

DAFTAR PUSTAKA

- Abbas, A.K., Lichtman, A.H and Pillai, S. (2018). *Cellular and Molecular Immunology*. 9th ed. Pp: 1-5, 12-28, 57-60.
- Abcam. (2019). *Immunohistochemistry: Application Guide*. Pp: 1-22.
- Ali, L., Goraya, M. U., Arafat, Y., Ajmal, M., Chen, J., & Yu, D. (2017). Molecular Mechanism of Quorum-Sensing in Enterococcus faecalis : Its Role in Virulence and Therapeutic Approaches. *Int. J. Mol. Sci*, 18(960): 1-19.
- Atri, C., Guerfali FZ., & Laouini D. (2018). Role of Human Macrophage Polarization in Inflammation during Infectious Diseases. *Int. J. Mol. Sci*, 19 (1801): 1-13.
- Ayre, W. N., Melling, G., Cuveillier, C., Natarajan, M., Roberts, J. L., Marsh, L. L., Lynch, C.D., Maillard, J.Y., Denyer, S.P., & Sloan, J. (2018). Enterococcus faecalis Demonstrates Pathogenicity through Increased Attachment in an Ex Vivo Polymicrobial Pulpal Infection. *Infection and Immunity*, 86(5), 1-14.
- Baratawidjaja, K.G., & Rengganis, I., (2014). *Imunologi Dasar*. Badan Penerbit FKUI : Jakarta. Pp: 177-257.
- Bradley, J.R. (2008). TNF-mediated inflammatory disease. *J Pathol*, 214(2): 149-60.
- Carranza, Newman, Takei and Klokkevold. (2011). *Carranza's Clinical periodontology*. Elsevier : St Louis. Pp: 70-90.
- Ch'ng, Jun-Hong., Chong, Kelvin K.L., Lam L.N., Wong, Jun Jie & Kline, Kimberly A. (2018). Biofilm-associted infection by enterococci. *Nature reviews Microbiology*, 1-9.
- Charan, J., and Biswas, T. (2013). How to Calculate Sample Size for Different Study Designs in Medical Research. *Indian Journal of Psychological Medicine*, 35 (2) : 124.
- Chen, L., Bu, Q., Xu, H., Liu, Y., She, P., Tan, R., & Wu, Y. (2016). The effect of berberine hydrochloride on Enterococcus faecalis biofilm formation and dispersion in vitro. *Microbiological Research*, 186–187, 44–51.
- Chugal, N., & Lin, L. M. (2017). *Endodontic Prognosis*. Springer International Publishing : Switzerland. Pp: 13-29.
- Cieśluk, M., Piktel, E., Wątek, M., Durnaś, B., Wollny, T., Król, G., & Bucki, R. (2017). Neutrophil extracellular traps as the main source of eDNA Zewnatrzkomórkowe pułapki neutrofilowe jako główne źródło eDNA. *Medical Studies*, 33 (2) : 137-143.

- Claxton, N.S., Fellers, T.J and Davidson, M.C. (2006). *Laser Scanning Confocal Microscopy*. Springer : New York. Pg. 1-37.
- Commins, S. P., Borish, L., & Steinke, J. W. (2010). Immunologic messenger molecules : Cytokines , interferons , and chemokines. *Journal of Allergy and Clinical Immunology*, 125(2): S53–S72.
- Coondoo, A. (2011). Cytokines in dermatology - a basic overview. *Indian J Dermatol*, 56(4): 368-74.
- Daw, K., Baghdyan A.S., Awasthi S., & Shankar N. (2012). Biofilm and planktonic Enterococcus faecalis elicit different responses from host phagocytes in vitro. *FEMS immunol Med Microbial*, 65(2) : 27-282.
- Dembic, Z., (2015). *The Cytokines of the Immune System : The Role Cytokines in Disease Related to Immune Response*. Elsevier : London. Pp : 263-266.
- Djimeli, C.L., Arfao, A.T., Rossi, V., Nsulem, N., Raspal, V., Bricheux, G., Nola, M., & Sime-Ngando, T. (2016). Impact of two disinfectants on detachment of Enterococcus Faecalis from polythene in aquatic microcosm. *Research in Biotechnology*, 7(1) : 28-42.
- Domenico, E. G. Di, Cavallo, I., Bordignon, V., Prignano, G., Sperduti, I., & Gurtner, A. (2018). Inflammatory cytokines and biofilm production sustain Staphylococcus aureus outgrowth and persistence : a pivotal interplay in the pathogenesis of Atopic Dermatitis. *Scientific Reports*, 8, 1–13.
- Dunny, G.M., Hancock L.E., & Shankar N. (2014). *Enterococcal Biofilm Structure and Role In Colonization and Disease*. Massachusset Eye and Ear Infirmary : Boston. Pp: 547-570.
- Farges, J., Alliot-licht, B., Renard, E., Ducret, M., Gaudin, A., Smith, A. J., & Cooper, P. R. (2015). Dental Pulp Defence and Repair Mechanisms in Dental Caries. *Mediators of Inflammation*, 1-16.
- Fatimatuzzahro, N. (2014). *Ekspresi Tumor Necrosis Factor- dan Interleukin-β Sebagai Respon Pulpa Setelah Aplikasi Asam Fosfat 37% dan Ethylene Diamine Tetraacetic acid 19%*. Executive Summary/Illu Kedokteran Gigi, 1-14.
- Fisher, K., & Phillips, C. (2009). The ecology , epidemiology and virulence of Enterococcus. *Microbiology*, 155 : 1749–1757.
- Garsin, D.A., Frank, K.L., Silanpaa, J., Ausuberl, F.M., Hartke, A., Shankar, N., & Murray, B.E. (2014). *Pathogenesis and Models of Enterococcal Infection*. Massachusset Eye and Ear Infirmary : Boston. Pp : 185-230.
- Gomes, B.P.Figuero de Almeida & Herrera, Ranie Rodrigo. (2018). Etiologic role of root canal infection in apical periodontitis and its relationship wth clinical symtomatology. *Braz. Oral Res*, 32 (e69) : 82-101.

- Gonzales, J. F., Hahn, M. M., & Gunn, J. S. (2018). Chronic biofilm-based infections : skewing of the. *Pathogens and Disease*, 76 : 1–7.
- Grossman, L.I. *Endodontic Practice*. (2013). 13th ed. Wolters Kluwer : New York. Pp : 43-50, 79-85, 89.
- Gutmann, J. L & Manjarres V. (2018). Historical and Contemporary Perspectives on the Microbiological Aspects of Endodontics. *Dent. J*, 6(49) : 1–20.
- Hamidzadeh, K., Christensen, S. M., Dalby, E., Chandrasekaran, P., & Mosser, D. M. (2018). Macrophages and the Recovery from Acute and Chronic Inflammation. *Annu Rev Physiol*, 10(1): 567–592.
- Harkness JE, Wagner JE. (1983). *Biology and Medicine of Rabbits and Rodents*. Philadelphia: Lea and Fabriger. Pp: 30-50.
- Henriques, F., Carlos, L., Carla, L., Brito, N. De, Luciano, W., Tavares, F., & Qu, L. (2011). Cytokine Analysis in Lesions Refractory to Endodontic Treatment. *JOE*, 37(12), 1659–1662.
- Holub, M., Lawrence, D. A., Andersen, N., Al, D., Davidová, J., Beran, O. L., Maresova, V., & Chalupa, P. (2013). Cytokines and Chemokines as Biomarkers of Community-Acquired Bacterial Infection. *Mediators of Inflammation*, 1-7.
- Irvan., Febyan., & Suparto. (2018). Sepsis dan Tata Laksana Berdasar Guideline Terbaru. *Jurnal Anestesiologi Indonesia*, 10(1): 62–73.
- Iwasaki, Y., Otsuka, H., Yanagisawa, N., & Hisamitsu, H. (2011). In situ proliferation and differentiation of macrophages in dental pulp. *Cell Tissues Res*, 346: 99–109.
- Jain, H., Mulay, S., & Mullany, P. (2015). *Persistence of endodontic infection and Enterococcus Faecalis : Role of Horizontal Gene Transfer*. Pp: 1-10.
- Jakubovics, N. S., & Burgess, J. G. (2015). Extracellular DNA in oral microbial biofilms. *Microbes and Infection*, 1–7.
- Jakubovics, N. S., Shields, R. C., Rajarajan, N., & Burgess, J. G. (2013). Life after death : the critical role of extracellular DNA in microbial biofilms. *Letters in Applied Microbiology*, 57: 467–475.
- Jamal, M., & Andleeb, S. (2015). Bacterial Biofilm : Its Composition , Formation and Role in Human Infections Research & Reviews : Journal of Microbiology and Bacterial Biofilm : Its Composition , Formation and Role in Human. *RRJMB*, 4 (3): 1-8.
- Janeway. (2018). *Immunology*. 9th ed. Garland and Science : New York.Pp: 49-87.

- Jhajharia, K., Parolia, A., K, Vikram S., & Mehta, L. K. (2015). Biofilm in endodontics : A review. *Journal of International Society of Preventive and Community Dentistry*, 5(1), 1-8.
- Johnson, D. I. (2018). *Bacterial Pathogens and Their Virulence Factors*. Springer International Publishing : Burlington USA. Pp : 81-89.
- Jonkman, J., and Brown C.M. (2015). Any Way You Slide It-A Comparison of Confocal Microscopy Techniques. *Journal of Biomolecular Technique* 26: 54-65.
- Jontell, M. (1998). Immune Defense Mechanisms Of The Dental Pulp. *Crit Rev Oral Biol Med*, 9 (2) : 179-200.
- Kaufman, S., Rouse, B.T., & Sacks, D.L. (2011). *The Immune Response to Infection*. 5th ed. Pp. 57-60, 155-160, 209-220.
- Kawai, S., Harada, K., Daito, K., Arita, K., & Ohura, K. (2012). Original TNF- α and LPS Enhance MMP Production in Human Dental Pulp Cells of Deciduous Teeth. *Journal of Hard Tissue Biology*, 21(2): 151-156.
- Kayaoglu, G & Orstavik, D. (2004). Virulence Factors of Enterococcus Faecalis : Relationship to Endodontic Disease. *Crit Rev Oral Biol Mol*, 15(5): 308–320.
- Kementrian Kesehatan. (2016). *Peraturan Menteri Kesehatan Republik Indonesia nomor 89 tahun 2015 tentang Upaya Kesehatan Gigi dan Mulut*. Pg : 25-30.
- Khan, M.S.A., Altaf, M.M., Althubiani, A.S and Ahmadi, I. (2016). *Confocal laser microscopy : Scanning new structural and functional insights of host-microbe interactions*. Springer : New York. Pg: 63-69.
- Kruger, P., Saffarzadeh, M., Weber, A. N. R., Rieber, N., Radsak, M., Bernuth, H. Von, Benarafa, C., Roos, D., Skokowa, J. And Harti, D. (2015). Neutrophils : Between Host Defence , Immune Modulation , and Tissue Injury. *PLOS Pathogens*, 11(3): 1–23.
- Kurmusaoglu, S. (2019). *The Methods for Detection of Biofilm And Screeing Antibiofilm Activity of Agents*. IntechOpen : Turkey. Pg :1-18
- Lamont, R.J., Hajishengallis G.N., & Jenkinson, H.F. (2014). *Oral Microbiology and Immunology*. 2nd ed. Library of Congress : Philadelphia. Pp: 3-49.
- Lawrence, J.H., and Neu, T.H. (2014). *Investigation of Microbial Biofilm Structure by Laser Scanning Microscopy*. Springer : Verlag Berlin Heidelberg. Pg 272-290.
- Lee, C., & Choi, E. Y. (2018). Macrophages and Inflammation. *Journal of Rheumatic Diseases*, 25(1): 1-13.
- Lin, C., Kuo, P., Chin, Y., Weng, I., Lee, H., Huang, H., Lin, H.Y., Hsiung, C., Chan, Y.H., and Lee S.Y., (2019). Dental Pulp Stem Cell Transplantation

- with Accelerates Alveolar Bone Regeneration in Rats. *Journal of Endodontics*, 4 (54) : 1–7.
- Malole, M.B.M., Pramono C.S.U., (1989). *Penggunaan Hewan-hewan Percobaan di Laboratorium*. Bogor : PAU Pangan dan Gizi, IPB. Pp: 5-20.
- Martinez, F. O., & Gordon, S. (2014). The M1 and M2 paradigm of macrophage activation : time for reassessment. *F1000 Prime reports*, 6 (13): 1–13.
- Merle, N.S., Noe R., Mecarellii, L.H., Bacchi, V.F., & Roumenina L.T. (2015). Complement system part II : role in immunity. *Frontiers in Immunology*, 6(257) : 1-18.
- Montanaro, L., Poggi, A., Visai, L., Ravaioli, S., Campoccia, D., Speziale, P., & Arciola, C. R. (2011). Extracellular DNA in biofilms. *Int J Artif Organs*, 34 (9) : 824–831.
- Moore, D.M. (2000). *Laboratory Animal Medicine And Science Series Ii Rats And Mice : Biology*. University of Washington Health Sciences Center for Educational Resources : USA. Pp: 20-56.
- Mousavi, N., & Rostami, F.M. (2018). Microbial pathogenesis and biofilm mediated by Enterococcus. *Reviews in Microbial Microbiology*, 29 : 1-6.
- Murray P, Rosenthal & Pfallar. (2016). *Medical Microbiology*. Elsevier : Philadelphia. Pg. 183-200.
- Nascimento, L.O., Massari P., & Wetzler, LM. (2012). The role of TLR2 in infection and immunity. *Frontiers in Immunology*, 3(79): 1-12.
- Neelakantan, P., Romero, M., Vera, J., Daood, U., & Khan, A., Yan .., Cheung GS. (2017). Biofilms in Endodontics — Current Status and Future Directions. *Int. J. Mol. Sci*, 18 (1748), 1-21.
- Okiji T. (2012). *Pulp as a connective tissue in Seltzer and Bender's dental pulp*. 2nd . China: Quintessence Pub Co, inc. Pp : 38.
- Okshevsky, M., & Meyer, R. L. (2013). The role of extracellular DNA in the establishment , maintenance and perpetuation of bacterial biofilms. *Crit rev Microbial*, 1549-7828, 1–11.
- Okshevsky, M., and Meyer, Rike-Louise. (2014). Evaluation of fluorescent stains for visualizing extracellular DNA in biofilms. *Journal of Microbiological Methods* 105 : 102-104.
- Okshevsky, M., Regina, V. R., & Meyer, R. L. (2015). Extracellular DNA as a target for biofilm control. *Current Opinion in Biotechnology*, 33: 73–80.
- Olmos G and llado J. (2014). Tumor Necrosis Factor Alpha : A Link between Neuroinflammation and Excitotoxicity. *Mediators of Inflammation*, Article ID 861231, 1-12.

- Orakpoghenor, O., Avazi, D. O., Markus, T., & Olaolu, O. (2018). A Short Review of Immunochemistry. *Immunogenetics Open Access*, 3 (1), 1-6.
- Oscarsson, J., Karched, M., Thay, B., Chen, C., & Asikainen, S. (2008). Proinflammatory effect in whole blood by free soluble bacterial components released from planktonic and biofilm cells, *BMC Microbiology*, 13 (8): 1–13.
- Parisi, L., Gini, E., Baci, D., Tremolati, M., Fanuli, M., Bassani, B., Farronato, G., Bruno, A., & Mortara, L. (2018). Review Article Macrophage Polarization in Chronic Inflammatory Diseases : Killers or Builders ?. *Journal of Immunology Research*, 1-18.
- Park, Ok-Jin., Han, Ji-Young., Baik, Jung Eun., Jeon, Jun-Ho., Kang, Seok-Seong., Yun, Cheol-Heui., Oh, Jong-Won., Seo, Ho Seong., & Han Seung-Hyun. (2013). Lipoteichoic acid of Enterococcus faecalis induces the expression of chemokines via TLR2 and PAFR signaling pathways. *J. Leukoc. Biol*, 94: 1275-1284.
- Parker, N., Schneegurt, M., Thi Tu, A-H., Forster, B.M., & Lister, P., (2018). *Microbiology*. Houston: Rice University. Pp: 361-394.
- Paula-silva, F.W.G., Ghosh, A., Silva, L.A.B., & Kapila, Y.L. (2009). TNF- α Promotes an Odontoblastic Phenotype in Dental Pulp Cells. *J Dent Res*, 88(4): 339-344.
- Paz, Luis E. Chever de., Sedgley, C.M. and Kishen, A. (2015). *The Root Canal Biofilm*. Springer : New York. Pp: 1-100.
- Prada, I., Micó-muñoz, P., Giner-lluesma, T., Micó-martínez, P., & Collado-castellano, N. (2019). Influence of microbiology on endodontic failure . Literature review. *Med Oral Patol Oral Cir Bucal*, 24(3) : 364-372.
- Raasch, P., Schmitz, U., & Patenge N., (2010) Non-coding RNA detection methods combined to improve usability, reproducibility and precision. *BMC Bioinformatics*, 11:491.
- Ran, S. J., Jiang, W., Zhu, C. L., & Liang, J. P. (2015). Exploration of the mechanisms of bio film formation by Enterococcus faecalis in glucose starvation environments. *Australian Dental Journal*, 60 : 143–153.
- Rhim, E.M., Ahn, Su-Jin., & Kim, Ji-Yoen. (2013). Stimulation of Matrix Metalloproteinases by Tumor Necrosis Factor- α in Human Pulp Cell Cultures. *Journal of endodontics*, 39 (6) : 795-800.
- Rich, R.R., Fleisher, T.A., Shearer, W.S., Shroeder, H.W., Frew, A.J., and Weyand, C.M. (2019). *Clinical Immunology : Principles and Practice*. 5th ed. Elsevier : China. Pp : 299-311.
- Roitt, I.M., Delves, P.J., Martin, S.J., and Burton, D.R. (2018). *Roitt's Esensial Immunology*. 13th ed. Pp : 3-50.

- Rostami, N., Shields, R. C., Yassin, S., & Bowen, L. (2016). A Critical Role for Extracellular DNA in Dental Plaque Formation. *Journal of Dental Research*, 1-9.
- Saber, S.E., & Hady, S.A. (2012). Development of intracanal mature *Enterococcus faecalis* biofilm and its susceptibility to some antimicrobial intracanal medications; an *in vitro* study. *European Journal of Dentistry*; 6: 43-48.
- Sabio & Davis. (2014). TNF and MAP kinase signaling pathways. *Semin Immunol*, 26 (3) : 237-245.
- Sava, I. G., Heikens, E., & Huebner, J. (2010). Pathogenesis and immunity in enterococcal infections. *Clinical Microbiology and Infection*, 16(6):533–540.
- Schlafer, S., Garcia, J., Meyer, R.L., Vaeth, M., and Neuhas, K.W. (2018). Effect of Dnase treatment on adhesion and early biofilm formation of *Enterococcus faecalis*. *European Endodontic Journal* 2 : 82-86.
- Schlafer, S., Meyer, L., & Regina, V. R. (2017). Extracellular DNA Contributes to Dental Biofilm Stability. *Caries Res*, 51 : 436-442.
- Shahmoradi, M., Bertassoni, L. E., Health, O., & Swain, M. V. (2014). *Fundamental Structure and Properties of Enamel , Dentin and Cementum Chapter 17 Fundamental Structure and Properties of Enamel , Dentin and Cementum*. Pp: 10-54.
- Soeprijanto dan Sularish. (2016). Pengaruh Penggunaan Kitosan dengan Berat Molekul yang berbeda terhadap ekspresi Tumor Necrosis Alpha (TNF- α) pada penyembuhan luka pencabutan gigi tikus *Rattus Norvegicus*. *Jurnal Material Kedokteran Gigi*. ISSN 2302-5271 : 15-19.
- Stephen, T. L., Groneck, L., & Kalka-moll, W. M. (2010). The Modulation of Adaptive Immune Responses by Bacterial Zwitterionic Polysaccharides. *Internasional Journal of Microbiology*, 1-9.
- Stinemetz, E. K., Gao, P., Pinkston, K. L., Montealegre, M. C., Murray, B. E., & Harvey, B. R. (2017). Processing of the major autolysin of *E. faecalis*, AtlA, by the zinc-metalloprotease , GelE , impacts AtlA septal localization and cell separation. *Plos One* : 1–17.
- Takeuchi, O., & Akira, S. (2010). Review Pattern Recognition Receptors and Inflammation. *Cell*, 140(6), 805–820.
- Tang, L., Schramm, A., Neu, T. R., Revsbech, N. P., & Meyer, R. L. (2013). Extracellular DNA in adhesion and biofilm formation of environmental isolates : a quantitative study. *FEMS Microbial Ecol*, 86 : 394-403.
- Thoh, M., Kumar, P., & Nagarajaram, H.A. (2010) Azadirachtin interacts with the tumor necrosis factor (TNF) binding domain of its receptors and inhibits TNF-induced biological responses. *J Biol Chem*, 285(8):5888-5895.

- Toral, F. C., Hernández, L. D., González, C. E., Varona, F. S., Ciodaro, A. R., Ortega, H. D., & Salcedo-reyes, J. C. (2017). Ex vivo model for studying polymicrobial biofilm formation in root canals. *Journal of the Faculty of Sciences*, 22(1), 31–43.
- Tsai, C., Chen, W., Hsieh, H., Chi, P., Hsiao, L., & Yang, C. (2014). TNF- α induces matrix metalloproteinase-9- dependent soluble intercellular adhesion molecule-1 release via TRAF2-mediated MAPKs and NF- κ B activation in osteoblast-like MC3T3-E1 cells. *Journal of Biomedical Science*, 21(1), 1–19.
- Tuffaha, Muin S.A. (2008). *Phenotypic and Genotypic Diagnosis of Malignancies*. Federal Republic of Germany : Wiley-VCH Verlag GmbH and Weinheim. ISBN : 978-3-527-31881-0. Pp : 5-77.
- Vara, J.A.R. (2011). *Principles and Methods of Immunohistochemistry*. 2nd ed. Springer Science : New York. 83-95.
- Velsko, I. M., Huang, H., Wallet, S. M., & Shaddox, L. M. (2017). Cytokine response patterns to complex biofilms by mononuclear cells discriminate patient disease status and biofilm dysbiosis. *Journal of Oral Microbiology*, 9 : 1-11.
- Wang, S., Seneviratne, C., Shun, G., Cheung, P., & Chu, C. (2015). Lipoteichoic acid from an Enterococcus faecalis clinical strain promotes TNF- α expression through the NF- κ B and p38 MAPK signaling pathways in differentiated THP-1 macrophages. *Biomedical Reports*, 3 : 697-702.
- Ward, N. S., Casserly, B., & Ayala, A. (2008). The Compensatory Anti - inflammatory Response Syndrome (CARS) in Critically Ill Patients. *Clinics in Chest Medicine*, 29(4), 617–625.
- World Health Organization (WHO). 2017. *Sugars and dental caries*. Geneva: WHO. Pg: 1-4.
- Wynn, T.A., Chawla A., and Pollard, J.W. (2013). Origins and Hallmarks of Macrophages: Development, Homeostasis adn Disease. *Nature*, 496(7446): 445-455.
- Xu, G., Shi, Y., & Liang S. (2007) Apoptosis signaling pathways and lymphocyte homeostasis. *Cell Res*, 17(9):759-71.
- Yamada, K. J., & Kielian, T. (2019). Biofilm-Leukocyte Cross-Talk : Impact on Immune Polarization and Immunometabolism. *J Innate Imun*, 11, 280–288.
- Yoo, Y., Perinpanayagam, H., Oh, S., Kim, A., Han, S., & Kum, K. (2019). Endodontic biofilms : contemporary and future treatment options. *Restor Dent Endod*, 44(1), 1–10.
- Yu, Mi-Kyung., Kim, Mi-Ah., Rosa, Vinicius., Hwang, Yun-chan, Del Fabbro, M., Sohn, Won-Jun., Min, Kyung-San. (2019). Role of extracellular DNA in

Enterococcus faecalis biofilm formation and its susceptibility to sodium hypochlorite. *Journal of Applied Oral Science*, 27 : 1-8.

Yumoto, H., Hirao, K., Hosokawa, Y., Kuramoto, H., Takegawa, D., Nakanishi, T., & Matsuo, T. (2018). The roles of odontoblasts in dental pulp innate immunity. *Japanese Dental Science Review*, 54(3), 105–117.

Zelova, H., and Hosek, J. (2013). TNF- α signalling and inflammation :interactions between old acquaintances. *Inflamm Res* 62 : 641-651.

Zou, J., and Shankar, N. (2016). Surface Protein Esp Enhances Pro-Inflammatory Cytokine Expression through NF-kb Activation during Enterococcal Infection. *Innate Immunity*, 22 (1): 31-39.