

## DAFTAR PUSTAKA

- Al Khateb, K., Ozhmukhametova, E. K., Mussin, M. N., Seilkhanov, S. K., Rakhyzbekov, 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*, 502(1–2), 70–79. <https://doi.org/10.1016/j.ijpharm.2016.02.027>
- Ale, M. T., & Meyer, A. S. (2013). Fucoidans from brown seaweeds: An update on structures, extraction techniques and use of enzymes as tools for structural elucidation. *RSC Advances*, 3(22), 8131–8141. <https://doi.org/10.1039/c3ra23373a>
- Ale, M. T., Mikkelsen, J. D., & Meyer, A. S. (2011). Important determinants for fucoidan bioactivity: A critical review of structure-function relations and extraction methods for fucose-containing sulfated polysaccharides from brown seaweeds. *Marine Drugs*, 9(10), 2106–2130. <https://doi.org/10.3390/md9102106>
- Arbyn, M., Weiderpass, E., Bruni, L., de Sanjosé, S., Saraiya, M., Ferlay, J., & Bray, F. (2020). Estimates of incidence and mortality of cervical cancer in 2018: a worldwide analysis. *The Lancet Global Health*, 8(2), e191–e203. [https://doi.org/10.1016/S2214-109X\(19\)30482-6](https://doi.org/10.1016/S2214-109X(19)30482-6)
- Baweja, P., Kumar, S., Sahoo, D., & Levine, I. (2016). Biology of Seaweeds. In *Seaweed in Health and Disease Prevention*. Elsevier Inc. <https://doi.org/10.1016/B978-0-12-802772-1.00003-8>

- Boddupalli, B. M., Mohammed, Z. N. K., Nath A., R., & Banji, D. (2010). Mucoadhesive drug delivery system: An overview. *Journal of Advanced Pharmaceutical Technology and Research*, 1(4), 381–387. <https://doi.org/10.4103/0110-5558.76436>
- Bonacucina, G., Cespi, M., Mencarelli, G., Giorgioni, G., & Palmieri, G. F. (2011). Thermosensitive self-assembling block copolymers as drug delivery systems. *Polymers*, 3(2), 779–811. <https://doi.org/10.3390/polym3020779>
- Bosch, F. X., Lorincz, A., Muñoz, N., Meijer, C. J. L. M., & Shah, K. V. (2002). The causal relation between human papillomavirus and cervical cancer. *Journal of Clinical Pathology*, 55(4), 244–265. <https://doi.org/10.1136/jcp.55.4.244>
- Ceschel, G. C., Maffei, P., Borgia, S. L., Ronchi, C., & Rossi, S. (2001). Development of a mucoadhesive dosage form for vaginal administration. *Drug development and industrial pharmacy*, 27(6), 541-547.
- Chang, H. K., Myong, J. P., Byun, S. W., Lee, S. J., Lee, Y. S., Lee, H. N., Lee, K. H., Park, D. C., Kim, C. J., Hur, S. Y., Park, J. S., & Park, T. C. (2017). Factors associated with participation in cervical cancer screening among young Koreans: A nationwide cross-sectional study. *BMJ Open*, 7(4). <https://doi.org/10.1136/bmjopen-2016-013868>
- Chen, Y., Lee, J. H., Meng, M., Cui, N., Dai, C. Y., Jia, Q., Lee, E. S., & Jiang,

- H. B. (2021). An overview on thermosensitive oral gel based on poloxamer 407. *Materials*, 14(16). <https://doi.org/10.3390/ma14164522>
- Cui, H., Wang, Z., Liu, J., Wang, Y., Wang, Z., Fu, J., Wan, Z., Li, R., Li, Q., Helen Fitton, J., Liu, Y., & Zhang, M. (2020). Effects of a highly purified fucoidan from *Undaria pinnatifida* on growth performance and intestine health status of gibel carp *Carassius auratus gibelio*. *Aquaculture Nutrition*, 26(1), 47–59. <https://doi.org/10.1111/anu.12966>
- Cumashi, A., Ushakova, N. A., Preobrazhenskaya, M. E., D’Incecco, A., Piccoli, A., Totani, L., Tinari, N., Morozevich, G. E., Berman, A. E., Bilan, M. I., Usov, A. I., Ustyuzhanina, N. E., Grachev, A. A., Sanderson, C. J., Kelly, M., Rabinovich, G. A., Iacobelli, S., & Nifantiev, N. E. (2007). A comparative study of the anti-inflammatory, anticoagulant, antiangiogenic, and antiadhesive activities of nine different fucoidans from brown seaweeds. *Glycobiology*, 17(5), 541–552. <https://doi.org/10.1093/glycob/cwm014>
- D’souza, A. A., & Shegokar, R. (2016). Polyethylene glycol (PEG): a versatile polymer for pharmaceutical applications. *Expert Opinion on Drug Delivery*, 13(9), 1257–1275. <https://doi.org/10.1080/17425247.2016.1182485>
- das Neves, J., & Bahia, M. F. (2006). Gels as vaginal drug delivery systems. *International Journal of Pharmaceutics*, 318(1–2), 1–14. <https://doi.org/10.1016/j.ijpharm.2006.03.012>
- De Araújo Pereira, R. R., & Bruschi, M. L. (2012). Vaginal mucoadhesive drug

- delivery systems. *Drug Development and Industrial Pharmacy*, 38(6), 643–652. <https://doi.org/10.3109/03639045.2011.623355>
- Dongre, R. S. (2017). Marine Polysaccharides in Medicine. *Biological Activities and Application of Marine Polysaccharides*, November. <https://doi.org/10.5772/65786>
- Druehl, L. (2013). Mouritsen, O. G. 2013. Seaweeds, Edible, Available & Sustainable. University of Chicago Press, 283 pp. ISBN 978-0-226-04436-1. *Journal of Phycology*, 49(6), 1229–1229. <https://doi.org/10.1111/jpy.12113>
- El-Kamel, A., Sokar, M., Naggar, V., & Al Gamal, S. (2002). Chitosan and sodium alginate—Based bioadhesive vaginal tablets. *AAPS PharmSci*, 4(4), 224-230.
- Ferguson, L. M., & Rohan, L. C. (2011). The importance of the vaginal delivery route for antiretrovirals in HIV prevention. *Therapeutic Delivery*, 2(12), 1535–1550. <https://doi.org/10.4155/tde.11.126>
- Fitton, J. H., Stringer, D. N., Park, A. Y., & Karpinić, S. S. (2019). Therapies from fucoidan: New developments. *Marine Drugs*, 17(10). <https://doi.org/10.3390/md17100571>
- Giordano, M., & Wang, Q. (2017). Microalgae for industrial purposes. In *Biomass and Green Chemistry: Building a Renewable Pathway*. [https://doi.org/10.1007/978-3-319-66736-2\\_6](https://doi.org/10.1007/978-3-319-66736-2_6)
- Hamdi, N., Khalil, K., Din, S. A. E.-, & Salem, M. A. (2010). The effect of

combining herbal therapy with conventional chemotherapy on the incidence of chemotherapy side effects in 2nd stage breast cancer patients. *Journal of American Science*, 6(11), 784–801.

- Hifney, A. F., Fawzy, M. A., Abdel-Gawad, K. M., & Gomaa, M. (2016). Industrial optimization of fucoidan extraction from *Sargassum* sp. and its potential antioxidant and emulsifying activities. In *Food Hydrocolloids* (Vol. 54). Elsevier Ltd. <https://doi.org/10.1016/j.foodhyd.2015.09.022>
- Holdt, S. L., & Kraan, S. (2011). Bioactive compounds in seaweed: Functional food applications and legislation. *Journal of Applied Phycology*, 23(3), 543–597. <https://doi.org/10.1007/s10811-010-9632-5>
- Jeon, Y. J., Wijesinghe, W. A. J. P., & Kim, S. K. (2011). Functional properties of brown algal sulfated polysaccharides, fucoidans. In *Advances in Food and Nutrition Research* (1st ed., Vol. 64). Elsevier Inc. <https://doi.org/10.1016/B978-0-12-387669-0.00012-0>
- Journal, I. N., Studi, P., Keperawatan, I., Kedokteran, F., & Kuala, U. S. (2008). *KANKER SERVIKS WANITA USIA SUBUR Cervical Cancer in Productive Women Darmawati*.
- Kumar, S., Haglund, B. O., & Himmelstein, K. J. (1994). In Situ-Forming Gels for Ophthalmic Drug Delivery. *Journal of Ocular Pharmacology*, 10(1), 47–56. <https://doi.org/10.1089/jop.1994.10.47>
- Launay-Vacher, V., Rey, J. B., Isnard-Bagnis, C., Deray, G., & Daouphars, M. (2008). Prevention of cisplatin nephrotoxicity: State of the art and

- recommendations from the European Society of Clinical Pharmacy Special Interest Group on Cancer Care. *Cancer Chemotherapy and Pharmacology*, 61(6), 903–909. <https://doi.org/10.1007/s00280-008-0711-0>
- Liu, S., Bao, H., & Li, L. (2015). Role of PPO-PEO-PPO triblock copolymers in phase transitions of a PEO-PPO-PEO triblock copolymer in aqueous solution. *European Polymer Journal*, 71, 423–439. <https://doi.org/10.1016/j.eurpolymj.2015.08.016>
- Ma, T., Luo, X., George, A. F., Mukherjee, G., Sen, N., Spitzer, T. L., Giudice, L. C., Greene, W. C., & Roan, N. R. (2020). HIV efficiently infects T cells from the endometrium and remodels them to promote systemic viral spread. *ELife*, 9, 1–24. <https://doi.org/10.7554/eLife.55487>
- Majeed, A., & Khan, N. A. (2019). Journal of Drug Delivery and Therapeutics Ocular in situ gel : An overview. *Journal of Drug Delivery and Therapeutics*, 9(1), 337–347.
- Meillisa, A., Woo, H. C., & Chun, B. S. (2015). Production of monosaccharides and bio-active compounds derived from marine polysaccharides using subcritical water hydrolysis. *Food Chemistry*, 171, 70–77. <https://doi.org/10.1016/j.foodchem.2014.08.097>
- Nagamine, T., Kadena, K., Tomori, M., Nakajima, K., & Iha, M. (2020). Activation of NK cells in male cancer survivors by fucoidan extracted from *Cladophora okamuranus*. *Molecular and Clinical Oncology*, 12(1), 81–88.

<https://doi.org/10.3892/mco.2019.1943>

- Noviana, H. (2012). Human Pappiloma Virus dan Kanker Serviks. *Jurnal CDK-189*, 1, 65-66.
- Oun, R., Moussa, Y. E., & Wheate, N. J. (2018). The side effects of platinum-based chemotherapy drugs: A review for chemists. *Dalton Transactions*, 47(19), 6645–6653. <https://doi.org/10.1039/c8dt00838h>
- Pangestuti, R., & Kim, S. K. (2011). Biological activities and health benefit effects of natural pigments derived from marine algae. *Journal of Functional Foods*, 3(4), 255–266. <https://doi.org/10.1016/j.jff.2011.07.001>
- Paula McGee PhD RN RNT MA BA Cert Ed. (2015). Cervical cancer. *Diversity and Equality in Health and Care*. 12(2): 77-80
- 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. <https://doi.org/10.1021/acsami.1c03422>
- Rençber, S., Karavana, S. Y., Şenyiğit, Z. A., Eraç, B., Limoncu, M. H., & Baloğlu, E. (2017). Mucoadhesive in situ gel formulation for vaginal delivery of clotrimazole: formulation, preparation, and in vitro/in vivo evaluation. *Pharmaceutical Development and Technology*, 22(4), 551–

561. <https://doi.org/10.3109/10837450.2016.1163385>

Rodriguez-Garcia, M., Connors, K., & Ghosh, M. (2021). HIV Pathogenesis in the Human Female Reproductive Tract. *Current HIV/AIDS Reports*, 18(2), 139–156. <https://doi.org/10.1007/s11904-021-00546-1>

Rohan, L. C., & Sassi, A. B. (2009). Vaginal drug delivery systems for HIV prevention. *AAPS Journal*, 11(1), 78–87. <https://doi.org/10.1208/s12248-009-9082-7>

Russo, E., & Villa, C. (2019). Poloxamer hydrogels for biomedical applications. *Pharmaceutics*, 11(12). <https://doi.org/10.3390/pharmaceutics11120671>

Sabeena Farvin, K. H., & Jacobsen, C. (2013). Phenolic compounds and antioxidant activities of selected species of seaweeds from Danish coast. *Food Chemistry*, 138(2–3), 1670–1681. <https://doi.org/10.1016/j.foodchem.2012.10.078>

Saepudin, E., Sinurat, E., & Suryabrata, I. A. (2018). Depigmentation and Characterization of Fucoidan from Brown Seaweed *Sargassum binderi* Sonder. *IOP Conference Series: Materials Science and Engineering*, 299(1). <https://doi.org/10.1088/1757-899X/299/1/012027>

Sahoo, C. K., Kumar Nayak, P., Sarangi, D. K., & Sahoo, T. K. (2013). Intra Vaginal Drug Delivery System: An Overview. *American Journal of Advanced Drug Delivery*, 1(1), 43–45. <http://doi.org/ISSN-2321-547X>

Santi, R. A., Sunarti, T. C., Santoso, D., & Triwisari, D. A. (2012). U. lactuca. *Jurnal Akuatika*, III(2), 105–114.



- Setiawati, D. (2014). Human papilloma virus dan kanker serviks. *Al-Sihah: The Public Health Science Journal*.
- Sezer, A. D., Cevher, E., Hatipoğlu, F., Oğurtan, Z., Baş, A. L., & Akbuğa, J. (2008). Preparation of fucoidan-chitosan hydrogel and its application as burn healing accelerator on rabbits. *Biological and Pharmaceutical Bulletin*, 31(12), 2326–2333. <https://doi.org/10.1248/bpb.31.2326>
- Shah, S. N. H., Tahir, M. A., Safdar, A., Riaz, R., Shahzad, Y., Rabbani, M., Karim, S., & Murtaza, G. (2013). Effect of permeation enhancers on the release behavior and permeation kinetics of novel tramadol lotions. *Tropical Journal of Pharmaceutical Research*, 12(1), 27–32. <https://doi.org/10.4314/tjpr.v12i1.5>
- Sinurat, E., Peranginangin, R., & Saepudin, E. (2016). Purification and Characterization of Fucoidan from the Brown Seaweed *Sargassum binderi* Sonder. *Squalen Bulletin of Marine and Fisheries Postharvest and Biotechnology*, 10(2), 79. <https://doi.org/10.15578/squalen.v10i2.133>
- Subramanian, P. (2021). Mucoadhesive delivery system: A smart way to improve bioavailability of nutraceuticals. *Foods*, 10(6). <https://doi.org/10.3390/foods10061362>
- Synytsya, A., Kim, W. J., Kim, S. M., Pohl, R., Synytsya, A., Kvasnička, F., Čopíková, J., & Il Park, Y. (2010). Structure and antitumour activity of fucoidan isolated from sporophyll of Korean brown seaweed *Undaria pinnatifida*. *Carbohydrate Polymers*, 81(1), 41–48.

<https://doi.org/10.1016/j.carbpol.2010.01.052>

Tako M (2020) Rheological characteristics of fucoidan isolated from 1. Beratto-Ramos, A.; Agurto-Muñoz, C.; Pablo Vargas-Montalba, J.; Castillo, R. del P. Fourier-transform infrared imaging and multivariate analysis for direct identification of principal polysaccharides in brown seaweeds. *Carbohydr Polym* 230.

Verma, P., Yadav, A. N., & Kazy, S. K. (2014). *Evaluating the diversity and phylogeny of plant growth promoting bacteria associated with wheat ( Triticum aestivum ) growing in central zone of India*. 3(5), 432–447.

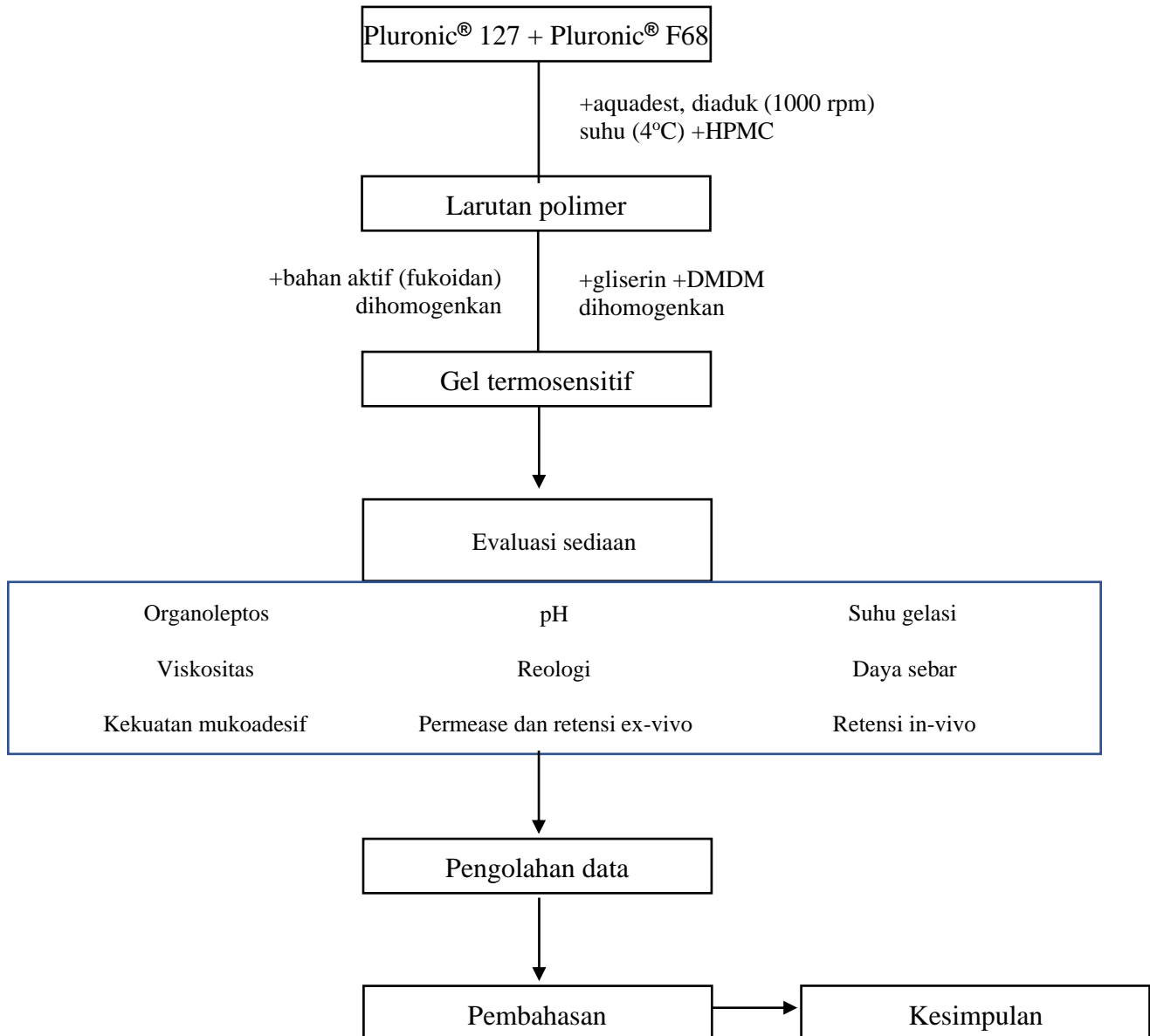
Widyartini, D. S., Widodo, P., & Susanto, A. B. (2017). Thallus variation of *Sargassum polycystum* from Central Java, Indonesia. *Biodiversitas*, 18(3), 1004–1011. <https://doi.org/10.13057/biodiv/d180319>

Wijesekara, I., Pangestuti, R., & Kim, S. K. (2011). Biological activities and potential health benefits of sulfated polysaccharides derived from marine algae. *Carbohydrate Polymers*, 84(1), 14–21. <https://doi.org/10.1016/j.carbpol.2010.10.062>

Zuo, T., Li, X., Chang, Y., Duan, G., Yu, L., Zheng, R., Xue, C., & Tang, Q. (2015). Dietary fucoidan of *Acaudina molpadioides* and its enzymatically degraded fragments could prevent intestinal mucositis induced by chemotherapy in mice. *Food and Function*, 6(2), 415–422. <https://doi.org/10.1039/c4fo00567h>

## LAMPIRAN

### Lampiran 1. Prosedur Penelitian



Lampiran 2. Persamaan Kurva Baku fukoidan dalam aquadest

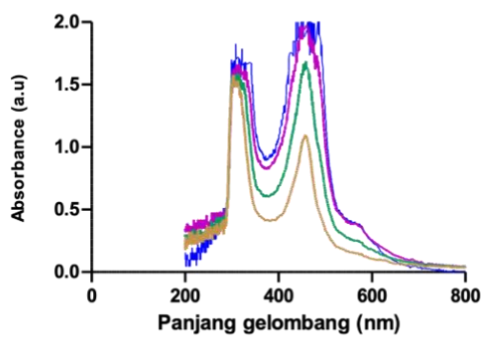
Tabel 10. Persamaan Kurva Baku fukoidan dalam aquadest

Konsentrasi Pengenceran	$x$ Absorbansi
31,25	0.032
62,5	0.069333
125	0.129667
250	0.265667
500	0.555667

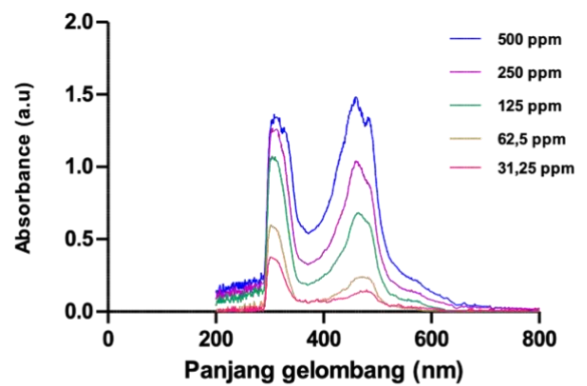


Gambar 22. Kurva baku fukoidan dalam air

Lampiran 3. Panjang gelombang maksimum Fucoidan dengan variasi fukoidan, fenol 5%, dan asam sulfat.

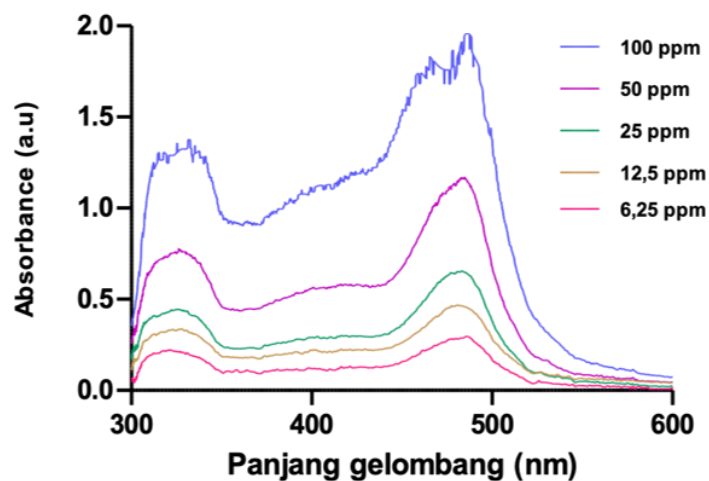


F1 = Fenol (25  $\mu$ l) + Asam Sulfat (475  $\mu$ l)  
 F2 = Fenol (50  $\mu$ l) + Asam Sulfat (450  $\mu$ l)  
 F3 = Fenol (75  $\mu$ l) + Asam Sulfat (425  $\mu$ l)  
 F4 = Fenol (100  $\mu$ l) + Asam Sulfat (400  $\mu$ l)



Gambar 23. Panjang gelombang maksimum fukoidan dengan penambahan variasi fenol dan asam sulfat

Gambar 24. Panjang gelombang maksimum fukoidan dengan penambahan variasi fukoidan dengan penambahan fenol dan asam sulfat

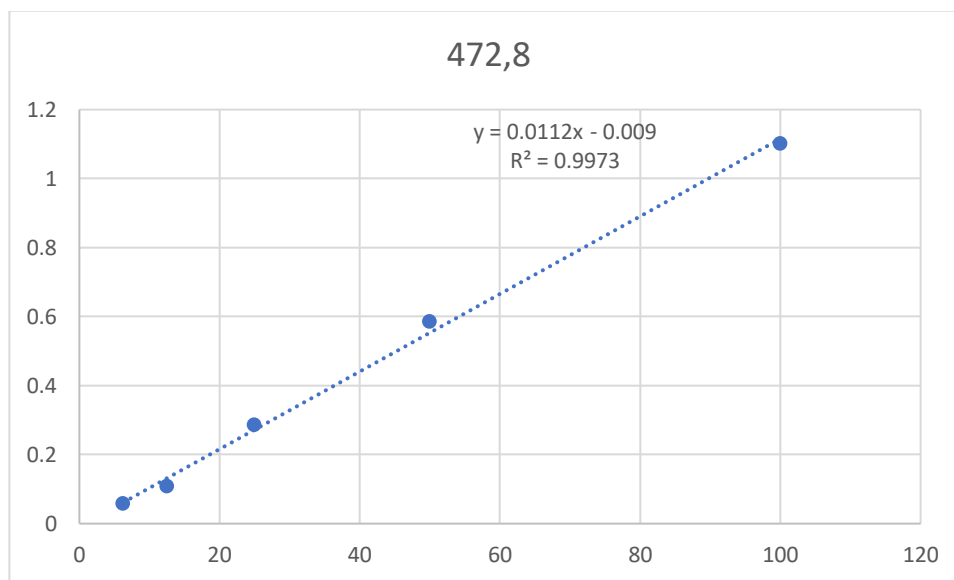


Gambar 25. Panjang gelombang maksimum fukoidan pengenceran bertingkat dengan penambahan fenol dan asam sulfat

Lampiran 4. Persamaan kurva baku fukoidan dalam cairan vagina buatan

Tabel 11. Persamaan Kurva Baku fukoidan dalam cairan vagina buatan

Konsentrasi Pengenceran	$x$ Absorbansi
100	1,1
50	0,585
25	0,284
12,5	0,108
6,25	0,057



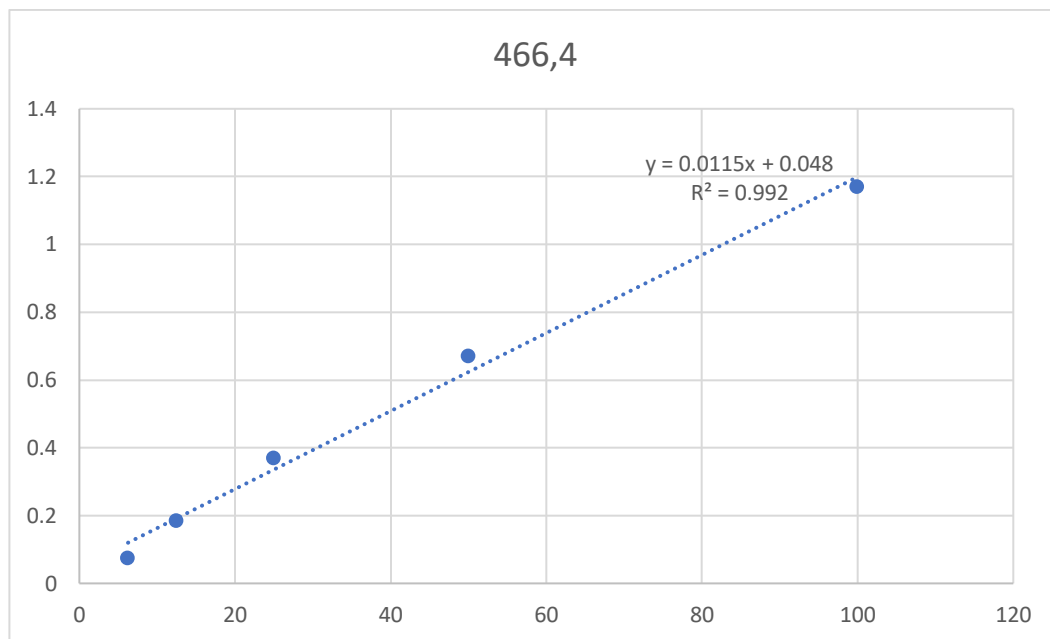
**Persamaan kurva baku fucoidan dalam cairan vagina buatan**

Gambar 26. Persamaan kurva baku fucoidan dalam cairan vagina buatan

Lampiran 5. Persamaan kurva baku fukoidan dalam jaringan vagina

Tabel 12. Persamaan Kurva Baku fukoidan dalam jaringan vagina

Konsentrasi Pengenceran	$x$ Absorbansi
100	1,1
50	0,585
25	0,284
12,5	0,108
6,25	0,057



Gambar 27. Persamaan kurva baku fucoidan dalam jaringan vagina

## Lampiran 6. Data Uji Suhu Gelasi

Tabel 13. Data pengukuran suhu gelasi

<b>Formula</b>	<b>Suhu Gelasi (°C)</b>	<b>Rata-Rata</b>	<b>SD</b>
<b>F1</b>	78	77,33333333	1,154700538
	76		
	78		
<b>F2</b>	46,6	46,53333333	1,5011107
	45		
	48		
<b>F3</b>	36	36,1666667	0,28867513
	36,5		
	36		
<b>F4</b>	33	33,6666667	1,15470054
	35		
	33		
<b>F5</b>	27	27,5	0,5
	28		
	27,5		



Lampiran 7. Data pengukuran pH

Tabel 14. Data pengukuran pH

Replikasi	Formula				
	F1	F2	F3	F4	F5
1	4,14	4,17	4,7	4,61	4,89
2	4,17	4,15	4,66	4,65	4,88
3	4,02	4,13	4,56	4,61	4,91
Rata-Rata	4,11	4,15	4,64	4,623333	4,893333
SD	0,079372539	0,02	0,072111	0,023094	0,015275

## Lampiran 8. Data pengukuran daya sebar

Tabel 15. Data pengukuran daya sebar

<b>Formula</b>	<b>Daya Sebar (cm)</b>	<b>Rata Rata</b>	<b>Standar Deviasi</b>
<b>F1</b>	144,69	143,94	0,74020267
	144		
	143,21		
<b>F2</b>	131,97	130,79	1,12902613
	130,68		
	129,72		
<b>F3</b>	69,54	69,44	0,963898335
	70,35		
	68,43		
<b>F4</b>	53,98	55,46333333	1,3562571
	56,64		
	55,77		
<b>F5</b>	38,88	38,4366667	0,46651188
	38,48		
	37,95		

## Lampiran 9. Data Uji Viskositas

Tabel 16. Data pengukuran viskositas pada suhu dingin

<b>Kode Formula</b>	<b>Replikasi 1</b>	<b>replikasi 2</b>	<b>replikasi 3</b>	<b>rata-rata</b>	<b>SD</b>
<b>F1</b>	80	80	70	76,66666667	5,773503
<b>F2</b>	110	120	107,5	112,5	6,614378
<b>F3</b>	170	160	165	165	5
<b>F4</b>	190	225	227,5	214,1666667	20,96624
<b>F5</b>	370	410	400	393,3333333	20,81666

Tabel 17. Data pengukuran viskositas pada suhu kamar

<b>Kode Formula</b>	<b>Replikasi 1</b>	<b>replikasi 2</b>	<b>replikasi 3</b>	<b>rata-rata</b>	<b>SD</b>
<b>F1</b>	480	520	530	510	26,45751
<b>F2</b>	660	580	590	610	43,58899
<b>F3</b>	720	680	670	690	26,45751
<b>F4</b>	740	792	700	744	46,13025
<b>F5</b>	1110	1130	1020	1086,666667	58,59465

Tabel 18. Data pengukuran viskositas pada suhu fisiologis vagina

<b>Kode Formula</b>	<b>Replikasi 1</b>	<b>replikasi 2</b>	<b>replikasi 3</b>	<b>rata-rata</b>	<b>SD</b>
<b>F1</b>	1020	1080	1060	1053,333333	30,5505
<b>F2</b>	1070	1030	1100	1066,666667	35,11885
<b>F3</b>	38000	36800	38400	37733,33333	832,6664
<b>F4</b>	45200	43200	42000	43466,66667	1616,581
<b>F5</b>	52000	52000	50400	51466,66667	923,7604

## Lampiran 10. Data Uji reologi

Tabel 19. Data pengukuran rheologi

Formula	Kecepatan (rpm)	Faktor koreksi	Torsi (%)			Rata-rata	Viskositas (Pa.s)	SD
			Replikasi 1	Replikasi 2	Replikasi 3			
F1	5	200	59	56,5	58	57,833333	11566,66667	1,258306
	10	100	49	51	50,5	50,166667	5016,666667	1,040833
	20	50	41	40	39,5	40,166667	2008,333333	0,763763
	50	20	51	54	53	52,666667	1053,333333	1,527525
	100	10	21	19,5	22	20,833333	208,3333333	1,258306
F2	5	200	62	59,5	60,5	60,666667	12133,33333	1,258306
	10	100	58,5	60	58	58,833333	5883,333333	1,040833
	20	50	57,5	58	59	58,166667	2908,333333	0,763763
	50	20	53,5	51,5	55	53,333333	1066,666667	1,755942
	100	10	31	28,5	27	28,833333	288,3333333	2,020726
F3	5	8000	66,5	63	68	65,833333	52666,6667	2,565801
	10	4000	55,5	57	58	56,833333	227333,3333	1,258306
	20	2000	39	36	37,5	37,5	75000	1,5
	50	800	47,5	46	48	47,166667	37733,33333	1,040833
	100	400	27	25	29	27	10800	2
F4	5	8000	76	74,5	78,5	76,333333	61066,6667	2,020726
	10	4000	67,5	69,5	66	67,666667	27066,6667	1,755942
	20	2000	52	49	54,5	51,833333	10366,6667	2,753785

	50	800	56,5	54	52,5	54,333333	43466,66667	2,020726
	100	400	51	54,5	57	54,166667	21666,66667	3,013857
	5	8000	88	91	85,5	88,166667	705333,3333	2,753785
	10	4000	74	77	72,5	74,5	298000	2,291288
F5	20	2000	61	59	60,5	60,166667	120333,3333	1,040833
	50	800	65	65	63	64,333333	51466,66667	1,154701
	100	400	55,5	58	59,5	57,666667	23066,66667	2,020726

## Lampiran 11. Data Uji mukoadesif

Tabel 20. Data pengukuran mukoadesif

formula	Kekuatan mukoadhesif			Rata-rata	SD
	Replikasi 1	Replikasi 2	Replikasi 3		
F1	2223,386	2394,415	2223,386	2280,396	98,74403
F2	3249,564	3591,623	3762,653	3534,613	261,2521
F3	5472,949	5472,949	5301,92	5415,939	98,74403
F4	6841,187	6499,127	7012,216	6784,177	261,2521
F5	11116,93	11287,96	11972,08	11458,99	452,502

Lampiran 12. Data uji permease ex vivo

Tabel 21. Hasil uji permeasi formula 1

Time	Abs	Concentration ( $\mu\text{g/ml}$ )	0,5 ml ( $\mu\text{g}$ )	Dilution factor	13 ml (mg)	Correction factor	Fucoidan permeated (mg)	Average (mg)	SD
0,25	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
0,5	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
1	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
2	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
3	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
4	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		

<b>5</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>6</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>7</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>8</b>	0,125	10,36	5,18	1	0,134642857	0	0,134642857		
	0,124	10,27	5,13	1	0,133482143	0	0,133482143	0,134255952	0,00067
	0,125	10,36	5,18	1	0,134642857	0	0,134642857		
<b>24</b>	0,221	18,93	9,46	1	0,246071429	0,005178571	0,25125		
	0,179	15,21	7,60	1	0,197708333	0,005133929	0,202842262	0,218864087	0,028
	0,179	15,18	7,59	1	0,197321429	0,005178571	0,2025		



Tabel 22. Hasil uji permeasi formula 2

Time	Abs	Concentration ( $\mu\text{g/ml}$ )	0,5 ml ( $\mu\text{g}$ )	Dilution factor	13 ml (mg)	Correction factor	Fucoidan permeated (mg)	Average (mg)	SD
0,25	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
0,5	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
1	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
2	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
3	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
4	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		

	0,000	0	0,00	1	0	0	0		
<b>5</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>6</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>7</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>8</b>	0,124	10,27	5,13	1	0,133482143	0	0,133482143		
	0,124	10,27	5,13	1	0,133482143	0	0,133482143	0,133869048	0,00067
	0,125	10,36	5,18	1	0,134642857	0	0,134642857		
<b>24</b>	0,096	7,77	3,88	1	0,100982143	0,005133929	0,106116071		
	0,221	18,93	9,46	1	0,246071429	0,005133929	0,251205357	0,154494048	0,0837545
	0,096	7,77	3,88	1	0,100982143	0,005178571	0,106116071		

Tabel 23. Hasil uji permeasi formula 3

Time	Abs	Concentration ( $\mu\text{g/ml}$ )	0,5 ml ( $\mu\text{g}$ )	Dilution factor	13 ml (mg)	Correction factor	Fucoidan permeated (mg)	Average (mg)	SD
0,25	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
0,5	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
1	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
2	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
3	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
4	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		

	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
<b>5</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>6</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>7</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>8</b>	0,124	10,27	5,13	1	0,133482143	0	0,133482143		
	0,083	6,58	3,29	1	0,085505952	0	0,085505952	0,117490079	0,027699
	0,124	10,27	5,13	1	0,133482143	0	0,133482143		
<b>24</b>	0,096	7,77	3,88	1	0,100982143	0,005133929	0,106116071		
	0,096	7,77	3,88	1	0,100982143	0,00328869	0,104270833	0,137614087	0,056162
	0,179	15,18	7,59	1	0,197321429	0,005133929	0,202455357		

Tabel 24. Hasil uji permeasi formula 4

Time	Abs	Concentration ( $\mu\text{g/ml}$ )	0,5 ml ( $\mu\text{g}$ )	Dilution factor	13 ml (mg)	Correction factor	Fucoidan permeated (mg)	Average (mg)	SD
0,25	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
0,5	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
1	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
2	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
3	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
4	0,000	0	0,00	1	0	0	0	0	0

	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
<b>5</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>6</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>7</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>8</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>24</b>	0,096	7,77	3,88	1	0,100982143	0	0,100982143		
	0,096	7,77	3,88	1	0,100982143	0	0,100982143	0,100208333	0,00134
	0,094	7,59	3,79	1	0,098660714	0	0,098660714		

Tabel 25. Hasil uji permeasi formula 5

Time	Abs	Concentration ( $\mu\text{g/ml}$ )	0,5 ml ( $\mu\text{g}$ )	Dilution factor	13 ml (mg)	Correction factor	Fucoidan permeated (mg)	Average (mg)	SD
0,25	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
0,5	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
1	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
2	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
3	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
4	0,000	0	0,00	1	0	0	0	0	0

	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0		
<b>5</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>6</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>7</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>8</b>	0,000	0	0,00	1	0	0	0		
	0,000	0	0,00	1	0	0	0	0	0
	0,000	0	0,00	1	0	0	0		
<b>24</b>	0,096	7,77	3,88	1	0,100982143	0	0,100982143		
	0,064	4,91	2,46	1	0,063839286	0	0,063839286	0,063839286	0,037143
	0,032	2,05	1,03	1	0,026696429	0	0,026696429		



## Lampiran 13. Data uji retensi ex vivo

Tabel 26. Hasil uji retensi ex vivo

formula	replikasi	serapan	konsentrasi ( $\mu\text{g/mL}$ )	Jumlah fukoidan yang terdeposisi setelah 24 jam	Rata-rata	SD
F1	1	0,574	45,739	1,200217652	1,052662377	0,127786617
	2	0,477	37,304	0,978884739		
	3	0,477	37,304	0,978884739		
F2	1	0,344	25,739	0,681932522	0,88927687	0,179624579
	2	0,481	37,652	0,997556696		
	3	0,477	37,304	0,988341391		
F3	1	0,301	22,000	0,747318	0,668549304	0,136431383
	2	0,301	22,000	0,747318		
	3	0,221	15,043	0,511011913		
F4	1	0,176	11,130	0,238313739	0,207903913	0,057576301
	2	0,124	6,609	0,141498783		
	3	0,179	11,391	0,243899217		
F5	1	0,116	5,913	0,144745391	0,102173217	0,039765692
	2	0,079	2,696	0,06598687		
	3	0,093	3,913	0,095787391		

Lampiran 14. Data pengukuran ekstrudabilitas

<b>Formula</b>	<b>Bobot awal (g)</b>	<b>Bobot ekstruksi (g)</b>	<b>rata-rata</b>	<b>% Extrudabilitas</b>	<b>SD</b>
<b>F1</b>	15	13,212 12,826 12,905	12,981	86,54	0,203
<b>F2</b>	15	12,301 12,897 12,887	12,695	84,633	0,341
<b>F3</b>	15	12,361 12,659 12,551	12,52366667	83,491	0,150
<b>F4</b>	15	12,233 11,571 11,973	11,92566667	79,504	0,333
<b>F5</b>	15	9,737 9,415 9,096	9,416	62,773	0,320

## Lampiran 15. Data uji retensi in vivo

Tabel 27. Hasil uji retensi in vivo F1

<b>FORMULA 1</b>			
<b>Waktu (jam)</b>	<b>1</b>	<b>8</b>	<b>24</b>
<b>Abs</b>	0	0	0
	0	0	0
	0	0	0
<b>Konsentrasi (mikrogram/ml)</b>	0	0	0
	0	0	0
	0	0	0
<b>rata-rata</b>	0	0	0
<b>SD</b>	0	0	0
<b>Jumlah fukoidan dlm kulit (satuan mikrogram)</b>	0	0	0
	0	0	0

Tabel 28. Hasil uji retensi in vivo F2

<b>FORMULA 2</b>			
<b>Waktu</b>	<b>1</b>	<b>8</b>	<b>24</b>
<b>Abs</b>	0,048667	0,019	0
	0,067	0,043667	0
	0,044667	0,038	0
<b>Konsentrasi (mikrogram/ml)</b>	0,057971	0	0
	1,652174	0	0
	0	0	0
<b>rata-rata</b>	0,570048	0	0
<b>SD</b>	0,937596	0	0
<b>Jumlah fukoidan dlm kulit (satuan mikrogram)</b>	0,047536	0	0
	0,594783	0	0
	0	0	0

Tabel 29. Hasil uji retensi in vivo F3

<b>FORMULA 3</b>			
<b>Waktu</b>	<b>1</b>	<b>8</b>	<b>24</b>
<b>Abs</b>	0,067	0,368	0,226
	0,075	0,345667	0,124
	0,101333	0,262333	0,243
<b>Konsentrasi (mikrogram/ml)</b>	1,652174	27,82609	15,47826
	2,347826	25,88406	6,608696
	4,637681	18,63768	16,95652
<b>rata-rata</b>	2,879227	24,11594	13,01449
<b>SD</b>	1,562083	4,842662	5,596605
<b>Jumlah fukoidan dlm kulit (satuan mikrogram)</b>	1,321739	25,6	12,98626
	1,408696	15,2829	7,104348
	3,246377	13,04638	13,56522

Tabel 30. Hasil uji retensi in vivo F4

<b>FORMULA 4</b>			
<b>Waktu</b>	<b>1</b>	<b>8</b>	<b>24</b>
<b>Abs</b>	0,022333	0,124	0,067
	0,101667	0,177333	0,053
	0,057533	0,146	0,057
<b>Konsentrasi (mikrogram/ml)</b>	0	6,608696	1,652174
	4,666667	11,24638	0,434783
	0,828986	8,521739	0,782609
<b>rata-rata</b>	1,831884	8,792271	0,956522
<b>SD</b>	2,489739	2,330646	0,627052
<b>Jumlah fukoidan dlm kulit (satuan mikrogram)</b>	0	5,617391	1,384522
	1,4	6,747826	0,26087
	0,315014	6,987826	0,618261

Tabel 31. Hasil uji retensi in vivo F5

<b>FORMULA 5</b>			
<b>Waktu</b>	<b>1</b>	<b>8</b>	<b>24</b>
<b>Abs</b>	0,052667	0,079333	0,019
	0,079	0,096	0
	0,071	0,101667	0
<b>Konsentrasi (mikrogram/ml)</b>	0,405797	2,724638	0
	2,695652	4,173913	0
	2	4,666667	0
<b>rata-rata</b>	1,700483	3,855072	0
<b>SD</b>	1,173943	1,009512	0
<b>Jumlah fukoidan dlm kulit</b>	0,316522	2,288696	0
<b>(satuan mikrogram)</b>	1,24	3,33913	0
	0,76	4,293333	0

## Lampiran 16. Hasil Analisis Statistik dengan SPSS

**Suhu gelasi**

Dependent Variable: Suhu Gelasi (Kombinasi Pluronic-HPMC)

Tukey HSD

(I) Formula	(J) Formula	Mean Difference			95% Confidence Interval	
		(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Formula 1	Formula 2	30.800*	.837	.000	28.05	33.55
	Formula 3	41.167*	.837	.000	38.41	43.92
	Formula 4	43.667*	.837	.000	40.91	46.42
	Formula 5	49.833*	.837	.000	47.08	52.59
Formula 2	Formula 1	-30.800*	.837	.000	-33.55	-28.05
	Formula 3	10.367*	.837	.000	7.61	13.12
	Formula 4	12.867*	.837	.000	10.11	15.62
	Formula 5	19.033*	.837	.000	16.28	21.79
Formula 3	Formula 1	-41.167*	.837	.000	-43.92	-38.41
	Formula 2	-10.367*	.837	.000	-13.12	-7.61
	Formula 4	2.500	.837	.080	-.25	5.25
	Formula 5	8.667*	.837	.000	5.91	11.42
Formula 4	Formula 1	-43.667*	.837	.000	-46.42	-40.91
	Formula 2	-12.867*	.837	.000	-15.62	-10.11
	Formula 3	-2.500	.837	.080	-5.25	.25
	Formula 5	6.167*	.837	.000	3.41	8.92
Formula 5	Formula 1	-49.833*	.837	.000	-52.59	-47.08
	Formula 2	-19.033*	.837	.000	-21.79	-16.28
	Formula 3	-8.667*	.837	.000	-11.42	-5.91
	Formula 4	-6.167*	.837	.000	-8.92	-3.41

### Daya sebar

Tukey HSD

(I) Formula	(J) Formula	Mean Difference		Sig.	95% Confidence Interval	
		(I-J)	Std. Error		Lower Bound	Upper Bound
Formula 1	Formula 2	-11.00000*	1.22543	.000	-15.0330	-6.9670
	Formula 3	36.64667*	1.22543	.000	32.6137	40.6797
	Formula 4	83.87000*	1.22543	.000	79.8370	87.9030
	Formula 5	100.89667*	1.22543	.000	96.8637	104.9297
Formula 2	Formula 1	11.00000*	1.22543	.000	6.9670	15.0330
	Formula 3	47.64667*	1.22543	.000	43.6137	51.6797
	Formula 4	94.87000*	1.22543	.000	90.8370	98.9030
	Formula 5	111.89667*	1.22543	.000	107.8637	115.9297
Formula 3	Formula 1	-36.64667*	1.22543	.000	-40.6797	-32.6137
	Formula 2	-47.64667*	1.22543	.000	-51.6797	-43.6137
	Formula 4	47.22333*	1.22543	.000	43.1903	51.2563
	Formula 5	64.25000*	1.22543	.000	60.2170	68.2830
Formula 4	Formula 1	-83.87000*	1.22543	.000	-87.9030	-79.8370
	Formula 2	-94.87000*	1.22543	.000	-98.9030	-90.8370
	Formula 3	-47.22333*	1.22543	.000	-51.2563	-43.1903
	Formula 5	17.02667*	1.22543	.000	12.9937	21.0597
Formula 5	Formula 1	-100.89667*	1.22543	.000	-104.9297	-96.8637
	Formula 2	-111.89667*	1.22543	.000	-115.9297	-107.8637
	Formula 3	-64.25000*	1.22543	.000	-68.2830	-60.2170
	Formula 4	-17.02667*	1.22543	.000	-21.0597	-12.9937

### Viskositas suhu dingin

Dependent Variable: Viskositas (Suhu Dingin)

Tukey HSD

(I) Formula	(J) Formula	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
		(I-J)			Lower Bound	Upper Bound
Formula 1	Formula 2	-35.83333	11.40175	.063	-73.3574	1.6908
	Formula 3	-88.33333*	11.40175	.000	-125.8574	-50.8092
	Formula 4	-137.50000*	11.40175	.000	-175.0241	-99.9759
	Formula 5	-316.66667*	11.40175	.000	-354.1908	-279.1426
Formula 2	Formula 1	35.83333	11.40175	.063	-1.6908	73.3574
	Formula 3	-52.50000*	11.40175	.007	-90.0241	-14.9759
	Formula 4	-101.66667*	11.40175	.000	-139.1908	-64.1426
	Formula 5	-280.83333*	11.40175	.000	-318.3574	-243.3092
Formula 3	Formula 1	88.33333*	11.40175	.000	50.8092	125.8574
	Formula 2	52.50000*	11.40175	.007	14.9759	90.0241
	Formula 4	-49.16667*	11.40175	.010	-86.6908	-11.6426
	Formula 5	-228.33333*	11.40175	.000	-265.8574	-190.8092
Formula 4	Formula 1	137.50000*	11.40175	.000	99.9759	175.0241
	Formula 2	101.66667*	11.40175	.000	64.1426	139.1908
	Formula 3	49.16667*	11.40175	.010	11.6426	86.6908
	Formula 5	-179.16667*	11.40175	.000	-216.6908	-141.6426
Formula 5	Formula 1	316.66667*	11.40175	.000	279.1426	354.1908
	Formula 2	280.83333*	11.40175	.000	243.3092	318.3574
	Formula 3	228.33333*	11.40175	.000	190.8092	265.8574
	Formula 4	179.16667*	11.40175	.000	141.6426	216.6908



### Viskositas suhu ruang

Dependent Variable: Viskositas (Suhu Ruang)

Tukey HSD

(I) Formula	(J) Formula	Mean Difference		Sig.	95% Confidence Interval	
		(I-J)	Std. Error		Lower Bound	Upper Bound
Formula 1	Formula 2	-100.00000	34.37312	.090	-213.1247	13.1247
	Formula 3	-180.00000*	34.37312	.003	-293.1247	-66.8753
	Formula 4	-234.00000*	34.37312	.000	-347.1247	-120.8753
	Formula 5	-576.66667*	34.37312	.000	-689.7914	-463.5419
Formula 2	Formula 1	100.00000	34.37312	.090	-13.1247	213.1247
	Formula 3	-80.00000	34.37312	.213	-193.1247	33.1247
	Formula 4	-134.00000*	34.37312	.020	-247.1247	-20.8753
	Formula 5	-476.66667*	34.37312	.000	-589.7914	-363.5419
Formula 3	Formula 1	180.00000*	34.37312	.003	66.8753	293.1247
	Formula 2	80.00000	34.37312	.213	-33.1247	193.1247
	Formula 4	-54.00000	34.37312	.545	-167.1247	59.1247
	Formula 5	-396.66667*	34.37312	.000	-509.7914	-283.5419
Formula 4	Formula 1	234.00000*	34.37312	.000	120.8753	347.1247
	Formula 2	134.00000*	34.37312	.020	20.8753	247.1247
	Formula 3	54.00000	34.37312	.545	-59.1247	167.1247
	Formula 5	-342.66667*	34.37312	.000	-455.7914	-229.5419
Formula 5	Formula 1	576.66667*	34.37312	.000	463.5419	689.7914
	Formula 2	476.66667*	34.37312	.000	363.5419	589.7914
	Formula 3	396.66667*	34.37312	.000	283.5419	509.7914
	Formula 4	342.66667*	34.37312	.000	229.5419	455.7914

### Viskositas suhu fisiologis vagina

Dependent Variable: Viskositas (Suhu Kulit Vagina)

Tukey HSD

(I) Formula	(J) Formula	Mean Difference		Sig.	95% Confidence Interval	
		(I-J)	Std. Error		Lower Bound	Upper Bound
Formula 1	Formula 2	-4000.00000	1317.23616	.074	-8335.1324	335.1324
	Formula 3	-7333.33333*	1317.23616	.002	-11668.4657	-2998.2009
	Formula 4	-12000.00000*	1317.23616	.000	-16335.1324	-7664.8676
	Formula 5	-21200.00000*	1317.23616	.000	-25535.1324	-16864.8676
Formula 2	Formula 1	4000.00000	1317.23616	.074	-335.1324	8335.1324
	Formula 3	-3333.33333	1317.23616	.159	-7668.4657	1001.7991
	Formula 4	-8000.00000*	1317.23616	.001	-12335.1324	-3664.8676
	Formula 5	-17200.00000*	1317.23616	.000	-21535.1324	-12864.8676
Formula 3	Formula 1	7333.33333*	1317.23616	.002	2998.2009	11668.4657
	Formula 2	3333.33333	1317.23616	.159	-1001.7991	7668.4657
	Formula 4	-4666.66667*	1317.23616	.034	-9001.7991	-331.5343
	Formula 5	-13866.66667*	1317.23616	.000	-18201.7991	-9531.5343
Formula 4	Formula 1	12000.00000*	1317.23616	.000	7664.8676	16335.1324
	Formula 2	8000.00000*	1317.23616	.001	3664.8676	12335.1324
	Formula 3	4666.66667*	1317.23616	.034	331.5343	9001.7991
	Formula 5	-9200.00000*	1317.23616	.000	-13535.1324	-4864.8676
Formula 5	Formula 1	21200.00000*	1317.23616	.000	16864.8676	25535.1324
	Formula 2	17200.00000*	1317.23616	.000	12864.8676	21535.1324
	Formula 3	13866.66667*	1317.23616	.000	9531.5343	18201.7991
	Formula 4	9200.00000*	1317.23616	.000	4864.8676	13535.1324

**Bioadhesif**

Dependent Variable: Bioadhesive Strenght

Tukey HSD

(I) Formula	(J) Formula	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
		(I-J)			Lower Bound	Upper Bound
Formula 1	Formula 2	-1254.21757*	219.32142	.001	-1976.0224	-532.4127
	Formula 3	-3135.54392*	219.32142	.000	-3857.3487	-2413.7391
	Formula 4	-4503.78127*	219.32142	.000	-5225.5861	-3781.9764
	Formula 5	-9178.59221*	219.32142	.000	-9900.3970	-8456.7874
Formula 2	Formula 1	1254.21757*	219.32142	.001	532.4127	1976.0224
	Formula 3	-1881.32635*	219.32142	.000	-2603.1312	-1159.5215
	Formula 4	-3249.56370*	219.32142	.000	-3971.3685	-2527.7589
	Formula 5	-7924.37464*	219.32142	.000	-8646.1795	-7202.5698
Formula 3	Formula 1	3135.54392*	219.32142	.000	2413.7391	3857.3487
	Formula 2	1881.32635*	219.32142	.000	1159.5215	2603.1312
	Formula 4	-1368.23735*	219.32142	.001	-2090.0422	-646.4325
	Formula 5	-6043.04829*	219.32142	.000	-6764.8531	-5321.2435
Formula 4	Formula 1	4503.78127*	219.32142	.000	3781.9764	5225.5861
	Formula 2	3249.56370*	219.32142	.000	2527.7589	3971.3685
	Formula 3	1368.23735*	219.32142	.001	646.4325	2090.0422
	Formula 5	-4674.81094*	219.32142	.000	-5396.6158	-3953.0061
Formula 5	Formula 1	9178.59221*	219.32142	.000	8456.7874	9900.3970
	Formula 2	7924.37464*	219.32142	.000	7202.5698	8646.1795
	Formula 3	6043.04829*	219.32142	.000	5321.2435	6764.8531
	Formula 4	4674.81094*	219.32142	.000	3953.0061	5396.6158