

DAFTAR PUSTAKA

1. ANGGRAENI, R., ROSITA, F., KUSUMAWARDANI, A.,. Terapi Probiotik (*Lactococcus lactis*) Topikal untuk Akne Vulgaris: Kasus Serial.
2. BYRD AL, BELKAID Y, SEGRE JA, 2018. The human skin microbiome. *Nat Rev Microbiol.* 16, 143–155.
3. CAILLON, F., O'CONNELL, M., EADY, E. A., JENKINS, G. R., COVE, J. H., LAYTON, A. M. & MOUNTFORD, A. P. 2010. Interleukin-10 secretion from CD14+ peripheral blood mononuclear cells is downregulated in patients with acne vulgaris. *Br J Dermatol,* 162, 296-303.
4. Chularojanamontri L, Tuchinda P, Kulthan K, Pongparit K. Moisturizers for Acne: What are their Constituents? *J Clin Aesthet Dermatol.* 2014 May;7(5):36-44.
5. COUPER, K. N., BLOUNT, D. G. & RILEY, E. M. 2008. IL-10: the master regulator of immunity to infection. *J Immunol,* 180, 5771-7.
6. DRÉNO, B. 2017. What is new in the pathophysiology of acne, an overview. *J Eur Acad Dermatol Venereol,* 31 Suppl 5, 8-12.
7. DRÉNO, B., DAGNELIE, M. A., KHAMMARI, A. & CORVEC, S. 2020. The Skin Microbiome: A New Actor in Inflammatory Acne. *Am J Clin Dermatol,* 21, 18-24.
8. GUÉNICHE, A., BENYACOUB, J., PHILIPPE, D., BASTIEN, P., KUSY, N., BRETON, L., BLUM, S. & CASTIEL-HIGOUNENC, I. 2010. *Lactococcus ferment lysateCNCM I-2116 (ST11)* inhibits substance P-induced skin inflammation and accelerates skin barrier function recovery in vitro. *European journal of dermatology : EJD,* 20, 731-7.
9. HIDAYAT, R. & WULANDARI, P. 2021. Enzyme linked immunosorbent assay (ELISA) technique guideline. *Bioscientia Medicina: Journal of Biomedicine and Translational Research,* 5, 447-453.

10. HTWE, M. M., TEANPAISAN, R., KHONGKOW, P. & AMNUAIKIT, T. 2019. Liposomes of probiotic's lyophilized cell free supernatant; a potential cosmeceutical product. *Pharmazie*, 74, 462-466.
11. Isoda K, Seki T, Inoue Y, Umeda K, Nishizaka T, Tanabe H, Takagi Y, Ishida K, Mizutani H. Efficacy of the combined use of a facial cleanser and moisturizers for the care of mild acne patients with sensitive skin. *The Journal of dermatology*. 2015 Feb 1;42(2):181-8.
12. JONES, R. 2017. The use of *Lactobacillus casei* and *Lactococcus* ferment lysatein clinical trials for the improvement of human health. *The microbiota in gastrointestinal pathophysiology*. Elsevier.
13. KANG, S. 2019. *Fitzpatrick's Dermatology*, McGraw-Hill Education.
14. KIMOTO-NIRA, H., 2018. New lactic acid bacteria for skin health via oral intake of heat-killed or live cells. *Animal Science Journal*.
15. KOBER, M. M. & BOWE, W. P. 2015. The effect of probiotics on immune regulation, acne, and photoaging. *Int J Womens Dermatol*, 1, 85-89.
16. Konstantinou GN. 2017. "Enzyme-Linked Immunosorbent Assay (ELISA)". *Food Allergens*. Springer. 7: 79-94.
17. LEE, Y. B., BYUN, E. J. & KIM, H. S. 2019. Potential Role of the Microbiome in Acne: A Comprehensive Review. *J Clin Med*, 8.
18. LEHMANN, H. P., ROBINSON, K. A., ANDREWS, J. S., HOLLOWAY, V. & GOODMAN, S. N. 2002. Acne therapy: a methodologic review. *J Am Acad Dermatol*, 47, 231-40.
19. LOLOU, V. & PANAYIOTIDIS, M. I. 2019. Functional Role of Probiotics and Prebiotics on Skin Health and Disease. *Fermentation*.
20. Milligan ED, Sloane EM, Langer SJ, et al. Controlling neuropathic pain by adeno-associated virus driven production of the anti-inflammatory cytokine, interleukin-10. *Mol Pain* 2005;1:9.
21. MOTTOIN VHM, SUYENAGA ES, 2018. An approach on the potential use of probiotics in the treatment of skin conditions: acne and atopic dermatitis. *Int J Dermatol*. 57, 1425–1432.

22. NAVARRO-LÓPEZ, V., NÚÑEZ-DELEGIDO, E., RUZAFA-COSTAS, B., SÁNCHEZ-PELLICER, P., AGÜERA-SANTOS, J. & NAVARRO-MORATALLA, L. 2021. Probiotics in the Therapeutic Arsenal of Dermatologists. *Microorganisms*, 9.
23. PANDE, S. & MISRI, R. 2005. Sebumeter. *Indian Journal of Dermatology, Venereology, and Leprology*, 71.
24. Park J, Halliday GM, Surjana D, Damian DL. Nicotinamide prevents ultraviolet radiation-induced cellular energy loss. *Photochem Photobiol*. 2010 Jul-Aug;86(4):942-8.
25. PERDOSKI 2021. Panduan Praktik Klinis Bagi Dokter Spesialis Kulit dan Kelamin Indonesia. *Kandidiasis/Kandidosis*. Jakarta.
26. PORUBSKY, C., GLASS, A., COMEAU, V., BUCKLEY, C., GOODMAN, M. & KOBER, M.-M. 2018. The Role of Probiotics in Acne and Rosacea.
27. OLGA, M., ANATOLY, K., ELENA, K., OLGA, D. 2017. Role of Cytokines in The Pathogenesis of Akne. *International Journal of Biomedicine*
28. RAHMAYANI, T., PUTRA, I. B. & JUSUF, N. K. 2019a. Association of serum interleukin-10 (IL-10) with the severity of acne vulgaris. *Bali Medical Journal*, 8, 753.
29. RAHMAYANI, T., PUTRA, I. B. & JUSUF, N. K. 2019b. The Effect of Oral Probiotic on the Interleukin-10 Serum Levels of Acne Vulgaris. *Open Access Maced J Med Sci*, 7, 3249-3252.
30. Stringer T, Nagler A, Orlow SJ, Oza VS. Clinical evidence for washing and cleansers in acne vulgaris: a systematic review. *J Dermatolog Treat*. 2018 Nov;29(7):688-693.
31. Uceyler N, Valenza R, Stock M, et al. Reduced levels of anti-inflammatory cytokines in patients with chronic widespread pain. *Arthritis Rheum* 2006;54:2656–2664.
32. Walocko FM, Eber AE, Keri JE, Al-Harbi MA, Nouri K. The role of nicotinamide in acne treatment. *Dermatol Ther*. 2017 Sep;30(5).

33. WOO TE, SIBLEY CD, 2020. The emerging utility of the cutaneous microbiome in the treatment of acne and atopic dermatitis. *J Am Acad Dermatol* 82, 222–228.
34. YU, Y., DUNAWAY, S., CHAMPER, J., KIM, J. & ALIKHAN, A. 2020. Changing our microbiome: probiotics in dermatology. *Br J Dermatol*, 182, 39-46.
35. YU Y, DUNAWAY S, CHAMPER J, 2020. Changing our microbiome: probiotics in dermatology. *Br J Dermatol*. 182, 39–46.
36. Yunus M, et al. 2020. “Effectiveness of Topical Autologous Serum and Topical 0,05% Topical Tretinoin Cream in Acne Vulgaris – Analysis of Interleukin-17A and Serum Vitamin A Level”. EurAsian Journal of Biosciences. 14(2): 7585-8.
37. ZAENGLEIN, A. L., PATHY, A. L., SCHLOSSER, B. J., ALIKHAN, A., BALDWIN, H. E., BERSON, D. S., BOWE, W. P., GRABER, E. M., HARPER, J. C., KANG, S., KERI, J. E., LEYDEN, J. J., REYNOLDS, R. V., SILVERBERG, N. B., STEIN GOLD, L. F., TOLLEFSON, M. M., WEISS, J. S., DOLAN, N. C., SAGAN, A. A., STERN, M., BOYER, K. M. & BHUSHAN, R. 2016. Guidelines of care for the management of acne vulgaris. *J Am Acad Dermatol*, 74, 945-73.e33.

LAMPIRAN

Lampiran 1. Persetujuan etik penelitian



REKOMENDASI PERSETUJUAN ETIK

Nomor : 47/UN4.6.4.5.31/ PP36/ 2022

Tanggal: 31 Januari 2022

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

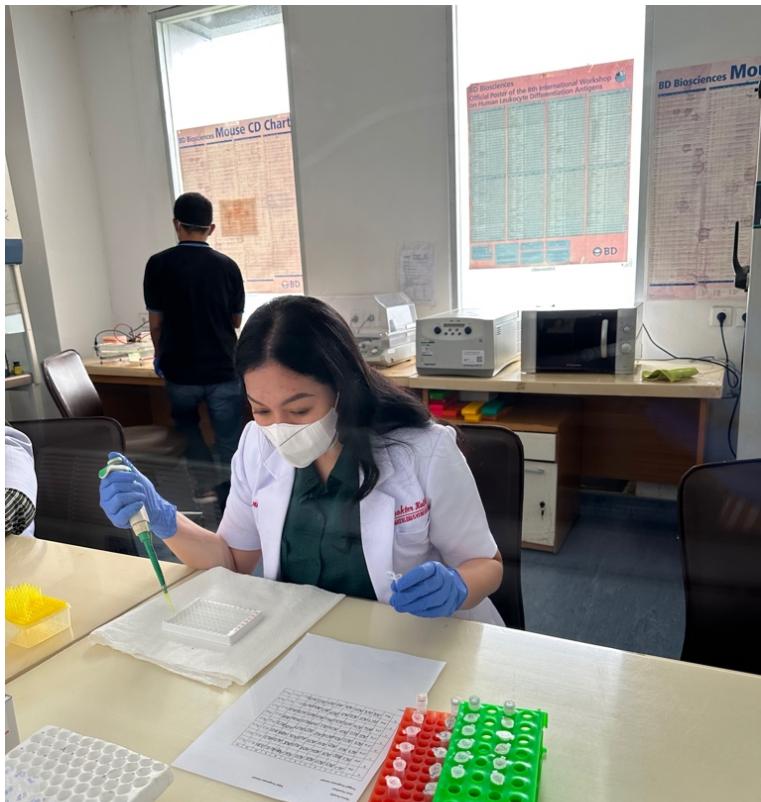
No Protokol	UH22010004	No Sponsor Protokol	
Peneliti Utama	Prof. Dr. dr. Anis Irawan Anwar, Sp.KK(K), FINSDV, FAADV	Sponsor	
Judul Peneliti	EFEKTIVITAS MIKROBIOM TOPIKAL YANG MENGANDUNG LACTOBACILLUS PLANTARUM TERHADAP KADAR IL 8, IL 12, TNF ALPHA DAN ANTI INFLAMASI IL 10 SEBAGAI PENGOBATAN ACNE VULGARIS		
No Versi Protokol	2	Tanggal Versi	28 Januari 2022
No Versi PSP	2	Tanggal Versi	28 Januari 2022
Tempat Penelitian	RS Universitas Hasanuddin dan RS Dr. Wahidin Sudirohusodo Makassar		
Jenis Review	<input type="checkbox"/> Exempted <input type="checkbox"/> Expedited <input checked="" type="checkbox"/> Fullboard Tanggal 18 Januari 2022	Masa Berlaku 31 Januari 2022 sampai 31 Januari 2023	Frekuensi review lanjutan
Ketua KEPK FKUH RSUH dan RSWS	Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)	Tanda tangan	
Sekretaris KEPK FKUH RSUH dan RSWS	Nama dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K)	Tanda tangan	

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Lapor SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari protokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan

Lampiran 2. Alat dan Bahan





Lampiran 3. *Inform Consent* dan Kuisioner Penelitian

**SURAT PERNYATAAN PERSETUJUAN
UNTUK IKUT SERTA DALAM PENELITIAN
(INFORMED CONSENT)**

Yang bertanda tangan dibawah ini:

N a m a :

U s i a :

Alamat :

Pekerjaan :

No. KTP/lainnya:

Dengan ini menyatakan bahwa:

Telah memperoleh penjelasan sepenuhnya, menyadari, mengerti, dan memahami tentang tujuan, manfaat dan risiko yang mungkin timbul dalam penelitian yang berjudul:

"Efektivitas Mikrobiom Topikal yang Mengandung Lactococcus Ferment Lysate 5% Terhadap Perbaikan Klinis dan Kadar IL 10 sebagai Pengobatan Akne Vulgaris"

Maka dengan ini saya menyatakan :

setuju/tidak setuju*) berperan serta dalam penelitian ini

Demikian surat pernyataan ini kami buat dengan sesungguhnya dan tanpa paksaan.

Makassar, 2022

Peserta penelitian,

(.....)

Kode Penelitian:

KUISIONER PENELITIAN

**Efektivitas Mikrobiom Topikal yang Mengandung Lactococcus Ferment Lysate
Terhadap IL 12, IL 8, TNF Alpha, IL 10 dan IL 1 sebagai Pengobatan Akne
Vulgaris**

Nama : Berat Badan : Kg

Umur : Tahun Tinggi : Cm

Alamat :

No. Telpon :

ID LINE :

Pendidikan Terakhir : 1. SD 4. Akademi/Sarjana
2. SMP 5. Sekolah.....
3. SMA/Sederajat

Agama : 1. Islam 4. Budha
2. Kristen 5. Lainnya.....
3. Hindu

Pekerjaan : 1. Pelajar 4. Swasta
2. Mahasiswa 5. Lainnya.....
3. PNS

Aktivitas Rutin : 1. Luar Ruangan 2. Dalam Ruangan

1. Luar Ruangan

2. Dalam Ruangan

2. Tidak

Kebiasaan memencet jerawat :

Merokok : 1. Ya 2. Tidak

: 1. Ya

2. Tidak

Alkohol : 1. Ya 2. Tidak

: 1. Ya

2. Tidak

Riwayat keluarga menderita jerawat:

1. Ayah	3. Kakak/Adik
2. Ibu	4. Lainnya.....

1. Ayah 3. Kakak/Adik

2. Ibu 4. Lainnya.....

Kebiasaan Makan :

Kacang: 1. Setiap hari 2. Sekali Seminggu 3. Sekali sebulan 4.Tidak pernah

Coklat : 1. Setiap hari 2. Sekali Seminggu 3. Sekali sebulan 4.Tidak pernah

Makanan pedes: 1. Setiap hari 2. Sekali Seminggu 3. Sekali sebulan 4.Tidak pernah

Riwayat Jerawat : 1. <6bulan 2. >6bulan

1. <6bulan

2. > 6bulan

Pemakaian Kosmetik : 1. Ya 2. Tidak

: 1. Ya

2. Tidak

Jika "Ya", Kosmetik yang digunakan:.....

Riwayat penggunaan obat untuk jerawat: 1. Ya 2. Tidak
Jika " Ya ", obat yang digunakan.....

Apakah sudah menikah : 1. Ya 2. Tidak

Tidur Teratur : 1. Ya 2. Tidak

Apakah menstruasi Anda teratur tiap bulan? : 1. Ya 2. Tidak

Kapan Terakhir Haid

Berapa lama menstruasi Anda? : 1. <5 hari

2. 5-7 hari

3. > 7 hari

Berapa lama panjang siklus menstruasi Anda? (siklus menstruasi adalah rata-rata jumlah hari dari rentang hari pertama menstruasi awal sampai hari pertama menstruasi berikutnya, selama 3 bulan terakhir):

1. <24 hari

2. 24 - 30 hari

3. >30 hari

** Manifestasi Klinik

Komedo : _____

Papul : _____

Pustul : _____

Daerah wajah	Hari 0	Hari 14	Hari 28

NB: **Diisi oleh peneliti

Makassar,

2022

()

Lampiran 4. Data SPSS

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Lesi NI A H0	35	100.0%	0	0.0%	35	100.0%
Lesi NI A H2	35	100.0%	0	0.0%	35	100.0%
Lesi NI A H4	35	100.0%	0	0.0%	35	100.0%
Lesi NI A H6	35	100.0%	0	0.0%	35	100.0%
Lesi NI A H8	35	100.0%	0	0.0%	35	100.0%
Lesi I A H0	35	100.0%	0	0.0%	35	100.0%
Lesi I A H2	35	100.0%	0	0.0%	35	100.0%
Lesi I A H4	35	100.0%	0	0.0%	35	100.0%
Lesi I A H6	35	100.0%	0	0.0%	35	100.0%
Lesi I A H8	35	100.0%	0	0.0%	35	100.0%
Lesi NI B H0	35	100.0%	0	0.0%	35	100.0%
Lesi NI B H2	35	100.0%	0	0.0%	35	100.0%
Lesi NI B H4	35	100.0%	0	0.0%	35	100.0%
Lesi NI B H6	35	100.0%	0	0.0%	35	100.0%
Lesi NI B H8	35	100.0%	0	0.0%	35	100.0%
Lesi I B H0	35	100.0%	0	0.0%	35	100.0%
Lesi I B H2	35	100.0%	0	0.0%	35	100.0%
Lesi I B H4	35	100.0%	0	0.0%	35	100.0%
Lesi I B H6	35	100.0%	0	0.0%	35	100.0%
Lesi I B H8	35	100.0%	0	0.0%	35	100.0%

	Median	3.00	
	Variance	26.718	
	Std. Deviation	5.169	
	Minimum	0	
	Maximum	20	
	Range	20	
	Interquartile Range	7	
	Skewness	1.402	.398
	Kurtosis	1.708	.778
Lesi I B H8	Mean	3.20	.825
	95% Confidence Interval for Mean	Lower Bound	1.52
		Upper Bound	4.88
	5% Trimmed Mean	2.54	
	Median	1.00	
	Variance	23.812	
	Std. Deviation	4.880	
	Minimum	0	
	Maximum	20	
	Range	20	
	Interquartile Range	6	
	Skewness	1.953	.398
	Kurtosis	3.842	.778

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Lesi NI A H0	.165	35	.017	.897	35	.003
Lesi NI A H2	.140	35	.079	.908	35	.007
Lesi NI A H4	.156	35	.030	.905	35	.005
Lesi NI A H6	.202	35	.001	.840	35	.000
Lesi NI A H8	.198	35	.001	.807	35	.000
Lesi I A H0	.163	35	.019	.917	35	.012
Lesi I A H2	.312	35	.000	.669	35	.000
Lesi I A H4	.201	35	.001	.803	35	.000
Lesi I A H6	.225	35	.000	.728	35	.000
Lesi I A H8	.202	35	.001	.786	35	.000
Lesi NI B H0	.160	35	.024	.879	35	.001
Lesi NI B H2	.124	35	.188	.958	35	.200
Lesi NI B H4	.121	35	.200*	.922	35	.017
Lesi NI B H6	.139	35	.085	.964	35	.299
Lesi NI B H8	.102	35	.200*	.952	35	.130
Lesi I B H0	.213	35	.000	.734	35	.000
Lesi I B H2	.189	35	.003	.830	35	.000
Lesi I B H4	.169	35	.012	.852	35	.000
Lesi I B H6	.187	35	.003	.832	35	.000
Lesi I B H8	.256	35	.000	.714	35	.000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

P<0.05 → Distribus tidak normal → Uji non Parametrik Friedman

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Lesi NI A H0	35	65.03	27.493	22	120
Lesi NI A H2	35	58.60	35.552	13	162
Lesi NI A H4	35	55.17	33.514	13	160
Lesi NI A H6	35	51.43	29.043	14	143
Lesi NI A H8	35	50.34	30.501	14	142

Ranks

Mean Rank

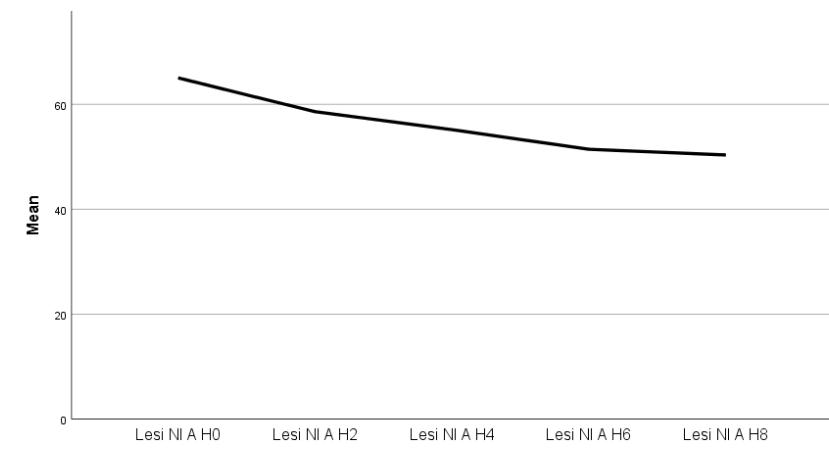
Lesi NI A H0	3.73
Lesi NI A H2	3.11
Lesi NI A H4	2.91
Lesi NI A H6	2.71
Lesi NI A H8	2.53

Test Statistics^a

N	35
Chi-Square	12.127
df	4
Asymp. Sig.	.016

a. Friedman Test

Grafik Lesi Non Inflamasi Krim A



Uji Friedman pada total lesi inflamasi terdapat perbedaan signifikan secara statistic pada penggunaan krim A dimana $p<0.05$ ($p=0.00$)

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Lesi NI B H0	35	66.31	30.256	29	148
Lesi NI B H2	35	61.94	26.231	20	133
Lesi NI B H4	35	45.86	21.546	17	96
Lesi NI B H6	35	36.31	16.022	8	71
Lesi NI B H8	35	31.69	16.376	4	81

Ranks

Mean Rank

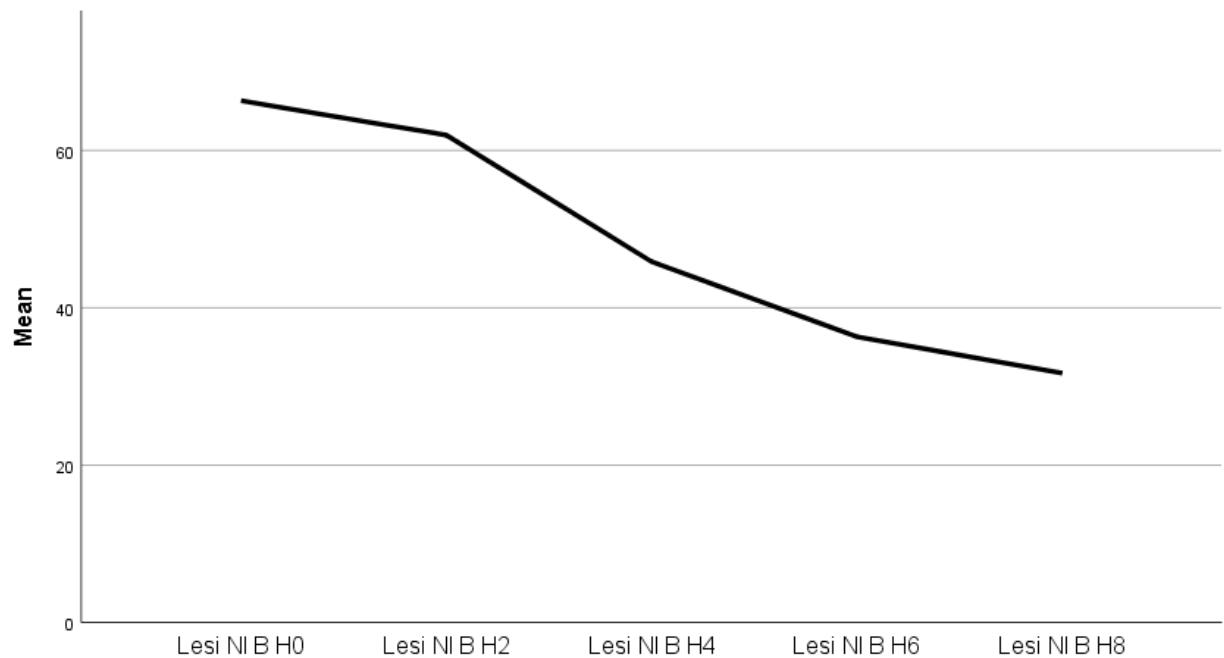
Lesi NI B H0	4.21
Lesi NI B H2	4.00
Lesi NI B H4	3.09
Lesi NI B H6	2.09
Lesi NI B H8	1.61

Test Statistics^a

N	35
Chi-Square	74.828
df	4
Asymp. Sig.	.000

a. Friedman Test

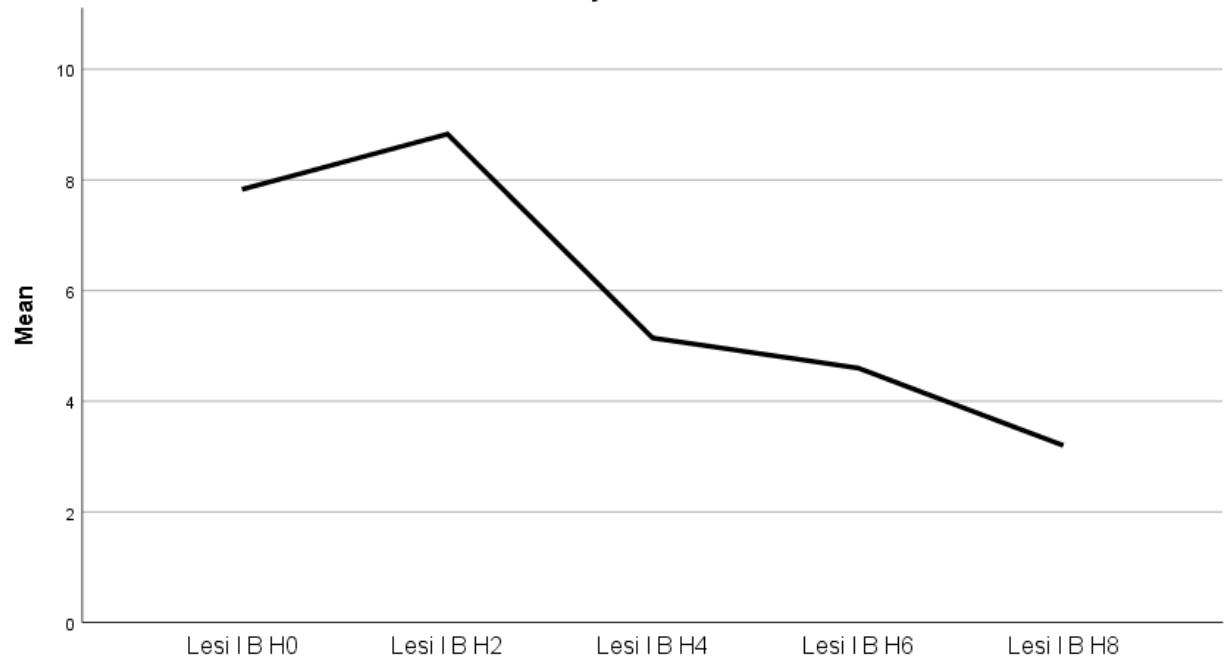
Lesi Non Inflamasi Krim B



Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Lesi I B H0	35	7.83	7.322	2	39
Lesi I B H2	35	8.83	9.067	0	40
Lesi I B H4	35	5.14	5.370	0	19
Lesi I B H6	35	4.60	5.169	0	20
Lesi I B H8	35	3.20	4.880	0	20

Simple Line Mean of Lesi I B H0, Mean of Lesi I B H2, Mean of Lesi I B H4, Mean of Lesi I B H6, Mean of Lesi I B H8 by INDEX



Case Processing Summary

Kelompok		Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
Lesi NI AB H0	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%
Lesi NI AB H2	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%
Lesi NI AB H4	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%
Lesi NI AB H6	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%
Lesi NI AB H8	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%
Lesi I AB H0	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%

Lesi I AB H2	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%
Lesi I AB H4	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%
Lesi I AB H6	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%
Lesi I AB H8	Krim A	35	100.0%	0	0.0%	35	100.0%
	Krim B	35	100.0%	0	0.0%	35	100.0%

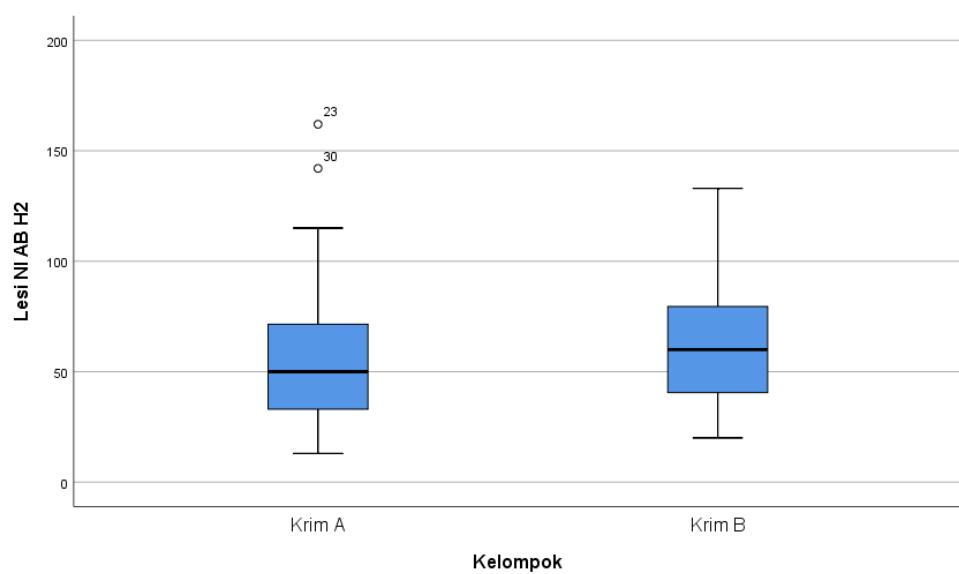
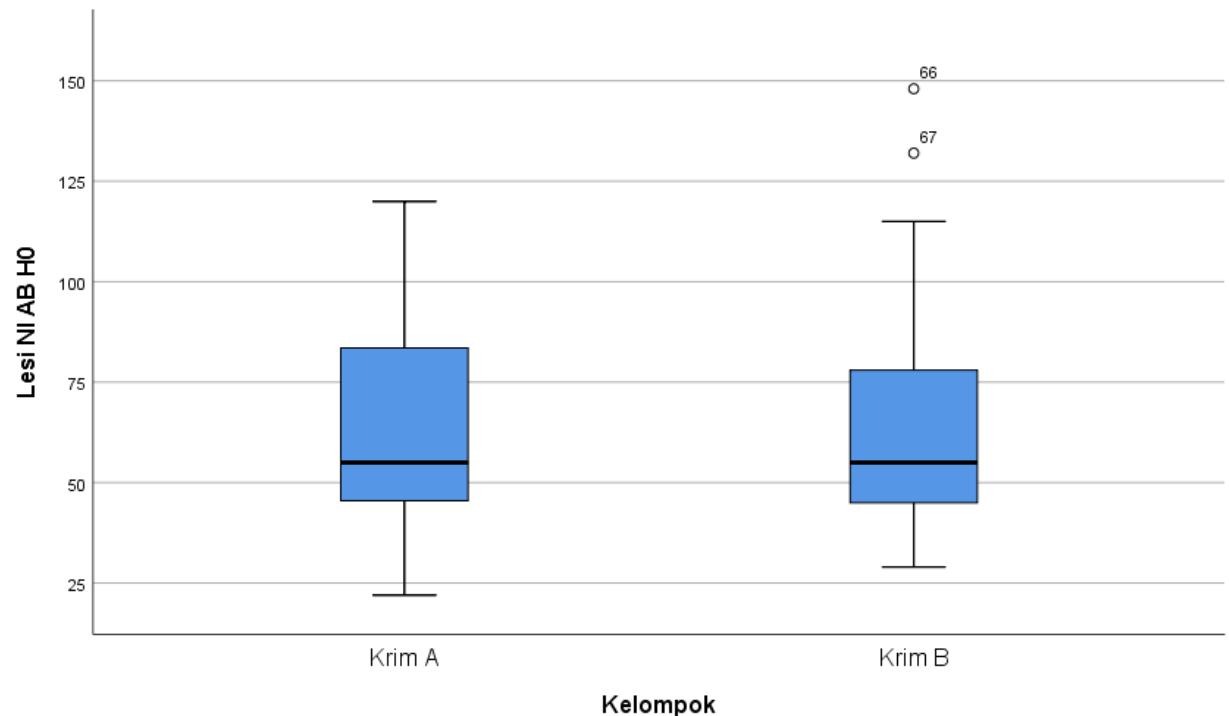
Tests of Normality

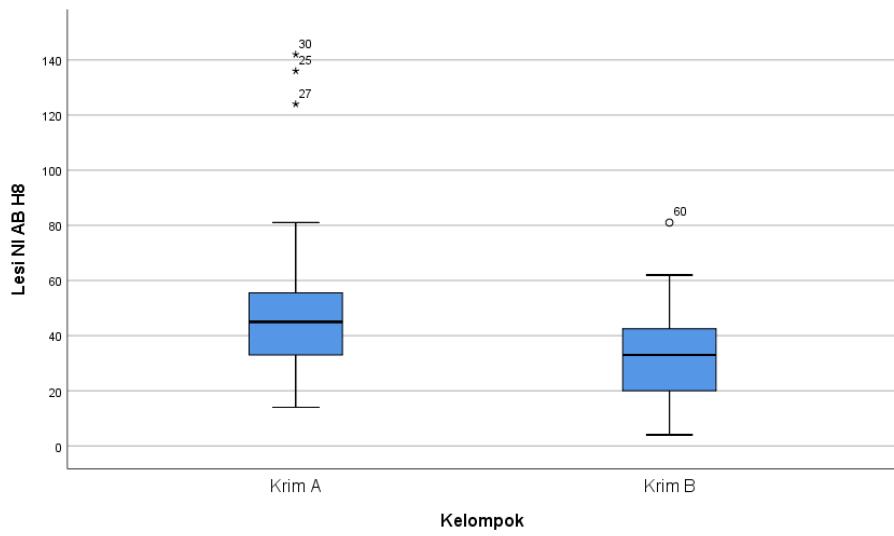
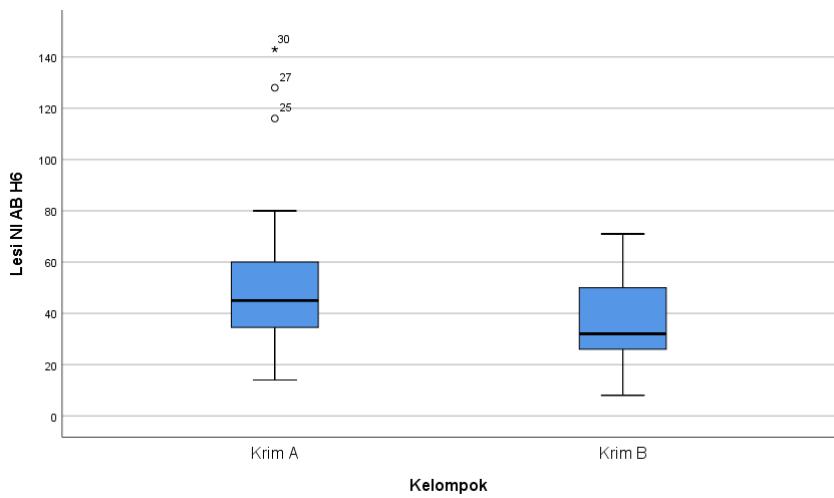
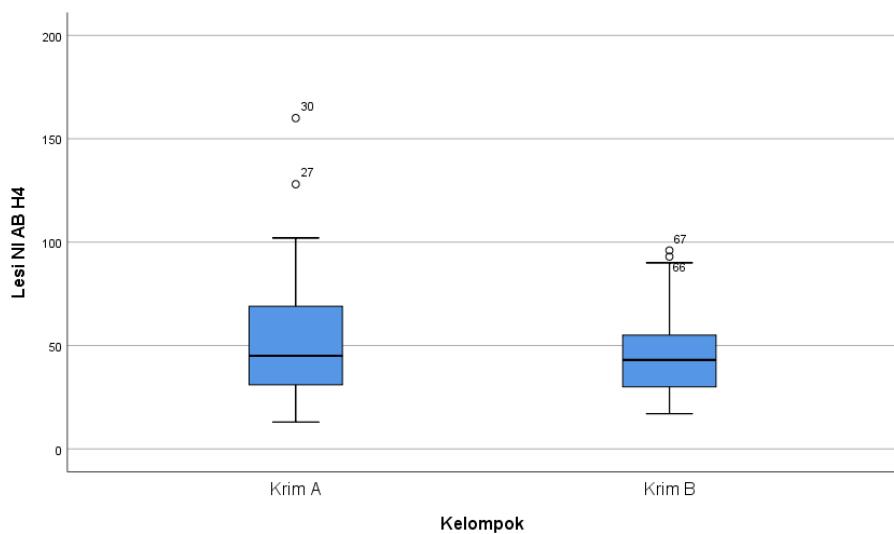
	Kelompok	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Lesi NI AB H0	Krim A	.165	35	.017	.897	35	.003
	Krim B	.160	35	.024	.879	35	.001
Lesi NI AB H2	Krim A	.140	35	.079	.908	35	.007
	Krim B	.124	35	.188	.958	35	.200
Lesi NI AB H4	Krim A	.156	35	.030	.905	35	.005
	Krim B	.121	35	.200*	.922	35	.017
Lesi NI AB H6	Krim A	.202	35	.001	.840	35	.000
	Krim B	.139	35	.085	.964	35	.299
Lesi NI AB H8	Krim A	.198	35	.001	.807	35	.000
	Krim B	.102	35	.200*	.952	35	.130
Lesi I AB H0	Krim A	.163	35	.019	.917	35	.012
	Krim B	.213	35	.000	.734	35	.000
Lesi I AB H2	Krim A	.312	35	.000	.669	35	.000
	Krim B	.189	35	.003	.830	35	.000
Lesi I AB H4	Krim A	.201	35	.001	.803	35	.000
	Krim B	.169	35	.012	.852	35	.000
Lesi I AB H6	Krim A	.225	35	.000	.728	35	.000

	Krim B	.187	35	.003	.832	35	.000
Lesi I AB H8	Krim A	.202	35	.001	.786	35	.000
	Krim B	.256	35	.000	.714	35	.000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction





Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Lesi NI AB H0	70	65.67	28.704	22	148
Lesi NI AB H2	70	60.27	31.060	13	162
Lesi NI AB H4	70	50.51	28.359	13	160
Lesi NI AB H6	70	43.87	24.496	8	143
Lesi NI AB H8	70	41.01	26.054	4	142
Kelompok	70	1.50	.504	1	2

Mann-Whitney Test

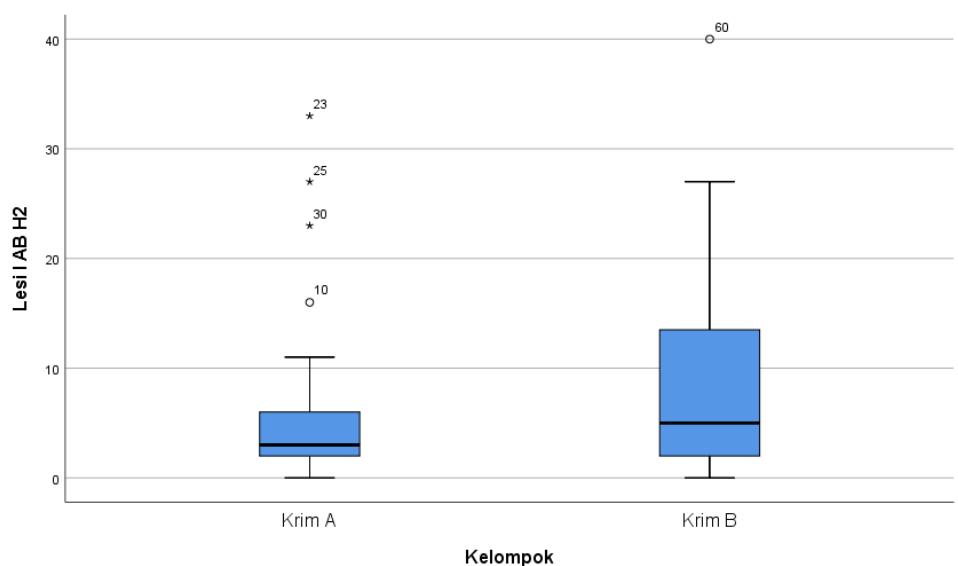
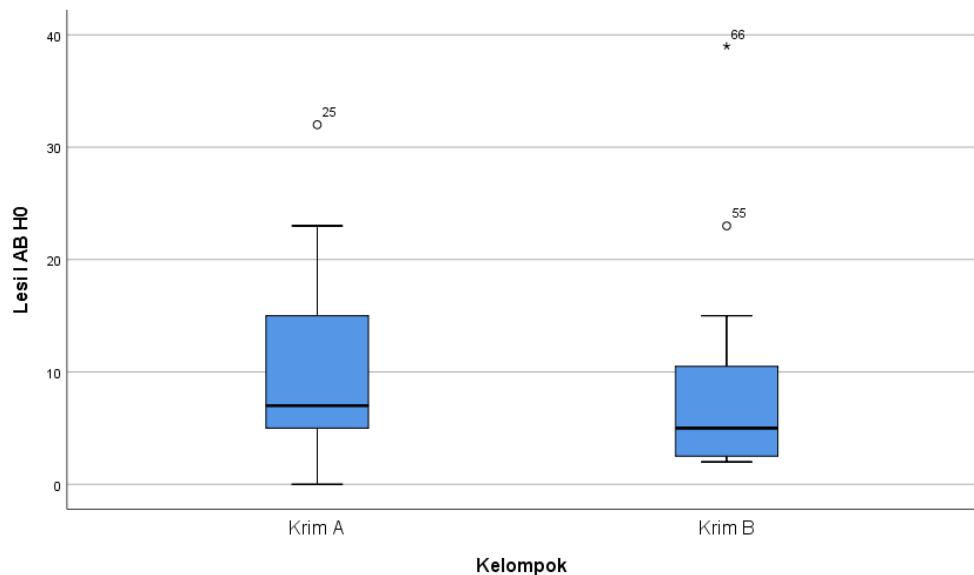
Ranks

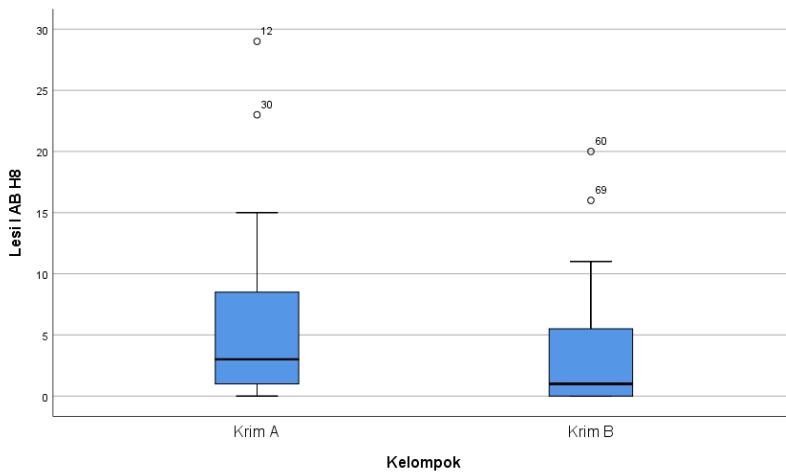
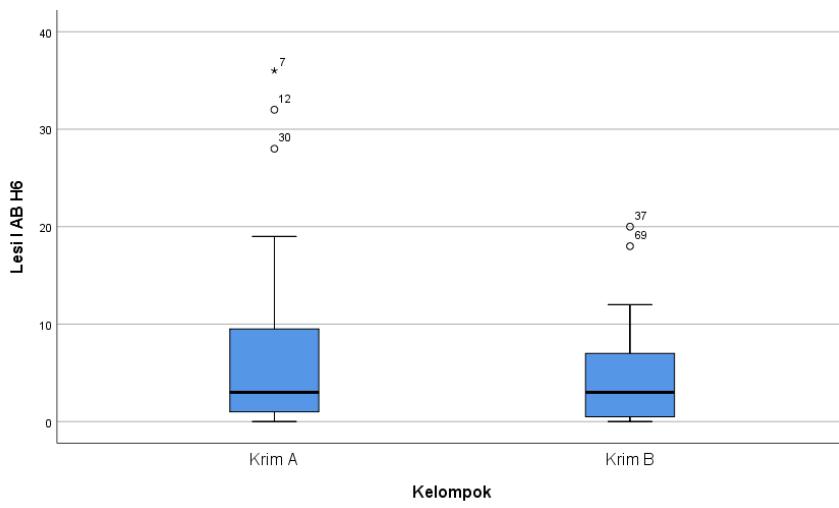
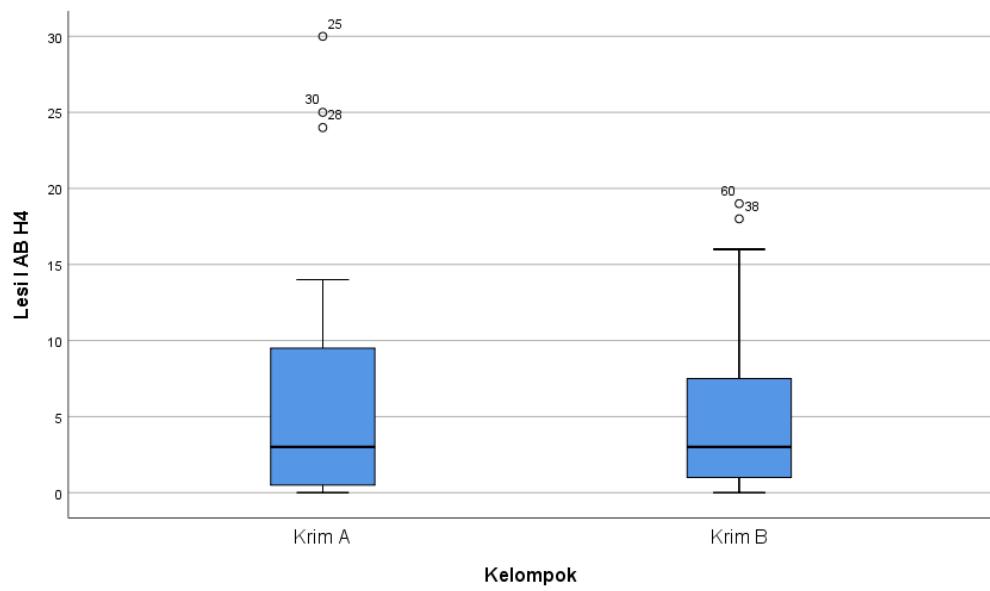
	Kelompok	N	Mean Rank	Sum of Ranks
Lesi NI AB H0	Krim A	35	35.57	1245.00
	Krim B	35	35.43	1240.00
	Total	70		
Lesi NI AB H2	Krim A	35	32.91	1152.00
	Krim B	35	38.09	1333.00
	Total	70		
Lesi NI AB H4	Krim A	35	37.73	1320.50
	Krim B	35	33.27	1164.50
	Total	70		
Lesi NI AB H6	Krim A	35	41.39	1448.50
	Krim B	35	29.61	1036.50
	Total	70		
Lesi NI AB H8	Krim A	35	42.97	1504.00
	Krim B	35	28.03	981.00
	Total	70		

Test Statistics^a

	Lesi NI AB H0	Lesi NI AB H2	Lesi NI AB H4	Lesi NI AB H6	Lesi NI AB H8
Mann-Whitney U	610.000	522.000	534.500	406.500	351.000
Wilcoxon W	1240.000	1152.000	1164.500	1036.500	981.000
Z	-.029	-1.063	-.916	-2.422	-3.074
Asymp. Sig. (2-tailed)	.977	.288	.359	.015	.002

a. Grouping Variable: Kelompok





Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Lesi I AB H0	70	8.79	7.425	0	39
Lesi I AB H2	70	7.26	8.500	0	40
Lesi I AB H4	70	5.80	6.617	0	30
Lesi I AB H6	70	5.74	7.415	0	36
Lesi I AB H8	70	4.49	6.050	0	29
Kelompok	70	1.50	.504	1	2

Mann-Whitney Test

Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
Lesi I AB H0	Krim A	35	38.70	1354.50
	Krim B	35	32.30	1130.50
	Total	70		
Lesi I AB H2	Krim A	35	31.29	1095.00
	Krim B	35	39.71	1390.00
	Total	70		
Lesi I AB H4	Krim A	35	35.94	1258.00
	Krim B	35	35.06	1227.00
	Total	70		
Lesi I AB H6	Krim A	35	37.31	1306.00
	Krim B	35	33.69	1179.00
	Total	70		
Lesi I AB H8	Krim A	35	41.14	1440.00
	Krim B	35	29.86	1045.00
	Total	70		

Test Statistics^a

	Lesi NI A W2 - Lesi NI A W0	Lesi NI A W4 - Lesi NI A W0	Lesi NI A W6 - Lesi NI A W0	Lesi NI A W8 - Lesi NI A W0	Lesi NI A W2 - Lesi NI A W2	Lesi NI A W4 - Lesi NI A W2	Lesi NI A W6 - Lesi NI A W2	Lesi NI A W8 - Lesi NI A W4	Lesi NI A W6 - Lesi NI A W4	Lesi NI A W8 - Lesi NI A W6
Z	-1.753 ^b	-2.253 ^b	-2.834 ^b	-2.727 ^b	-.787 ^b	-1.262 ^b	-1.758 ^b	-1.240 ^b	-1.196 ^b	-1.095 ^b
Asymp. Sig. (2-tailed)	.080	.024	.005	.006	.431	.207	.079	.215	.232	.274

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Test Statistics^a

	Lesi I AB H0	Lesi I AB H2	Lesi I AB H4	Lesi I AB H6	Lesi I AB H8
Mann-Whitney U	500.500	465.000	597.000	549.000	415.000
Wilcoxon W	1130.500	1095.000	1227.000	1179.000	1045.000
Z	-1.321	-1.740	-.183	-.752	-2.362
Asymp. Sig. (2-tailed)	.186	.082	.854	.452	.018

a. Grouping Variable: Kelompok

z. Lesi NI A W8 > Lesi NI A W4

aa. Lesi NI A W8 = Lesi NI A W4

ab. Lesi NI A W8 < Lesi NI A W6

ac. Lesi NI A W8 > Lesi NI A W6

ad. Lesi NI A W8 = Lesi NI A W6

Ranks

		N	Mean Rank	Sum of Ranks
Lesi I A W2 - Lesi I A W0	Negative Ranks	28 ^a	19.05	533.50
	Positive Ranks	7 ^b	13.79	96.50
	Ties	0 ^c		
	Total	35		
Lesi I A W4 - Lesi I A W0	Negative Ranks	28 ^d	17.54	491.00
	Positive Ranks	6 ^e	17.33	104.00

	Ties	1 ^f		
	Total	35		
Lesi I A W6 - Lesi I A W0	Negative Ranks	22 ^g	17.09	376.00
	Positive Ranks	10 ^h	15.20	152.00
	Ties	3 ⁱ		
	Total	35		
Lesi I A W8 - Lesi I A W0	Negative Ranks	27 ^j	16.78	453.00
	Positive Ranks	6 ^k	18.00	108.00
	Ties	2 ^l		
	Total	35		

a. Lesi I A W2 < Lesi I A W0

b. Lesi I A W2 > Lesi I A W0

c. Lesi I A W2 = Lesi I A W0

d. Lesi I A W4 < Lesi I A W0

e. Lesi I A W4 > Lesi I A W0

f. Lesi I A W4 = Lesi I A W0

g. Lesi I A W6 < Lesi I A W0

h. Lesi I A W6 > Lesi I A W0

i. Lesi I A W6 = Lesi I A W0

j. Lesi I A W8 < Lesi I A W0

k. Lesi I A W8 > Lesi I A W0

l. Lesi I A W8 = Lesi I A W0

Test Statistics^a

	Lesi I A W2 - Lesi I A W0	Lesi I A W4 - Lesi I A W0	Lesi I A W6 - Lesi I A W0	Lesi I A W8 - Lesi I A W0
Z	-3.585 ^b	-3.313 ^b	-2.098 ^b	-3.088 ^b
Asymp. Sig. (2-tailed)	.000	.001	.036	.002

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.