

DAFTAR PUSTAKA

- Abbass, M., El-Rashidy, A. A., Sadek, K. M., Moshy, S. E., Radwan, I. A., Rady, D., Dörfer, C. E., dan Fawzy El-Sayed, K. M., (2020) Hydrogels and Dentin-Pulp Complex Regeneration: From the Benchtop to Clinical Translation. *Polymers*. 12(12): 2935.
- Abdelaz, P., ElZoghbi, A., Shokry, M., Ahmed, A. Z., dan Rasha, H., (2019) Reparative Dentin Formation Using Stem Cell Therapy versus Calcium Hydroxide in Direct Pulp Capping: An Animal Study. *Brazilian Dental Journal*. 30(6): 542-549.
- Aguilar, A., Zein, N., Harmouch, E., Hafdi, B., Bornert, F., Offner, D., Clauss, F., Fioretti, F., Huck, O., Benkirane-Jessel, N., dan Hua, G., (2019) Application of Chitosan in Bone and Dental Engineering. *Molecules*. 24(16).
- Anusavice, K. J., Shen, C., dan Rawls, H. R., (2013) *Phillips' Science of Dental Materials*. 12th ed. Missouri: Elsevier Saunders. pp. 528-529.
- Atay, H. Y., (2019) Antibacterial Activity of Chitosan-Based Systems. Dalam: Jana S. dan Jana S., ed. *Functional Chitosan*. Singapore: Springer. pp. 460, 462-470.
- Bagchi, D., Das, A., dan Roy, S., (2020) *Wound healing, tissue repair, and regeneration indidiabetes*. Oxford: Elsevier. pp. 285.
- Bordini, E., Cassiano, F. B., Silva, I., Usberti, F. R., Anovazzi, G., Pacheco, L. E., Pansani, T. N., Leite, M. L., Hebling, J., de Souza Costa, C. A., dan Soares, D. G., (2020) Synergistic potential of 1 α ,25-dihydroxyvitamin D3 and calcium-aluminate-chitosan scaffolds with dental pulp cells. *Clinical oral investigations*. 24(2): 663-674.
- Carpio-Perochena, A. d., Kishen, A., Shrestha, A., dan Bramante, C. M., (2015) Antibacterial Properties Associated with Chitosan Nanoparticle Treatment on Root Dentin and 2 Types of Endodontic Sealers. *Journal of Endodontics*. 41(8): 1353-1358.
- Cheung, R., Ng, T., Wong, J., dan Chan, W., (2015) Chitosan: An Update on Potential Biomedical and Pharmaceutical Applications. *Marine Drugs*. 13(8): 5156-5186.
- Croisier, F. dan Jérôme, C., (2013) Chitosan-based biomaterials for tissue engineering. *European Polymer Journal*. 49(4): 780-792.

- Dash, M., Chiellini, F., Ottenbrite, R., dan Chiellini, E., (2011) Chitosan—A versatile semi-synthetic polymer in biomedical applications. *Progress in Polymer Science*. 36(8): 981-1014.
- Ducret, M., Montembault, A., Josse, J., Padeloup, M., Celle, A., Benchrih, R., Mallein-Gerin, F., Alliot-Licht, B., David, L., dan Farges, J. C., (2019) Design and characterization of a chitosan-enriched fibrin hydrogel for human dental pulp regeneration. *Dental materials : official publication of the Academy of Dental Materials*. 35(4): 523-533.
- Duncan, H. F. dan Cooper, P. R., (2019) *Clinical approaches in endodontic regeneration: current and emerging therapeutic perspectives*. Cham: Springer. pp. 45, 106-108.
- Fakhri, E., Eslami, H., Maroufi, P., Pakdel, F., Taghizadeh, S., Ganbarov, K., Yousefi, M., Tanomand, A., Yousefi, B., Mahmoudi, S., dan Kafil, H. S. (2020) Chitosan biomaterials application in dentistry. *International journal of biological macromolecules*. 162: 956-974.
- Farea, M., Husein, A., Halim, A. S., Abdullah, N. A., Mokhtar, K. I., Lim, C. K., Berahim, Z., dan Mokhtar, K., (2014) Synergistic effects of chitosan scaffold and TGFβ1 on the proliferation and osteogenic differentiation of dental pulp stem cells derived from human exfoliated deciduous teeth. *Archives of oral biology*. 59(12): 1400-1411.
- Fouad, A. F., (2017) *Endodontic Microbiology*. 2nd ed. Hoboken: Wiley-Blackwell. pp. 30.
- Garg, N. dan Garg, A., (2015) *Textbook of operative dentistry*. 3rd ed. New Delhi: Jaypee Brother Medical Publisher. pp. 216.
- Giraud, T., Jeanneau, C., Rombouts, C., Bakhtiar, H., Laurent, P., dan About, I., (2019) Pulp capping materials modulate the balance between inflammation and regeneration. *Dental materials : official publication of the Academy of Dental Materials*. 35(1): 24-35.
- Goldberg, M., (2012) Dentin structure composition and mineralization. *Frontiers in Bioscience*. E3(2): 711-735.
- Goldberg, M., (2014) *The Dental Pulp: Biology, Pathology, and Regenerative Therapies*. Berlin: Springer. pp. 174-175.
- Gopikrishna, V., (2021) *Grossman's endodontic practice*. 14th ed. New Dekhi: Wolters Kluwer. pp. 194, 197.

- Han, N., Zheng, Y., Li, R., Li, X., Zhou, M., Niu, Y., dan Zhang, Q., (2014) β -Catenin Enhances Odontoblastic Differentiation of Dental Pulp Cells through Activation of Runx2. *PLoS ONE*. 9(2): e88890.
- Hargreaves, K. M. dan Berman, L. H., (2016) *Cohen's pathways of the pulp*. 11th ed. Missouri: Elsevier. pp. 854.
- Islam, M. M., Shahruzzaman, M., Biswas, S., Nurus Sakib, M., dan Rashid, T. U., (2020) Chitosan based bioactive materials in tissue engineering applications-A review. *Bioactive materials*. 5(1): 164-183.
- Ismiyati, T., Siswomihardjo, W., Soesatyo, M. H. N. E., dan Rochmadi, R., (2017) Campuran kitosan dengan resin akrilik sebagai bahan gigi tiruan penghambat *Candida albicans*. *Majalah Kedokteran Gigi Indonesia*. 3(3): 140-145.
- Khoroushi, M., Foroughi, M. R., Karbasi, S., Hashemibeni, B., dan Khademi, A. A., (2018) Effect of Polyhydroxybutyrate/Chitosan/Bioglass nanofiber scaffold on proliferation and differentiation of stem cells from human exfoliated deciduous teeth into odontoblast-like cells. *Materials science and engineering C*. 89: 128-139.
- Komabayashi, T., Zhu, Q., Eberhart, R., dan Imai, Y. (2016) Current status of direct pulp-capping materials for permanent teeth. *Dental materials journal*. 35(1): 1-12.
- Koruyucu, M., Topcuoglu, N., Tuna, E. B., Ozel, S., Gencay, K., Kulekci, G., dan Seymen, F., (2015) An assessment of antibacterial activity of three pulp capping materials on *Enterococcus faecalis* by a direct contact test: An in vitro study. *European Journal of Dentistry*. 9(2): 240-245.
- Kunert, M., dan Lukomska-Szymanska, M., (2020) Bio-Inductive Materials in Direct and Indirect Pulp Capping-A Review Article. *Materials (Basel, Switzerland)*. 13(5): 1204.
- Levengood, S. L., dan Zhang, M., (2014) Chitosan-based scaffolds for bone tissue engineering. *Journal of materials chemistry B*. 2(21): 3161-3184.
- Li, F., Liu, X., Zhao, S., Wu, H., dan Xu, H. H., (2014) Porous chitosan bilayer membrane containing TGF- β 1 loaded microspheres for pulp capping and reparative dentin formation in a dog model. *Dental materials : official publication of the Academy of Dental Materials*. 30(2): 172-181.
- Li, J., dan Zhuang, S., (2020) Antibacterial activity of chitosan and its derivatives and their interaction mechanism with bacteria: Current state and perspectives. *European Polymer Journal*. 138: 109984.

- Low, A., Yusof, M. H., Reza, F., Nurul, A. A., Sritharan, S., Ali, N. H. Z., Azeez, H. S., dan Husein, A., (2015) Gypsum-based biomaterials: Evaluation of physical and mechanical properties, cellular effects and its potential as a pulp liner. *Dental Materials Journal*. 34(4): 522-528.
- Moeller, M., dan Matyjaszewski, K., (2012) *Polymer Science: A Comprehensive Reference*. 1st ed. Amsterdam: Elsevier Science. pp. 364.
- Moussa, D. G., dan Aparicio, C., (2019) Present and future of tissue engineering scaffolds for dentin-pulp complex regeneration. *Journal of tissue engineering and regenerative medicine*. 13(1): 58-75.
- Mursida, Tasir, dan Sahriawati, (2018) Efektivitas larutan alkali pada proses deasetilasi dari berbagai bahan baku kitosan. *Jurnal Pengolahan hasil Perikanan Indonesia*. 21(2): 356-366.
- Muxika, A., Etxabide, A., Uranga, J., Guerrero, P., dan de la Caba, K., (2017) Chitosan as a bioactive polymer: Processing, properties and applications. *International Journal of Biological Macromolecules*. 105: 1358-1368.
- Patel, S. dan Barnes, J. J., (2020) *The principles of endodontic*. 10th ed. Oxford : Oxford University Press. pp. 9-11, 55-56.
- Paula, A. B., Laranjo, M., Marto, C. M., Paulo, S., Abrantes, A. M., Casalta-Lopes, J., Marques-Ferreira, M., Botelho, M. F., dan Carrilho, E., (2018) Direct Pulp Capping: What is the Most Effective Therapy?—Systematic Review and Meta-Analysis. *Journal of Evidence Based Dental Practice*. 18(4): 298-314.
- Paula, A. B., Laranjo, M., Marto, c., Paulo, S., Abrantes, A. M., Fernandes, B., Casalta-Lopes, J., Marques-Ferreira, M., Botelho, M. F., dan Carrilho, E., (2020) Evaluation of dentinogenesis inducer biomaterials: an in vivo study. *Journal of Applied Oral Science*. 28: e20190023.
- Rizeq, B. R., Younes, N. N., Rasool, K., dan Nasrallah, G. K., (2019) Synthesis, Bioapplications, and Toxicity Evaluation of Chitosan-Based Nanoparticles. *International journal of molecular sciences*. 20(22): 5776.
- Shahi, S., Özcan, M., Maleki Dizaj, S., Sharifi, S., Al-Haj Husain, N., Eftekhari, A., dan Ahmadian, E., (2019) A review on potential toxicity of dental material and screening their biocompatibility. *Toxicology mechanisms and methods*. 29(5): 368-377.

- Silalahi, P. F.S., Abidin, T., dan Agusnar, H., (2014) Evaluasi karakteristik abu sekam padi dengan kitosan molekul tinggi nanopartikel sebagai bahan dentinogenesis. *Dent. J. (Maj. Ked. Gigi)*. 47(2): 63-66.
- Soares, D. G., Rosseto, H. L., Basso, F. G., Scheffel, D. S., Hebling, J., dan Costa, C. A. D. S., (2016) Chitosan-collagen biomembrane embedded with calcium-aluminate enhances dentinogenic potential of pulp cells. *Brazilian Oral Research*. 30(1).
- Subhi, H., Reza, F., Husein, A., al Shehadat, S. A., dan Nurul, A. A., (2018) Gypsum-Based Material for Dental Pulp Capping: Effect of Chitosan and BMP-2 on Physical, Mechanical, and Cellular Properties. *International Journal of Biomaterials*. 2018: 1-7.
- Subhi, H., Zulkifli, Z. A., Mohamad-Noor, S. S., dan Nurul, A. A., (2019) Antibacterial properties of gypsum-based chitosan against *Streptococcus mutans*. *Materials Letters*. 256: 126645.
- Sularsih, Yuliati, A., dan Pramono D, C., (2012) Degrees of chitosan deacetylation from white shrimp shell waste as dental biomaterials. *Dent. J. (Maj. Ked. Gigi)*. 45(1): 17-21.
- Sularsih dan Wahjuningsih, E., (2015) Bone morphogenetic protein-2 of *Rattus norvegicus* using chitosan gel with different molecular weight on wound healing of dental extraction. *Dent. J. (Maj. Ked. Gigi)*. 48(2): 59-64.
- Tanikonda, R., Ravi, R. K., Sirisha, K., dan Divella, S., (2014) Chitosan: applications in dentistry. *Trends Biomater. Artif. Organs*. 28(2): 74-78.
- Wang, W., Meng, Q., Li, Q., Liu, J., Zhou, M., Jin, Z., dan Zhao, K., (2020) Chitosan Derivatives and Their Application in Biomedicine. *International Journal of Molecular Sciences*. 21(2): 487.
- Wu, S., Zhou, Y., Yu, Y., Zhou, X., Du, W., Wan, M., Fan, Y., Zhou, X., Xu, X., dan Zheng, L., (2019) Evaluation of Chitosan Hydrogel for Sustained Delivery of VEGF for Odontogenic Differentiation of Dental Pulp Stem Cells. *Stem Cells International*. 2019: 1-14.
- Yang, X., Han, G., Pang, X., dan Fan, M., (2012) Chitosan/collagen scaffold containing bone morphogenetic protein-7 DNA supports dental pulp stem cell differentiation in vitro and in vivo. *Journal of Biomedical Materials Research Part A*. 108(12): 2519-2526.
- Yang, G., Li, X., Yuan, G., Liu, P., dan Fan, M., (2014) The Effects of Osterix on the Proliferation and Odontoblastic Differentiation of Human Dental Papilla Cells. *Journal of Endodontics*. 40(11): 1771-1777.

- Yang, Y., Huang, L., Dong, Y., Zhang, H., Zhou, W., Ban, J., Wei, J., Liu, Y., Gao, J., dan Chen, J., (2014) In Vitro Antibacterial Activity of a Novel Resin-Based Pulp Capping Material Containing the Quaternary Ammonium Salt MAE-DB and Portland Cement. *PLoS ONE*. 9(11): e112549.
- Younes, I., dan Rinaudo, M., (2015) Chitin and chitosan preparation from marine sources. Structure, properties and applications. *Marine drugs*. 13(3): 1133-1174.
- Yu, F., Dong, Y., Yang, Y. W., Lin, P. T., Yu, H. H., Sun, X., Sun, X. F., Zhou, H., Huang, L., dan Chen, J. H., (2016) Effect of an Experimental Direct Pulp-capping Material on the Properties and Osteogenic Differentiation of Human Dental Pulp Stem Cells. *Scientific Reports*. 6(1).
- Yuan, Y., Chesnutt, B. M., Haggard, W. O., dan Bumgardner, J. D., (2011) Deacetylation of Chitosan: Material Characterization and in vitro Evaluation via Albumin Adsorption and Pre-Osteoblastic Cell Cultures. *Materials*. 4(8): 1399-1416.
- Zheng, K., Feng, G., Zhang, J., Xing, J., Huang, D., Lian, M., Zhang, W., Wu, W., Hu, Y., Lu, X., dan Feng, X., (2020) Basic fibroblast growth factor promotes human dental pulp stem cells cultured in 3D porous chitosan scaffolds to neural differentiation. *The International journal of neuroscience*. 1-9.
- Zhu, N., Chatzistavrou, X., Ge, L., Qin, M., Papagerakis, P., dan Wang, Y., (2019) Biological properties of modified bioactive glass on dental pulp cells. *Journal of Dentistry*. 83: 18-26.