

DAFTAR PUSTAKA

- Abubakar, A.R. and Haque, M., 2020. Preparation of medicinal plants: Basic extraction and fractionation procedures for experimental purposes. *Journal of pharmacy & bioallied sciences*, 12(1), p.1.
- Adeyeye, O.A., Xiao, C., Zhang, Z., Yawe, A.S. and Liang, X., 2021. Groundwater fluoride chemistry and health risk assessment of multi-aquifers in Jilin Qianan, Northeastern China. *Ecotoxicology and Environmental Safety*, 211, p.111926.
- Alejandra, B.M. and Daniel, O.M., 2020. Virulence factors of *Streptococcus mutans* related to dental caries. *Staphylococcus and Streptococcus*, 9.
- Almeida, M., Salam, S., Rahmadani, A., Helmi, H., Narsa, A.C., Kusuma, S.A.F. and Sriwidodo, S., 2022. The potency of the genus *uncaria* from east borneo for herbal medicine purposes: a mini-review. *Journal of Tropical Pharmacy and Chemistry*, 6(2), pp.167-176.
- Al-Sheikh, H.M.A., Sultan, I., Kumar, V., Rather, I.A., Al-Sheikh, H., Tasleem Jan, A. and Haq, Q.M.R., 2020. Plant-based phytochemicals as possible alternative to antibiotics in combating bacterial drug resistance. *Antibiotics*, 9(8), p.480.
- Amrianti, P.S.A., 2020. Identifikasi senyawa dan aktivitas antioksidan fraksi n-heksan dan fraksi etil asetat kayu bajakah kalalawit (*Uncaria gambir* (Hunter) Roxb) asal muara teweh kalimantan tengah.
- Amrurrohman, B., Narsa, A.C., Almada, M., Salam, S., Gama, S.I., Herman, 2022. Profil metabolit sekunder n-heksana dari kulit akar bajakah merah (*Uncaria nervosa* Elmer). *Mulawarman pharmaceutical conferences- xvi*.
- Antika, L.D., Triana, D. and Ernawati, T., 2020, March. Antimicrobial activity of quinine derivatives against human pathogenic bacteria. In *IOP Conference Series: Earth and Environmental Science* (Vol. 462, No. 1, p. 012006). IOP Publishing.
- Arifin, Y.F., Hamidah, S. and Hatta, G.M., 2021. Comparison of the flavonoid contents of bajakah plants from tropical forest in kalimantan, indonesia. *Journal of Hunan University Natural Sciences*, 48(8).
- Balouiri, M., Sadiki, M. and Ibsouda, S.K., 2016. Methods for in vitro evaluating antimicrobial activity: A review. *Journal of pharmaceutical analysis*, 6(2), pp.71-79.
- Bedran, T.B.L., Grignon, L., Spolidorio, D.P. and Grenier, D., 2014. Subinhibitory concentrations of triclosan promote *Streptococcus mutans* biofilm formation and adherence to oral epithelial cells. *PloS one*, 9(2), p.e89059.
- Benarroch, J.M. and Asally, M., 2020. The microbiologist's guide to membrane potential dynamics. *Trends in microbiology*, 28(4), pp.304-314.
- Berezin, S., Aviv, Y., Aviv, H., Goldberg, E. and Tischler, Y.R., 2017. Replacing a century old technique—modern spectroscopy can supplant Gram staining. *Scientific Reports*, 7(1), pp.1-7.

- Bharadwaj, M., Mondal, B.C. and Lata, M., 2021. Scope of utilization of tannin & saponin to improve animal performance. *Jurnal of Entomology and Zoology Studies*.9 (1): 2168-2179.
- Bhatla, S.C. and Lal, M.A., 2018. Plant physiology, development and metabolism. *Springer*. ISBN: 978-981-13-2023-1.
- Bhatla, S.C. and Lal, M.A., 2022. Plant physiology, development and metabolism. *Springer*.
- Biologicals, D., 2014. McFarland Standard for in vitro use only. *Dalynn biologicals*, 2.http://www.dalynn.com/dyn/ck_assets/files/tech/TM53.pdf
- Brookes, Z.L., Bescos, R., Belfield, L.A., Ali, K. and Roberts, A., 2020. Current uses of chlorhexidine for management of oral disease: a narrative review. *Journal of dentistry*, 103, p.103497.
- Bunduki, M.C., Flanders, K.J. and Donnelly, C.W., 1995. Metabolic and structural sites of damage in heat-and sanitizer-injured populations of *Listeria monocytogenes*. *Journal of food protection*, 58(4), pp.410-415.
- Chen, X., Daliri, E.B.-M., Kim, N., Kim, J.-R., Yoo, D. & Oh, D.-H. 2020. Microbial etiology and prevention of dental caries: exploiting natural products to inhibit cariogenic biofilms. *Pathogens*. 9(7):569.
- Cieplik, F., Jakubovics, N.S., Buchalla, W., Maisch, T., Hellwig, E. and Al-Ahmad, A., 2019. Resistance toward chlorhexidine in oral bacteria—is there cause for concern?. *Frontiers in microbiology*, 10, p.587.
- Clarke, J.K., 1924. On the bacterial factor in the aetiology of dental caries. *British journal of experimental pathology*, 5(3), p.141.
- CLSI, 2012. Methods for dilution antimicrobial susceptibility tests for bacteria that grow aerobically; approved standard—ninth edition. M07-A9 Vol. 32 No. 2. ISBN 1-56238-784-7.
- Crossley, B.M., Bai, J., Glaser, A., Maes, R., Porter, E., Killian, M.L., Clement, T. and Toohey-Kurth, K., 2020. Guidelines for sanger sequencing and molecular assay monitoring. *Journal of Veterinary Diagnostic Investigation*, 32(6), pp.767-775.
- Dadgostar, P., 2019. Antimicrobial resistance: implications and costs. *Infection and drug resistance*, pp.3903-3910.
- Darvishi, S., Tavakoli, S., Kharaziha, M., Girault, H.H., Kaminski, C.F. and Mela, I., 2022. Advances in the sensing and treatment of wound biofilms. *Angewandte Chemie*, 134(13), p.e202112218.
- Dewi, Z.Y., Nur, A. and Hertriani, T., 2015. Efek antibakteri dan inhibisi biofilm ekstrak sereh (*Cymbopogon nardus* L.) terhadap bakteri *Streptococcus mutans*. *Majalah Kedokteran Gigi Indonesia*, 1(2), pp.136-141.
- Dey, P., Kundu, A., Kumar, A., Gupta, M., Lee, B.M., Bhakta, T., Dash, S. and Kim, H.S., 2020. Analysis of alkaloids (indole alkaloids, isoquinoline alkaloids, tropane alkaloids). *In Recent advances in natural products analysis* (pp. 505-567). Elsevier.
- Dong, G., Tian, X.L., Cyr, K., Liu, T., Lin, W., Tziolas, G. and Li, Y.H., 2016. Membrane topology and structural insights into the peptide pheromone receptor ComD, a quorum-sensing histidine protein kinase of *Streptococcus mutans*. *Scientific Reports*, 6(1), p.26502.

- Dong, S., Yang, X., Zhao, L., Zhang, F., Hou, Z. and Xue, P., 2020. Antibacterial activity and mechanism of action saponins from *Chenopodium quinoa* Willd. husks against foodborne pathogenic bacteria. *Industrial Crops and Products*, 149, p.112350.
- Dong, Y., Yang, C., Zhong, W., Shu, Y., Zhang, Y. and Yang, D., 2022. Antibacterial effect and mechanism of anthocyanin from *Lycium ruthenicum* Murr. *Frontiers in Microbiology*, 13.
- Dörr, T., Moynihan, P.J. and Mayer, C., 2019. Bacterial cell wall structure and dynamics. *Frontiers in Microbiology*, p.2051.
- Dwicahyani, T., Sumardianto, S. and Rianingsih, L., 2018. Uji bioaktivitas ekstrak teripang keling *Holothuria atra* sebagai antibakteri *Staphylococcus aureus* dan *Escherichia coli*. *Jurnal Pengolahan dan Bioteknologi Hasil Perikanan*, 7(1), pp.15-24.
- Eloff, J.N., 1998. A sensitive and quick microplate method to determine the minimal inhibitory concentration of plant extracts for bacteria. *Planta medica*, 64(08), pp.711-713.
- Elshikh, M., Ahmed, S., Funston, S., Dunlop, P., McGaw, M., Marchant, R. and Banat, I.M., 2016. Resazurin-based 96-well plate microdilution method for the determination of minimum inhibitory concentration of biosurfactants. *Biotechnology letters*, 38(6), pp.1015-1019.
- Endarini, H.L., 2016. Farmakognisi dan fitokimia. Penerbit: Pusdik SDM Kesehatan Kemenkes RI.
- Farha, A.K., Yang, Q.Q., Kim, G., Li, H.B., Zhu, F., Liu, H.Y., Gan, R.Y. and Corke, H., 2020. Tannins as an alternative to antibiotics. *Food Bioscience*, 38, p.100751.
- Febriyanti, R., Putra Mahardika, M. and Ardiyanto, R., 2021. Srinings fitokimia pada ekstrak hasil proses infundasi akar bajakah. (Doctoral dissertation, Politeknik Harapan Bersama).
- Feoktistova, M., Geserick, P. and Leverkus, M., 2016. Crystal violet assay for determining viability of cultured cells. *Cold Spring Harb Protoc*, 2016(4), pp.343-6.
- Fischer, N.H., Lu, T., Cantrell, C.L., Castañeda-Acosta, J., Quijano, L. and Franzblau, S.G., 1998. Antimycobacterial evaluation of germacranolides in honour of professor GH Neil Towers 75th birthday. *Phytochemistry*, 49(2), pp.559-564.
- Fitriani, SE dan SH, S., 2020. Karakteristik tanaman akar bajakah (*Spatholobus littoralis* Hassk.) dari Loa Kulu Kabupaten Kutai Kartanegara. *Jurnal Riset Teknologi Industri*, 14 (2), hlm.365-376.
- Flores, L.,M.A., Quintero-Cabello, K.P., Palafox-Rivera, P., Silva-Espinoza, B.A., Cruz-Valenzuela, M.R., Ortega-Ramirez, L.A., Gonzalez-Aguilar, G.A. and Ayala-Zavala, J.F., 2021. Plant-derived substances with antibacterial, antioxidant, and flavoring potential to formulate oral health care products. *Biomedicine*, 9 (11), p.1669.
- Ford, A.J. and Hasenpusch, J.W., 2009. Rediscovery of *Uncaria cordata* (Lour.) Merr. var. *cordata* (Rubiaceae: Naucleaeae) in Australia. *Austrobaileya*, 8(1), pp.99-102.

- Franco, M., F., 2021. Ethnobotany of the mountain regions of southeast asia, springer reference. Georgia: Department of Ethnobotany, Institute of Botany and Bakuriani Alpine Botanical Garden Ilia State University Tbilisi.
- Fukuyama, N., Ino, C., Suzuki, Y., Kobayashi, N., Hamamoto, H., Sekimizu, K. and Orihara, Y., 2011. Antimicrobial sesquiterpens from *Laurus nobilis* L. *Natural product research*, 25(14), pp.1295-1303.
- Fuse, Y., Ito, Y., Yamaguchi, M. and Tsukada, N., 2022. High ingestion rate of iodine from povidone-iodine mouthwash. *Biological Trace Element Research*, pp.1-8.
- Gabe, V., Kacergius, T., Abu-Lafi, S., Kalesinskas, P., Masalha, M., Falah, M., Abu-Farich, B., Melninkaitis, A., Zeidan, M. and Rayan, A., 2019. Inhibitory effects of ethyl gallate on *Streptococcus mutans* biofilm formation by optical profilometry and gene expression analysis. *Molecules*, 24(3), p.529.
- Gabe, V., Zeidan, M., Kacergius, T., Bratchikov, M., Falah, M. and Rayan, A., 2020. Lauryl gallate activity and *Streptococcus mutans*: its effects on biofilm formation, acidogenicity and gene expression. *Molecules*, 25(16), p.3685.
- Gandjar, Ibnu G, Abdul R. Kimia farmasi analisis. Yogyakarta: Pustaka Pelajar; 2007.
- Geng, C.A., Huang, X.Y., Ma, Y.B., Hou, B., Li, T.Z., Zhang, X.M. and Chen, J.J., 2017. (\pm)-Uncarilins A and B, dimeric isoechinulin-type alkaloids from *Uncaria rhynchophylla*. *Journal of natural products*, 80(4), pp.959-964.
- Giudice, D. C., Vaia, E., Liccardo, D., Marzano, F., Valletta, A., Spagnuolo, G., Ferrara, N., Rengo, C., Cannavo, A. and Rengo, G., 2021. Infective endocarditis: a focus on oral microbiota. *Microorganisms*, 9(6), p.1218.
- Gonzalez, G.F., dos Santos, F.A. and Da Costa, F.B., 2016. Sesquiterpene lactones: more than protective plant compounds with high toxicity. *Critical Reviews in Plant Sciences*, 35(1), pp.18-37.
- Grabarek, O.,E., Sekowski, S., Bitiucki, M., Dobrzynska, I., Shlyonsky, V., Ionov, M., Burzynski, P., Roszkowska, A., Swiecicka, I., Abdulladjanova, N. and Zamaraeva, M., 2020. Inhibition of interaction between *Staphylococcus aureus* α -hemolysin and erythrocytes membrane by hydrolysable tannins: structure-related activity study. *Scientific reports*, 10(1), pp.1-14.
- Guimarães, A.C., Meireles, L.M., Lemos, M.F., Guimarães, M.C.C., Endringer, D.C., Fronza, M. and Scherer, R., 2019. Antibacterial activity of terpenes and terpenoids present in essential oils. *Molecules*, 24(13), p.2471.
- Häkkinen, S.T., Soković, M., Nohynek, L., Ćirić, A., Ivanov, M., Stojković, D., Tsitko, I., Matos, M., Baixinho, J.P., Ivasiv, V. and Fernández, N., 2021. Chicory extracts and sesquiterpene lactones show potent activity against bacterial and fungal pathogens. *Pharmaceuticals*, 14(9), p.941.
- Harborne, J.B. 1984. Phytochemical method, a guide to modern techniques of plant analysis. London New York: Chapman and Hall.

- Harborne, J.B. 1996. Metode fitokimia: penuntun cara modern menganalisis tumbuhan. ITB Press, Bandung.
- Hastari, B. and Octavianus, R., 2021. Komposisi dan keragaman jenis bajakah di resort sebangau hulu taman nasional sebangau. *Daun: Jurnal Ilmiah Pertanian dan Kehutanan*, 8(2), pp.82-97.
- Heitzman, M.E., Neto, C.C., Winiaz, E., Vaisberg, A.J. and Hammond, G.B., 2005. Ethnobotany, phytochemistry and pharmacology of *Uncaria* (Rubiaceae). *Phytochemistry*, 66(1), pp.5-29.
- Heliawati, L., 2018. Kimia organik bahan alam. Diterbitkan: Universitas Pakuan Baogor.
- Homenta, H., 2016. Infeksi biofilm bakterial. *eBiomedik*, 4(1).
- Horváth, G., Molnár, P., Bencsik, T., 2013. Pharmacognosy 2. Europa: University of Pecs. ISBN 978-963-642-613-2.
- Huang, Q., Liu, X., Zhao, G., Hu, T. and Wang, Y., 2018. Potential and challenges of tannins as an alternative to in-feed antibiotics for farm animal production. *Animal Nutrition*, 4(2), pp.137-150.
- Husna, F. and MITA, S.R., 2020. Identifikasi bahan kimia obat dalam obat tradisional stamina pria dengan metode kromatografi lapis tipis. *Farmaka*, 18(2), pp.16-25.
- Inmawaty, J., Sudjarwo, I. and Satari, M.H., 2012. Inhibitory concentrations of gambier (*Uncaria gambir* Roxb.) catechins extract against *Streptococcus mutans*. *Padjadjaran Journal of Dentistry*, 24(3).
- IT IS. Taksonomi *Uncaria gambir* (Hunter) Roxb.–gambir. https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=506057#null [12 Maret 2022]
- IT IS. Taksonomi *Streptococcus mutans* Clarke. https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=506057#null [12 Maret 2022]
- Irianti, T., T., 2021. Antioksidan dan kesehatan. Penerbit: Universitas Gadjah Mada. ISBN; 9786023869282, 6023869289 (hal:120-121).
- Jafaar, H.J., Isbilen, O., Volkan, E. and Sariyar, G., 2021. Alkaloid profiling and antimicrobial activities of *Papaver glaucum* and *P. decaisnei*. *BMC Research Notes*, 14, pp.1-7.
- Jones E, Michael S, Sittampalam GS. Basics of Assay Equipment and Instrumentation for High Throughput Screening. 2012 May 1 [Updated 2016 Apr 2]. In: markossian s, grossman a, brimacombe k, et al., editors. assay guidance manual [Internet]. Bethesda (MD): Eli Lilly & Company and the National Center for Advancing Translational Sciences; 2004-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK92014/?report=classic>.
- Julianto, T., S., 2019. Fitokimia, tinjauan metabolit sekunder dan skrining fitokimia. Penerbit: Universitas Islam Indonesia. ISBN: 978-602-450-332-1.
- Károly, M., Nagy, G., Nagy, Á. and Bródy, A., 2019. A szájúreg leggyakoribb bakteriális eredetű kórképeinek jellegzetességei, diagnosztikája és kezelése. *Orvosi Hetilap*, 160(19), pp.739-746.

- Kemenkes, 2017. Farmakope herbal indonesia edisi ii. Jakarta: Kementrian Kesehatan RI. ISBN: 978-602-416-329-7.
- Khan, M.I., Ahmmed, 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. *Evidence-Based Complementary and Alternative Medicine*, 2018.
- Kim, Y., Jang, S., Kim, H., dan Kim, S., 2017. Deodorizing, antimicrobial and glucosyltransferase inhibitory activities of polyphenolics from bio source, Korean J. Chem. Eng., 34(3): 1–5.
- Kováč, J., Slobodníková, L., Trajčiková, E., Rendeková, K., Mučaji, P., Sychrová, A. and Bittner Fialová, S., 2023. Therapeutic potential of flavonoids and tannins in management of oral infectious diseases—a review. *Molecules*, 28(1), p.158.
- Kriswandini, I.L., Diyatri, I., Nuraini, P., Berniyanti, T., Putri, I.A. and Tyas, P.N.B.N., 2020. The forming of bacteria biofilm from *Streptococcus mutans* and *Aggregatibacter actinomycetemcomitans* as a marker for early detection in dental caries and periodontitis. *Infectious disease reports*, 12(S1), pp.26-28.
- Leber, A.L., 2016. Clinical microbiology procedures handbook, 4th edition volume 2. Washington DC: Department of Laboratory Medicine, Nationwide Children's Hospital, Columbus, Ohio. ISBN: 9781555818814.
- Lemberg, R., Tandy, D. and Goldsworthy, N.E., 1946. Identification of aminobenzoic acids in relation to bacterial metabolism. *Nature*, 157(3978), pp.103-103.
- Lemos, J.A., Quivey Jr, R.G., Koo, H. and Abranches, J., 2013. *Streptococcus mutans*: a new gram-positive paradigm?. *Microbiology*, 159(Pt 3), p.436.
- 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*. *Microbiology spectrum*, 7(1), pp.7-1.
- Leung, V., Dufour, D. and Lévesque, C.M., 2015. Death and survival in *Streptococcus mutans*: differing outcomes of a quorum-sensing signaling peptide. *Frontiers in Microbiology*, 6, p.1176.
- Lezoul, N.E.H., Belkadi, M., Habibi, F. and Guillén, F., 2020. Extraction processes with several solvents on total bioactive compounds in different organs of three medicinal plants. *Molecules*, 25(20), p.4672.
- Lin, Y., Chen, J., Zhou, X. and Li, Y., 2021. Inhibition of *Streptococcus mutans* biofilm formation by strategies targeting the metabolism of exopolysaccharides. *Critical reviews in microbiology*, 47(5), pp.667-677.
- Liu, X.L., Hao, Y.Q., Jin, L., Xu, Z.J., McAllister, T.A. and Wang, Y., 2013. Anti-*Escherichia coli* O157: H7 properties of purple prairie clover and sainfoin condensed tannins. *Molecules*, 18(2), pp.2183-2199.
- Liu, J., Wang, X., Yong, H., Kan, J. and Jin, C., 2018. Recent advances in flavonoid-grafted polysaccharides: Synthesis, structural characterization, bioactivities and potential applications. *International journal of biological macromolecules*, 116, pp.1011-1025.

- Liu, Z.H., Wang, W.M., Zhang, Z., Sun, L. and Wu, S.C., 2022. Natural antibacterial and antivirulence alkaloids from *macleaya cordata* against methicillin-resistant *Staphylococcus aureus*. *Frontiers in Pharmacology*, 13, p.813172.
- Lobiuc, A., Pavăl, N.E., Mangalagiu, I.I., Gheorghită, R., Teliban, G.C., Amăriucăi-Mantu, D. and Stoleru, V., 2023. Future antimicrobials: natural and functionalized phenolics. *Molecules*, 28(3), p.1114.
- Lorent, J.H., Quetin-Leclercq, J. and Mingeot-Leclercq, M.P., 2014. The amphiphilic nature of saponins and their effects on artificial and biological membranes and potential consequences for red blood and cancer cells. *Organic & biomolecular chemistry*, 12(44), pp.8803-8822.
- Lu, L., Hu, W., Tian, Z., Yuan, D., Yi, G., Zhou, Y., Cheng, Q., Zhu, J. and Li, M., 2019. Developing natural products as potential anti-biofilm agents. *Chinese medicine*, 14(1), pp.1-17.
- Mahizan, N.A., Yang, S.K., Moo, C.L., Song, A.A.L., Chong, C.M., Chong, C.W., Abushelaibi, A., Lim, S.H.E. and Lai, K.S., 2019. Terpene derivatives as a potential agent against antimicrobial resistance (AMR) pathogens. *Molecules*, 24(14), p.2631.
- Matsui, R. and Cvitkovitch, D., 2010. Acid tolerance mechanisms utilized by *Streptococcus mutans*. *Future microbiology*, 5(3), pp.403-417.
- Mazur, M. and Masłowiec, D., 2022. Antimicrobial activity of lactones. *Antibiotics*, 11(10), p.1327.
- Ménorval, M.A., Mir, L.M., Fernández, M.L. and Reigada, R., 2012. Effects of dimethyl sulfoxide in cholesterol-containing lipid membranes: a comparative study of experiments in silico and with cells. *PloS one*, 7(7), p.e41733.
- Misaki, T., Naka, S., Hatakeyama, R., Fukunaga, A., Nomura, R., Isozaki, T. and Nakano, K., 2016. Presence of *Streptococcus mutans* strains harbouring the *cnm* gene correlates with dental caries status and IgA nephropathy conditions. *Scientific reports*, 6(1), p.36455.
- Mishra, R., Panda, A.K., De Mandal, S., Shakeel, M., Bisht, S.S. and Khan, J., 2020. Natural anti-biofilm agents: strategies to control biofilm-forming pathogens. *Frontiers in Microbiology*, 11, p.566325.
- Mitchell, T.J., 2003. The pathogenesis of streptococcal infections: from tooth decay to meningitis. *Nature Reviews Microbiology*, 1(3), pp.219-230.
- Miyatani, F., Kuriyama, N., Watanabe, I., Nomura, R., Nakano, K., Matsui, D., Ozaki, E., Koyama, T., Nishigaki, M., Yamamoto, T. and Mizuno, T., 2015. Relationship between *Cnm*-positive *Streptococcus mutans* and cerebral microbleeds in humans. *Oral Diseases*, 21(7), pp.886-893.
- Momeni, S.S., Ghazal, T., Grenett, H., Whiddon, J., Moser, S.A. and Childers, N.K., 2019. *Streptococcus mutans* serotypes and collagen-binding proteins *Cnm/Cbm* in children with caries analysed by PCR. *Molecular oral microbiology*, 34(2), pp.64-73.
- Mukherjee, I. and Singh, U.K., 2022. Exploring a variance decomposition approach integrated with the monte carlo method to evaluate groundwater

- fluoride exposure on the residents of a typical fluorosis endemic semi-arid tract of India. *Environmental Research*, 203, p.111697.
- Munoz, R., Garcia, E. and De la Campa, A.G., 1996. Quinine specifically inhibits the proteolipid subunit of the F₀F₁ H⁺-ATPase of *Streptococcus pneumoniae*. *Journal of bacteriology*, 178(8), pp.2455-2458.
- Murat, Oz., Lozon, Y., Sultan, A., Yang, K.H.S. and Galadari, S., 2015. Effects of monoterpenes on ion channels of excitable cells. *Pharmacology & therapeutics*, 152, pp.83-97.
- Nadiah, M., Narsa, C.,A., Salam, S., Almeida, M., 2022. Antibacterial activity test acne causing bacteria extract and fractions of the red bajakah stem bark (*Uncaria nervosa* Elmer). Mulawarman Pharmaceutical Conferences-XVI.
- Nakano, K. and Ooshima, T., 2009. Serotype classification of *Streptococcus mutans* and its detection outside the oral cavity. *Future microbiology*, 4(7), pp.891-902.
- National Center for Biotechnology Information (2022). PubChem compound summary for cid 3314, eugenol. <https://pubchem.ncbi.nlm.nih.gov/compound/Eugenol>. [1 Agustus 2022].
- Nisar, M.F., Khadim, M., Rafiq, M., Chen, J., Yang, Y. and Wan, C.C., 2021. Pharmacological properties and health benefits of eugenol: a comprehensive review. *Oxidative Medicine and Cellular Longevity*.
- Nomura, R., Matayoshi, S., Otsugu, M., Kitamura, T., Teramoto, N. and Nakano, K., 2020. Contribution of severe dental caries induced by *Streptococcus mutans* to the pathogenicity of infective endocarditis. *Infection and immunity*, 88(7), pp.e00897-19.
- Nursanti, N., Novriyanti, N. and Wulan, C., 2018. Various types of potential drug plants in Muhammad Sabki Urban forest Jambi city. *Media Konservasi*, 23(2), pp.169-177.
- Omar, M.M., 2020. Isolation and identification of *Bacillus* sp. producing of amylase from different sources in kirkuk, iraq. *Plant Archives*, 20(1), pp.1867-1872.
- Osorio-Tobón, J.F., 2020. Recent advances and comparisons of conventional and alternative extraction techniques of phenolic compounds. *Journal of Food Science and Technology*, 57, pp.4299-4315.
- Othman, L., Sleiman, A. and Abdel-Massih, R.M., 2019. Antimicrobial activity of polyphenols and alkaloids in middle eastern plants. *Frontiers in microbiology*, 10, p.911.
- Ouattara, B., Simard, R.E., Holley, R.A., Piette, G.J.P. and Bégin, A., 1997. Antibacterial activity of selected fatty acids and essential oils against six meat spoilage organisms. *International journal of food microbiology*, 37(2-3), pp.155-162.
- Oulahal, N. and Degraeve, P., 2022. Phenolic-rich plant extracts with antimicrobial activity: an alternative to food preservatives and biocides?. *Frontiers in Microbiology*, 12, p.3906.

- Paluch, E., Rewak-Soroczyńska, J., Jędrusik, I., Mazurkiewicz, E. and Jermakow, K.J.A.M., 2020. Prevention of biofilm formation by quorum quenching. *Applied Microbiology and Biotechnology*, 104, pp.1871-1881.
- Pambayun, R., Gardjito, M., Sudarmadji, S. and Kuswanto, K.R., 2007. Kandungan fenol dan sifat antibakteri dari berbagai jenis ekstrak produk gambir (*Uncaria gambir* Roxb). *Majalah Farmasi Indonesia*, 18(3), pp.141-146.
- Paramita, P.P. and Tata, H.L., 2021, May. Phytochemical compounds identification of three bajakah species (*Salacia* sp., *Uncaria acida*, and *Uncaria gambir*) using GC-MS pyrolysis. In *IOP Conference Series: Earth and Environmental Science* (Vol. 762, No. 1, p. 012043). IOP Publishing.
- Park, S.J., Park, H.W. and Park, J., 2003. Inactivation kinetics of food poisoning microorganisms by carbon dioxide and high hydrostatic pressure. *Journal of food science*, 68(3), pp.976-981.
- Peretti, P., Rodrigues, E.T., de Souza Junior, B.M., Bezerra, R.M., Fernandez, E.G., de Sousa, F.F.O. and Pinheiro, M.T., 2021. Spilanthol content of *Acmella oleracea* subtypes and their bactericide and antibiofilm activities against *Streptococcus mutans*. *South African Journal of Botany*, 143, pp.17-24.
- Qin, N., Lu, X., Liu, Y., Qiao, Y., Qu, W., Feng, F. and Sun, H., 2021. Recent research progress of *Uncaria* spp. based on alkaloids: phytochemistry, pharmacology and structural chemistry. *European Journal of Medicinal Chemistry*, 210, p.112960.
- Riyanti, E., Maskoen, M.A., Oewen, R.R., Pratidin, B., N., Ahmad, H., Ramadhany, Y.F., 2020. Antibacterial activity of allium sativum against streptococcus mutans atcc 25175 in indonesia. *Systematic Reviews in Pharmacy*; 11(4): 313-318.
- Robinson, T., 1963. The organic constituents of higher plants: their chemistry and interrelationships (No. QK861 R58).
- Rodriguez, L.J.P., Ponce-Diaz, M.E., Loyola-Leyva, A., Garcia-Cortes, J.O., Medina-Solis, C.E., Contreras-Ramire, A.A. and Serena-Gomez, E., 2018. Determination and identification of antibiotic-resistant oral streptococci isolated from active dental infections in adults. *Acta Odontologica Scandinavica*, 76(4), pp.229-235.
- Saboora, A., Sajjadi, S.T., Mohammadi, P. and Fallahi, Z., 2019. Antibacterial activity of different composition of aglycone and glycosidic saponins from tuber of *Cyclamen coum* Miller. *Industrial Crops and Products*, 140, p.111662.
- Sadgrove, N.J., Padilla-González, G.F. and Phumthum, M., 2022. Fundamental chemistry of essential oils and volatile organic compounds, methods of analysis and authentication. *Plants*, 11(6), p.789.
- Santoso, B., Huda, D.N. and Pangawikan, A.D., 2021. Pemanfaatan ekstrak gambir (*Uncaria Gambir* Roxb) pada pembuatan permen jelly fungsional. *Indonesian Journal of Industrial Research*, 32(2), pp.110-119.

- Sibarani, P.R., 2020. Karakterisasi simplisia dan standarisasi ekstrak etanol batang bajakah kalalawit (*Uncaria cordata* (Lour) Merr.) asal kecamatan loksado kalimantan selatan. Universitas Lambung Mangkurat.
- Singh, A., Ahmad, S., Ahmad, A., 2015. Green extraction methods and environmental applications of carotenoids-a review. *RSC Adv.* 5, 62358–62393.
- Sintim, H., O., Gürsoy, U. K., 2016. Biofilms as “connectors” for oral and systems medicine: a new opportunity for biomarkers, molecular targets, and bacterial eradication. *OMICS: A Journal of Integrative Biology*, 20(1), 3-11.
- Sogandi, S. and Nilasari, P., 2019. Identifikasi senyawa aktif ekstrak buah mengkudu (*Morinda citrifolia* L.) dan potensinya sebagai inhibitor karies gigi. *Jurnal Kefarmasian Indonesia*, pp.73-81.
- Song, L., Wang, W., Conrads, G., Rheinberg, A., Sztajer, H., Reck, M., Wagner-Döbler, I. and Zeng, A.P., 2013. Genetic variability of mutans streptococci revealed by wide whole-genome sequencing. *BMC genomics*, 14, pp.1-24.
- Sugden, R., Kelly, R. and Davies, S., 2016. Combatting antimicrobial resistance globally. *Nature microbiology*, 1(10), pp.1-2.
- Sulaiman, M., Jannat, K., Nissapatorn, V., Rahmatullah, M., Paul, A.K., de Lourdes Pereira, M., Rajagopal, M., Suleiman, M., Butler, M.S., Break, M.K.B. and Weber, J.F., 2022. Antibacterial and antifungal alkaloids from asian angiosperms: distribution, mechanisms of action, structure-activity, and clinical potentials. *Antibiotics*, 11(9), p.1146.
- Sutton, S., 2011. Measurement of microbial cells by optical density. *Journal of Validation technology*, 17(1), pp.46-49.
- Syafriana, V., 2021. Antimicrobial activity of ethanol extract of akar kaik-kaik (*Uncaria cordata* (Lour.) Merr.) leaves against *Staphylococcus aureus*, *Escherichia coli*, and *Candida albicans*. *Advances in Biological Sciences Research*, 14, pp.540-546.
- Toumba, K.J., Twetman, S., Splieth, C., Parnell, C., Van Loveren, C. and Lygidakis, N.A., 2019. Guidelines on the use of fluoride for caries prevention in children: an updated EAPD policy document. *European Archives of Paediatric Dentistry*, 20(6), pp.507-516.
- Trentin, D., Giordani, R.B., Zimmer, K.R., Da Silva, A.G., Da Silva, M.V., dos Santos Correia, M.T., Baumvol, I.J.R. and Macedo, A.J., 2011. Potential of medicinal plants from the Brazilian semi-arid region (Caatinga) against *Staphylococcus epidermidis* planktonic and biofilm lifestyles. *Journal of Ethnopharmacology*, 137(1), pp.327-335.
- Trombetta, D., Castelli, F., Sarpietro, M.G., Venuti, V., Cristani, M., Daniele, C., Saija, A., Mazzanti, G. and Bisignano, G., 2005. Mechanisms of antibacterial action of three monoterpenes. *Antimicrobial agents and chemotherapy*, 49(6), pp.2474-2478.
- Ulanowska, M. and Olas, B., 2021. Biological properties and prospects for the application of eugenol—a review. *International Journal of Molecular Sciences*, 22(7), p.3671.

- Vasquez, C.R.A., Santos, S.S.F.D., Koga-Ito, C.Y. and Jorge, A.O.C., 2007. Antimicrobial activity of *Uncaria tomentosa* against oral human pathogens. *Brazilian oral research*, 21, pp.46-50.
- Vongsak, B., Sithisarn, P., Mangmool, S., Thongpraditchote, S., Wongkrajang, Y. and Gritsanapan, W., 2013. Maximizing total phenolics, total flavonoids contents and antioxidant activity of *Moringa oleifera* leaf extract by the appropriate extraction method. *Industrial crops and products*, 44, pp.566-571.
- Wagner, H., Bladt, S., Zgainski, E.M., 1984. Plant drug analysis (a thin layer chromatography atlas). *Springer-Verlag*. Berlin Heidelberg New York Tokyo.
- Wagner, H. and Bladt, S., 1996. Plant drug analysis: a thin layer chromatography atlas. *Springer Science & Business Media*.
- Wagner, H., Bauer, R., Melchart, D., Xiao, P.G. and Staudinger, A., 2011. Chromatographic fingerprint analysis of herbal medicines Volume 1, 2nd Edition. Berlin, Germany: Springer. ISBN: 978-3-7091-0762-1.
- Walsh, D.J., Livinghouse, T., Goeres, D.M., Mettler, M. and Stewart, P.S., 2019. Antimicrobial activity of naturally occurring phenols and derivatives against biofilm and planktonic bacteria. *Frontiers in chemistry*, p.653.
- Wang, S., Wang, Y., Wang, Y., Duan, Z., Ling, Z., Wu, W., Tong, S., Wang, H. and Deng, S., 2019. Theaflavin-3, 3'-digallate suppresses biofilm formation, acid production, and acid tolerance in *Streptococcus mutans* by targeting virulence factors. *Frontiers in microbiology*, p.1705.
- Whitmore, S.E. and Lamont, R.J., 2012. Tyrosine phosphorylation and bacterial virulence. *International journal of oral science*, 4(1), pp.1-6.
- WHO, 2020. Antibiotic resistance. <https://www.who.int/news-room/fact-sheets/detail/antibiotic-resistance> [20 Juli 2022].
- WHO, 2022. Oral health. <https://www.who.int/indonesia/id/news/detail/12-102022-time-to-act-to-curb-antimicrobial-resistance-now> [9 Juni 2023].
- Wink, M., 2010. Annual plant reviews, biochemistry of plant secondary metabolism. John Wiley & Sons.
- Wu, D., Wu, X.D., You, X.F., Ma, X.F. and Tian, W.X., 2010. Inhibitory effects on bacterial growth and b-ketoacyl-ACP reductase by different species of maple leaf extracts and tannic acid. *Phytotherapy Research*, 24(S1), pp.S35-S41.
- Wulandari L., 2011. Kromatografi lapis tipis. Penerbit: TK Taman Kampus Presindo Peduli dan Pelayan Pendidikan. ISBN: 978-979-17068-1-0.
- Yan, Y., Li, X., Zhang, C., Lv, L., Gao, B. and Li, M., 2021. Research progress on antibacterial activities and mechanisms of natural alkaloids: A review. *Antibiotics*, 10(3), p.318.
- Yuan, G., Guan, Y., Yi, H., Lai, S., Sun, Y. and Cao, S., 2021. Antibacterial activity and mechanism of plant flavonoids to gram-positive bacteria predicted from their lipophilicities. *Scientific reports*, 11(1), p.10471.
- Yumoto, H., Hirota, K., Hirao, K., Ninomiya, M., Murakami, K., Fujii, H. and Miyake, Y., 2019. The pathogenic factors from oral streptococci for

- systemic diseases. *International journal of molecular sciences*, 20(18), p.4571.
- Zengin, H. and Baysal, A.H., 2014. Antibacterial and antioxidant activity of essential oil terpenes against pathogenic and spoilage-forming bacteria and cell structure-activity relationships evaluated by SEM microscopy. *Molecules*, 19(11), pp.17773-17798.
- Zhang, P., Zhang, E., Xiao, M., Chen, C. and Xu, W., 2013. Study of anti-inflammatory activities of α -d-glucosylated eugenol. *Archives of pharmacol research*, 36, pp.109-115.
- Zhang, Q., Zhao, J.J., Xu, J., Feng, F. and Qu, W., 2015. Medicinal uses, phytochemistry and pharmacology of the genus *Uncaria*. *Journal of Ethnopharmacology*, 173, pp.48-80.
- Zhang, Q.W., Lin, L.G. and Ye, W.C., 2018. Techniques for extraction and isolation of natural products: A comprehensive review. *Chinese medicine*, 13(1), pp.1-26.
- Zhang, Q., Ma, Q., Wang, Y., Wu, H. and Zou, J., 2021. Molecular mechanisms of inhibiting glucosyltransferases for biofilm formation in *Streptococcus mutans*. *International Journal of Oral Science*, 13(1), p.30.