DAFTAR PUSTAKA

Abdeltawab, H., Svirskis, D. & Sharma, M. 2020. Formulation strategies to modulate drug release from poloxamer based in- situ gelling systems Formulation strategies to modulate drug release from poloxamer based in situ gelling systems. *Expert Opinion on Drug Delivery*, 00(00): 1–15. https://doi.org/10.1080/17425247.2020.1731469.

Aiyalu, R., Govindarjan, A. & Ramasamy, A. 2016. Formulation and evaluation of topical herbal gel for the treatment of arthritis in animal model. *Brazilian Journal of Pharmaceutical Sciences*, 52(3): 493–507.

Anwal, L. 2021. a Comprehensive Review on Alzheimer'S Disease. *World Journal of Pharmacy and Pharmaceutical Sciences*, 10(7): 1170.

Bvg, Z.V. = VcYWdd ` d [E] VgbVXZji ^ XVa : mX ^ e ^ Zcih.

Chaturvedi, M. 2011. A review on mucoadhesive polymer used in nasal drug delivery system. , 2(4).

Dash, S., Murthy, P.N., Nath, L. & Chowdhury, P. 2010. Kinetic modeling on drug release from controlled drug delivery systems. *Acta Poloniae Pharmaceutica - Drug Research*, 67(3): 217–223.

Enggi, C.K., Isa, H.T., Sulistiawati, S., Ardika, K.A.R., Wijaya, S., Asri, R.M., Mardikasari, S.A., Donnelly, R.F. & Permana, A.D. 2021. Development of thermosensitive and mucoadhesive gels of cabotegravir for enhanced permeation and retention profiles in vaginal tissue: A proof of concept study. *International Journal of Pharmaceutics*, 609(August): 121182.

Fan, R., Cheng, Y., Wang, R., Zhang, T., Zhang, H., Li, J., Song, S. & Zheng, A. 2022. Thermosensitive Hydrogels and Advances in Their Application in Disease Therapy. *Polymers*, 14(12).

Fonseca, L.C., Lopes, J.A., Vieira, J., Viegas, C., Oliveira, C.S., Hartmann, R.P. & Fonte, P. 2021. Intranasal drug delivery for treatment of Alzheimer's disease. *Drug Delivery and Translational Research*, 11(2): 411–425. https://doi.org/10.1007/s13346-021-00940-7.

Gadad, A.P., Wadklar, P.D., Dandghi, P. & Patil, A. 2016. Thermosensitive In situ Gel for Ocular Delivery of Lomefloxacin. , 50(2).

Grassi, G., Crevatin, A., Farra, R., Guarnieri, G., Pascotto, A., Rehimers, B., Lapasin, R. & Grassi, M. 2006. Rheological properties of aqueous Pluronic-alginate systems containing liposomes. *Journal of Colloid and Interface Science*, 301(1): 282–290.

Han, K., Woghiren, O.E. & Priefer, R. 2016. Surface tension examination of various liquid oral , nasal , and ophthalmic dosage forms. *Chemistry Central Journal*: 1–5.

International, A.D. & University, M. 2021. World Alzheimer Report 2021. https://www.alzint.org/resource/world-alzheimer-report-2021/.

Kabra, A. & Ramteke, A. 2021. Alzheimer disease –etiology, pathophysiology and treatment: An overview. *Annals of the Romanian Society for Cell Biology*, 25(1): 3548–3556.

Karasulu, E., Yavaşoğlu, A., Evrenşanal, Z., Uyanikgil, Y. & Karasulu, H.Y. 2008. Permeation studies and histological examination of sheep nasal mucosa following administration of different nasal formulations with or without absorption enhancers. *Drug Delivery*, 15(4): 219–225.

Kesavan, K., Nath, G. & Pandit, J.K. 2010. Sodium alginate based mucoadhesive system for gatifloxacin and its in vitro antibacterial activity. *Scientia Pharmaceutica*, 78(4): 941–957.

Keshri, U.P., Ranjan, R., Guria, R.T., Kumar, P., Rajnish, K. & Gari, M. 2020. Effect of telmisartan on hypertensive dementia patients: an observational study. *International Journal of Basic & Clinical Pharmacology*, 9(7): 1038.

Khateb, K. Al, Ozhmukhametova, E.K., Mussin, M.N., Seilkhanov, S.K., Rakhypbekov, T.K., Lau, W.M. & Khutoryanskiy, V. V. 2016. In situ gelling systems based on Pluronic F127/Pluronic F68 formulations for ocular drug delivery. *International Journal of Pharmaceutics*. http://dx.doi.org/10.1016/j.ijpharm.2016.02.027.

Khattab, A., Marzok, S. & Ibrahim, M. 2019. Journal of Drug Delivery Science and Technology Development of optimized mucoadhesive thermosensitive pluronic based in situ gel for controlled delivery of Latanoprost : Antiglaucoma efficacy and stability approaches. *Journal of Drug Delivery Science and Technology*, 53(April): 101134. https://doi.org/10.1016/j.jddst.2019.101134.

Korsmeyer, R.W., Gurny, R., Doelker, E., Buri, P. & Peppas, N.A. 1983. Mechanisms of solute release from porous hydrophilic polymers. *International Journal of Pharmaceutics*, 15(1): 25–35.

Permana, A.D., Utami, R.N., Courtenay, A.J., Manggau, M.A., Donnelly, R.F. & Rahman, L. 2020. Phytosomal nanocarriers as platforms for improved delivery of natural antioxidant and photoprotective compounds in propolis: An approach for enhanced both dissolution behaviour in biorelevant media and skin retention profiles. *Journal of Photochemistry and Photobiology B: Biology*, 205(February): 111846. https://doi.org/10.1016/j.jphotobiol.2020.111846.

Permana, A.D., Utami, R.N., Layadi, P., Himawan, A., Juniarti, N., Anjani, Q.K., Utomo, E., Mardikasari, S.A., Arjuna, A. & Donnelly, R.F. 2021. Thermosensitive and mucoadhesive in situ ocular gel for effective local delivery and antifungal activity of itraconazole nanocrystal in the treatment of fungal keratitis. *International Journal of Pharmaceutics*, 602(April): 120623. https://doi.org/10.1016/j.ijpharm.2021.120623.

Permana, A.D., Utomo, E., Pratama, M.R., Amir, M.N., Anjani, Q.K., Mardikasari, S.A., Sumarheni, S., Himawan, A., Arjuna, A., Usmanengsi, U. & Donnelly, R.F. 2021. Bioadhesive-Thermosensitive in Situ Vaginal Gel of the Gel Flake-Solid Dispersion of Itraconazole for Enhanced Antifungal Activity in the Treatment of Vaginal Candidiasis. *ACS Applied Materials and Interfaces*, 13(15): 18128–18141.

Qi, X.J., Xu, D., Tian, M.L., Zhou, J.F., Wang, Q.S. & Cui, Y.L. 2021. Thermosensitive hydrogel designed for improving the antidepressant activities of genipin via intranasal delivery. *Materials and Design*, 206: 109816. https://doi.org/10.1016/j.matdes.2021.109816.

Rao, M., Agrawal, D.K. & Shirsath, C. 2017. Thermoreversible mucoadhesive in situ nasal gel for treatment of Parkinson's disease. *Drug Development and Industrial Pharmacy*, 43(1): 142–150.

Rarokar, N.R., Saoji, S.D. & Khedekar, P.B. 2018. Investigation of effectiveness of some extensively used polymers on thermoreversible properties of Pluronic® tri-block copolymers. *Journal of Drug Delivery Science and Technology*, 44: 220–230.

Rhee, Y., Shin, Y., Park, C., Chi, S. & Park, E. 2006. Effect of Flavors on the Viscosity and Gelling Point of Aqueous Poloxamer Solution. , 29(12): 1171–1178.

Soria Lopez, J.A., González, H.M. & Léger, G.C. 2019. Alzheimer's disease. *Handbook of Clinical Neurology*, 167: 231–255.

Swamy, N.G.N. & Abbas, Z. 2012. Mucoadhesive in situ gels as nasal drug delivery systems: An overview. *Asian Journal of Pharmaceutical Sciences*, 7(3): 168–180.

Torika, N., Asraf, K., Danon, A., Apte, R.N. & Fleisher-Berkovich, S. 2016. Telmisartan modulates glial activation: In vitro and in vivo studies. *PLoS ONE*, 11(5): 1–15.

Verekar, R.R., Gurav, S.S. & Bolmal, U. 2020. Thermosensitive mucoadhesive in situ gel for intranasal delivery of Almotriptan malate: Formulation, characterization, and evaluation. *Journal of Drug Delivery Science and Technology*, 58(December 2019): 101778.

Vinicius, M., De Mello, C., Vieira, L., Cruz de Souza, L., Gomes, K. & Carvalho, M. 2019. Alzheimer's disease: risk factors and potentially protective measures. *Journal of Biomedical Science*, 26(33): 1–11. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6507104/.

Wang, Q., Zuo, Z., Cheung, C.K.C. & Leung, S.S.Y. 2019. Updates on thermosensitive hydrogel for nasal, ocular and cutaneous delivery. *International Journal of Pharmaceutics*, 559(January): 86–101. https://doi.org/10.1016/j.ijpharm.2019.01.030.

Wang, Y., Jiang, S., Wang, H. & Bie, H. 2017. A mucoadhesive , thermoreversible in situ nasal gel of geniposide for neurodegenerative diseases. : 1–17.

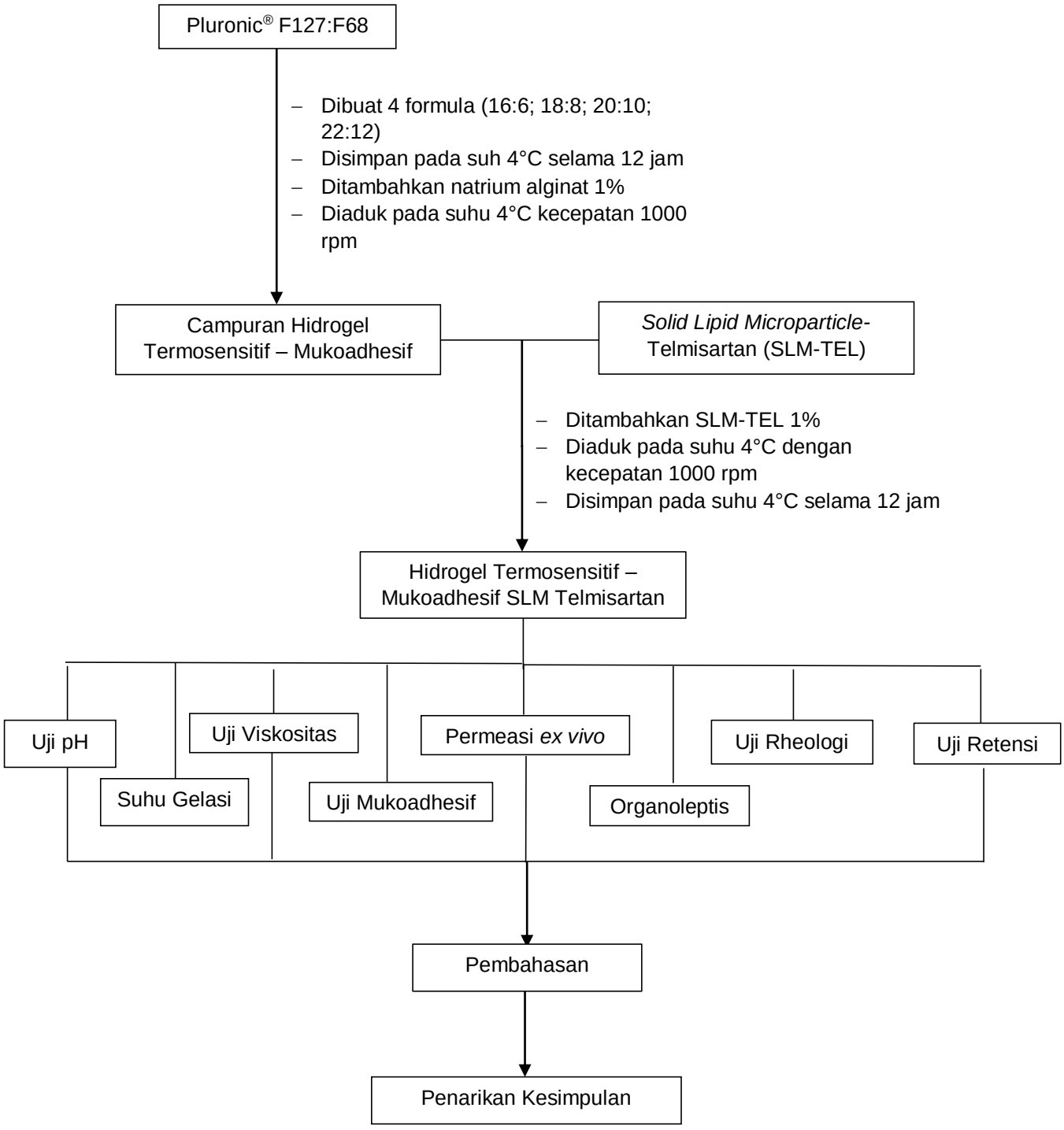
Yasir, M., Sara, U.V.S., Chauhan, I., Gaur, P.K., Singh, A.P., Puri, D. & Ameeduzzafar, A. 2018. Solid lipid nanoparticles for nose to brain delivery of donepezil: formulation, optimization by Box–Behnken design, in vitro and in vivo evaluation. *Artificial Cells, Nanomedicine and Biotechnology*, 46(8): 1838–1851. https://doi.org/10.1080/21691401.2017.1394872.

Yoganand, P.S., Chacko, R., Kant, R., Mishra, C., Kumar, R.L.V.P. & Kundu, S. 2020. MULTIFACETED TELMISARTAN 550 Yoganand PS. , 7(2394): 45–49.

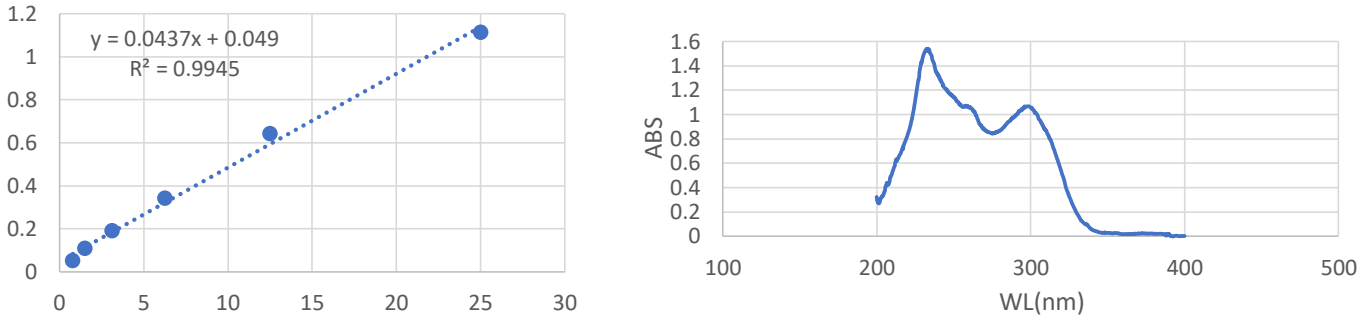
Zhang, X., Dong, Y., Dong, H., Cui, Y., Du, Q., Wang, X., Li, L. & Zhang, H. 2021. Telmisartan Mitigates TNF- α -Induced Type II Collagen Reduction by Upregulating SOX - 9. : 4–9.

LAMPIRAN

Lampiran 1. Skema kerja penelitian



Lampiran 2. Panjang gelombang maksimum dan kurva baku



Gambar 6. Panjang gelombang maksimum dan kurva baku telmisartan dalam PBS 7.4 + SLS 1%

Lampiran 3. Perhitungan Data

Lampiran 3.1 Uji permeasi *ex vivo*

Persamaan: y = 0,0437x + 0,049

Keterangan:

x = konsentrasi

y = absorbansi

Untuk F2 replikasi 1 jam ke-8 diperoleh absorbansi = 0,567 dengan faktor pengenceran = 8

y = 0,0437x + 0,049

0,567 = 0,0437x + 0,049

$$x = \frac{(0{,}567-0{,}049)}{0{,}0437}$$

x = 11,8535469 x faktor pengenceran

x = 11,8535469 x 8 = 94,8283752 µg/mL

Konsentrasi dalam 1 mL = 94,8283752 µg/mL x 1 mL

= 94,8283752 µg

= 0,0948283 mg

Konsentrasi dalam 13 mL = 0,0948283 mg x 13 mL

= 1,23276888 mg

Faktor koreksi = $\frac{\text{konsentrasi jam sebelumnya}}{1000}$ + faktor koreksi jam sebelumnya

= $\frac{90,98398169}{1000}$ +0,559908467

= 0,650892449

Jumlah terpermeasi = konsentrasi dalam 13 mL + faktor koreksi

= 1,23276888 + 0,650892449

= 1,88366133 mg

Lampiran 3.2 Perhitungan retensi

Persamaan: y = 0,1049x + 0,0104

Keterangan:

x = konsentrasi

y = absorbansi

Untuk F2 replikasi 1 diperoleh absorbansi = 0,223

y = 0,1049x + 0,0104

0,223 = 0,1049x + 0,0104

$x = \frac{(0,223 - 0,0104)}{0,1049}$

x = 2,02669209µg/mL

Jumlah TEL yang terdeposisi = $\frac{2,02669209}{1000}$ x 20 = 0,04053384 mg

Lampiran 3.3 Perhitungan % erosi

Untuk F2 replikasi 1 pada jam ke-8

Bobot vial awal = 16,51 g

Bobot vial jam ke-8 = 14,58 g

$$\% \text{ erosi} = \frac{(\text{Bobot vial awal-bobot vial jam ke-8})}{\text{Bobot vial awal}} \times 100\%$$

$$\% \text{ erosi} = \frac{(16{,}51 - 14{,}58)}{16{,}51} \times 100\%$$

% erosi = 11,6898849 mg

Lampiran 3.4 Perhitungan fluks

Untuk F1 pada jam ke-8 replikasi pertama, konsentrasi obat adalah 13.318 µg/mL, faktor pengenceran = 16, volume kompartemen reseptor = 13 mL, dan luas area membran difusi adalah 1.77 cm^2

$$\text{Permeat} = \frac{\text{Konsentrasi obat jam ke-n x faktor dilusi x Volume kompartemen}}{\text{Luas area membran difusi}}$$

$$\text{Permeat} = \frac{13.318 \times 16 \times 13}{1.77}$$

Permeat = 1565.053 µg/cm^2

Untuk permeat kumulatif, dilakukan penjumlahan dari permeat dari jam-jam sebelumnya hingga diperoleh nilai permeat kumulatif pada jam ke-24 replikasi pertama = 6796.39 µg/cm^2

$$\text{Fluks} = \frac{\text{Permeat kumulatif jam ke-n}}{\text{Waktu (jam)}}$$

$$\text{Fluks} = \frac{6796.39\ \mu g/cm^2}{24}$$

Fluks = 283.182 µg/cm^2.jam

Lampiran 4. Tabel hasil evaluasi

Tabel 4. 1. kurva baku TEL dalam PBS 7.4 +SLS 1%

Kons	y1	y2	y3
25	1.114	1.094	1.131
12.5	0.637	0.631	0.658
6.25	0.328	0.335	0.359
3.125	0.169	0.194	0.202
1.5125	0.096	0.107	0.116
0.78125	0.044	0.049	0.056

Tabel 4. 2. Uji pH

Replikasi	Formula			
	F1	F2	F3	F4
1	5.5	5.5	5.3	5.55
2	5.4	5.35	5.5	5.3
3	5.3	5.4	5.45	5.4
Rata-rata	5.4	5.41	5.41	5.41
SD	0.1	0.07	0.10	0.12

Tabel 4. 3. Uji suhu gelasi

Formula	Suhu gelasi (°C)			Rata-rata	SD
	Replikasi 1	Replikasi 2	Replikasi 3		
F1	36	37	37	36.67	0.57
F2	34	35	35	34.67	0.57
F3	34	33	32	33	1
F4	33	33	32	32.67	0.57

Tabel 4. 4. Uji viskositas

Tabel 4.4 1. Uji viskositas (suhu 4°C)

Formula	Replikasi 1	Replikasi 2	Replikasi 3	Rata-rata	SD
F1	8000	9200	8800	8667	611
F2	12800	14400	15200	14133	1222
F3	17600	16800	16000	16800	800
F4	23200	23200	24800	23733	924

Tabel 4.4 2. Uji viskositas (suhu 25°C)

Formula	Replikasi 1	Replikasi 2	Replikasi 3	Rata-rata	SD
F1	9600	9200	10000	9600	400
F2	202800	19600	19600	20000	692.82
F3	20800	20000	20800	20533.33	461.88

F4	37600	38400	29600	38533.33	1006.64

Tabel 4.4 3 Uji viskositas (suhu 37°C)

Formula	Replikasi 1	Replikasi 2	Replikasi 3	Rata-rata	SD
F1	12000	10400	11200	11200	800
F2	35600	36000	37200	36266.67	832.66
F3	49600	40000	36000	41866.67	6989.51
F4	78800	78000	77600	78133.33	611.01

Tabel 4. 5. Tabel uji rheologi

Formula 1

Kecepatan (rpm)	Faktor	Torsi (%)			Rata-rata	Viskositas (cPs)
		Replikasi 1	Replikasi 2	Replikasi 3		
5	8000	48.5	48	48.5	48.33	3866666.66
10	4000	48	48	48	48	192000
20	2000	47	47	47.5	47.166	5773.50
50	800	12	11.5	12.5	12	9600
100	400	9	10.5	11	10.166	4066.66

Formula 2

Kecepatan (rpm)	Faktor	Torsi (%)			Rata-rata	Viskositas (cPs)
		Replikasi 1	Replikasi 2	Replikasi 3		
5	8000	48	47	48	47.66	381333.33
10	4000	47	48	48	47.66	190667
20	2000	48	47	47	47.33	94666.7
50	800	26	24.5	24.5	25	20000
100	400	11	10	10	10.33	4133.33

Formula 3

Kecepatan (rpm)	Faktor	Torsi (%)			Rata-rata	Viskositas (cPs)
		Replikasi 1	Replikasi 2	Replikasi 3		
5	8000	47.5	48	47	47.5	380000
10	4000	48	48.5	48	48.16	192667
20	2000	48	47	48	47.66	95333.3
50	800	26	25	26	25.66	20533.33
100	400	16.5	16	16.5	16.33	6533.33

Formula 4

Kecepatan (rpm)	Faktor	Torsi (%)			Rata-rata	Viskositas (cPs)
		Replikasi 1	Replikasi 2	Replikasi 3		
5	8000	48	49.5	48.5	48.66	388000
10	4000	48	48.5	48	48.166	192667
20	2000	47.5	46	47.5	47	94000
50	800	47	48	49.5	48.166	38533.33
100	400	48	48.5	48	48.166	19266.7

Tabel 4. 6. Uji kekuatan mukoadhesif

Formula	Bobot yang dibutuhkan (g)			Luas permukaan mukosa (cm^2)	Percepatan gravitasi (cm/s^2)	Kekuatan mukoadhesif			Rata-rata	SD
	Replikasi 1	Replikasi 2	Replikasi 3			Replikasi 1	Replikasi 2	Replikasi 3		
F1	30	30	30	71.02	980	422.37	422.37	422.37	422.37	0
F2	70	70	74	71.02	980	985.54	985.54	1041.86	1004.31	32.51
F3	81	76	76	71.02	980	1140.41	1070.01	1070.01	1093.48	40.64
F4	105	105	101	71.02	980	1478.31	1478.31	1421.99	1459.54	32.51

Tabel 4. 7. Uji permeasi *ex vivo*

Formula F1

Waktu	Faktor pengenceran	Absorbansi	Konsentrasi (µg/mL)	13 mL (mg)	Faktor koreksi	TEL yang terpermeasi (mg)	Rata-rata (mg)	SD
0.25	2	0.788	33.82	0.44	0.00	0.44	0.46	0.02
		0.818	35.19	0.46	0.00	0.46		
		0.869	37.53	0.49	0.00	0.49		
0.5	4	0.632	53.36	0.69	0.03	0.73	0.73	0.08
		0.567	47.41	0.62	0.04	0.65		
		0.705	60.05	0.78	0.04	0.82		
0.75	4	0.646	54.65	0.71	0.09	0.80	0.81	0.04
		0.642	54.28	0.71	0.08	0.79		
		0.687	58.40	0.76	0.10	0.86		
1	4	0.589	49.43	0.64	0.14	0.78	0.76	0.05
		0.524	43.48	0.57	0.14	0.70		
		0.591	49.61	0.64	0.16	0.80		
2	4	0.629	53.09	0.69	0.19	0.88	0.96	0.07
		0.724	61.78	0.80	0.18	0.98		
		0.731	62.43	0.81	0.21	1.02		
3	4	0.732	62.52	0.81	0.24	1.06	1.10	0.06
		0.755	64.62	0.84	0.24	1.08		
		0.804	69.11	0.90	0.27	1.17		

Waktu	Faktor pengenceran	Absorbansi	Konsentrasi (µg/mL)	13 mL (mg)	Faktor koreksi	TEL yang terpermeasi (mg)	Rata-rata (mg)	SD
4	4	0.857	73.96	0.96	0.31	1.27	1.29	0.02
		0.89	76.98	1.00	0.31	1.31		
		0.844	72.77	0.95	0.34	1.28		
5	8	0.453	73.96	0.96	0.38	1.34	1.44	0.11
		0.489	80.55	1.05	0.38	1.43		
		0.532	88.42	1.15	0.41	1.56		
6	4	0.838	72.22	0.94	0.45	1.39	1.46	0.05
		0.907	78.54	1.02	0.46	1.49		
		0.884	76.43	0.99	0.50	1.49		
7	8	0.552	92.08	1.20	0.53	1.72	1.75	0.03
		0.553	92.27	1.20	0.54	1.74		
		0.56	93.55	1.22	0.57	1.79		
8	8	0.558	93.18	1.21	0.62	1.83	1.91	0.07
		0.596	100.14	1.30	0.64	1.94		
		0.598	100.50	1.31	0.67	1.97		
24	16	0.631	213.09	2.77	0.71	3.48	3.74	0.23
		0.703	239.45	3.11	0.74	3.85		
		0.707	240.92	3.13	0.77	3.90		

Formula F2

Waktu	Faktor pengenceran	Absorbansi	Konsentrasi (µg/ml)	13 mL (mg)	Faktor koreksi	TEL yang terpermeasi (mg)	Rata-rata	SD
0.25	2	0.97	42.15	0.55	0.00	0.55	0.56	0.01
		0.989	43.02	0.56	0.00	0.56		
		0.998	43.43	0.56	0.00	0.56		
0.5	2	0.891	38.54	0.50	0.04	0.54	0.57	0.02
		0.932	40.41	0.53	0.04	0.57		
		0.962	41.78	0.54	0.04	0.59		
0.75	4	0.548	45.68	0.59	0.08	0.67	0.72	0.04
		0.609	51.26	0.67	0.08	0.75		
		0.598	50.25	0.65	0.09	0.74		
1	4	0.607	51.08	0.66	0.13	0.79	0.83	0.04
		0.63	53.18	0.69	0.13	0.83		
		0.67	56.84	0.74	0.14	0.87		
2	4	0.726	61.97	0.81	0.18	0.98	1.05	0.08
		0.768	65.81	0.86	0.19	1.04		
		0.842	72.59	0.94	0.19	1.14		
3	4	0.829	71.40	0.93	0.24	1.17	1.27	0.13
		0.866	74.78	0.97	0.25	1.23		
		1.016	88.51	1.15	0.26	1.42		
4	4	0.857	73.96	0.96	0.31	1.27	1.35	0.07
		0.923	80.00	1.04	0.33	1.37		
		0.93	80.64	1.05	0.35	1.40		

Waktu	Faktor pengenceran	Absorbansi	Konsentrasi (µg/ml)	13 mL (mg)	Faktor koreksi	TEL yang terpermeasi (mg)	Rata-rata	SD
5	4	0.997	86.77	1.13	0.38	1.51	1.50	0.04
		0.934	81.01	1.05	0.41	1.46		
		0.971	84.39	1.10	0.43	1.53		
6	8	0.551	91.90	1.19	0.47	1.67	1.86	0.17
		0.647	109.47	1.42	0.49	1.91		
		0.673	114.23	1.49	0.52	2.00		
7	8	0.546	90.98	1.18	0.56	1.75	2.04	0.26
		0.698	118.81	1.54	0.60	2.14		
		0.726	123.94	1.61	0.63	2.24		
8	8	0.567	94.83	1.23	0.65	1.89	2.02	0.15
		0.582	97.57	1.27	0.72	1.99		
		0.647	109.47	1.42	0.76	2.18		
24	8	1.016	177.03	2.30	0.75	3.05	3.10	0.05
		1.016	177.03	2.30	0.82	3.12		
		1.005	175.01	2.28	0.87	3.14		

Formula F3

Waktu	Faktor pengenceran	Absorbansi	Konsentrasi (µg/ml)	13 mL (mg)	Faktor koreksi	TEL yang terpermeasi (mg)	Rata-rata (mg)	SD
0.25	4	0.617	51.99	0.68	0.00	0.68	0.75	0.07
		0.684	58.12	0.76	0.00	0.76		
		0.742	63.43	0.82	0.00	0.82		
0.5	4	0.648	54.83	0.71	0.05	0.76	0.91	0.13
		0.793	68.10	0.89	0.06	0.94		
		0.86	74.23	0.97	0.06	1.03		
0.75	4	0.808	69.47	0.90	0.11	1.01	1.13	0.11
		0.912	78.99	1.03	0.13	1.15		
		0.972	84.49	1.10	0.14	1.24		
1	8	0.515	85.31	1.11	0.18	1.29	1.72	0.56
		0.948	164.58	2.14	0.21	2.34		
		0.595	99.95	1.30	0.22	1.52		
2	8	0.67	113.68	1.48	0.26	1.74	1.91	0.15
		0.72	122.84	1.60	0.37	1.97		
		0.766	131.26	1.71	0.32	2.03		
3	8	0.652	110.39	1.44	0.38	1.81	1.99	0.17
		0.684	116.25	1.51	0.49	2.00		
		0.761	130.34	1.69	0.45	2.15		
4	8	0.809	139.13	1.81	0.49	2.29	2.43	0.12
		0.85	146.64	1.91	0.61	2.52		
		0.848	146.27	1.90	0.58	2.49		

Waktu	Faktor pengenceran	Absorbansi	Konsentrasi (µg/ml)	13 mL (mg)	Faktor koreksi	TEL yang terpermeasi (mg)	Rata-rata	SD
5	8	0.811	139.50	1.81	0.62	2.44	2.63	0.18
		0.902	156.16	2.03	0.76	2.79		
		0.867	149.75	1.95	0.73	2.68		
6	8	0.806	138.58	1.80	0.76	2.57	2.72	0.13
		0.842	145.17	1.89	0.91	2.80		
		0.853	147.19	1.91	0.88	2.79		
7	8	0.806	138.58	1.80	0.90	2.70	2.91	0.18
		0.874	151.03	1.96	1.06	3.02		
		0.882	152.49	1.98	1.03	3.01		
8	8	0.812	139.68	1.82	1.04	2.86	3.00	0.13
		0.836	144.07	1.87	1.21	3.08		
		0.844	145.54	1.89	1.18	3.07		
24	8	0.812	139.68	1.82	1.18	3.00	3.09	0.09
		0.806	138.58	1.80	1.35	3.15		
		0.809	139.13	1.81	1.32	3.13		

FORMULA 4

Waktu	Faktor pengenceran	Absorbansi	Konsentrasi (µg/ml)	13 mL (mg)	Faktor koreksi	TEL yang terpermeasi (mg)	Rata-rata (mg)	SD
0.25	2	0.529	21.97	0.29	0.00	0.29	0.31	0.02
		0.598	25.13	0.33	0.00	0.33		
		0.586	24.58	0.32	0.00	0.32		
0.5	4	0.46	37.62	0.49	0.00	0.49	0.51	0.02
		0.474	38.90	0.51	0.00	0.51		
		0.5	41.28	0.54	0.00	0.54		
0.75	2	0.748	31.99	0.42	0.00	0.42	0.43	0.01
		0.763	32.68	0.42	0.00	0.43		
		0.795	34.14	0.44	0.00	0.44		
1	2	0.889	38.44	0.50	0.00	0.50	0.49	0.01
		0.853	36.80	0.48	0.00	0.48		
		0.852	36.75	0.48	0.00	0.48		
2	4	0.514	42.56	0.55	0.00	0.56	0.60	0.05
		0.546	45.49	0.59	0.00	0.59		
		0.601	50.53	0.66	0.00	0.66		
3	4	0.591	49.61	0.64	0.00	0.65	0.67	0.03
		0.618	52.08	0.68	0.00	0.68		
		0.633	53.46	0.69	0.00	0.70		
4	4	0.683	58.03	0.75	0.00	0.76	0.77	0.02
		0.687	58.40	0.76	0.00	0.76		
		0.717	61.14	0.79	0.00	0.80		

Waktu	Faktor pengenceran	Absorbansi	Konsentrasi (µg/ml)	13 mL (mg)	Faktor koreksi	TEL yang terpermeasi (mg)	Rata-rata (mg)	SD
5	4	0.588	49.34	0.64	0.00	0.65	0.73	0.08
		0.679	57.67	0.75	0.00	0.75		
		0.716	61.05	0.79	0.00	0.80		
6	4	0.662	56.11	0.73	0.00	0.73	0.76	0.03
		0.678	57.57	0.75	0.00	0.75		
		0.707	60.23	0.78	0.00	0.79		
7	4	0.588	49.34	0.64	0.01	0.65	0.72	0.07
		0.647	54.74	0.71	0.01	0.72		
		0.703	59.86	0.78	0.01	0.78		
8	4	0.559	46.68	0.61	0.01	0.61	0.67	0.05
		0.629	53.09	0.69	0.01	0.70		
		0.629	53.09	0.69	0.01	0.70		
24	8	0.504	83.30	1.08	0.01	1.09	1.26	0.17
		0.579	97.03	1.26	0.01	1.27		
		0.644	108.92	1.42	0.01	1.42		

Tabel 4. 8. Uji retensi

Formula	Absorbansi	Konsentrasi (µg/mL)	Konsentrasi (mg/mL)	Rata-rata (mg/mL)	SD
	0.238	2.170	0.002		
F1	0.202	1.827	0.002	0.002	0.0001929
	0.204	1.846	0.002		
	0.223	2.027	0.002		
F2	0.267	2.446	0.002	0.002	0.0002704
	0.214	1.941	0.002		
	0.264	2.418	0.002		
F3	0.294	2.704	0.003	0.003	0.0001439
	0.282	2.589	0.003		
	0.847	7.975	0.008		
F4	0.851	8.013	0.008	0.008	0.0000220
	0.851	8.013	0.008		

Tabel 4. 9. Data fluks permeasi *ex vivo* pada jam ke-24

Formula	Faktor pengenceran	Permeasi	Rata-rata	SD	Permeat kumulatif	Rata-rata	SD	Fluks (µg/cm2.jam)	Rata-rata	SD
		1565.06225			6796.390386			283.1829328		
	16	1758.678199	1697.72503	115.0151514	7158.748012	7123.677531	311.2373626	298.2811672	296.8198971	12.96822344
F1		1769.43464			7415.894194			308.9955914		
		1300.184876			6777.230475			282.3846031		
	8	1300.184876	1295.254841	8.53907236	7269.673816	7225.303495	427.6178346	302.9030757	301.0543123	17.81740977
F2		1285.394769			7629.006193			317.875258		
		1025.895616			9700.965753			404.2069064		
	8	1017.828285	1021.86195	4.033665594	10947.36842	10467.13812	670.5982809	456.1403509	436.1307551	27.94159504
F3		1021.86195			10753.08019			448.0450081		
		611.772615			4149.633479			172.901395		
	8	712.6142549	708.1324042	94.1988629	4477.03267	4454.735463	294.5869375	186.5430279	185.6139776	12.27445573
F4		800.0103427			4737.54024			197.39751		

Tabel 4. 10. Data uji erosi pada jam ke-24

Formula	Bobot awal	Bobot sisa	% erosi	% sisa	Rata-rata	SD
F1	17.51	13.65	22.04	77.95	79.5466667	1.605065
	18.42	14.95	18.83	81.16		
	17.2	13.68	20.46	79.53		
F2	16.51	14.31	13.32	86.67	86.29	1.033779
	16.67	14.19	14.87	85.12		
	16.57	14.43	12.91	87.08		
F3	17.01	14.09	17.16	82.83	81.0966667	1.682538
	17.2	13.67	20.52	79.47		
	16.52	13.68	19	80.99		
F4	18.12	14.93	17.6	82.39	83.83	3.065159
	16.5	13.49	18.24	81.75		
	16.53	14.44	12.64	87.35		

Lampiran 5. Data hasil uji analisis statistika

Lampiran 5.1 Uji pH

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
pH	F1	.175	3	.	1.000	3	1.000
	F2	.253	3	.	.964	3	.637
	F3	.292	3	.	.923	3	.463
	F4	.219	3	.	.987	3	.780

a. Lilliefors Significance Correction

ANOVA

pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.001	3	.000	.020	.996
Within Groups	.085	8	.011		
Total	.086	11			

Multiple Comparisons

Dependent Variable: pH

						95% Confidence Interval	
	(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Tukey HSD	F1	F2	-.01667	.08416	.997	-.2862	.2529
		F3	-.01667	.08416	.997	-.2862	.2529
		F4	-.01667	.08416	.997	-.2862	.2529
	F2	F1	.01667	.08416	.997	-.2529	.2862
		F3	.00000	.08416	1.000	-.2695	.2695
		F4	.00000	.08416	1.000	-.2695	.2695
	F3	F1	.01667	.08416	.997	-.2529	.2862
		F2	.00000	.08416	1.000	-.2695	.2695
		F4	.00000	.08416	1.000	-.2695	.2695
	F4	F1	.01667	.08416	.997	-.2529	.2862
		F2	.00000	.08416	1.000	-.2695	.2695
		F3	.00000	.08416	1.000	-.2695	.2695
Games-Howell	F1	F2	-.01667	.07265	.995	-.3228	.2895
		F3	-.01667	.08333	.997	-.3562	.3228

	F4	-.01667	.09280	.998	-.4042	.3709
F2	F1	.01667	.07265	.995	-.2895	.3228
	F3	.00000	.07454	1.000	-.3174	.3174
	F4	.00000	.08498	1.000	-.3853	.3853
F3	F1	.01667	.08333	.997	-.3228	.3562
	F2	.00000	.07454	1.000	-.3174	.3174
	F4	.00000	.09428	1.000	-.3906	.3906
F4	F1	.01667	.09280	.998	-.3709	.4042
	F2	.00000	.08498	1.000	-.3853	.3853
	F3	.00000	.09428	1.000	-.3906	.3906

Lampiran 5.2 Suhu gelasi

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
Suhu_Gelasi	F1	.385	3	.	.750	3	.000
	F2	.385	3	.	.750	3	.000
	F3	.175	3	.	1.000	3	1.000
	F4	.385	3	.	.750	3	.000

a. Lilliefors Significance Correction

Pairwise Comparisons of Formula

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
F4-F3	.833	2.902	.287	.774	1.000
F4-F2	4.667	2.902	1.608	.108	.647
F4-F1	7.833	2.902	2.699	.007	.042
F3-F2	3.833	2.902	1.321	.187	1.000
F3-F1	7.000	2.902	2.412	.016	.095
F2-F1	3.167	2.902	1.091	.275	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Lampiran 5.3 Uji viskositas

Lampiran 5.4.1 Tabel uji viskositas (suhu 4°C)

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
VISKOSITAS	F1	.253	3	.	.964	3	.637
	F2	.253	3	.	.964	3	.637
	F3	.175	3	.	1.000	3	1.000
	F4	.385	3	.	.750	3	.000

a. Lilliefors Significance Correction

Pairwise Comparisons of FORMULA

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
F1-F2	-3.000	2.939	-1.021	.307	1.000
F1-F3	-6.000	2.939	-2.042	.041	.247
F1-F4	-9.000	2.939	-3.063	.002	.013
F2-F3	-3.000	2.939	-1.021	.307	1.000
F2-F4	-6.000	2.939	-2.042	.041	.247
F3-F4	-3.000	2.939	-1.021	.307	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Lampiran 5.4.2 Tabel uji viskositas (suhu 25°C)

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
VISKOSITAS	F1	.175	3	.	1.000	3	1.000
	F2	.385	3	.	.750	3	.000
	F3	.385	3	.	.750	3	.000
	F4	.219	3	.	.987	3	.780

a. Lilliefors Significance Correction

Pairwise Comparisons of FORMULA

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
F1-F2	-3.667	2.918	-1.257	.209	1.000
F1-F3	-5.333	2.918	-1.828	.068	.406
F1-F4	-9.000	2.918	-3.084	.002	.012
F2-F3	-1.667	2.918	-.571	.568	1.000
F2-F4	-5.333	2.918	-1.828	.068	.406
F3-F4	-3.667	2.918	-1.257	.209	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Lampiran 5.4.3 Tabel uji viskositas (suhu 37°C)

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
VISKOSITAS	F1	.175	3	.	1.000	3	1.000
	F2	.292	3	.	.923	3	.463
	F3	.272	3	.	.947	3	.554
	F4	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

ANOVA

VISKOSITAS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6861226666.667	3	2287075555.556	180.940	.000
Within Groups	101120000.000	8	12640000.000		
Total	6962346666.667	11			

Multiple Comparisons

Dependent Variable: VISKOSITAS

	(I) FORMULA	(J) FORMULA	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Tukey HSD	F1	F2	-25066.66667*	2902.87214	.000	-34362.6851	-15770.6482
		F3	-30666.66667*	2902.87214	.000	-39962.6851	-21370.6482
		F4	-66933.33333*	2902.87214	.000	-76229.3518	-57637.3149
	F2	F1	25066.66667*	2902.87214	.000	15770.6482	34362.6851
		F3	-5600.00000	2902.87214	.289	-14896.0184	3696.0184
		F4	-41866.66667*	2902.87214	.000	-51162.6851	-32570.6482
	F3	F1	30666.66667*	2902.87214	.000	21370.6482	39962.6851
		F2	5600.00000	2902.87214	.289	-3696.0184	14896.0184
		F4	-36266.66667*	2902.87214	.000	-45562.6851	-26970.6482
	F4	F1	66933.33333*	2902.87214	.000	57637.3149	76229.3518
		F2	41866.66667*	2902.87214	.000	32570.6482	51162.6851
		F3	36266.66667*	2902.87214	.000	26970.6482	45562.6851
Games-Howell	F1	F2	-25066.66667*	666.66667	.000	-27782.7370	-22350.5964
		F3	-30666.66667*	4061.74566	.040	-58013.6395	-3319.6938
		F4	-66933.33333*	581.18653	.000	-69382.7962	-64483.8705
	F2	F1	25066.66667*	666.66667	.000	22350.5964	27782.7370
		F3	-5600.00000	4063.93351	.608	-32898.5229	21698.5229
		F4	-41866.66667*	596.28479	.000	-44406.1935	-39327.1399
	F3	F1	30666.66667*	4061.74566	.040	3319.6938	58013.6395
		F2	5600.00000	4063.93351	.608	-21698.5229	32898.5229
		F4	-36266.66667*	4050.78867	.029	-63861.5264	-8671.8069
	F4	F1	66933.33333*	581.18653	.000	64483.8705	69382.7962
		F2	41866.66667*	596.28479	.000	39327.1399	44406.1935
		F3	36266.66667*	4050.78867	.029	8671.8069	63861.5264

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

Lampiran 5.4 Tabel uji kekuatan mukoadhesif

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
Kekuatan_Mukoadhesif	F1	.	3	.	.	3	.
	F2	.385	3	.	.750	3	.000
	F3	.385	3	.	.750	3	.000
	F4	.385	3	.	.750	3	.000

a. Lilliefors Significance Correction

Pairwise Comparisons of Formula

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
F1-F2	-3.000	2.908	-1.032	.302	1.000
F1-F3	-6.000	2.908	-2.064	.039	.234
F1-F4	-9.000	2.908	-3.095	.002	.012
F2-F3	-3.000	2.908	-1.032	.302	1.000
F2-F4	-6.000	2.908	-2.064	.039	.234
F3-F4	-3.000	2.908	-1.032	.302	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Lampiran 5.5 Tabel uji permeasi *ex vivo*

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
Permeasi_ex_vivo	F1	.346	3	.	.838	3	.209
	F2	.304	3	.	.907	3	.407
	F3	.340	3	.	.848	3	.235
	F4	.191	3	.	.997	3	.900

a. Lilliefors Significance Correction

ANOVA

Permeasi_ex_vivo

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.319	3	3.440	154.934	.000
Within Groups	.178	8	.022		
Total	10.496	11			

Multiple Comparisons

Dependent Variable: Permeasi_ex_vivo

	(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Tukey HSD	F1	F2	.64000*	.12166	.003	.2504	1.0296
		F3	.65000*	.12166	.003	.2604	1.0396
		F4	2.48333*	.12166	.000	2.0938	2.8729
	F2	F1	-.64000*	.12166	.003	-1.0296	-.2504
		F3	.01000	.12166	1.000	-.3796	.3996
		F4	1.84333*	.12166	.000	1.4538	2.2329
	F3	F1	-.65000*	.12166	.003	-1.0396	-.2604
		F2	-.01000	.12166	1.000	-.3996	.3796
		F4	1.83333*	.12166	.000	1.4438	2.2229
	F4	F1	-2.48333*	.12166	.000	-2.8729	-2.0938
		F2	-1.84333*	.12166	.000	-2.2329	-1.4538
		F3	-1.83333*	.12166	.000	-2.2229	-1.4438
Games-Howell	F1	F2	.64000	.13524	.090	-.2188	1.4988
		F3	.65000	.14055	.076	-.1323	1.4323
		F4	2.48333*	.16323	.001	1.7845	3.1822
	F2	F1	-.64000	.13524	.090	-1.4988	.2188
		F3	.01000	.05437	.997	-.2408	.2608
		F4	1.84333*	.09922	.004	1.2546	2.4321
	F3	F1	-.65000	.14055	.076	-1.4323	.1323
		F2	-.01000	.05437	.997	-.2608	.2408
		F4	1.83333*	.10635	.002	1.3099	2.3568
	F4	F1	-2.48333*	.16323	.001	-3.1822	-1.7845
		F2	-1.84333*	.09922	.004	-2.4321	-1.2546
		F3	-1.83333*	.10635	.002	-2.3568	-1.3099

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

Lampiran 5.6 Tabel uji fluks

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
Fluks	F1	.212	3	.	.990	3	.813
	F2	.208	3	.	.992	3	.828
	F3	.332	3	.	.864	3	.278
	F4	.197	3	.	.996	3	.875

a. Lilliefors Significance Correction

ANOVA

Fluks

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	94592.231	3	31530.744	89.005	.000
Within Groups	2834.060	8	354.257		
Total	97426.290	11			

Multiple Comparisons

Dependent Variable: Fluks

			Mean Difference			95% Confidence Interval	
	(I) Formula	(J) Formula	(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Tukey HSD	F1	F2	-4.23442	15.36788	.992	-53.4478	44.9789
		F3	-139.31086*	15.36788	.000	-188.5242	-90.0975
		F4	111.20592*	15.36788	.000	61.9926	160.4193
	F2	F1	4.23442	15.36788	.992	-44.9789	53.4478
		F3	-135.07644*	15.36788	.000	-184.2898	-85.8631
		F4	115.44033*	15.36788	.000	66.2270	164.6537
	F3	F1	139.31086*	15.36788	.000	90.0975	188.5242
		F2	135.07644*	15.36788	.000	85.8631	184.2898
		F4	250.51678*	15.36788	.000	201.3034	299.7301
	F4	F1	-111.20592*	15.36788	.000	-160.4193	-61.9926
		F2	-115.44033*	15.36788	.000	-164.6537	-66.2270
		F3	-250.51678*	15.36788	.000	-299.7301	-201.3034
Games-Howell	F1	F2	-4.23442	12.72314	.985	-58.5444	50.0756
		F3	-139.31086*	17.78490	.016	-228.9715	-49.6502

	F4	111.20592*	10.30917	.001	69.1756	153.2363
F2	F1	4.23442	12.72314	.985	-50.0756	58.5444
	F3	-135.07644*	19.13281	.012	-220.2856	-49.8673
	F4	115.44033*	12.49163	.004	61.2347	169.6460
F3	F1	139.31086*	17.78490	.016	49.6502	228.9715
	F2	135.07644*	19.13281	.012	49.8673	220.2856
	F4	250.51678*	17.62002	.003	159.7461	341.2874
F4	F1	-111.20592*	10.30917	.001	-153.2363	-69.1756
	F2	-115.44033*	12.49163	.004	-169.6460	-61.2347
	F3	-250.51678*	17.62002	.003	-341.2874	-159.7461

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

Lampiran 5.7 Tabel uji retensi

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
RETENSI	F1	.368	3	.	.792	3	.094
	F2	.326	3	.	.873	3	.304
	F3	.219	3	.	.987	3	.780
	F4	.385	3	.	.750	3	.000

a. Lilliefors Significance Correction

Pairwise Comparisons of FORMULA

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
F1-F2	-2.000	2.939	-.681	.496	1.000
F1-F3	-5.000	2.939	-1.701	.089	.533
F1-F4	-8.333	2.939	-2.836	.005	.027
F2-F3	-3.000	2.939	-1.021	.307	1.000
F2-F4	-6.333	2.939	-2.155	.031	.187
F3-F4	-3.333	2.939	-1.134	.257	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Lampiran 5.8 Tabel uji erosi

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
Uji_erosi	F1	.176	3	.	1.000	3	.983
	F2	.192	3	.	.997	3	.895
	F3	.347	3	.	.834	3	.200
	F4	.310	3	.	.899	3	.381

a. Lilliefors Significance Correction

ANOVA

Uji_erosi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	80.037	3	26.679	6.724	.014
Within Groups	31.742	8	3.968		
Total	111.779	11			

Multiple Comparisons

Dependent Variable: Uji_erosi

			Mean Difference			95% Confidence Interval	
	(I) Formula	(J) Formula	(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Tukey HSD	F1	F2	-1.55000	1.62640	.778	-6.7583	3.6583
		F3	-4.28333	1.62640	.112	-9.4916	.9250
		F4	-6.74333*	1.62640	.014	-11.9516	-1.5350
	F2	F1	1.55000	1.62640	.778	-3.6583	6.7583
		F3	-2.73333	1.62640	.392	-7.9416	2.4750
		F4	-5.19333	1.62640	.051	-10.4016	.0150
	F3	F1	4.28333	1.62640	.112	-.9250	9.4916
		F2	2.73333	1.62640	.392	-2.4750	7.9416
		F4	-2.46000	1.62640	.474	-7.6683	2.7483
	F4	F1	6.74333*	1.62640	.014	1.5350	11.9516
		F2	5.19333	1.62640	.051	-.0150	10.4016
		F3	2.46000	1.62640	.474	-2.7483	7.6683
Games-Howell	F1	F2	-1.55000	1.34253	.681	-7.0213	3.9213
		F3	-4.28333	1.99762	.313	-13.8786	5.3120

	F4	-6.74333*	1.10226	.019	-11.6351	-1.8516
F2	F1	1.55000	1.34253	.681	-3.9213	7.0213
	F3	-2.73333	2.01876	.594	-12.2495	6.7828
	F4	-5.19333*	1.14012	.049	-10.3397	-.0470
F3	F1	4.28333	1.99762	.313	-5.3120	13.8786
	F2	2.73333	2.01876	.594	-6.7828	12.2495
	F4	-2.46000	1.86761	.622	-13.0293	8.1093
F4	F1	6.74333*	1.10226	.019	1.8516	11.6351
	F2	5.19333*	1.14012	.049	.0470	10.3397
	F3	2.46000	1.86761	.622	-8.1093	13.0293

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

Lampiran 6 Hasil uji kinetika pelepasan obat menggunakan *add-ins* Microsoft Excel (DDsolver)

Lampiran 6.1 Formula 1 (Higuchi)

Time (h)	No.1 F (%)	Mean	SD	RSD(%)
0.25	0.05	0.05		
0.5	0.07	0.07		
0.75	0.08	0.08		
1	0.08	0.08		
2	0.10	0.10		
3	0.11	0.11		
4	0.13	0.13		
5	0.14	0.14		
6	0.15	0.15		
7	0.18	0.18		
8	0.19	0.19		
24	0.37	0.37		

Best-fit Values

Parameter	No.1	Mean	SD	RSD(%)
kH	0.070	0.070		

Secondary Parameter

Parameter	No.1	Mean	SD	RSD(%)
T25	126404.204	126404.204		
T50	505616.817	505616.817		
T75	1137637.838	1137637.838		
T80	1294379.052	1294379.052		
T90	1638198.487	1638198.487		

Goodness of Fit

Time	Parameter	No.1
0.25	N_observed	12
0.5	DF	11
0.75	R_obs-pre	0.9795

1	Rsqr	0.9593
2	Rsqr_adj	0.9593
3	MSE	0.0003
4	MSE_root	0.0175
5	Weighting	1
6	SS	0.0034
7	WSS	0.0034
8	AIC	-66.3641
24	MSC	3.0349

Lampiran 6.2 Formula 2 (Korsmeyer-Peppas)

Time (h)	No.1 F (%)	Mean	SD	RSD (%)
0.25	0.05	0.05		
0.5	0.06	0.06		
0.75	0.07	0.07		
1	0.08	0.08		
2	0.11	0.11		
3	0.13	0.13		
4	0.13	0.13		
5	0.15	0.15		
6	0.19	0.19		
7	0.20	0.20		
8	0.20	0.20		
24	0.30	0.30		

Best-fit Values

Parameter	No.1	Mean	SD	RSD(%)
kKP	0.082	0.082		
n	0.411	0.411		

Secondary Parameter

Parameter	No.1	Mean	SD	RSD(%)
T25	1080013.484	1080013.484		
T50	5821718.524	5821718.524		
T75	15596338.549	15596338.549		
T80	18244986.440	18244986.440		
T90	24292064.120	24292064.120		

Goodness of Fit		
Time	**Parameter**	**No.1**
0.25	N_observed	12
0.5	DF	10
0.75	R_obs-pre	0.9910
1	Rsqr	0.9820
2	Rsqr_adj	0.9802
3	MSE	0.0001
4	MSE_root	0.0103
5	Weighting	1
6	SS	0.0011
7	WSS	0.0011
8	AIC	-78.2541
24	MSC	3.6853

Lampiran 6.3 Formula 3 (Korsmeyer-Peppas)

Time (h)	No.1 F(%)_Pre	Mean	SD	RSD(%)
0.25	0.08	0.08		
0.5	0.10	0.10		
0.75	0.12	0.12		
1	0.14	0.14		
2	0.18	0.18		
3	0.21	0.21		
4	0.24	0.24		
5	0.26	0.26		
6	0.28	0.28		
7	0.30	0.30		
8	0.31	0.31		

Best-fit Values				
Parameter	**No.1**	**Mean**	**SD**	**RSD(%)**
kKP	0.135	0.135		
n	0.404	0.404		

Secondary Parameter				
Parameter	**No.1**	**Mean**	**SD**	**RSD(%)**
T25	403008.056	403008.056		
T50	2236884.818	2236884.818		

T75	6096052.497	6096052.497
T80	7150770.033	7150770.033
T90	9568262.245	9568262.245

Goodness of Fit	
Parameter	**No.1**
N_observed	11
DF	9
R_obs-pre	0.9847
Rsqr	0.9675
Rsqr_adj	0.9639
MSE	0.0002
MSE_root	0.0153
Weighting	1
SS	0.0021
WSS	0.0021
AIC	-63.7327
MSC	3.0637

Lampiran 6.4 Formula 4 (Korsmeyer-Peppas)

Time (h)	No.1 F(%)	Mean	SD	RSD(%)
0.25	0.03	0.03		
0.5	0.05	0.05		
0.75	0.04	0.04		
1	0.05	0.05		
2	0.06	0.06		
3	0.07	0.07		
4	0.08	0.08		
5	0.07	0.07		
6	0.08	0.08		
7	0.07	0.07		
8	0.07	0.07		
24	0.13	0.13		

Best-fit Values				
Parameter	**No.1**	**Mean**	**SD**	**RSD(%)**
kKP	0.049	0.049		
N	0.251	0.251		

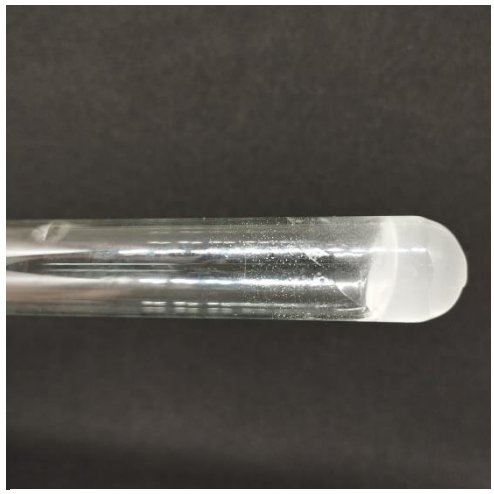
Secondary Parameter

Parameter	No.1	Mean	SD	RSD(%)
T25	63371811252.800	63371811252.800		
T50	1007853344368.760	1007853344368.760		
T75	5084292179802.090	5084292179802.090		
T80	6578116540585.580	6578116540585.580		
T90	10526079847272.200	10526079847272.200		

Goodness of Fit		
Time	**Parameter**	**No.1**
0.25	N_observed	12
0.5	DF	10
0.75	R_obs-pre	0.9349
1	Rsqr	0.8709
2	Rsqr_adj	0.8580
3	MSE	0.0001
4	MSE_root	0.0090
5	Weighting	1
6	SS	0.0008
7	WSS	0.0008
8	AIC	-81.5241
24	MSC	1.7137

Lampiran 7. Dokumentasi

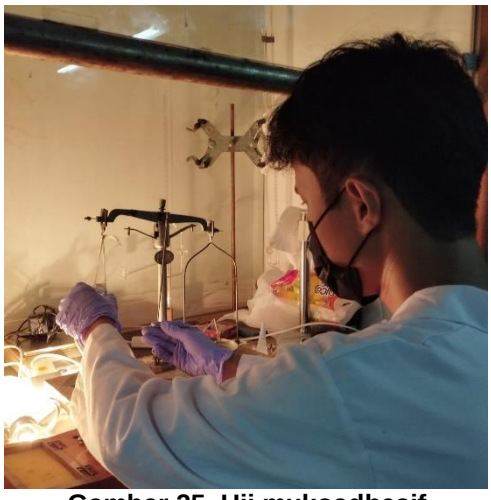
Gambar 21. Orientasi Pluronic



Gambar 22. Uji organoleptis

Gambar 23. Preparasi uji mukoadhesif & permeasi ex vivo

Gambar 24. Mukosa nasal babi



Gambar 25. Uji mukoadhesif

Gambar 26. Uji suhu gelasi F1

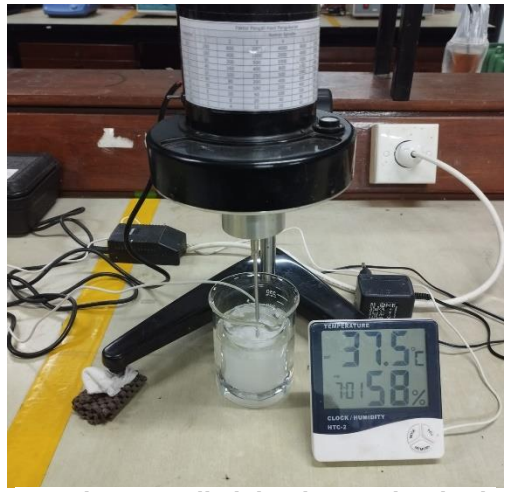
Gambar 277. Uji suhu gelasi F2

Gambar 28. Uji suhu gelasi F3

Gambar 299. Uji suhu gelasi F4

Gambar 8. Uji pH

Gambar 31. Uji retensi



Gambar 32. Uji viskositas & rheologi