

## REFERENCE

- Abachi, S., Lee, S. and Rupasinghe, H.P.V., (2016) Molecular Mechanisms of Inhibition of *Streptococcus* Species by Phytochemicals. *Molecules*.21(2):215-246.
- Adham, S., Chiu, K., Lehman, G., (2013) *Optimization of Membrane Treatment for Direct and Clarified Water Filtration*. Melbourne: Denver, Co. pp 12.
- Andika and Fajeriyati N., (2017) Antibacterial Activity of Ethanol Extract of Kencur Rhizome (*Kaempferia galanga* L.) in *Bacillus subtilis* and *Escherichia coli*. *JCPS*. 1(1): 36-41.
- Armbruster, C.R. and Parsek, M.R., (2018) New Insight into the Early Stages of Biofilm Formation. *PNAS*. 115(17):4317-4319.
- Banas, J.A., (2004) Virulence properties of *Streptococcus mutans*. *Front Biosci* 9(1):1267.
- Badan Pusat Statistik., (2019) *Statistik Indonesia 2019*. Catalog: 110100. Jakarta: Badan Pusat Statistik. pp 271.
- Brooks, G.F., Carroll, K.C., Butel, J.S., Morse, S.A. and Mietzner, T.A., (2013) *Jawetz, Melnick and Adelberg's Medical Microbiology*. 26<sup>th</sup> Ed. New York: Mc Graw Hill. pp 169.
- Bruinsma, G.M., van der Mei, H.C. and Busscher, H.J., (2001) Bacterial Adhesion to Surface Hydrophilic and Hydrophobic Contact Lenses. *Biomaterials*. 22(24): 3217-24.
- Cieplik, F., Kara, E., Muehler, D., Enax, J., Hiller, K., Maish, T., Buchalla, W., (2018) Antimicrobial Efficacy of Alternative Compounds for Use in Oral Care Toward Biofilms from Caries- Associated Bacteria *in vitro*. *MicrobiologyOpen*. 2018(695):1-10
- Cheon, K., Moser, S.A., Wiener, H.W., Whiddon, J., Momeni, S.S., Ruby, J.D., Cutter, G.D. and Childers N.K., (2013) Characteristics of *Streptococcus mutans* genotypes and dental caries in children. *Eur J Oral Sci*. 121:148-155.
- Cheung, H.Y., Wong, M. M.K., Cheung, S.-H., Liang, L. Y., Lam, Y.-W., dan Chiu, S.-K., (2012) Differential Actions of Chlorhexidine on the Cell Wall of *Bacillus subtilis* and *Escherichia coli*. *PLoS ONE*. 7(5):e36659.

- Chouhan, S., Sharma, K. and Guleria, S., (2017) Antimicrobial Activity of Some Essential Oils-present Status and Future Perspectives. *Medicines Journal*. 4(58):1-21.
- Daniel, W.W. and Cross C.L (2013) *Biostatistics:A Foundation for Analysis in the Health Sciences*. 10<sup>th</sup> Ed. New Jersey:Wiley. pp 189.
- El aziz, M.M.A., Ashour, A.S., Melad, A.S.G., (2019) A Review on Saponins from Medicinal Plants: Chemistry, Isolation and Determination. *J Nanomed Res*.7(4):282-288.
- Elshamy, A.I, Mohamed, T.A., Essa, A.F., Gawad Abd-El, A.M., Alqahtani, A.S., Shahat, A.A., Yoneyama, T., Farrag, A.R.H., Noji, M., El-Seedi, H.R., Umeyama, A., Paré, P.W. and Hegazy, M-EF. (2019) Recent Advances in *Kaempferia* Phytochemistry and Biological Activity. *Nutrients*. 11(10):2396-2429.
- Farkash, Y., Feldman, M., Ginsburg, I., Steinberg, D. and Shalish, M., (2019) Polyphenols Inhibit *Candida albicans* and *Streptococcus mutans* Biofilm Formation. *Dent. J*. 7(42):1-10.
- Fejerskov O., Nyvad B., Kidd., (2015) Dental Caries; *The Disease and Its Clinical Management*. 3<sup>rd</sup> Ed. Oxford:Wiley Blackwell. pp 111-112.
- Galvão, L.C.D., Furletti, V.F., Bersan, S.M.F., Cunha, M.G.D., Ruiz, A.L.T.G., Carvalho, J.E.D., Sartoratto, A., Rehder, V.L.G., Figueira, G.M., Duarte, M.C.T., Ikegaki, M., Alencar, S.M.D. and Rosalen, P.L., (2012) Antimicrobial Activity of Essential Oils against *Streptococcus mutans* and their Anti proliferative Effects. *Evid*. 2012:1-12.
- Garrett, R. H. and Grisham, C. M., (2010) *Biochemistry*. 4<sup>th</sup> Edition. California: Brooks/Cole. pp 31.
- Goldberg, M., (2016) *Understanding Dental Caries;From Pathogenesis to Prevention and Therapy*. France:Springer. pp 43-45.
- Haerazi, A., Jekti, D.S.D. and Andayani, Y., (2017) Uji Aktivitas Antibakteri Ekstrak Kencur (*Kaempferia galanga* L.) terhadap Pertumbuhan Bakteri *Staphylococcus aureus* dan *Streptococcus viridans*, *Jurnal Ilmiah Biologi "Bioscientist"*. 2(1):1-11.
- Heasman, P., (2013) *Restorative Dentistry, Paediatric Dentistry and Orthodontic*, 3<sup>rd</sup> Ed. London: Elsevier, pp 99.

- Hertiani, T., Pratiwi, S.U.T., Irianto, I.D.K. and Febriana, A., (2010) *Kaempferia galanga* L. Rhizome as a Potential Dental Plaque Preventive Agent. *IJCC*. 1(1):19-25. (Abstr.)
- Hong, S.W., Baik, J.E., Kang, S.S., Yun, C.H., Seo, D.G., Han, S.H., (2014) Lipoteichoic acid of *Streptococcus mutans* interacts with Toll-like receptor 2 through the lipid moiety for induction of inflammatory mediators in murine macrophages. *Molecular Immunology*. 57(2014):284–291.
- Huhtamäki, T., Tian, X., Korhonen, J.T. and Ras, R.H.A., (2018) Surface-wetting Characterization using contact-angle measurements. *Nat. Protoc*. 2018(13): 1521-1538.
- Justino, G.C., (2017) Flavonoids: From Biosynthesis to Human Health. Croatia: InTech. pp 4.
- Kaspar, J.R., Godwin, M.J., Velsko, I.M., Richards, V.P., Burne, R.A., (2019) Spontaneously Arising *Streptococcus mutans* Variants with Reduced Susceptibility to Chlorhexidine Display Genetic Defects and Diminished Fitness. *Antimicrob*. 63(7):1-17.
- Kementerian Kesehatan Republik Indonesia., (2018) *Laporan Nasional RISKESDAS 2018*. Jakarta: Badan Penelitian dan Pengembangan Kesehatan. pp.197,207.
- Khan, M.I., Ahhmed, A., Shin, J.H., Baek, J.S., Kim, M.Y. and Kim, J.D., (2018) Green Tea Seed Isolated Saponins Exerts Antibacterial Effects against Various Strains of Gram Positive and Gram-Negative Bacteria, a Comprehensive Study *in vitro* and *in vivo*. *Evid*. 2018: 1-12.
- Klein, M.I., Hwang, G., Santos, P.H.S., Campanella, O.H. and Koo, H., (2015) *Streptococcus mutans*-Derived Extracellular Matrix in Cariogenic Oral Biofilms. *Front*. 5(10): 1-8.
- Krasowska, A. and Sigler, K., (2014) How Microorganisms use Hydrophobicity and What Does This Mean for Human Needs?. *Front*. 4(112): 1-7.
- Krzysciak, W., Jurczak, A., Koscielniak, D., Bystrowska, B and Skalniak, A., (2014) The Virulence of *Streptococcus mutans* and the Ability to Form Biofilms. *Eur J Clin Microbial Infect Dis*. 33(4): 499-500.
- Kumar, S. and Pandey, A.K., (2013) Chemistry and Biological Activities of Flavonoids: An Overview. *Sci*. 2013(11-12):162750.
- Lamont, R.J. and Jenkinson H.F., (2010) *Oral Microbiology at a Glance*. Oxford: Wiley-Blackwell. pp 27.

- Law, K.Y., (2014) Definitions for Hydrophilicity, Hydrophobicity and Superhydrophobicity: Getting the Basis Right. *J.* 2014(5):686-688.
- Lemos, J.A., Palmer, S.R., Zeng, L., Wen, Z.T., Kajfasz, J.K., Freires, I.A., Abranches, J. and Brady, L.J., (2019) The Biology of *Streptococcus mutans*. *Microbiol.* 7(1): 1-26.
- Lemos, J.A., Quivey, R.G., Koo, J.H. and Abranches, J., (2013) *Streptococcus mutans*: a new Gram-positive paradigm? *Microbiology (Reading, Engl.)*. 2013(159):436-445.
- Lens, P., O'Flaherty, V., Moran, A.P., Stoodley, P. and Mahony T., (2003) *Biofilms in Medicine, Industry and Environmental Biotechnology*. London: IWA Publishing. pp 17.
- Li, Lanjuan., (2015) *Infectious Microecology: Theory and Applications*. Zhejiang: Springer. pp 249.
- Lim, T.K., (2016) *Edible Medicinal and Non-Medicinal Plants: Volume 12, Modified Stems, Roots, Bulbs*. Switzerland: Springer. pp 417-418.
- Loosdrecht, M.C.M., Lyklema, J., Norde, W., Schraa G., Zehnder, A.J.B., (1987) The Role of Bacterial Cell Wall Hydrophobicity in Adhesion. *Appl. Environ. Microbiol.* 53(8):1893-1897
- Marsh, P.D., Martin, M.V., Lewis, M.A.O. and Williams, D.W., (2009) *Oral Microbiology*. 5<sup>th</sup> Ed. Oxford: Elsevier. pp 78.
- Metwalli, K.H., Khan, S.A., Krom, B.P. and Rizk, M.A.J (2013) *Streptococcus mutans*, *Candida albicans* and the Human Mouth: A Sticky Situation. *PLOS Pathog.* 9(10):1-5.
- Mieher, J.L., Larson, M.R., Schormann, N., Purushotham, S., Wu, Ren., Rajashankar, K.R., Wu, Hui. And Deivanayagam C., (2018) Glucan Binding Protein C *Streptococcus mutans* Mediates both Sucrose-Independent and Sucrose-Dependent Adherence. *Infect. Immun.* 86(7):1-18.
- Newman, M.G., Takei, H., Klokkevold P.R., Carranza F.A., (2018) *Newman and Carranza's Clinical Periodontology*. 13<sup>th</sup> Ed. California: Elsevier. pp 112.
- Organisation for Economic Co-operation and Development., (2016) *Harmonisation of Regulatory Oversight in Biotechnology: Safety Assessment of Transgenic Organism in the Environment*. 5<sup>th</sup> Volume. France: OECD Publishing. pp 34.

- Oliveira, r., Azeredo, J., Teixeira, P. and Fonseca, P., (2001) The Role of Hydrophobicity in Bacterial Adhesion. *BioLine*. 11-21.
- Papuc C., Goran G.V., Predescu C.N. and Nicorescu V., (2017) Plant Polyphenols as Antioxidant and Antibacterial Agents for Shelf-Life Extension of Meat and Meat Products: Classification, Structures Sources and Action Mechanisms. *Compr. Rev. Food Sci. Food Saf.* 16(6): 1243-1268.
- Patra, J.K., Kumar, G.D.S. and Thatoi, H., (2019) *Ethnopharmacology and Biodiversity of Medicinal Plants*. Florida: CRC Press. pp 214.
- Phan, H.T.T., Yoda, T., Chahal, B., Morita, M., Takagi, M., Vestergaard, M.C., (2014) Structure-dependent Interactions of Polyphenols with a Biomimetic Membrane System. *Biochimica et Biophysica Acta*. 1838 (2014):2670 –2677.
- Philip, N. and Walsh, L.J., (2019) Cranberry Polyphenols: Natural Weapons against Dental Caries. *Dent J*. 7(20):1-7.
- Pitt, S.J., (2018) *Clinical Microbiology for Diagnostic Laboratory Scientists*. Chichester:Wiley Blackwell. pp 66.
- Pratiwi, S., Lagendrijk, E., Weert, S.D. and Hertiani T., (2015) Antimicrobial Effects of Indonesian Medicinal Plants Extracts on Planktonic and Biofilm Growth of *Pseudomonas aeruginosa* and *Staphylococcus aureus*. *Int. J. Pharm. Pharm. Sci.* 2(1):1-14. (Abstr.)
- Preetha, T.S., Hemanthakumar, A.S. and Krishnan, P.N (2016) A Comprehensive review of *Kaempferia galangal* L. (Zingiberaceae): A High Sought Medicinal Plant in Tropical Asia. *J. Med. Plants Stud.* 4(3):270-276.
- Rahmi, A., Roebiakto, E. and Lutpiatina, L., (2016) Potensi Ekstrak Rimpang Kencur (*Kaempferia galanga* L.) Menghambat Pertumbuhan *Candida albicans*. *MLTJ*. 2(2):770-76.
- Rashid, S.A., Othman, R.N.I.R., Hussein, M.Z., (2019) *Synthesis, Technology and Applications of Carbon Nanomaterial*. Amsterdam: Elsevier. pp 178.
- Razak, F.A., Othman, R.Y., Rahim, Z.H.A., (2006) The effect of *Piper betle* and *Psidium guajava* extracts on the cell-surface hydrophobicity of selected early settlers of dental plaque. *Journal of Oral Science*. 48(2);71-75.
- Robinson, D.S and Bird, D.L., (2013) *Essentials of Dental Assisting*. Missouri: Elsevier. pp 263.
- Saini, G., (2010) Bacterial Hydrophobicity: Assesment Techniques, applications and extension to colloids. *Noida: Dissertation Sharda University*. pp 11.

- Sajjan, P., Laxminarayan, N., Kar, P.P., Sajjanar, M., (2016) Chlorhexidine as an Antimicrobial Agent in Dentistry – A Review. *OHDM*. 15(2): 93-100.
- Samaranayake, L., (2011) *Essential Microbiology for Dentistry*. 4<sup>th</sup> Ed. Philadelphia: Elsevier. pp 5.
- Saraswati, J.J., Septalta, A. and Bovita, N. A, (2013) Antibacterial Effect of (*Kaempferia galanga* L.). *IJID*. 1(01):22-28.
- Seshagiri, M. and Jyothi, K.S (2012) in-vitro Activity of Saponins of *Bauhinia purpurea*, *Madhuca longifolia*, *Celastrus paniculatus* and *Semecarpus anacardium* on Selected Oral Pathogens. *J Dent*. 9(4): 216-223.
- Shetu, H.J., Trisha, K.T., Shishir, A.S., Anwar, R., Rashed, S.S.B. and Dash, P.R., (2018) Pharmacological Importance of *Kaempferia galanga* L. (Zingiberaceae): A mini review. *Int. J. Pharm. Pharm. Sci.* 3(3):32-39.
- Srivastava, N., Ranjana., Singh, S., Gupta, A.C., Shanker, K., Bawankule, D.U. and Luqman, S., (2019) Aromatic Ginger (*Kaempferia galanga* L.) Extracts with Ameliorative and Protective Potential as a Functional Food, Beyond its Flavor and Nutritional Benefits. *Toxicol. Rep.* 6(2019): 521-528.
- Susanti, S.F. and Antikasari, L.A.S (2018) Uji Aktivitas Antimikroba Perasan Rimpang Kencur (*Kaempferia galanga* L) dan Perasan Rimpang Kunyit Putih (*Curcuma mangga*) Dengan Variasi Konsentrasi terhadap Pertumbuhan Bakteri *Escherichia Coli*. *Jurnal sains*. 8(16):28-32.
- Sullan, R.M.A., Li, J.K., Crowley, P.J., Brady, L.J. and Dufrene, Y.F., (2015) Binding Forces of *Streptococcus mutans* P1 Adhesin. *ACS Nano*. 9(2):1448-1460.
- Tahmourespour, A., Kermanshahi, R.K., Salehi, R and Nabinejad, A., (2008) The Relationship Between Cell Surface Hydrophobicity and Antibiotic Resistance of Streptococcal Strains Isolated from Dental Caries and Plaque. *IJBMS*. 10(4):251-252.
- Tarahovsky, Y.S., Kim, Y.A., Yagolnik, E.A., Muzafarov, E.N., (2014) Flavonoid–Membrane Interactions: Involvement of Flavonoid–metal Complexes in Raft Signaling. *Biochim Biophys Acta Biomembr*. 1838(2014):1235-1246.
- Thakur, M., Melzig, M.F., Fuchs, H., Weng, A., (2011) Chemistry and Pharmacology of Saponins: Special Focus on Cytotoxic Properties. *Botanics: Targets and Therapy*. 2011(1):19-29.



- Umar, M.I., Asmawi, M.Z.B., Sadikun, A., Altaf, R. and Iqbal, M.A., (2011) Phytochemistry and Medicinal Properties of *Kaempferia galanga* L. (Zingiberaceae) Extracts. *Afr. J. Pharm. Pharmacol.* 2(14):1638-1647.
- Wang, j., Shi, Y., Jiang, S., Dong, H., Wang, D. and Wang, T., (2019) Astilbin Inhibits the Activity of Sortase A from *Streptococcus mutans*. *Molecules*. 24(465):1-11.
- Wang, Y., Lee, S.M., Dykes, G.A., (2013) Potential Mechanisms for the Effects of Tea Extracts on the Attachment, Biofilm Formation and Cell Size of *Streptococcus mutans*. *Biofouling*. 29(3): 307-318.
- Wiranti R.M.A., (2019) Uji Aktivitas Anti Quorum Sensing Dari Tanaman Akar Rimpang terhadap Bakteri *Vibrio harveyi*. *Tesis. Akuakultur*. Yogyakarta: Universitas Gadjah Mada. (Abstr.)
- World Health Organization., (2017) *WHO Technical Information Note. Sugars and Dental Caries*. Geneva. pp 2-3.
- Xie, Y., Yang, W., Tang, F., Chen, X., Ren L., (2015) Antibacterial Activities of Flavonoids: Structure-Activity Relationship and Mechanism. *Curr. Med. Chem.* 22(1):132-149.
- Xuedong Z., (2016) *Dental caries; Principles and Management*. Berlin:Springer. pp 27,32,34.
- Yamanaka-Okada, A., Sato, E., Kouchi, T., Kimizuka, R. and Kato, t., (2008) Inhibitory Effect of Cranberry Polyphenol on Cariogenic Bacteria. *Bull Tokyo Dental Voll*. 49:107-112.
- Young, M.M., (2019) *Comprehensive Biotechnology*. 3rd Ed. Saint Louis, Mo: Elsevier. pp 542.
- Yuan, Y. and Lee, T.R. (2013) Contact Angle and Wetting Properties. In: Bracco, G. and Holst, B., Eds. *Surface Science Techniques Springer Series, Surface Sciences*. Berlin: Springer. pp 3-34.
- Zharfan R.S., Purwono P.B. and Mustika A., (2017) Antimicrobial Activity of Pineapple (*Ananas Comosus* L.Merr) Extract against Multidrug-Resistant of *Pseudomonas Aeruginosa*: An in vitro Study. *IJTID*. 6(5):118-123.
- Zhao, X. and Li, Y., (2015) *Atlas of Oral Microbiology from Healthy Microflora to Disease*. San Diego: Elsevier. pp 59.