

DAFTAR PUSTAKA

- Abdul Karim, Trisniartami Setyaningrum, Cita Rosita Sigit Prakoeswa Effect of Lactobacillus plantarum IS-10506 Supplementation on Scoring Atopic Dermatitis (SCORAD) Index in Adult With Mild-Moderate Atopic Dermatitis: A Randomized, Double Blind, Controlled Trial).2020
- Abuabara, K. et al. (2018) 'The prevalence of atopic dermatitis beyond childhood: A systematic review and meta-analysis of longitudinal studies', *Allergy: European Journal of Allergy and Clinical Immunology*, 73(3), pp. 696–704. doi: 10.1111/all.13320.
- Blanchet-Réthoré, S., Bourdès, V., Mercenier, A., Haddar, C. H., Verhoeven, P. O., & Andres, P. (2017). Effect of a lotion containing the heat-treated probiotic strain Lactobacillus johnsonii NCC 533 on Staphylococcus aureus colonization in atopic dermatitis. *Clinical, Cosmetic and Investigational Dermatology*, 10, 249–257. <https://doi.org/10.2147/CCID.S135529>
- Bjerre, R. D. et al. (2017) 'The role of the skin microbiome in atopic dermatitis: a systematic review', *British Journal of Dermatology*, 177(5), pp. 1272–1278. doi: 10.1111/bjd.15390.
- Boediardja Siti A. 2016. Dermatitis Atopik: Ilmu Kulit dan Kelamin, Ed VII. Jakarta: Badan Penerbit Fakultas Kedokteran Universitas Indonesia
- Brancaleon L, M.P. Bamberg, T. Sakamaki, N. Kollias. Attenuated total reflection-Fourier transform infrared spectroscopy as a possible method to investigate biophysical parameters of stratum corneum in vivo. *J Invest Dermatol*, 116 (2001), pp. 380-386
- Boyman, O., Werfel, T. and Akdis, C. A. (2012) 'The suppressive role of IL-10 in contact and atopic dermatitis', *Journal of Allergy and Clinical Immunology*, 129(1), pp. 160–161. doi: 10.1016/j.jaci.2011.10.046.
- Czarnowicki, T. et al. (2015) 'Early pediatric atopic dermatitis shows only a cutaneous lymphocyte antigen (CLA)(+) TH2/TH1 cell imbalance, whereas adults acquire CLA(+) TH22/TC22 cell subsets', *The Journal of allergy and*

clinical immunology, 136(4), pp. 941-951.e3. doi: 10.1016/J.JACI.2015.05.049.

Danby S.G., T. Al-Enezi, A. Sultan, J. Chittock, K. Kennedy, M.J. Cork. The effect of aqueous cream BP on the skin barrier in volunteers with a previous history of atopic dermatitis *Br J Dermatol*, 165 (2011), pp. 329-334

Davani-Davari, D. et al. (2019) 'Prebiotics: Definition, types, sources, mechanisms, and clinical applications', *Foods*, 8(3), pp. 1–27. doi: 10.3390/foods8030092.

De Benedetto, A. et al. (2011) 'Tight junction defects in patients with atopic dermatitis', *Journal of Allergy and Clinical Immunology*, 127(3), pp. 773-786.e7. doi: 10.1016/j.jaci.2010.10.018.

Dwivedi, Mitesh Kumar, N. Amaresan, A. Sankaranarayanan, E. H. K. (2021) *Probiotics in the Prevention and Management of Human Disease - A Scientific Perspective*.

Elias P., 2008. Skin Barier Function. Volume 8, 299.-305.

Eliska N. Faktor resiko pada dermatitis atopik. *Jurnal Kedokteran dan Kesehatan*. 2015;2(1):143-9.

Fanfaret L, Daniel B, Laura M et al. 2021. Probiotics dan Prebiotics in Atopic Dermatitis: Pros dan Cons (Review). Spandidos Publication.

Fluhr JW, Sugarman JL, Fowler AJ, et al.: The objective severity assessment of atopic dermatitis score: an objective measure using permeability barrier function and stratum corneum hydration with computer-assisted estimates for extent of disease. *Arch Dermatol* 2003, 139:1417–1422.

Flohr, C., England, K., Radulovic, S., McLean, W.H.I., Campbell, L.E., Barker, J., Perkin, M., and Lack, G. 2010. Filaggrin Loss-of-Function Mutations Are Associated with Early-Onset Eczema, Eczema Severity and Transepidermal Water Loss at 3 Months of Age. *Br J Dermatol.* 163(6). Pp: 1333–6. doi: 10.1111/j.1365- 2133.2010.10068.x.

Flohr, C. and Mann, J. (2014) 'New insights into the epidemiology of childhood atopic dermatitis', *Allergy: European Journal of Allergy and Clinical Immunology*, 69(1), pp. 3–16. doi: 10.1111/all.12270.

- Fujii, M. (2021) 'The pathogenic and therapeutic implications of ceramide abnormalities in atopic dermatitis', *Cells*, 10(9). doi: 10.3390/cells10092386.
- Halim, T. Y. F. et al. (2018) 'Tissue-Restricted Adaptive Type 2 Immunity Is Orchestrated by Expression of the Costimulatory Molecule OX40L on Group 2 Innate Lymphoid Cells', *Immunity*, 48(6), pp. 1195-1207.e6. doi: 10.1016/J.IMMUNI.2018.05.003.
- Han, Y. et al. (2012) 'A randomized trial of Lactobacillus plantarum CJLP133 for the treatment of atopic dermatitis', *Pediatric Allergy and Immunology*, 23(7), pp. 667–673. doi: 10.1111/PAI.12010.
- Imhof R.E, M.E.P. De Jesus, P. Xiao, L.I. Ciortea, E.P. Berg. Closed-chamber transepidermal water loss measurement: microclimate, calibration and performance *Int J Cosmet Sci*, 31 (2009), pp. 97-118
- Keles Herry E.F, J. Pandaleke, Ferra O. Mawu. 2016. Profil dermatitis atopik pada anak di Poliklinik Kulit dan Kelamin RSUP Prof. Dr. R. D. Kandou Manado periode Januari 2013 – Desember 2015. *Jurnal e-Clinic (eCI)*, Volume 4, No.2.
- Kim, S. O. et al. (2014) 'Effects of probiotics for the treatment of atopic dermatitis: A meta-analysis of randomized controlled trials', *Annals of Allergy, Asthma and Immunology*, 113(2), pp. 217–226.
- Knackstedt Rebecca, Thomas Knackstedt, James Gatherwright. 2019. The role of topical probiotics on skin conditions: A systematic review of animal and human studies and implications for future therapies. *Experimental Dermatology* WILEY.DOI: 10.1111/exd.14032
- Kottner, J.A. Licherfeld, U. Blume-Peytavi. Transepidermal water loss in young and aged healthy humans: A systematic review and meta-analysis *Arch Dermatol Res*, 305 (2013), pp. 315-323
- Li, H. Y. et al. (2021) 'Effects and mechanisms of probiotics, prebiotics, synbiotics, and postbiotics on metabolic diseases targeting gut microbiota: A narrative review', *Nutrients*, 13(9). doi: 10.3390/nu13093211.

Lyubchenko, Taras *et al* (2020) 'Skin tape sampling technique identifies proinflammatory cytokines in atopic dermatitis skin. doi: 10.1016/j.anai.2020.08.397

Marzec, A. and Feleszko, W. (2020) 'Postbiotics—A Step Beyond Pre- and Probiotics 2 ', pp. 1–17.

Montero-Vilchez, T. *et al.* (2021) 'Skin barrier function in psoriasis and atopic dermatitis: Transepidermal water loss and temperature as useful tools to assess disease severity', *Journal of Clinical Medicine*, 10(2), pp. 1–12. doi: 10.3390/jcm10020359.

Myles, I. A. *et al.* (2018) 'First-in-human topical microbiome transplantation with Roseomonas mucosa for atopic dermatitis', *JCI insight*, 3(9), pp. 1–13. doi: 10.1172/jci.insight.120608.

Nakahara, T. *et al.* (2021) 'Basics and recent advances in the pathophysiology of atopic dermatitis', *Journal of Dermatology*, 48(2), pp. 130–139. doi: 10.1111/1346-8138.15664.

Navarro-Lopez, V. *et al.* (2018) 'Effect of oral administration of a mixture of probiotic strains on SCORAD index and use of topical steroids in young patients with moderate atopic dermatitis a randomized clinical trial', *JAMA Dermatology*, 154(1), pp. 37–43. doi: 10.1001/jamadermatol.2017.3647.

Nilsson EJ, Henning, Magnusson. Topical corticosteroids and *Staphylococcus aureus* in atopic dermatitis. J Am Acad Dermatol. 1992; 27:29-34.

Notoatmodjo. (2010). Metodologi penelitian kesehatan. Jakarta: Rineka Cipta.

Oranje, A. P. *et al.* (2007) 'Practical issues on interpretation of scoring atopic dermatitis: The SCORAD index, objective SCORAD and the three-item severity score', *British Journal of Dermatology*, 157(4), pp. 645–648. doi: 10.1111/j.1365-2133.2007.08112.x.

Pachacama López, A. F. *et al.* (2021) 'Probiotics to Reduce the Severity of Atopic Dermatitis in Pediatric Patients: A Systematic Review and Meta-Analysis', *Actas Dermo-Sifiliográficas (English Edition)*, 112(10), pp. 881–890.

doi: 10.1016/j.adengl.2021.06.006.

Paller, A. S. et al. (2020) 'The microbiome in patients with atopic dermatitis', 143(1), pp. 26–35. doi: 10.1016/j.jaci.2018.11.015.The.

Prakoeswa, C. R. S. et al. (2017) 'Lactobacillus plantarum IS-10506 supplementation reduced SCORAD in children with atopic dermatitis', *Beneficial Microbes*, 8(5), pp. 833–840. doi: 10.3920/BM2017.0011.

Prakoeswa, C. R. S. et al. (2020) 'Beneficial effect of Lactobacillus plantarum IS-10506 supplementation in adults with atopic dermatitis: a randomized controlled trial', *Journal of Dermatological Treatment*, 0(0), p. 000. doi: 10.1080/09546634.2020.1836310.

Raimondo, A. and Lembo, S. (2021) 'Atopic dermatitis: Epidemiology and clinical phenotypes', *Dermatology Practical and Conceptual*, 11(4), pp. 1–6. doi: 10.5826/dpc.1104a146.

Rusu E et al. Prebiotics and probiotics in atopic dermatitis (Review). *Exp Ther Med*. 2019;926–931.

Sastroasmoro, S, Ismael, S 2011, Dasar-Dasar Metodologi Penelitian Klinis, Binarupa Aksara, Jakarta.

Sewon Kang, MD, M. et al. (2019) *Fitzpatrick's Dermatology*. 9th edition.

Shuzuki S, Alberto CE, Morita Y et al., 2018. Low Interleukin 10 Production at Birth Is a Risk Factor for Atopic Dermatitis in Neonates with *Bifidobacterium* Colonization. *International Archives of Allergy and Immunology* vol. 177. doi: <https://doi.org/10.1159/000492130>

Sularsito SA, Djuanda S. Dermatitis. In: Djuanda A, Hamzah M, Aisah S, editors. Ilmu Penyakit Kulit dan Kelamin (6th ed). Jakarta: Badan Penerbit FKUI,; 2011; p. 129-53.

Vavrova, K., Kovačík, A. and Opalka, L. (2017) 'Ceramides in the skin barrier', *European Pharmaceutical Journal*, 64(2), pp. 28–35. doi: 10.1515/afpuc-2017-0004.

Watson, W., Kapur, S. Dermatitis atopik. *Semua Klinik Asth Immun 7* (Suppl 1), S4 (2011). <https://doi.org/10.1186/1710-1492-7-S1-S4>

Weidinger, S. *et al.* (2018) 'Atopic dermatitis', *Nature Reviews Disease Primers*, 4(1). doi: 10.1038/s41572-018-0001-z.

WILLIAMS, H. C. *et al.* (1994) 'The U.K. Working Party's Diagnostic Criteria for Atopic Dermatitis. I. Derivation of a minimum set of discriminators for atopic dermatitis', *The British journal of dermatology*, 131(3), pp. 383–396. doi: 10.1111/J.1365-2133.1994.TB08530.X.

Yao, X. *et al.* (2021) 'Guidelines for Diagnosis and Treatment of Atopic Dermatitis in China (2020)', *International Journal of Dermatology and Venereology*, 4(1), pp. 1–9. doi: 10.1097/JD9.0000000000000143.

Yoshihara, Y. *et al.* (2019) 'IL-10-Producing Regulatory B Cells Are Decreased in Patients with Atopic Dermatitis', *Journal of Investigative Dermatology*, 139(2), pp. 475–478.

Yuqing Hu, Shoushou Liu, Ping Liu *et al.*, 2020. Clinical Relevance of Eosinophils, Basophils, Serum Total IgE Level, Allergen-Specific IgE and Clinical Features in Atopic Dermatitis. *Journal of Clinical Laboratory Analysis*.

LAMPIRAN

Lampiran 1. Persetujuan Etik



REKOMENDASI PERSETUJUAN ETIK

Nomor : 358/UN4.6.4.5.31/ PP36/ 2022

Tanggal: 25 Juli 2022

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

No Protokol	UH22050224	No Sponsor Protokol	
Peneliti Utama	Dr. dr. Farida Ilyas, Sp.KK(K), FINSDV, FAADV	Sponsor	
Judul Peneliti	Efektivitas Mikrobiom Topikal yang mengandung Lactobacillus plantarum terhadap kadar Interleukin (IL) -4, IL-10, IL-17, TEWL, dan kolonisasi Staphylococcus Aureus pada Dermatitis Atopik		
No Versi Protokol	2	Tanggal Versi	13 Juli 2022
No Versi PSP	2	Tanggal Versi	13 Juli 2022
Tempat Penelitian	RS Universitas Hasanuddin, RSUP Dr. Wahidin Sudirohusodo dan SD di Makassar		
Jenis Review	<input type="checkbox"/> Exempted <input type="checkbox"/> Expedited <input checked="" type="checkbox"/> Fullboard Tanggal 2 Juni 2022	Masa Berlaku 25 Juli 2022 sampai 25 Juli 2023	Frekuensi review lanjutan
Ketua KEP Universitas Hasanuddin	Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)	Tanda tangan	
Sekretaris KEP Universitas Hasanuddin	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. Informed Consent



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN

KOMITE ETIK PENELITIAN KESEHATAN

RSPTN UNIVERSITAS HASANUDDIN

RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR

Sekretariat : Lantai 2 Gedung Laboratorium Terpadu



JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10, Makassar 90245

Contact Person: dr. Agus Salim Bukhari, MMed, PhD, SpGK, email: agussalim@yahoo.com Fax: 0411-581431

Lampiran 2.

FORMULIR PERSETUJUAN MENGIKUTI PENELITIAN

Saya yang bertanda tangan di bawah ini :

Nama orang tua / wali :

Nama Anak :

Umur orang tua / wali :

Alamat :

setelah mendengar/membaca dan mengerti penjelasan yang diberikan mengenai tujuan, manfaat, dan apa yang akan dilakukan pada penelitian ini, menyatakan setuju untuk ikut dalam penelitian ini secara sukarela tanpa paksaan.

Saya tahu bahwa keikutsertaan saya ini bersifat sukarela tanpa paksaan, sehingga saya bisa menolak ikut atau mengundurkan diri dari penelitian ini. Saya berhak bertanya atau meminta penjelasan pada peneliti bila masih ada hal yang belum jelas atau masih ada hal yang ingin saya ketahui tentang penelitian ini.

Saya juga mengerti bahwa semua biaya yang dikeluarkan sehubungan dengan penelitian ini, akan ditanggung oleh peneliti. Saya percaya bahwa keamanan dan kerahasiaan data penelitian akan terjamin dan saya dengan ini menyetujui semua data saya yang dihasilkan pada penelitian ini untuk disajikan dalam bentuk lisan maupun tulisan.

Dengan membubuhkan tandatangan saya di bawah ini, saya menegaskan keikutsertaan saya secara sukarela dalam studi penelitian ini.

Nama	Tanda tangan	Tgl/Bln/Thn
Responden
/Wali		

Saksi

(Tanda Tangan Saksi diperlukan hanya jika Partisipan tidak dapat memberikan consent/persetujuan sehingga menggunakan wali yang sah secara hukum, yaitu untuk partisipan berikut:

1. Berusia di bawah 18 tahun
2. Usia lanjut
3. Gangguan mental
4. Pasien tidak sadar
5. Dan lain-lain kondisi yang tidak memungkinkan memberikan persetujuan

Lampiran 3. Hasil Analisis *Lactobacillus plantarum*

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Kontrol (Minggu 1)	26.6696	23	7.88073	1.64325
	Perlakuan (Minggu 4)	22.2609	23	5.00416	1.04344
TEWL kiri	Kontrol (Minggu 1)	27.9130	23	6.97269	1.45391
	Perlakuan (Minggu 4)	18.3070	23	3.90352	.81394

Descriptives

		Statistic	Std. Error
Kontrol (Minggu 1)	Mean	156.3035	23.57162
	95% Confidence Interval for Mean	Lower Bound	107.4189
		Upper Bound	205.1880
	5% Trimmed Mean	141.9519	
	Median	119.2255	
	Variance	12779.284	
	Std. Deviation	113.04550	
	Minimum	40.68	
	Maximum	547.36	
	Range	506.68	
	Interquartile Range	95.78	
	Skewness	2.401	.481
	Kurtosis	6.387	.935
Perlakuan (Minggu 4)	Mean	178.0760	14.71600
	95% Confidence Interval for Mean	Lower Bound	147.5569
		Upper Bound	208.5952
	5% Trimmed Mean	176.6431	
	Median	166.1444	
	Variance	4980.898	
	Std. Deviation	70.57548	
	Minimum	68.22	
	Maximum	314.79	
	Range	246.57	
	Interquartile Range	105.72	
	Skewness	.382	.481
	Kurtosis	-.663	.935

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Perlakuan (Minggu 4) – Kontrol (Minggu 1)	Negative Ranks	7 ^a	12.86	90.00
	Positive Ranks	16 ^b	11.63	186.00
	Ties	0 ^c		
	Total	23		

- a. Perlakuan (Minggu 4) < Kontrol (Minggu 1)
- b. Perlakuan (Minggu 4) > Kontrol (Minggu 1)
- c. Perlakuan (Minggu 4) = Kontrol (Minggu 1)

Test Statistics^a

Perlakuan (Minggu 4) – Kontrol (Minggu 1)	Z	-1.460 ^b
Asymp. Sig. (2-tailed)		.144

- a. Wilcoxon Signed Ranks Test
- b. Based on negative ranks.

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Kontrol (Minggu 1)	.267	23	.000	.720	23	.000
Perlakuan (Minggu 4)	.115	23	.200*	.963	23	.520

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

a. Lilliefors Significance Correction

Descriptives

		Statistic	Std. Error
Kontrol (Minggu 1)	Mean	26.6696	1.64325
	95% Confidence Interval for Mean	Lower Bound Upper Bound	23.2617 30.0774
	5% Trimmed Mean	26.3343	
	Median	25.8000	
	Variance	62.106	
	Std. Deviation	7.88073	
	Minimum	14.80	
	Maximum	45.80	
	Range	31.00	
	Interquartile Range	12.10	
	Skewness	.489	.481
	Kurtosis	-.159	.935

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Kontrol (Minggu 1)	.128	23	.200*	.954	23	.355

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

a. Lilliefors Significance Correction

Case Processing Summary

	Valid		Cases		Total	
	N	Percent	N	Percent	N	Percent
Kontrol (Minggu 1)	23	100.0%	0	0.0%	23	100.0%

Descriptives

Kontrol (Minggu 1)			Statistic	Std. Error
		Mean	27.9130	1.45391
	95% Confidence Interval for Mean	Lower Bound	24.8978	
		Upper Bound	30.9283	
	5% Trimmed Mean		27.5947	
	Median		27.3000	
	Variance		48.618	
	Std. Deviation		6.97269	
	Minimum		18.90	
	Maximum		43.40	
	Range		24.50	
	Interquartile Range		14.00	
	Skewness		.464	.481
	Kurtosis		-.748	.935

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Kontrol (Minggu 1)	.133	23	.200*	.935	23	.144

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

a. Lilliefors Significance Correction

T-Test

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Kontrol (Minggu 1)	26.6696	23	7.88073	1.64325
	Perlakuan (Minggu 4)	22.2609	23	5.00416	1.04344
TEWL kiri	Kontrol (Minggu 1)	27.9130	23	6.97269	1.45391
	Perlakuan (Minggu 4)	18.3070	23	3.90352	.81394

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Kontrol (Minggu 1) & Perlakuan (Minggu 4)	23	.434	.038
Pair 2 Kontrol (Minggu 1) & Perlakuan (Minggu 4)	23	.421	.045

Paired Samples Test

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pair 1 Kontrol (Minggu 1) – Perlakuan (Minggu 4)	4.40870	7.27236	1.51639	1.26389	7.55350	2.907	22	.008
Pair 2 Kontrol (Minggu 1) – Perlakuan (Minggu 4)	9.60609	6.39629	1.33372	6.84013	12.37205	7.202	22	.000

T-Test

[DataSet0] /Users/thomasutomo/Downloads/drFarahspss/T test tidak berpasangan tewl m4.sav

Group Statistics

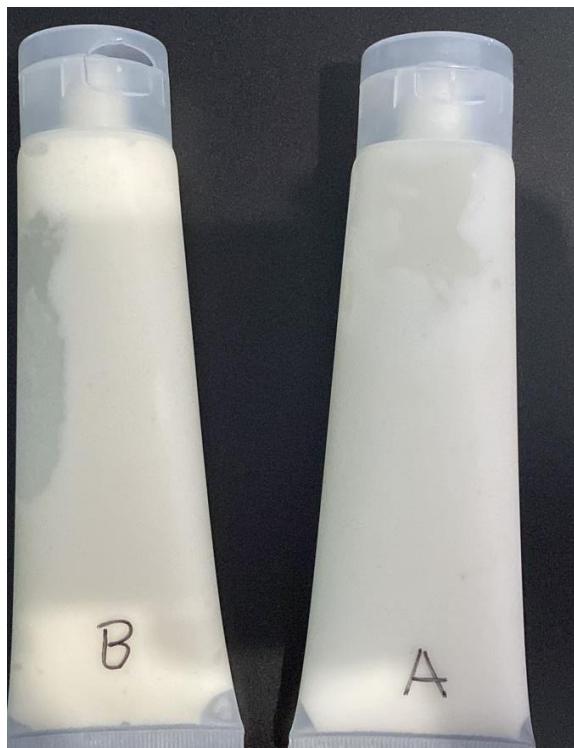
	perlakuan	N	Mean	Std. Deviation	Std. Error Mean
TEWL Minggu 4	Kontrol Minggu 4	23	22.2609	5.00416	1.04344
	Perlakuan Minggu 4	23	18.3070	3.90352	.81394

Independent Samples Test

	Levene's Test for Equality of Variances			t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
TEWL Minggu 4	Equal variances assumed	2.391	.129	2.988	44	.005	3.95391	1.32335	1.28687	6.62096
				2.988	41.539	.005	3.95391	1.32335	1.28240	6.62543

Lampiran 4. Alat dan Bahan

Lotion *Lactobacillus plantarum* dan lotion kontrol



Enzyme-Linked Immunosorbent Assay (ELISA) Kit Interleukin-10

