

DAFTAR PUSTAKA

- Abdulla, M., Al-Shamma., Abdulla., Alhijazi., Athraa., Hasan., Dhuha., 2020. Effect of Application of BMP2/TGF β 1 in Traumatic Pulp of Osteoporotic Rat. 10.31838/srp.2020.6.111. DOI: 10.31838/srp.2020.6.111.
- Aksel, H., Öztürk, Ş., Serper, A., Ulubayram., K., 2018. VEGF/BMP-2 loaded three-dimensional model for enhanced angiogenic and odontogenic potential of dental pulp stem cells. *International endodontic journal*, 51(4), 420–430. <https://doi.org/10.1111/iej.12869>.
- Arandi, N. Z., & Thabet, M., 2021. Minimal Intervention in Dentistry: A Literature Review on Biodentine as a Bioactive Pulp Capping Material. *BioMed research international*, 2021, 5569313. <https://doi.org/10.1155/2021/5569313>.
- Aryal, Y. P., Yeon, C. Y., Kim, T. Y., Lee, E. S., Sung, S., Pokharel, E., Kim, J. Y., Choi, S. Y., Yamamoto, H., Sohn, W. J., Lee, Y., An, S. Y., An, C. H., Jung, J. K., Ha, J. H., & Kim, J. Y., 2021. Facilitating Reparative Dentin Formation Using Apigenin Local Delivery in the Exposed Pulp Cavity. *Frontiers in physiology*, 12, 773878. <https://doi.org/10.3389/fphys.2021.77387>.
- Asmawati, A., 2017. Identification of inorganic compounds in eggshell as a dental remineralization material. *Journal of Dentomaxillofacial Science*, 2(3), 168–171. <https://doi.org/10.15562/jdmfs.v2i3.622>.
- Bjørndal, L., Simon, S., Tomson, P. L., & Duncan, H. F., 2019. Management of deep caries and the exposed pulp. *International endodontic journal*, 52(7), 949–973. <https://doi.org/10.1111/iej.13128>.
- Boushell LW., Sturdevant JR., 2019. Clinical Significance of Dental Anatomy, Histology, Physiology, and Occlusion. In Ritter AV., Boushell WL, (Ed), Walter R, Sturdevant's Art and Science of Operative Dentistry. Elsevier Inc. Pp. 6-9.
- Chakka, L., Vislisel, J., Vidal, C., Biz, M. T., K Salem, A., & Cavalcanti, B. N., 2020. Application of BMP-2/FGF-2 gene-activated scaffolds for dental pulp capping. *Clinical oral investigations*, 24(12), 4427–4437. <https://doi.org/10.1007/s00784-020-03308-2>.
- Cushley, S., Duncan, H. F., Lappin, M. J., Chua, P., Elamin, A. D., Clarke, M., & El-Karim, I. A., 2021. Efficacy of direct pulp capping for management of cariously exposed pulps in permanent teeth: a systematic review and meta-analysis. *International endodontic journal*, 54(4), 556–571. <https://doi.org/10.1111/iej.13449>.

- da Rosa, W., Piva, E., & da Silva, A. F., 2018. Disclosing the physiology of pulp tissue for vital pulp therapy. *International endodontic journal*, 51(8), 829–846. <https://doi.org/10.1111/iej.12906>.
- Dimitrova-Nakov, S., Baudry, A., Harichane, Y., Kellermann, O., Goldberg, M., & Dr ès Sciences Naturelles., 2014. Pulp stem cells: implication in reparative dentin formation. *Journal of endodontics*, 40(4 Suppl), S13–S18. <https://doi.org/10.1016/j.joen.2014.01.011>.
- Duncan HF., Yamauchi Yukako ., 2019. Current and Future Views on Pulp Exposure Management and Epigenetic Influences. In Duncan HF, Cooper PR, (Ed), *Clinical Approaches in Endodontic Regeneration*. Springer Nature Switzerland AG 2019. Pp. 55-65.
- Elbahrawy., Eman., El Dosoky, Ahmed., 2019. Remineralization Potential of Chicken Eggshell Powder in The Treatment of Artificially Induced Enamel Carious lesion in Permanent Teeth. *Egyptian Dental Journal*. 65. 3581-3593. 10.21608/edj.2019.75976.
- Fristad I., Berggreen E., 2020. Structure and functions of the dentin-pulp complex. In Berman LH, Hargreaves KM, (Ed), *Cohen's Pathways of the Pulp* 12thed. Elsevier 2020. Pp. 1683-1708.
- Galler, K. M., Weber, M., Korkmaz, Y., Widbiller, M., & Feuerer, M., 2021. Inflammatory Response Mechanisms of the Dentine-Pulp Complex and the Periapical Tissues. *International journal of molecular sciences*, 22(3), 1480. <https://doi.org/10.3390/ijms22031480>.
- Goldberg, M., & Smith, A. J., 2004. Cells and extracellular matrices of dentin and pulp: a biological basis for repair and tissue engineering. *Critical reviews in oral biology and medicine : an official publication of the American Association of Oral Biologists*, 15(1), 13–27. <https://doi.org/10.1177/154411130401500103>.
- Hanna, S. N., Perez Alfayate, R., & Prichard, J., 2020. Vital Pulp Therapy an Insight Over the Available Literature and Future Expectations. *European endodontic journal*, 5(1), 46–53. <https://doi.org/10.14744/eej.2019.44154>.
- Hincke, M. T., Nys, Y., Gautron, J., Mann, K., Rodriguez-Navarro, A. B., & McKee, M. D., 2012. The eggshell: structure, composition and mineralization. *Frontiers in bioscience (Landmark edition)*, 17(4), 1266–1280. <https://doi.org/10.2741/3985>.
- <http://www.badankebijakan.kemkes.go.id/kemenkes-dorong-indonesia-mandiri-produksi-bahan-baku-obat-dalam-negeri/>.
- Iohara, K., Nakashima, M., Ito, M., Ishikawa, M., Nakasima, A., & Akamine, A., 2004. Dentin regeneration by dental pulp stem cell therapy with recombinant human bone morphogenetic protein 2. *Journal of dental research*, 83(8), 590–595. <https://doi.org/10.1177/154405910408300802>.

- Kang, K. J., Ryu, C. J., Jang, Y. J., 2019. Identification of dentinogenic cell-specific surface antigens in odontoblast-like cells derived from adult dental pulp. *Stem cell research & therapy*, 10(1), 128. <https://doi.org/10.1186/s13287-019-1232-y>.
- Kleinert, A., Kleinert, L., Ozimirska, M., & Chałas, R. (2018). Endodontium - together or separately?. *Folia morphologica*, 77(3), 409–415. <https://doi.org/10.5603/FM.a2018.0008>.
- Liu, M., Goldman, G., MacDougall, M., & Chen, S., 2022. BMP Signaling Pathway in Dentin Development and Diseases. *Cells*, 11(14), 2216. <https://doi.org/10.3390/cells11142216>.
- Machla, F., Angelopoulos, I., Epple, M., Chatzinikolaidou, M., Bakopoulou, A., 2022. Biomolecule-Mediated Therapeutics of the Dentin-Pulp Complex: A Systematic Review. *Biomolecules*, 12(2), 285. <https://doi.org/10.3390/biom12020285>.
- Malik, Z., Alexiou, M., Hallgrimsson, B., Economides, A. N., Luder, H. U., Graf, D., 2018. Bone Morphogenetic Protein 2 Coordinates Early Tooth Mineralization. *Journal of dental research*, 97(7), 835–843. <https://doi.org/10.1177/0022034518758044>.
- Murray EP, Godoy GF., 2012. Stem Cells and Regeneration of the Pulpodentin Complex. In: Hargreaves MK, Goodis EH, Tay RF S, (Ed), Seltzer and Bender's Dental Pulp 2th ed. Quintessence Publishing Co, Inc. Chicago, USA. pp. 97.
- Njeh, A., Uzunoğlu Özyürek., Emel., Ardila-Osorio., Hector., Simon., et al., 2016. Reactionary and reparative dentin formation after pulp capping: Hydrogel vs. Dycal. *Evidence-Based Endodontics*. 1. 10.1186/s41121-016-0003-9.
- Ni SL, Zhang J, Liu X, Li XW, Sun YJ, Zhang X, Wang L, Lu JJ, Cui Y, Zheng CY, Han B, Sun HC. Effects of human bone morphogenetic protein 2 (hBMP2) on tertiary dentin formation. *Am J Transl Res*. 2018 Sep 15;10(9):2868-2876. PMID: 30323873; PMCID: PMC6176225.
- Peters OA., Paranjpe A., Gaudin A., 2021. Dentine–Pulp Complex Regeneration. In Hosseinpour Sepanta, Walsh J Laurenca, Moharamzadeh Keyvan. *Regenerative Approach in Dentistry*. Switzerland: Springer Nature. pp. 35-51.
- Reddy., Suravarapu., Prasad., Madu., Ambati., Naga., et al., 2020. Clinical Comparison of Eggshell Derived Calcium Hydroxyapatite with Dycal ® as Indirect Pulp Capping Agents in Primary Molars. *Pesquisa Brasileira em Odontopediatria e Clínica Integrada*. 20. 1-9. 10.1590/pboci.2020.151.
- Ricucci, D., Siqueira, J. F., Jr, Li, Y., Tay, F. R., 2019. Vital pulp therapy: histopathology and histobacteriology-based guidelines to treat teeth with

- deep caries and pulp exposure. *Journal of dentistry*, 86, 41–52.
<https://doi.org/10.1016/j.jdent.2019.05.022>.
- Simon S., 2021. Vital Pulp Therapy. In Plotin G. (Ed.), *Minimally Invasive Approaches in Endodontic Practice*. Springer Nature Switzerland, Rome. Pp. 33-36.
- Simon, S., Smith, A.J., Lumley, P.J., Cooper, P.R., Berdal, A., 2012, The pulp healing process: from generation to regeneration. *Endod Topics*, 26: 41-56. <https://doi.org/10.1111/etp.12019>.
- Salah M., Kataia., Mohamed., Kataia., Engy., Din., Enas., Essa.,Mona., 2018. Evaluation of eggshell powder as an experimental direct pulp capping material. *Future Dental Journal*. 4. 10.1016/j.fdj.2018.05.008. <https://doi.org/10.1016/j.fdj.2018.05.008>.
- Siqueira JF., Rôças IN., 2022. *Treatment of Endodontic Infections* 2th ed. Quintessenz Verlags-GmbH, Berlin, Germany. Pp. 772-6.
- Tóth, F., Gáll, J. M., Tózsér, J., & Hegedűs, C., 2020. Effect of inducible bone morphogenetic protein 2 expression on the osteogenic differentiation of dental pulp stem cells in vitro. *Bone*, 132, 115214. <https://doi.org/10.1016/j.bone.2019.115214>.
- Tjäderhane L., Paju S., 2020. Dentin-Pulp and Periodontal Anatomy and Physiology. In Orstavik Dag, (Ed), *Essential Endodontology Prevention and Treatment of Apical Periodontitis*. 3thed. John Wiley; Oslo, Norway. pp. 11-12.
- Tomson PL., Dunchan HF., 2021. Pulp Capping Materials for the Maintenance of Pulp Vitality. In Josette Camilleri. (Ed), *Endodontic Materials in Clinical Practice*. John Wiley & Sons Ltd, Birmingham, UK. Pp. 16-23.
- Tóth, F., Gáll, J. M., Tózsér, J., Hegedűs, C., 2020. Effect of inducible bone morphogenetic protein 2 expression on the osteogenic differentiation of dental pulp stem cells in vitro. *Bone*, 132, 115214. <https://doi.org/10.1016/j.bone.2019.115214>.
- Tziafas D., 2019. Characterization of Odontoblast-like Cell Phenotype and Reparative Dentin Formation In Vivo: A Comprehensive Literature Review. *Journal of endodontics*, 45(3), 241–249. <https://doi.org/10.1016/j.joen.2018.12.002>.
- Yokoyama A., Yamaji K., Ohara N., Matsuzaki K., Shimada Y., Yoshiyama M., 2019. Effects of Direct Pulp Capping on Hard Tissue Formation by Using Alginate Gel Containing, *Journal of Oral Tissue Engineering* 17(2), 53-8. <https://doi.org/10.11223/jarde.17.53>.
- Zhang, W., Zhang, X., Li, J., Zheng, J., Hu, X., Xu, M., Mao, X., & Ling, J., 2018. Foxc2 and BMP2 Induce Osteogenic/Odontogenic Differentiation and

- Mineralization of Human Stem Cells from Apical Papilla. *Stem cells international*, 2018, 2363917. <https://doi.org/10.1155/2018/2363917>.
- Wahyuwardani, S., Noor, S.M., Bakrie B. 2020. Animal Welfare Ethics in Research and Testing: Implementation and its Barrier. *Wartazoa*. 30(4): 211-220 <https://doi.org/10.14334/wartazoa.v30i4.2529>.
- Edahwati, L., Sutiyono., Hutugalung R.N., Nukhuf S.R.Z. 2022. Synthesis of Calcium Phosphate from Boiler Egg Shells as Raw Material for Hydroxyapatite. 3rd International Conference Eco-Innovation in Science, Engineering, and Technology. *NST Proceedings*. Pp 108-113. <https://doi:10.11594/nstp.2022.2718>.
- Sangwan, P., Sangwan, A., Duhan, J., Rohilla, A. Tertiary dentinogenesis with calcium hydroxide: A review of proposed mechanisms. *International Endodontic Journal*, 46: 3–19. <https://doi:10.1111/j.1365-2591.2012.02101.x>
- Salem, R.M., Zhang C., Chou L. 2021. Effect of Magnesium on Dentinogenesis of Human Dental Pulp Cells. *International Journal of Biomaterials*. <https://doi.org/10.1155/2021/6567455>
- Andre, M., Vacar, R.P., Coricovac, A., Ilinca, R., Didilescu, A.C. Demetrescu I. 2021. The Effect of Calcium-Silicate Cements on Reparative Dentinogenesis Following Direct Pulp Capping on Animal Models. *Molecules*. 26, 2725. <https://doi.org/10.3390/molecules26092725>

LAMPIRAN

Lampiran 1. Surat Rekomendasi Persetujuan Komisi Etik



REKOMENDASI PERETUJUAN ETIK

Nomor: 0023/PL.09/KEPK-FKG-RSGM UNHAS/2023

Tanggal: 06 Februari 2023

Dengan ini menyatakan bahwa protokol dan dokumen yang berhubungan dengan protokol berikut ini telah mendapatkan persetujuan etik:

No. Protokol	UH 17120762	No Protokol Sponsor	
Peneliti Utama	drg. Imara Binti Qaf	Sponsor	Pribadi
Judul Peneliti	Eksresi <i>Bone Morphogenetic Protein-2 (BMP2)</i> setelah Aplikasi Pasta Cangkang Telur Ayam Ras (<i>Gallus Sp</i>) pada Pulpa Gigi Kelinci (<i>Oryctolagus Cuniculus</i>) yang Terinflamasi		
No. Versi Protokol	1	Tanggal Versi	24 Januari 2023
No. Versi Protokol		Tanggal Versi	
Tempat Penelitian	<ol style="list-style-type: none"> Laboratorium STIPA Makassar. Klinik Kedokteran Hewan fakultaskedokteran Universitas Hasanuddin Makassar. Laboratorium Dental Fakultas Kedokteran Gigi Universitas Hasanuddin Makassar. Laboratorium Patologi Anatomi Rumah Sakit Pendidikan Universitas Hasanuddin Makassar. Laboratorium Biokimia Biomolekuler Fakultas Kedokteran Universitas Brawijaya Malang. 		
Dokumen Lain			
Jenis Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard	Masa Berlaku 06 Februari 2023-06 Februari 2024	Frekuensi Review Lanjutan
Ketua Komisi Etik Penelitian	Nama: Dr. drg. Marhamah, M.Kes	Tanda Tangan 	Tanggal
Sekretaris Komisi Etik Penelitian	Nama: drg. Muhammad Iqbal, Sp.Prod	Tanda Tangan 	Tanggal

Kewajiban peneliti utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum diimplementasikan
- 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 aturan yang berlaku.

Lampiran 2. Hasil analisis uji statistik menggunakan *SPSS 24 for windows*

```
ONEWAY BMP2 BY KELOMPOK
/STATISTICS DESCRIPTIVES HOMOGENEITY
/MISSING ANALYSIS
/POSTHOC=TUKEY ALPHA(0.05).
```

Oneway

		Notes
Output Created		15-JUN-2022 13:36:56
Comments		
Input	Data	C:\Users\Panasonic\Documents\DATA RAHMI.sav
	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	48
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY BMP2 BY KELOMPOK /STATISTICS DESCRIPTIVES HOMOGENEITY /MISSING ANALYSIS /POSTHOC=TUKEY ALPHA(0.05).
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	Elapsed Time	00:00:00,11

[DataSet0] C:\Users\Panasonic\Documents\DATA RAHMI.sav

Descriptives

BMP2

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
K - (3)	3	6,67	2,082	1,202	1,50	11,84	5	9
K + (3)	3	3,67	1,155	,667	,80	6,54	3	5
P1 (3)	3	4,67	1,155	,667	1,80	7,54	4	6
P2 (3)	3	6,00	1,000	,577	3,52	8,48	5	7
K - (7)	3	7,33	1,528	,882	3,54	11,13	6	9
K + (7)	3	4,33	1,528	,882	,54	8,13	3	6
P1 (7)	3	8,00	1,000	,577	5,52	10,48	7	9
P2 (7)	3	9,00	2,000	1,155	4,03	13,97	7	11
K - (14)	3	7,00	1,000	,577	4,52	9,48	6	8
K + (14)	3	5,00	1,732	1,000	,70	9,30	4	7
P1 (14)	3	10,67	2,082	1,202	5,50	15,84	9	13
P2 (14)	3	12,00	2,000	1,155	7,03	16,97	10	14
K - (21)	3	8,00	1,000	,577	5,52	10,48	7	9
K+ (21)	3	5,33	1,528	,882	1,54	9,13	4	7
P1 (21)	3	12,00	2,646	1,528	5,43	18,57	10	15
P2 (21)	3	13,00	1,000	,577	10,52	15,48	12	14
Total	48	7,67	3,171	,458	6,75	8,59	3	15

Test of Homogeneity of Variances

BMP2

Levene Statistic	df1	df2	Sig.
,877	15	32	,593

ANOVA

BMP2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	390,000	15	26,000	10,065	,000
Within Groups	82,667	32	2,583		
Total	472,667	47			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: BMP2

Tukey HSD

(I) KELOMPOK	(J) KELOMPOK	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
K - (3)	K + (3)	3,000	1,312	,635	-1,87	7,87
	P1 (3)	2,000	1,312	,971	-2,87	6,87
	P2 (3)	,667	1,312	1,000	-4,20	5,53
	K - (7)	-,667	1,312	1,000	-5,53	4,20
	K + (7)	2,333	1,312	,907	-2,53	7,20
	P1 (7)	-1,333	1,312	,999	-6,20	3,53
	P2 (7)	-2,333	1,312	,907	-7,20	2,53
	K - (14)	-,333	1,312	1,000	-5,20	4,53
	K + (14)	1,667	1,312	,994	-3,20	6,53
	P1 (14)	-4,000	1,312	,205	-8,87	,87
	P2 (14)	-5,333*	1,312	,021	-10,20	-,47
	K - (21)	-1,333	1,312	,999	-6,20	3,53
	K+ (21)	1,333	1,312	,999	-3,53	6,20
	P1 (21)	-5,333*	1,312	,021	-10,20	-,47
	P2 (21)	-6,333*	1,312	,003	-11,20	-1,47
K + (3)	K - (3)	-3,000	1,312	,635	-7,87	1,87
	P1 (3)	-1,000	1,312	1,000	-5,87	3,87
	P2 (3)	-2,333	1,312	,907	-7,20	2,53
	K - (7)	-3,667	1,312	,321	-8,53	1,20
	K + (7)	-,667	1,312	1,000	-5,53	4,20
	P1 (7)	-4,333	1,312	,124	-9,20	,53
	P2 (7)	-5,333*	1,312	,021	-10,20	-,47
	K - (14)	-3,333	1,312	,470	-8,20	1,53
	K + (14)	-1,333	1,312	,999	-6,20	3,53
	P1 (14)	-7,000*	1,312	,001	-11,87	-2,13
	P2 (14)	-8,333*	1,312	,000	-13,20	-3,47
	K - (21)	-4,333	1,312	,124	-9,20	,53
	K+ (21)	-1,667	1,312	,994	-6,53	3,20
	P1 (21)	-8,333*	1,312	,000	-13,20	-3,47
	P2 (21)	-9,333*	1,312	,000	-14,20	-4,47

	K - (3)	-2,000	1,312	,971	-6,87	2,87
	K + (3)	1,000	1,312	1,000	-3,87	5,87
	P2 (3)	-1,333	1,312	,999	-6,20	3,53
	K - (7)	-2,667	1,312	,791	-7,53	2,20
	K + (7)	,333	1,312	1,000	-4,53	5,20
	P1 (7)	-3,333	1,312	,470	-8,20	1,53
	P2 (7)	-4,333	1,312	,124	-9,20	,53
P1 (3)	K - (14)	-2,333	1,312	,907	-7,20	2,53
	K + (14)	-,333	1,312	1,000	-5,20	4,53
	P1 (14)	-6,000*	1,312	,006	-10,87	-1,13
	P2 (14)	-7,333*	1,312	,000	-12,20	-2,47
	K - (21)	-3,333	1,312	,470	-8,20	1,53
	K+ (21)	-,667	1,312	1,000	-5,53	4,20
	P1 (21)	-7,333*	1,312	,000	-12,20	-2,47
	P2 (21)	-8,333*	1,312	,000	-13,20	-3,47
	K - (3)	-,667	1,312	1,000	-5,53	4,20
	K + (3)	2,333	1,312	,907	-2,53	7,20
	P1 (3)	1,333	1,312	,999	-3,53	6,20
	K - (7)	-1,333	1,312	,999	-6,20	3,53
	K + (7)	1,667	1,312	,994	-3,20	6,53
	P1 (7)	-2,000	1,312	,971	-6,87	2,87
	P2 (7)	-3,000	1,312	,635	-7,87	1,87
P2 (3)	K - (14)	-1,000	1,312	1,000	-5,87	3,87
	K + (14)	1,000	1,312	1,000	-3,87	5,87
	P1 (14)	-4,667	1,312	,071	-9,53	,20
	P2 (14)	-6,000*	1,312	,006	-10,87	-1,13
	K - (21)	-2,000	1,312	,971	-6,87	2,87
	K+ (21)	,667	1,312	1,000	-4,20	5,53
	P1 (21)	-6,000*	1,312	,006	-10,87	-1,13
	P2 (21)	-7,000*	1,312	,001	-11,87	-2,13
	K - (3)	,667	1,312	1,000	-4,20	5,53
	K + (3)	3,667	1,312	,321	-1,20	8,53
	P1 (3)	2,667	1,312	,791	-2,20	7,53
	P2 (3)	1,333	1,312	,999	-3,53	6,20
	K + (7)	3,000	1,312	,635	-1,87	7,87
K - (7)	P1 (7)	-,667	1,312	1,000	-5,53	4,20
	P2 (7)	-1,667	1,312	,994	-6,53	3,20
	K - (14)	,333	1,312	1,000	-4,53	5,20
	K + (14)	2,333	1,312	,907	-2,53	7,20
	P1 (14)	-3,333	1,312	,470	-8,20	1,53

	P2 (14)	-4,667	1,312	,071	-9,53	,20
	K - (21)	-,667	1,312	1,000	-5,53	4,20
	K+ (21)	2,000	1,312	,971	-2,87	6,87
	P1 (21)	-4,667	1,312	,071	-9,53	,20
	P2 (21)	-5,667*	1,312	,011	-10,53	-,80
	K - (3)	-2,333	1,312	,907	-7,20	2,53
	K + (3)	,667	1,312	1,000	-4,20	5,53
	P1 (3)	-,333	1,312	1,000	-5,20	4,53
	P2 (3)	-1,667	1,312	,994	-6,53	3,20
	K - (7)	-3,000	1,312	,635	-7,87	1,87
	P1 (7)	-3,667	1,312	,321	-8,53	1,20
	P2 (7)	-4,667	1,312	,071	-9,53	,20
K + (7)	K - (14)	-2,667	1,312	,791	-7,53	2,20
	K + (14)	-,667	1,312	1,000	-5,53	4,20
	P1 (14)	-6,333*	1,312	,003	-11,20	-1,47
	P2 (14)	-7,667*	1,312	,000	-12,53	-2,80
	K - (21)	-3,667	1,312	,321	-8,53	1,20
	K+ (21)	-1,000	1,312	1,000	-5,87	3,87
	P1 (21)	-7,667*	1,312	,000	-12,53	-2,80
	P2 (21)	-8,667*	1,312	,000	-13,53	-3,80
	K - (3)	1,333	1,312	,999	-3,53	6,20
	K + (3)	4,333	1,312	,124	-,53	9,20
	P1 (3)	3,333	1,312	,470	-1,53	8,20
	P2 (3)	2,000	1,312	,971	-2,87	6,87
	K - (7)	,667	1,312	1,000	-4,20	5,53
	K + (7)	3,667	1,312	,321	-1,20	8,53
	P2 (7)	-1,000	1,312	1,000	-5,87	3,87
P1 (7)	K - (14)	1,000	1,312	1,000	-3,87	5,87
	K + (14)	3,000	1,312	,635	-1,87	7,87
	P1 (14)	-2,667	1,312	,791	-7,53	2,20
	P2 (14)	-4,000	1,312	,205	-8,87	,87
	K - (21)	,000	1,312	1,000	-4,87	4,87
	K+ (21)	2,667	1,312	,791	-2,20	7,53
	P1 (21)	-4,000	1,312	,205	-8,87	,87
	P2 (21)	-5,000*	1,312	,039	-9,87	-,13
	K - (3)	2,333	1,312	,907	-2,53	7,20
	K + (3)	5,333*	1,312	,021	,47	10,20
P2 (7)	P1 (3)	4,333	1,312	,124	-,53	9,20
	P2 (3)	3,000	1,312	,635	-1,87	7,87
	K - (7)	1,667	1,312	,994	-3,20	6,53

	K + (7)	4,667	1,312	,071	-,20	9,53
	P1 (7)	1,000	1,312	1,000	-3,87	5,87
	K - (14)	2,000	1,312	,971	-2,87	6,87
	K + (14)	4,000	1,312	,205	-,87	8,87
	P1 (14)	-1,667	1,312	,994	-6,53	3,20
	P2 (14)	-3,000	1,312	,635	-7,87	1,87
	K - (21)	1,000	1,312	1,000	-3,87	5,87
	K+ (21)	3,667	1,312	,321	-1,20	8,53
	P1 (21)	-3,000	1,312	,635	-7,87	1,87
	P2 (21)	-4,000	1,312	,205	-8,87	,87
	K - (3)	,333	1,312	1,000	-4,53	5,20
	K + (3)	3,333	1,312	,470	-1,53	8,20
	P1 (3)	2,333	1,312	,907	-2,53	7,20
	P2 (3)	1,000	1,312	1,000	-3,87	5,87
	K - (7)	-,333	1,312	1,000	-5,20	4,53
	K + (7)	2,667	1,312	,791	-2,20	7,53
	P1 (7)	-1,000	1,312	1,000	-5,87	3,87
K - (14)	P2 (7)	-2,000	1,312	,971	-6,87	2,87
	K + (14)	2,000	1,312	,971	-2,87	6,87
	P1 (14)	-3,667	1,312	,321	-8,53	1,20
	P2 (14)	-5,000*	1,312	,039	-9,87	-,13
	K - (21)	-1,000	1,312	1,000	-5,87	3,87
	K+ (21)	1,667	1,312	,994	-3,20	6,53
	P1 (21)	-5,000*	1,312	,039	-9,87	-,13
	P2 (21)	-6,000*	1,312	,006	-10,87	-1,13
	K - (3)	-1,667	1,312	,994	-6,53	3,20
	K + (3)	1,333	1,312	,999	-3,53	6,20
	P1 (3)	,333	1,312	1,000	-4,53	5,20
	P2 (3)	-1,000	1,312	1,000	-5,87	3,87
	K - (7)	-2,333	1,312	,907	-7,20	2,53
	K + (7)	,667	1,312	1,000	-4,20	5,53
	P1 (7)	-3,000	1,312	,635	-7,87	1,87
K + (14)	P2 (7)	-4,000	1,312	,205	-8,87	,87
	K - (14)	-2,000	1,312	,971	-6,87	2,87
	P1 (14)	-5,667*	1,312	,011	-10,53	-,80
	P2 (14)	-7,000*	1,312	,001	-11,87	-2,13
	K - (21)	-3,000	1,312	,635	-7,87	1,87
	K+ (21)	-,333	1,312	1,000	-5,20	4,53
	P1 (21)	-7,000*	1,312	,001	-11,87	-2,13
	P2 (21)	-8,000*	1,312	,000	-12,87	-3,13

	K - (3)	4,000	1,312	,205	-,87	8,87
	K + (3)	7,000*	1,312	,001	2,13	11,87
	P1 (3)	6,000*	1,312	,006	1,13	10,87
	P2 (3)	4,667	1,312	,071	-,20	9,53
	K - (7)	3,333	1,312	,470	-1,53	8,20
	K + (7)	6,333*	1,312	,003	1,47	11,20
	P1 (7)	2,667	1,312	,791	-2,20	7,53
P1 (14)	P2 (7)	1,667	1,312	,994	-3,20	6,53
	K - (14)	3,667	1,312	,321	-1,20	8,53
	K + (14)	5,667*	1,312	,011	,80	10,53
	P2 (14)	-1,333	1,312	,999	-6,20	3,53
	K - (21)	2,667	1,312	,791	-2,20	7,53
	K+ (21)	5,333*	1,312	,021	,47	10,20
	P1 (21)	-1,333	1,312	,999	-6,20	3,53
	P2 (21)	-2,333	1,312	,907	-7,20	2,53
	K - (3)	5,333*	1,312	,021	,47	10,20
	K + (3)	8,333*	1,312	,000	3,47	13,20
	P1 (3)	7,333*	1,312	,000	2,47	12,20
	P2 (3)	6,000*	1,312	,006	1,13	10,87
	K - (7)	4,667	1,312	,071	-,20	9,53
	K + (7)	7,667*	1,312	,000	2,80	12,53
	P1 (7)	4,000	1,312	,205	-,87	8,87
P2 (14)	P2 (7)	3,000	1,312	,635	-1,87	7,87
	K - (14)	5,000*	1,312	,039	,13	9,87
	K + (14)	7,000*	1,312	,001	2,13	11,87
	P1 (14)	1,333	1,312	,999	-3,53	6,20
	K - (21)	4,000	1,312	,205	-,87	8,87
	K+ (21)	6,667*	1,312	,001	1,80	11,53
	P1 (21)	,000	1,312	1,000	-4,87	4,87
	P2 (21)	-1,000	1,312	1,000	-5,87	3,87
	K - (3)	1,333	1,312	,999	-3,53	6,20
	K + (3)	4,333	1,312	,124	-,53	9,20
	P1 (3)	3,333	1,312	,470	-1,53	8,20
	P2 (3)	2,000	1,312	,971	-2,87	6,87
K - (21)	K - (7)	,667	1,312	1,000	-4,20	5,53
	K + (7)	3,667	1,312	,321	-1,20	8,53
	P1 (7)	,000	1,312	1,000	-4,87	4,87
	P2 (7)	-1,000	1,312	1,000	-5,87	3,87
	K - (14)	1,000	1,312	1,000	-3,87	5,87
	K + (14)	3,000	1,312	,635	-1,87	7,87

	P1 (14)	-2,667	1,312	,791	-7,53	2,20
	P2 (14)	-4,000	1,312	,205	-8,87	,87
	K+ (21)	2,667	1,312	,791	-2,20	7,53
	P1 (21)	-4,000	1,312	,205	-8,87	,87
	P2 (21)	-5,000*	1,312	,039	-9,87	-,13
	K - (3)	-1,333	1,312	,999	-6,20	3,53
	K + (3)	1,667	1,312	,994	-3,20	6,53
	P1 (3)	,667	1,312	1,000	-4,20	5,53
	P2 (3)	-,667	1,312	1,000	-5,53	4,20
	K - (7)	-2,000	1,312	,971	-6,87	2,87
	K + (7)	1,000	1,312	1,000	-3,87	5,87
	P1 (7)	-2,667	1,312	,791	-7,53	2,20
K+ (21)	P2 (7)	-3,667	1,312	,321	-8,53	1,20
	K - (14)	-1,667	1,312	,994	-6,53	3,20
	K + (14)	,333	1,312	1,000	-4,53	5,20
	P1 (14)	-5,333*	1,312	,021	-10,20	-,47
	P2 (14)	-6,667*	1,312	,001	-11,53	-1,80
	K - (21)	-2,667	1,312	,791	-7,53	2,20
	P1 (21)	-6,667*	1,312	,001	-11,53	-1,80
	P2 (21)	-7,667*	1,312	,000	-12,53	-2,80
	K - (3)	5,333*	1,312	,021	,47	10,20
	K + (3)	8,333*	1,312	,000	3,47	13,20
	P1 (3)	7,333*	1,312	,000	2,47	12,20
	P2 (3)	6,000*	1,312	,006	1,13	10,87
	K - (7)	4,667	1,312	,071	-,20	9,53
	K + (7)	7,667*	1,312	,000	2,80	12,53
	P1 (7)	4,000	1,312	,205	-,87	8,87
P1 (21)	P2 (7)	3,000	1,312	,635	-1,87	7,87
	K - (14)	5,000*	1,312	,039	,13	9,87
	K + (14)	7,000*	1,312	,001	2,13	11,87
	P1 (14)	1,333	1,312	,999	-3,53	6,20
	P2 (14)	,000	1,312	1,000	-4,87	4,87
	K - (21)	4,000	1,312	,205	-,87	8,87
	K+ (21)	6,667*	1,312	,001	1,80	11,53
	P2 (21)	-1,000	1,312	1,000	-5,87	3,87
	K - (3)	6,333*	1,312	,003	1,47	11,20
P2 (21)	K + (3)	9,333*	1,312	,000	4,47	14,20
	P1 (3)	8,333*	1,312	,000	3,47	13,20
	P2 (3)	7,000*	1,312	,001	2,13	11,87

K - (7)	5,667*	1,312	,011	,80	10,53
K + (7)	8,667*	1,312	,000	3,80	13,53
P1 (7)	5,000*	1,312	,039	,13	9,87
P2 (7)	4,000	1,312	,205	-,87	8,87
K - (14)	6,000*	1,312	,006	1,13	10,87
K + (14)	8,000*	1,312	,000	3,13	12,87
P1 (14)	2,333	1,312	,907	-2,53	7,20
P2 (14)	1,000	1,312	1,000	-3,87	5,87
K - (21)	5,000*	1,312	,039	,13	9,87
K+ (21)	7,667*	1,312	,000	2,80	12,53
P1 (21)	1,000	1,312	1,000	-3,87	5,87

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

Homogeneous Subsets

BMP2

Tukey HSD^a

KELOMPOK	N	Subset for alpha = 0.05				
		1	2	3	4	5
K + (3)	3	3,67				
K + (7)	3	4,33	4,33			
P1 (3)	3	4,67	4,67			
K + (14)	3	5,00	5,00			
K+ (21)	3	5,33	5,33			
P2 (3)	3	6,00	6,00	6,00		
K - (3)	3	6,67	6,67	6,67		
K - (14)	3	7,00	7,00	7,00		
K - (7)	3	7,33	7,33	7,33	7,33	
P1 (7)	3	8,00	8,00	8,00	8,00	
K - (21)	3	8,00	8,00	8,00	8,00	
P2 (7)	3		9,00	9,00	9,00	9,00
P1 (14)	3			10,67	10,67	10,67
P2 (14)	3				12,00	12,00
P1 (21)	3				12,00	12,00
P2 (21)	3					13,00
Sig.		,124	,071	,071	,071	,205

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

```

* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=KELOMPOK
MEANSD(BMP2, 1)[name="MEAN_BMP2" LOW="MEAN_BMP2_LOW"
HIGH="MEAN_BMP2_HIGH"] MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: KELOMPOK=col(source(s), name("KELOMPOK"), unit.category())
  DATA: MEAN_BMP2=col(source(s), name("MEAN_BMP2"))
  DATA: LOW=col(source(s), name("MEAN_BMP2_LOW"))
  DATA: HIGH=col(source(s), name("MEAN_BMP2_HIGH"))
  GUIDE: axis(dim(1), label("KELOMPOK"))
  GUIDE: axis(dim(2), label("Mean BMP2"))
  GUIDE: text.footnote(label("Error Bars: +/- 1 SD"))
  SCALE: cat(dim(1), include("1", "2", "3", "4", "5", "6", "7",
"8", "9", "10", "11", "12"
, "13", "14", "15", "16"))
  SCALE: linear(dim(2), include(0))
  ELEMENT: interval(position(KELOMPOK*MEAN_BMP2),
shape.interior(shape.square))
  ELEMENT:
interval(position(region.spread.range(KELOMPOK*(LOW+HIGH))),
shape.interior(shape.ibeam))
END GPL.

```

GGraph

Notes

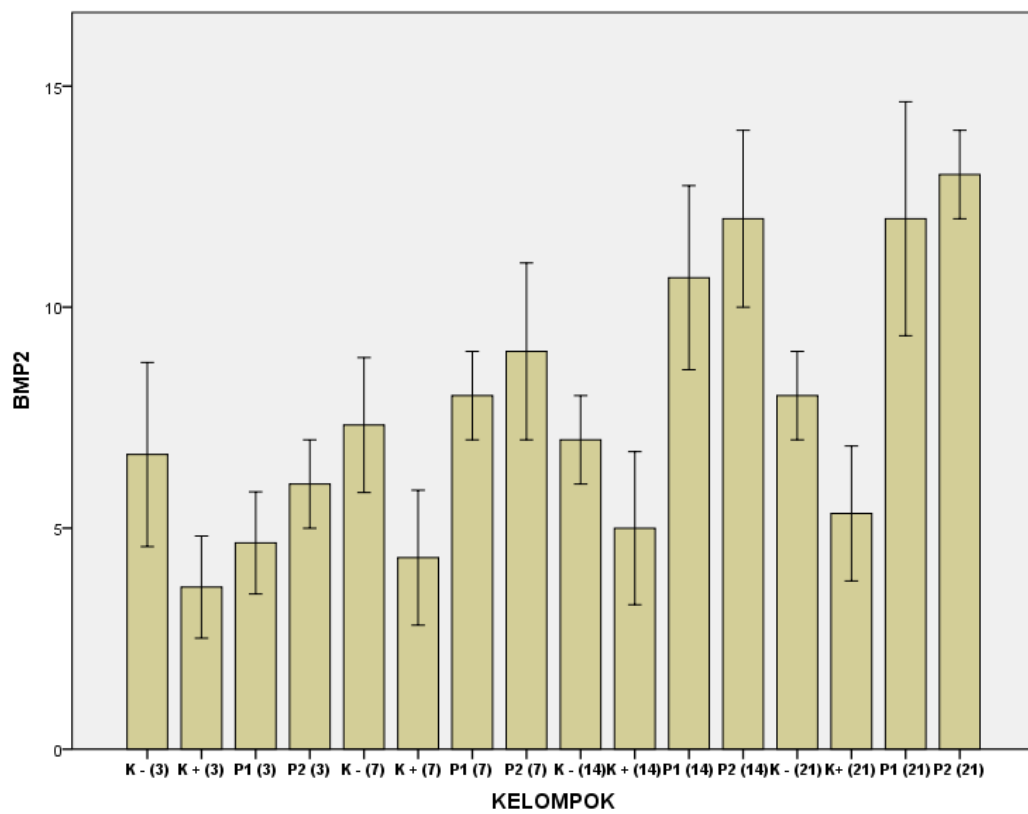
Output Created	15-JUN-2022 13:37:02
Comments	
Input	
Data	C:\Users\Panasonic\Documents\DATA
Active Dataset	RAHMI.sav
Filter	DataSet0
Weight	<none>
Split File	<none>
N of Rows in Working Data	48
File	

Syntax

```
GGRAPH
  /GRAPHDATASET
NAME="graphdataset"
VARIABLES=KELOMPOK
MEANSD(BMP2,
1)[name="MEAN_BMP2"
LOW="MEAN_BMP2_LOW"
HIGH="MEAN_BMP2_HIGH"]
MISSING=LISTWISE
REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE:
s=userSource(id("graphdataset"))
  DATA: KELOMPOK=col(source(s),
name("KELOMPOK"), unit.category())
  DATA: MEAN_BMP2=col(source(s),
name("MEAN_BMP2"))
  DATA: LOW=col(source(s),
name("MEAN_BMP2_LOW"))
  DATA: HIGH=col(source(s),
name("MEAN_BMP2_HIGH"))
  GUIDE: axis(dim(1),
label("KELOMPOK"))
  GUIDE: axis(dim(2), label("Mean
BMP2"))
  GUIDE: text.footnote(label("Error Bars:
+/- 1 SD"))
  SCALE: cat(dim(1), include("1", "2", "3",
"4", "5", "6", "7", "8", "9", "10", "11", "12"
, "13", "14", "15", "16"))
  SCALE: linear(dim(2), include(0))
  ELEMENT:
interval(position(KELOMPOK*MEAN_BM
P2), shape.interior(shape.square))
  ELEMENT:
interval(position(region.spread.range(KE
LOMPOK*(LOW+HIGH))),
shape.interior(shape.ibeam))
END GPL.
```

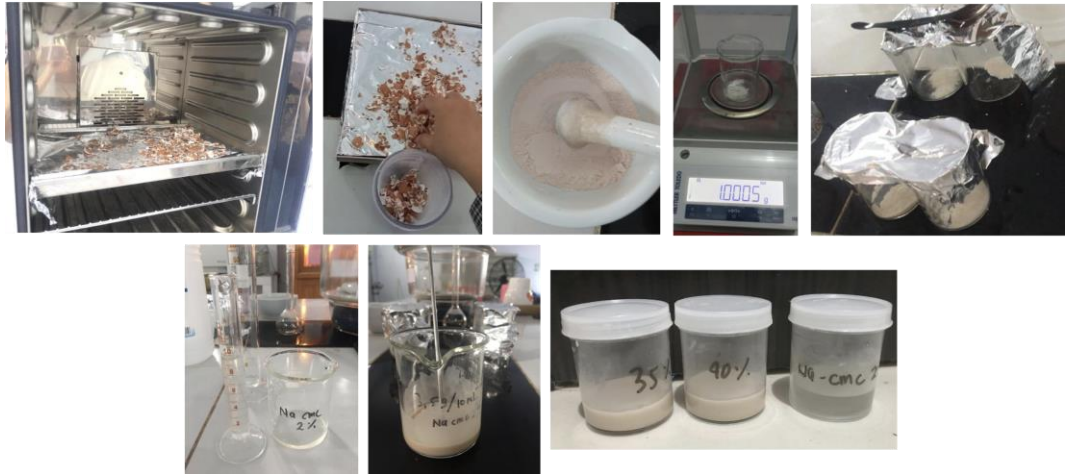
Resources	Processor Time	00:00:00,31
	Elapsed Time	00:00:00,28

[DataSet0] C:\Users\Panasonic\Documents\DATA RAHMI.sav



Lampiran 3. Dokumentasi Penelitian

a) Proses Pembuatan Sediaan Pasta Cangkang



b) Persiapan Hewan Coba Dan Aplikasi Bahan Uji Pada Pulpa Gigi Kelinci



c) Proses Persiapan untuk Pemeriksaan Imunohistokimia Pasca Perlakuan

