.41112	.078	-4709.0825	217.0825
		SNP4	-4380.00000*	748.41112	.001	-6843.0825	-1916.9175
		SNP5	-4646.00000*	748.41112	.001	-7109.0825	-2182.9175
SNP3	SNP3	SNP1	2411.00000	748.41112	.056	-52.0825	4874.0825
		SNP2	2246.00000	748.41112	.078	-217.0825	4709.0825
		SNP4	-2134.00000	748.41112	.098	-4597.0825	329.0825

		SNP5	-2400.00000	748.41112	.057	-4863.0825	63.0825
	SNP4	SNP1	4545.00000*	748.41112	.001	2081.9175	7008.0825
		SNP2	4380.00000*	748.41112	.001	1916.9175	6843.0825
		SNP3	2134.00000	748.41112	.098	-329.0825	4597.0825
		SNP5	-266.00000	748.41112	.996	-2729.0825	2197.0825
	SNP5	SNP1	4811.00000*	748.41112	.001	2347.9175	7274.0825
		SNP2	4646.00000*	748.41112	.001	2182.9175	7109.0825
		SNP3	2400.00000	748.41112	.057	-63.0825	4863.0825
		SNP4	266.00000	748.41112	.996	-2197.0825	2729.0825
Games	SNP1	SNP2	-165.00000	1073.06260	1.00	-8338.9444	8008.9444
-					0		
Howell		SNP3	-2411.00000*	240.50849	.018	-3955.8867	-866.1133
		SNP4	-4545.00000*	299.52462	.009	-6587.1384	-2502.8616
		SNP5	-4811.00000*	341.18079	.011	-7199.0315	-2422.9685
	SNP2	SNP1	165.00000	1073.06260	1.00	-8008.9444	8338.9444
					0		
		SNP3	-2246.00000	1095.08980	.450	-9899.6819	5407.6819
		SNP4	-4380.00000	1109.54600	.147	-	2999.6879
						11759.6879	
		SNP5	-4646.00000	1121.50866	.128	-	2539.9493
						11831.9493	
	SNP3	SNP1	2411.00000*	240.50849	.018	866.1133	3955.8867
		SNP2	2246.00000	1095.08980	.450	-5407.6819	9899.6819
		SNP4	-2134.00000*	370.77397	.024	-3829.1701	-438.8299
		SNP5	-2400.00000*	405.16992	.025	-4325.3648	-474.6352
	SNP4	SNP1	4545.00000*	299.52462	.009	2502.8616	6587.1384
		SNP2	4380.00000	1109.54600	.147	-2999.6879	11759.6879
		SNP3	2134.00000*	370.77397	.024	438.8299	3829.1701
		SNP5	-266.00000	442.75652	.968	-2253.3994	1721.3994
	SNP5	SNP1	4811.00000*	341.18079	.011	2422.9685	7199.0315
		SNP2	4646.00000	1121.50866	.128	-2539.9493	11831.9493
		SNP3	2400.00000*	405.16992	.025	474.6352	4325.3648
		SNP4	266.00000	442.75652	.968	-1721.3994	2253.3994

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

Lampiran 5.4 Uji drug loading

Tests of Normality							
	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Drug	SNP1	.362	3	.	.804	3	.124
Loading	SNP2	.354	3	.	.821	3	.166
	SNP3	.175	3	.	1.000	3	1.000
	SNP4	.353	3	.	.823	3	.172
	SNP5	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

One-way ANOVA

Drug Loading

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	928146.000	4	232036.500	.211	.926
Within Groups	10975594.000	10	1097559.400		
Total	11903740.000	14			

Multiple Comparisons

Dependent Variable: Drug Loading

	(I)	(J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
Tukey	SNP1	SNP2	325.00000	855.39831	.995	-2490.1861	3140.1861	
		SNP3	-379.00000	855.39831	.991	-3194.1861	2436.1861	
		SNP4	194.00000	855.39831	.999	-2621.1861	3009.1861	
		SNP5	-150.00000	855.39831	1.000	-2965.1861	2665.1861	
		SNP2	SNP1	-325.00000	855.39831	.995	-3140.1861	2490.1861
HSD	SNP2	SNP3	-704.00000	855.39831	.918	-3519.1861	2111.1861	
		SNP4	-131.00000	855.39831	1.000	-2946.1861	2684.1861	
		SNP5	-475.00000	855.39831	.979	-3290.1861	2340.1861	
		SNP3	SNP1	379.00000	855.39831	.991	-2436.1861	3194.1861
		SNP2	704.00000	855.39831	.918	-2111.1861	3519.1861	
	SNP3	SNP4	573.00000	855.39831	.959	-2242.1861	3388.1861	
		SNP5	229.00000	855.39831	.999	-2586.1861	3044.1861	

	SNP4	SNP1	-194.00000	855.39831	.999	-3009.1861	2621.1861
		SNP2	131.00000	855.39831	1.000	-2684.1861	2946.1861
		SNP3	-573.00000	855.39831	.959	-3388.1861	2242.1861
		SNP5	-344.00000	855.39831	.994	-3159.1861	2471.1861
	SNP5	SNP1	150.00000	855.39831	1.000	-2665.1861	2965.1861
		SNP2	475.00000	855.39831	.979	-2340.1861	3290.1861
		SNP3	-229.00000	855.39831	.999	-3044.1861	2586.1861
		SNP4	344.00000	855.39831	.994	-2471.1861	3159.1861
Games	SNP1	SNP2	325.00000	1139.55839	.998	-5049.7946	5699.7946
-		SNP3	-379.00000	938.65720	.990	-7356.0431	6598.0431
Howell		SNP4	194.00000	1172.02929	1.000	-5208.2657	5596.2657
		SNP5	-150.00000	937.42911	1.000	-7158.0553	6858.0553
	SNP2	SNP1	-325.00000	1139.55839	.998	-5699.7946	5049.7946
		SNP3	-704.00000	666.67083	.819	-5499.9022	4091.9022
		SNP4	-131.00000	968.00069	1.000	-4448.7289	4186.7289
		SNP5	-475.00000	664.94060	.936	-5310.7567	4360.7567
	SNP3	SNP1	379.00000	938.65720	.990	-6598.0431	7356.0431
		SNP2	704.00000	666.67083	.819	-4091.9022	5499.9022
		SNP4	573.00000	720.76996	.913	-4661.1216	5807.1216
		SNP5	229.00000	156.93948	.630	-471.8731	929.8731
	SNP4	SNP1	-194.00000	1172.02929	1.000	-5596.2657	5208.2657
		SNP2	131.00000	968.00069	1.000	-4186.7289	4448.7289
		SNP3	-573.00000	720.76996	.913	-5807.1216	4661.1216
		SNP5	-344.00000	719.16989	.983	-5615.9846	4927.9846
	SNP5	SNP1	150.00000	937.42911	1.000	-6858.0553	7158.0553
		SNP2	475.00000	664.94060	.936	-4360.7567	5310.7567
		SNP3	-229.00000	156.93948	.630	-929.8731	471.8731
		SNP4	344.00000	719.16989	.983	-4927.9846	5615.9846

Lampiran 6. Dokumentasi penelitian



Gambar 10. Proses analisis dengan menggunakan spektrofotometer UV-Vis.



Gambar 11. Proses formulasi SNP-MTX



Gambar 12. Proses karakterisasi SNP-MTX



Gambar 13. Proses uji pelepasan secara *in-vitro*