

DAFTAR PUSTAKA

- Alkarad, L., Alkhouli, M., & Dashash, M. (2023). Remineralization of teeth with casein phosphopeptide-amorphous calcium phosphate: analysis of salivary pH and the rate of salivary flow. *BDJ Open*, 9(1). <https://doi.org/10.1038/s41405-023-00141-Z>.
- Amalina, R., Monica, D., Feranisa, A., Syafaat, F. Y., Sari, M., & Yusuf, Y. (2021). Pembuatan gel hidroksiapatit cangkang kerang-simping (*Amusium pleuronectes*) dan pengaruhnya setelah aplikasi di lesi white-spot email gigi. *Cakradonya Dental Journal*, 13(2), 81-87.
- Anil, A., Ibraheem, W. I., Meshni, A. A., Preethanath, R., & Anil, S. (2022). Demineralization and Remineralization Dynamics and Dental Caries. In *Dental Caries - The Selection of Restoration Methods and Restorative Materials* (pp. 2–3). Licensee IntechOpen. www.intechopen.com
- Asmawati, A., Thalib, B., Thalib, A. M., Reni, D. S., & Hasyim, R. (2018). Comparison of blood clam (*anadara granosa*) shell paste, shrimp (*litopenaeus vannamei*) shell paste and casein phosphopeptide-amorphous calcium phosphate (CPP-ACP) paste as teeth remineralization material. *Journal of Dentomaxillofacial Science*, 3(3), 162. <https://doi.org/10.15562/jdmfs.v3i3.834>
- Bhuyan, C., Saha, D., & Rabha, B. (2021). A Brief Review on Topical Gels as Drug Delivery System. *Journal of Pharmaceutical Research International*, 344–357. <https://doi.org/10.9734/jpri/2021/v33i47a33020>
- Bonsor, S. J., Fhea, B., Pearson, G. J., Lds, B., & Livingstone, C. (2013). *A Clinical Guide to Applied Dental Materials*. Elsevier Ltd.
- Bossù, M., Matassa, R., Relucenti, M., Iaculli, F., Salucci, A., Di Giorgio, G., ... & Di Carlo, S. (2020). Morpho-chemical observations of human deciduous teeth enamel in response to biomimetic toothpastes treatment. *Materials*, 13(8), 1803.
- Bramanti, I. (2019). *Pengaruh Ekstrak Bawang Putih (Allium sativum L.) sebagai Bahan Dressing Intrakanal terhadap Hasil Perawatan Saluran Akar Gigi Desidui (Kajian In vitro dan Klinis: Biokompatibilitas, Antibakteri, Antiinflamasi, Analgetik, dan Pertumbuhan Sel)* (Doctoral dissertation, Universitas Gadjah Mada).
- Butera A, Maiorani C, Gallo S, Pascadopoli M, Quintini M, Lelli M, *et al.* Biomimetic action of Zinc hydroxyapatite on remineralization of enamel and dentin: a review. *Biomimetics* [Internet]. 2023 Feb 8;8(1):71. Available from: <https://doi.org/10.3390/biomimetics8010071>.
- Combe, E. C. (2020). Dental and Maxillofacial Surgery Applications of Polymers. In *Polymeric Biomaterials* (pp. 801-854). CRC Press.
- Chen L, Al-Bayatee S, Khurshid Z, Shavandi A, Brunton P, Ratnayake J. Hydroxyapatite in Oral Care Products—A Review. *Materials* [Internet]. 2021 Aug 27;14(17):4865. Available from: <https://doi.org/10.3390/ma14174865>
- Chhabra, N., & Chhabra, A. (2018). Enhanced remineralisation of tooth enamel using casein phosphopeptide-amorphous calcium phosphate complex: A review. *Int J Clin Prev Dent*, 14(1), 1-10.
- Datta, S. D., Nirjona, A. S., Azam, M. R., & Shah, M. S. (2024). Evaluating the properties of mussel sea shell lightweight foam concrete: emphasizing

- sustainability and waste reduction. In *7th Int. Conf. Civ. Eng. Sustain. Dev. (ICCESD 2024)*, Bangladesh.
- Day, R.A., dan Underwood, A.L., 2002, Analisis Kimia Kuantitatif, ed. 4, Jakarta, Indonesia: Erlangga.
- Divyapriya, G.K., Yavagal, P.C., Veeresh, D.J., 2019, Casein Phosphopeptide-Amorphous Calcium Phosphate in Dentistry, *Int J Oral Health Sci* vol. 6:18- 25.
- Dwiandhono, I., Imam, D.N.A., Mukaromah, A., 2019, Application of Whey Extract and CPP-ACP in Enamel Surface Towards Enamel Surface Hardness After Extracoronary Bleaching, *Jurnal Kesehatan Gigi*, vol. 6(2): 93-8.
- Edahwati L, Biomej S, Biomej S, Biomej TS, Biomej SM. Analysis of pH Regulation on the Ca/P Ratio of Green Mussel Shell Hydroxyapatite using the Sol-Gel Method. *Biomedical and Mechanical Engineering Journal (BIOMEJ)* [Internet]. 2023 Nov 30;3(2):20–6. Available from: <https://doi.org/10.33005/biomej.v3i2.83>.
- Fathurrahmaniah, Islamiah, M., & Rahmaniya, N. (2024). Pemanfaatan cangkang kerang hijau (*Perna viridis*) untuk meningkatkan pH mata air. *Cakra Kimia (Indonesian E-Journal of Applied Chemistry)*, 12(1), 49-54.
- Featherstone, J.D.B. 2008. *Dental Caries: A Dynamic Disease Process*. Australian Dental Journal 2008(53): 286-291.
- Garry, A. P., Flannigan, N. L., Cooper, L., Komarov, G., Burnside, G., & Higham, S. M. (2017). A randomised controlled trial to investigate the remineralising potential of Tooth Mousse™ in orthodontic patients. *Journal of orthodontics*, 44(3), 147-156.
- Gullapalli, R. P., & Mazzitelli, C. L. (2015). Polyethylene glycols in oral and parenteral formulations—A critical review. *International Journal of Pharmaceutics*, 496(2), 219-239.
- Gutiérrez-Prieto, S. J., Fonseca, L. F., Sequeda-Castañeda, L. G., Díaz, K. J., Castañeda, L. Y., Leyva-Rojas, J. A., Salcedo-Reyes, J. C., & Acosta, A. P. (2019). Elaboration and Biocompatibility of an Eggshell-Derived Hydroxyapatite Material Modified with Si/PLGA for Bone Regeneration in Dentistry. *International Journal of Dentistry*, 2019. <https://doi.org/10.1155/2019/5949232>
- Heshmat, H., Ganjkar, M.H., Miri, Y., Fard, M.J, 2016, The Effect of Two Remineralizing Agents and Natural Saliva on Bleached Enamel Hardness, *Dent Res J*, 13(1):52-7.
- Hidayat, A.A., 2023, Pengaruh Gel Ekstrak Cangkang Kerang Hijau (*Perna viridis*) terhadap Peningkatan Kadar Kalsium Enamel Gigi Desidui, *Tesis*, Yogyakarta: Universitas Gadjah Mada.
- Imran, E., Cooper, P. R., Ratnayake, J., Ekambaram, M., & Mei, M. L. (2023). Potential Beneficial Effects of Hydroxyapatite Nanoparticles on Caries Lesions In Vitro—A Review of the Literature. In *Dentistry Journal* (Vol. 11, Issue 2). MDPI. <https://doi.org/10.3390/dj11020040>

- Imran, F., Ali, S., & Anderson, P. (2021). Dental Enamel. In *An Illustrated Guide to Oral Histology* (First, pp. 15–34). John Wiley & Sons Ltd. <https://doi.org/https://doi.org/10.1002/9781119669616.ch2>
- Ionescu, A. C., Degli Esposti, L., Iafisco, M., & Brambilla, E. (2022). Dental tissue remineralization by bioactive calcium phosphate nanoparticles formulations. *Scientific Reports*, *12*(1). <https://doi.org/10.1038/s41598-022-09787-5>.
- Ismail, R., Fitriyana, D. F., Santosa, Y. I., Nugroho, S., Hakim, A. J., Al Mulqi, M. S., ... & Bayuseno, A. P. (2021). The potential use of green mussel (*Perna Viridis*) shells for synthetic calcium carbonate polymorphs in biomaterials. *Journal of Crystal Growth*, *572*, 126282.
- Jeanny Kathleen, H., Lunardhi, C. G., & Subiyanto, A. (2017). Kemampuan bioaktif glass (novamin) dan casein peptide amorphous calcium phosphate (CPP-ACP) terhadap demineralisasi enamel. *Conservative dentistry journal*, *7*(2), 111-119.
- Kale, S., Kakodkar, P., Shetiya, S., & Abdulkader, R. (2020). Prevalence of dental caries among children aged 5–15 years from 9 countries in the Eastern Mediterranean Region: A meta-analysis. *Eastern Mediterranean Health Journal*, *26*(6), 726–735. <https://doi.org/10.26719/emhj.20.050>
- Kazemina, M., Abdi, A., Shohaimi, S., Jalali, R., Vaisi-Raygani, A., Salari, N., & Mohammadi, M. (2020). Dental caries in primary and permanent teeth in children's worldwide, 1995 to 2019: A systematic review and meta-analysis. In *Head and Face Medicine* (Vol. 16, Issue 1). BioMed Central Ltd. <https://doi.org/10.1186/s13005-020-00237-z>
- Kurihara, H., Kataumi, T., Tanase, K., Eda, K., Ikeda, H., Ogihara, T., ... & Watanabe, S. (2017). Mineral transfer between enamel and artificial saliva. *Dental, Oral and Craniofacial Research*, *3*(3), 1-4.
- Kurniawati, C., Hakim, L., & Roeswahjuni, N. (2019). Efek remineralisasi casein phosphopeptide-amorphous calcium phosphate (CPP-ACP) terhadap enamel gigi sulung. *E-Prodenta Journal of Dentistry*, *3*(2), 257-262.
- Lara-Carrillo, E., Lovera-Rojas, N., Morales-Luckie, R. A., Robles-Bermeo, N. L., García-Fabila, M. M., de la Rosa-Santillana, R., & Medina-Solís, C. E. (2018). The effects of remineralization via fluoride versus low-level laser IR810 and fluoride agents on the mineralization and microhardness of bovine dental enamel. *Applied Sciences*, *8*(1), 78.
- Lesmana, H., Sitanaya, R. I., Yunus, S. I., Septa, B., & Hadrin, N. (2022). Penggunaan Casein Phosphopeptide Amorphous Calcium Phosphate (CPP-ACP) Terhadap Perubahan pH Saliva Pada Warga Binaan Rutan Kelas IIB Kolaka Sulawesi Tenggara. *Media Kesehatan Gigi: Politeknik Kesehatan Makassar*, *21*(2), 37-43.
- Liandi, A. R., Rianom, W. H., Cahyana, A. H., Fathoni, A., & Wendari, T. P. (2024). Transforming seafood waste: Green mussel shell-derived hydroxyapatite as a catalyst for spirooxindole synthesis. *Bioresource Technology Reports*, *25*. <https://doi.org/10.1016/j.biteb.2024.101796>
- Liang, J., Peng, X., Zhou, X., Zou, J., & Cheng, L. (2020). Emerging applications of drug delivery systems in oral infectious diseases prevention and treatment.

- In *Molecules* (Vol. 25, Issue 3). MDPI AG. <https://doi.org/10.3390/molecules25030516>
- Liang, K., Wang, S., Tao, S., Xiao, S., Zhou, H., Wang, P., Cheng, L., Zhou, X., Weir, M. D., Oates, T. W., Li, J., & Xu, H. H. K. (2019). Dental remineralization via poly(amido amine) and restorative materials containing calcium phosphate nanoparticles. In *International Journal of Oral Science* (Vol. 11, Issue 2). Springer Nature. <https://doi.org/10.1038/s41368-019-0048-z>
- Lieberman, H.A., Ringer, M.M., Banker, G.S., 1996, *Pharmaceutical Dosage Form*, 2nd edition, Marcel Decker Inc., New York.
- Limeback, H., Enax, J., & Meyer, F. (2021). Biomimetic hydroxyapatite and caries prevention: a systematic review and meta-analysis. In *Can J Dent Hyg* (Vol. 55, Issue 3).
- Lippert, F. (2013). An introduction to toothpaste - its purpose, history and ingredients. In *Toothpastes* (Vol. 23, pp. 1–14). S. Karger AG. <https://doi.org/10.1159/000350456>
- Malcangi, G., Patano, A., Morolla, R., De Santis, M., Piras, F., Settanni, V., Mancini, A., Di Venere, D., Inchingolo, F., Inchingolo, A. D., Dipalma, G., & Inchingolo, A. M. (2023). Analysis of Dental Enamel Remineralization: A Systematic Review of Technique Comparisons. In *Bioengineering* (Vol. 10, Issue 4). MDPI. <https://doi.org/10.3390/bioengineering10040472>
- Meyer, F., Enax, J., Amaechi, B. T., Limeback, H., Fabritius, H. O., Ganss, B., Pawinska, M., & Paszynska, E. (2022). Hydroxyapatite as Remineralization Agent for Children's Dental Care. In *Frontiers in Dental Medicine* (Vol. 3). Frontiers Media S.A. <https://doi.org/10.3389/fdmed.2022.859560>
- Mohd Pu'ad, N. A. S., Abdul Haq, R. H., Mohd Noh, H., Abdullah, H. Z., Idris, M. I., & Lee, T. C. (2019). Synthesis method of hydroxyapatite: A review. *Materials Today: Proceedings*, 29, 233–239. <https://doi.org/10.1016/j.matpr.2020.05.536>
- Mohd Pu'ad, N. A. S., Koshy, P., Abdullah, H. Z., Idris, M. I., & Lee, T. C. (2019). Syntheses of hydroxyapatite from natural sources. In *Heliyon* (Vol. 5, Issue 5). Elsevier Ltd. <https://doi.org/10.1016/j.heliyon.2019.e01588>
- Mohd Zulfanis M, Sanusi SH. A Review on Seashells as Alternative Abrasive Agent in Toothpaste. *arnf* [Internet]. 12Dec.2023 [cited 24Aug.2024];5(2):1- . Available from: <http://www.fazpublishing.com/arnf/index.php/arnf/article/view/40>
- Mount, G. J., Hume, W. R., Ngo, H. C., & Wolff, M. S. (2016). *Preservation and restoration of tooth structure*. Oxford: Wiley Blackwell.
- Murphy JN, Schneider CM, Hawboldt K, Kerton FM. Hard to Soft: Biogenic Absorbent Sponge-like Material from Waste Mussel Shells. *Matter* [Internet]. 2020 Dec 1;3(6):2029–41. Available from: <https://doi.org/10.1016/j.matt.2020.09.022>
- Nath SJC, Fu Y, Li KC, Loho T, Loch C, Ekambaram M. A comparison of the enamel remineralisation potential of Self-Assembling Peptides. *International Dental Journal* [Internet]. 2024 Apr 1;74(2):187–94. Available from: <https://doi.org/10.1016/j.identj.2023.07.003>

- Oliveira, De Menezes, M. A. H., Torres, C. P., Gomes-Silva, J. M., Chinelatti, M. A., De Menezes, F. C. H., Palma-Dibb, R. G., & Borsatto, M. C. (2010). Microstructure and mineral composition of dental enamel of permanent and deciduous teeth. *Microscopy research and technique*, 73(5), 572-577.
- Pajor K., Pajchel L., Kolmas J. 2019. *Hydroxyapatite and Fluorapatite in Conservative Dentistry and Oral Implantology—A Review*. *Materials* 2019, 12, 2683.
- Palma, C. E., MAMON, S., RUBIN, K., Lauron, J. M. B., Layawon, G. I., Jumayao, S. K. G., ... & May, B. (2017). A comparative study in the calcium content of the shells of oyster (*Crassostea echinata*), green shell (*Perna viridis*), capiz shell (*Placuna placeta*), and nylon shell (*Callista erycina*) from Panay Island, Philippines. *IJAPBR*, 2(4), 21-27.
- Philip, N. 2018. *State of the Art Enamel Remineralization Systems The Next Frontier in Caries Management*. *Caries Res* 2019(53):284-295.
- Prihanto A, Fitriyana DF, Muryanto S, Masykur I, Ismail R, Jamari J, *et al*. Aqueous crystallization of monocalcium phosphate monohydrate with green mussel shells (*Verna piridis*) for calcium sources. *Journal of Environmental Chemical Engineering* [Internet]. 2021 Dec 1;9(6):106913. Available from: <https://doi.org/10.1016/j.jece.2021.106913>.
- Rajkumar K & Ramya R (2017) *Texbook of Oral Anatomy, Histology, Physiology, and. Tooth Morphology*. New Delhi: Wolters Kluwer.
- Rathod, H. J., & Mehta, D. P. (2015). A review on pharmaceutical gel. *International Journal of Pharmaceutical Sciences*, 1(1), 33-47.
- Revankar, V. D., Saranyan, R., Chakravarthy, Y., Manivannan, E., & Rajmohan, M. (2021). Remineralising Potential of Marine Skeletal Species-*Perna viridis* Powder Extract on Human Teeth Enamel: An In-vitro Study. *JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH*. <https://doi.org/10.7860/jcdr/2021/46096.14482>
- Rose, R. K. (2000). Effects of an anticariogenic casein phosphopeptide on calcium diffusion in streptococcal model dental plaques. *Archives of oral biology*, 45(7), 569-575.
- Saragih, A. S., Pamungkas, A., & Noviyanto, A. (2020). Synthesis of hydroxyapatite from indonesian green mussels (*Perna viridis*) via precipitation methods. In *Key Engineering Materials: Vol. 833 KEM* (pp. 199–203). Trans Tech Publications Ltd. <https://doi.org/10.4028/www.scientific.net/KEM.833.199>
- Sari, M., & Yusuf, Y. (2018). Synthesis and Characterization of Hydroxyapatite based on Green Mussel Shells (*Perna viridis*) with Calcination Temperature Variation Using the Precipitation Method. In *International Journal of Nanoelectronics and Materials* (Vol. 11, Issue 3).
- Sarna-Boś, K., Boguta, P., Skic, K., Wiącek, D., Maksymiuk, P., Sobieszcański, J., & Chałas, R. (2022). Physicochemical Properties and Surface Characteristics of Ground Human Teeth. *Molecules*, 27(18). <https://doi.org/10.3390/molecules27185852>
- Sharma, S., Mudgal, S., Thakur, K., & Gaur, R. (2019). How to calculate sample size for observational and experiential nursing research studies? *National*

- Journal of Physiology, Pharmacy and Pharmacology*, 0, 1.
<https://doi.org/10.5455/njppp.2020.10.0930717102019>
- Solikha, D. F. (2019). Penentuan kadar tembaga (II) pada sampel menggunakan Spektroskopi Serapan Atom (SSA) perkin erlmer analyst 100 metode kurva kalibrasi. *Syntax Literate; Jurnal Ilmiah Indonesia*, 4(2), 1-11
- Susetya, I. E., Basyuni, M., Desrita, Susilowati, A., & Kajita, T. (2021). Density and characteristics of green mussels (*Perna viridis*) in Percut Sei Tuan coastal, North Sumatra, Indonesia. *Biodiversitas*, 22(2), 1043–1050.
<https://doi.org/10.13057/biodiv/d220261>
- Takahashi, N., dan Nyvad, B. 2011. *The Role of Bacteria in the Caries Process: Ecological Perspectives*. *J Dent Res* 2011 90: 294.
- Taranath, A., Pai, D., & Chakravarthy, K. (2014). The role of casein phosphopeptide-amorphous calcium phosphate products in remineralization of incipient enamel lesions and its substantivity. *J Exp Integr Med*, 4(1), 67-70.
- Tinanoff, N. (2019). Dental Caries. In *Pediatric Dentistry* (pp. 169–179). Elsevier.
<https://doi.org/10.1016/B978-0-323-60826-8.00012-2>
- Urrohman, A., & Putri, T. P. S. (2023). Pengamatan morfologi β -tcp yang disintesis dari cangkang kerang hijau. *Jurnal Kedokteran Gigi Terpadu*, 5(2).
- Verma, A., Singh, S., Kaur, R., & Jain, U. K. (2013). Topical Gels as Drug Delivery Systems A Review. *Int. J. Pharm. Sci.*, 23(2), 374–382.
- Wardani, S.R.H, 2024, Pengaruh Perbedaan Waktu Retensi Gel Ekstrak Cangkang Kerang Hijau (*Perna viridis*) dan CPP-ACP terhadap Kadar Kalsium Enamel Gigi Desidui, *Tesis*, Yogyakarta: Universitas Gadjah Mada.
- Wicaksono, P. S., Mulyono, R. M. G., & Muljani, S. (2022). Sintesa presipitat kalsium karbonat dari cangkang kerang hijau menggunakan asam asetat. *ChemPro*, 3(2), 49-55.
- Xu, J., dan Zhang, G., 2014, Biogenic Nanospheres of Amorphous Carbonated Ca- Mg Phosphate Within The Periostracum of The Green Mussel *Perna viridis*. *Journal of Structural Biology*, 188(3):205-12.
- Zhou, Y., Zhu, Y., dan Wong, W. K., 2023, Statistical Test of Homogeneity of Variance for Clinical Trials and Recommendations, *Contemporary Clinical Trials Communications*, 33 (2023): 1-11.