

## DAFTAR PUSTAKA

- Abidi, S. L. (2001). Chromatographic analysis of plant sterols in foods and vegetable oils. *Journal of Chromatography A*, 935(1–2), 173–201. [https://doi.org/10.1016/S0021-9673\(01\)00946-3](https://doi.org/10.1016/S0021-9673(01)00946-3)
- Acker, H. Van, & Coenye, T. (2016). The Role of Efflux and Physiological Adaptation in Biofilm Tolerance and Resistance. *The Journal Of Biological Chemistry*, 291(24), 12565–12572. <https://doi.org/10.1074/jbc.R115.707257>
- Agati, G., Biricolti, S., Guidi, L., Ferrini, F., Fini, A., & Tattini, M. (2011). The biosynthesis of flavonoids is enhanced similarly by UV radiation and root zone salinity in *L. vulgare* leaves. *Journal of Plant Physiology*, 168(3), 204–212. <https://doi.org/10.1016/j.jplph.2010.07.016>
- Ahn, S., Mun, Y., Lee, S., Kwak, S., Choi, M., Baik, S., ... Woo, W. (2006). *Selaginella tamariscina* Induces Apoptosis Via A Caspase-3-Mediated Mechanism In Human Promyelocytic Leukemia Cells. *Journal Of Medicinal Food*, 9(2), 138–144. <https://doi.org/10.1089/Jmf.2006.9.138>
- Akpaka, P. E., Kisson, S., Rutherford, C., Swanston, W. H., & Jayaratne, P. (2007). Molecular epidemiology of methicillin-resistant *Staphylococcus aureus* isolates from regional hospitals in Trinidad and Tobago. *International Journal of Infectious Diseases*, 11(6), 544–548. <https://doi.org/10.1016/j.ijid.2007.03.004>
- Al-mariri, A., Safi, M., Allium, L., & Houtt, M. (2014). In Vitro Antibacterial Activity of Several Plant Extracts and Oils against Some Gram-Negative Bacteria. *Iran J Med Sci*, 39(1).
- Aldred, K. J., Kerns, R. J., & Oshero, N. (2014). Mechanism of Quinolone Action and Resistance. *Biochemistry* 2014, 53(10), 1565–1574. <https://doi.org/10.1021/bi5000564>
- Alekshun, M. N., & Levy, S. B. (2015). Review Molecular Mechanisms of Antibacterial Multidrug Resistance. *Cell*, 128(6), 1037–1050. <https://doi.org/10.1016/j.cell.2007.03.004>
- Alem, M. A. S., Oteef, M. D. Y., Flowers, T. H., & Douglas, L. J. (2006). Production of tyrosol by *Candida albicans* biofilms and its role in quorum sensing and biofilm development. *Eukaryotic Cell*, 5(10), 1770–1779. <https://doi.org/10.1128/EC.00219-06>
- Alves, L., Oliveira, R. De, Oliveira, R. G. De, Souza, G. R., Oliveira, A. P. De, Lavor, É. M. De, ... Roberto, J. (2018). Chemical composition , antioxidant and antibacterial activities and evaluation of cytotoxicity of the fractions obtained from *Selaginella convoluta* ( Arn .) Spring ( *Selaginellaceae* ). *Biotechnology & Biotechnological Equipment*, 32(2), 506–512. <https://doi.org/10.1080/13102818.2018.1431055>
- Amarasekera, S., Durrani, A. F., Faith, S., Kowalski, R. P., & Jhanji, V. (2019). Clinical features of *Streptococcus pyogenes* keratitis : Case series. *Contact Lens and Anterior Eye*, 42(5), 581–585. <https://doi.org/10.1016/j.clae.2019.04.007>
- Amini, S. M. (2019). Preparation of antimicrobial metallic nanoparticles with bioactive compounds. *Materials Science & Engineering C*, 103(January), 109809. <https://doi.org/10.1016/j.msec.2019.109809>

- Amira, H. A. A. A. (2016). Effect of plants extracts on the growth of *Candida albicans* and *Staphylococcus aureus*. *African Journal of Pharmacy and Pharmacology*, 10(16), 337–345. <https://doi.org/10.5897/ajpp2016.4522>
- Annapoorani, A., Umamageswaran, V., Parameswari, R., Pandian, S. K., & Ravi, A. V. (2012a). Computational discovery of putative quorum sensing inhibitors against LasR and RhIR receptor proteins of *Pseudomonas aeruginosa*. *Journal of Computer-Aided Molecular Design*, 26(9), 1067–1077. <https://doi.org/10.1007/s10822-012-9599-1>
- Annapoorani, A., Parameswari, R., Pandian, S. K., & Ravi, A. V. (2012b). Methods to determine antipathogenic potential of phenolic and flavonoid compounds against urinary pathogen *Serratia marcescens*. *Journal of Microbiological Methods*, 91(1), 208–211. <https://doi.org/10.1016/j.mimet.2012.06.007>
- Andes, D. R., Safdar, N., Baddley, J. W., Alexander, B., Brumble, L., Freifeld, A., ... Pappas, P. G. (2016). The epidemiology and outcomes of invasive *Candida* infections among organ transplant recipients in the United States: results of the Transplant- Associated Infection Surveillance Network (TRANSNET). *Transplant Infectious Disease*, 18(6), 921–931. <https://doi.org/10.1111/tid.12613>
- Aniszewski, T. (2007). Alkaloids - Secrets of Life. In T. Aniszewski (Ed.), *Alkaloids - Secrets of Life* (First). <https://doi.org/10.1016/B978-0-444-52736-3.X5000-4>
- Arulmozhi, P., Vijayakumar, S., Praseetha, P. K., & Jayanthi, S. (2019). Extraction methods and computational approaches for evaluation of antimicrobial compounds from *Capparis zeylanica* L. *Analytical Biochemistry*, 572(December 2018), 33–44. <https://doi.org/10.1016/j.ab.2019.02.006>
- Arabski, M., We, A., Czerwonka, G., Lankoff, A., & Kaca, W. (2012). Effects of Saponins against Clinical *E. coli* Strains and Eukaryotic Cell Line. *Journal OfBiomedicine and Biotechnology*, 2012, 1–6. <https://doi.org/10.1155/2012/286216>
- Archer, N. K., Mazaitis, mark J., Costerton, J. W., Leid, J. G., Powers, mary elizabeth, & Shirtliff, mark e. (2017). *Staphylococcus aureus* biofilms Properties, regulation and roles in human disease. *Microbial Pathogenesis*, 8(1), 329–340. <https://doi.org/10.4161/viru.2.5.17724>
- Azwanida. (2015). A Review on the Extraction Methods Use in Medicinal Plants , Principle , Strength and Limitation. *Medicinal & Aromatic Plants*, 4(3), 3–8. <https://doi.org/10.4172/2167-0412.1000196>
- Babii, C., Bahrin, L. G., Neagu, A. N., Gostin, I., Mihasan, M., Birsa, L. M., & Stefan, M. (2016). Antibacterial activity and proposed action mechanism of a new class of synthetic tricyclic flavonoids. *Journal of Applied Microbiology*, 120(3), 630–637. <https://doi.org/10.1111/jam.13048>
- Bahrin, L. G., Apostu, M. O., Birsa, L. M., & Stefan, M. (2014). The antibacterial properties of sulfur containing flavonoids. *Bioorganic and Medicinal Chemistry Letters*, 24(10), 2315–2318. <https://doi.org/10.1016/j.bmcl.2014.03.071>
- Baillie, G. S., & Douglas, L. J. (1998). Effect of growth rate on resistance of *Candida albicans* biofilms to antifungal agents. *Antimicrobial Agents and Chemotherapy*, 42(8), 1900–1905. <https://doi.org/10.1128/aac.42.8.1900>

- Balouiri, M., Sadiki, M., & Ibsouda, S. K. (2016). Methods for in vitro evaluating antimicrobial activity : A review. *Journal of Pharmaceutical Analysis*, 6(2), 71–79. <https://doi.org/10.1016/j.jpha.2015.11.005>
- Banks, J. A. (2009). Selaginella and 400 Million Years of Separation. *Annual Review Of Plant Biology*, 60, 223–240. <https://doi.org/10.1146/annurev.arplant.59.032607.092851>
- Banks, J. A. (2012). The Selaginella Genome Identifies Genetic Changes Associated with the Evolution of Vascular Plants No Title. *Science - American Association for the Advancement of Science*, 332(2011), 960–963. <https://doi.org/10.1126/science.1203810>
- Baselga, R., Albizu, I., & Amorena, B. (1994). Staphylococcus aureus capsule and slime as virulence factors in ruminant mastitis . A review. *Veterinary Microbiology*, 39(3–4), 195–204. [https://doi.org/10.1016/0378-1135\(94\)90157-0](https://doi.org/10.1016/0378-1135(94)90157-0)
- Bashandy, T., Taconat, L., Renou, J. P., Meyer, Y., & Reichheld, J. P. (2009). Accumulation of flavonoids in an ntra ntrb mutant leads to tolerance to UV-C. *Molecular Plant*, 2(2), 249–258. <https://doi.org/10.1093/mp/ssn065>
- Basu, S., Bose, C., Ojha, N., Das, N., Das, J., Pal, M., & Khurana, S. (2015). Evolution of bacterial and fungal growth media. *Bioinformation*, 11(4), 182–184. <https://doi.org/10.6026/97320630011182>
- Belkum, A. Van, Verkaik, N. J., de Vogel, C. P., Boelens, H. A., Verveer, J., Nouwen, J. L., ... Wertheim, H. F. L. (2009). Reclassification of Staphylococcus aureus Nasal Carriage Types. *The Journal of Infectious Diseases*, 199(12), 1820–1826. <https://doi.org/10.1086/599119>
- Bensky, D., S. Clavey, and E. Stöger. 2004. *Chinese Herbal Medicine-Materia Medica*. 3rd ed. Seattle, W.A.: Eastland Press.
- Berlanga, M., & Guerrero, R. (2016). Living together in biofilms : the microbial cell factory and its biotechnological implications. *Microbial Cell Factories*, 15(1), 1–11. <https://doi.org/10.1186/s12934-016-0569-5>
- Bessen, D. E. (2009). Population biology of the human restricted pathogen, Streptococcus pyogenes. *Infection, Genetics and Evolution*, 9(4), 581–593. <https://doi.org/10.1016/j.meegid.2009.03.002>
- Bessen, D. E., Mcshan, W. M., Nguyen, S. V, Shetty, A., Agrawal, S., & Tettelin, H. (2015). Molecular epidemiology and genomics of group A Streptococcus. *Infection, Genetics and Evolution*, 33, 393–418. <https://doi.org/10.1016/j.meegid.2014.10.011>
- Bhardwaj, J., Chaudhary, N., Seo, H. J., Kim, M. Y., Shin, T. S., & Kim, J. D. (2014). Immunomodulatory effect of tea saponin in immune T-cells and T-lymphoma cells via regulation of Th1, Th2 immune response and MAPK/ERK2 signaling pathway. *Immunopharmacology and Immunotoxicology*, 36(3), 202–210. <https://doi.org/10.3109/08923973.2014.909849>
- Bhatti, H. N., & Khera, R. A. (2012). Biological transformations of steroidal compounds: A review. *Steroids*, 77(12), 1267–1290. <https://doi.org/10.1016/j.steroids.2012.07.018>
- Blackledge, M. S., Worthington, R. J., & Melander, C. (2013). Biologically-Inspired Strategies for Combating Bacterial Biofilms. *Current Opinion in Pharmacology*, 13(5), 699–706. <https://doi.org/10.1007/978-1-61779-201-4>

- Boakye, Y. D., Osafo, N., Danquah, C. A., Adu, F., & Agyare, C. (2019). Antimicrobial Agents: Antibacterial Agents, Anti-biofilm Agents, Antibacterial Natural Compounds, and Antibacterial Chemicals. *Intechopen Book*, 1–24. <https://doi.org/10.5772/intechopen.82560>
- Bogino, P. C., Oliva, M. de las M., Sorroche, F. G., & Giordano, W. (2013). The Role of Bacterial Biofilms and Surface Components in Plant-Bacterial Associations. *International Journal of Molecular Sciences*, *14*(8), 15838–15859. <https://doi.org/10.3390/ijms140815838>
- Boles, B. R., & Horswill, A. R. (2012). Staphylococcal biofilm disassembly. *Trends in Microbiology*, *19*(9), 449–455. <https://doi.org/10.1016/j.tim.2011.06.004.Staphylococcal>
- Boy, H. I. A., Rutilla, A. J. H., Santos, K. A., Ty, A. M. T., Yu, A. I., Mahboob, T., ... Nissapatorn, V. (2018). Recommended Medicinal Plants as Source of Natural Products: A Review. *Digital Chinese Medicine*, *1*(2), 131–142. [https://doi.org/10.1016/s2589-3777\(19\)30018-7](https://doi.org/10.1016/s2589-3777(19)30018-7)
- Branen, A. L., Davidson, P. M., Salmien, S., & Throngate, J. H. (2002). *Food Additives, Second Edition Revised and Expanded* (2 ed; A. L. Branen, P. M. Davidson, S. Salminen, & J. H. Throngate, eds.). Retrieved from <http://www.dekher.com>
- Bredy, J. (2005). Bioactive Microbial Metabolites. *The Journal Of Antibiotics*, *58*(1), 1–26. <https://doi.org/10.1038/ja.2005.1>
- Brantner, A., & Grein, E. (1994). Antibacterial activity of plant extracts used externally in traditional medicine. *Journal of Ethnopharmacology*, *44*(1), 35–40. [https://doi.org/10.1016/0378-8741\(94\)90096-5](https://doi.org/10.1016/0378-8741(94)90096-5)
- Breurec, S., Zriouil, S. B., Fall, C., Boisier, P., Brisse, S., Djibo, S., ... Garin, B. (2011). Epidemiology of methicillin-resistant *Staphylococcus aureus* lineages in five major African towns : emergence and spread of atypical clones. *Clinical Microbiology and Infection*, *17*(2), 160–165. <https://doi.org/10.1111/j.1469-0691.2010.03219.x>
- British Society for Antimicrobial Chemotherapy. (2018). *Stewardship From Principles This E-Book Has Been* (D. N. Obe, ed.). Birmingham United Kingdom: British Society for Antimicrobial Chemotherapy.
- Brooks G.F, Carroll KC, Butel JS, Morse SA, Mietzner TA. Jawetz, Melnick, & Adelberg's Medical Microbiology. 26th ed (2013). New York; Chicago: McGraw Hill Education., Appleton & Lange. (149-163)
- Brooks, B. D., & Brooks, A. E. (2014). Therapeutic strategies to combat antibiotic resistance. *Advanced Drug Delivery Reviews*, *78*, 14–27. <https://doi.org/10.1016/j.addr.2014.10.027>
- Brown, G. D., Denning, D. W., & Levitz, S. M. (2012a). Tackling Human Fungal Infections. *Science American Association for the Advancement of Science*, *336*(May), 647. <https://doi.org/10.1126/science.1222236>
- Brown, G. D., Denning, D. W., Gow, N. A. R., Levitz, S. M., Netea, M. G., & White, T. C. (2012b). Hidden Killers: Human Fungal Infections. *Science Translational Medicine*, *4*(165), 1–10. <https://doi.org/10.1126/scitranslmed.3004404>
- Bryers, J. D., & Ratner, B. D. (2004). Bioinspired Implant Materials Befuddle Bacteria. *ASM News*, *70*(5), 232–237. <https://doi.org/10.1371/journal.pone.0040629>

- Budzyńska, A., Więckowska-szakiel, M., Sadowska, B., Kalemba, D., & Rozalska, B. (2011). Antibiofilm Activity of Selected Plant Essential Oils and their Major Components. *Polish Journal of Microbiology*, 60(1), 35–41.
- Bushby, M., & Hitchings, G. H. (1968). Trimethoprim, A Sulphonamide Potentiator. *British Journal of Pharmacology and Chemotherapy*, 90(33), 72–90. <https://doi.org/10.1111/j.1476-5381.1968.tb00475.x>
- Cannell, R. J. P. (1998). How to Approach the Isolation of a Natural Product. In R. J. P. Cannell (Ed.), *Natural Products Isolation* (Vol. 4, pp. 1–51). <https://doi.org/10.1007/978-1-59259-256-2>
- Cao, Y., Tan, N., Chen, J., Zeng, G., Ma, Y., Wu, Y., ... Wang, Q. (2010a). Bioactive flavones and biflavones from *Selaginella moellendorffii* Hieron. *Fitoterapia Journal*, 81(4), 253–258. <https://doi.org/10.1016/j.fitote.2009.09.007>
- Cao, Y., Chen, J., Tan, N., Oberer, L., Wagner, T., Wu, Y., ... Wang, Q. (2010b). Antimicrobial selaginellin derivatives from *Selaginella pulvinata*. *Bioorganic & Medicinal Chemistry Letters*, 20(8), 2456–2460. <https://doi.org/10.1016/j.bmcl.2010.03.016>
- Cao, Y., Yao, Y., Huang, X., Oberer, L., Wagner, T., Guo, J., ... Duan, J. (2015). Four new selaginellin derivatives from *Selaginella pulvinata*: mechanism of racemization process in selaginellins with quinone methide. *Tetrahedron*, 71(10), 1581–1587. <https://doi.org/10.1016/j.tet.2015.01.017>
- Carapetis, J. R., Steer, A. C., Mulholland, E. K., & Weber, M. (2005). The global burden of group A streptococcal diseases. *Lancet Infect Diseases*, 5(11), 685–694. [https://doi.org/10.1016/S1473-3099\(05\)72267-X](https://doi.org/10.1016/S1473-3099(05)72267-X)
- Castro-rosas, J., Ferreira-grosso, C. R., Gómez-aldapa, C. A., Rangel-vargas, E., Rodríguez-marín, M. L., Guzmán-ortiz, F. A., & Falfan-cortes, R. N. (2017). Recent advances in microencapsulation of natural sources of antimicrobial compounds used in food - A review. *Food Research International*, 102(September), 575–587. <https://doi.org/10.1016/j.foodres.2017.09.054>
- Ceylan, O., Ugur, A., Sarac, N., & Kocman, A. (2014). In vitro antimicrobial, antioxidant, antibiofilm and quorum sensing inhibitory activities of *Bellis perennis* L. *J. BioSci. Biotech*, 35–42.
- Cha, T. W., Guo, A., & Zhu, X. Y. (2006). Formation of supported phospholipid bilayers on molecular surfaces: Role of surface charge density and electrostatic interaction. *Biophysical Journal*, 90(4), 1270–1274. <https://doi.org/10.1529/biophysj.105.061432>
- Chadha, A., Jamal, W., Aziz, A. R. A., & Rotimi, V. O. (2018). Overwhelming *Streptococcus pyogenes* sepsis in an elderly patient with septic arthritis. *Journal of Infection and Public Health*, 11(3), 434–435. <https://doi.org/10.1016/j.jiph.2017.08.011>
- Chai, T., & Wong, F. (2012). Antioxidant properties of aqueous extracts of *Selaginella willdenowii*. *Journal of Medicinal Plants Research*, 6(7), 1289–1296. <https://doi.org/10.5897/JMPR11.1376>
- Chen, J., Duh, C., & Chen, J. (2005). New Cytotoxic Biflavonoids from *Selaginella delicatula*. *Planta Medica*, 71(7), 659–665. <https://doi.org/10.1055/s-2005-871273>
- Chen, H., Jing, L., Teng, Y., & Wang, J. (2018). Multimedia fate modeling and risk assessment of antibiotics in a water scarce megacity. *Journal of Hazardous*

- Materials*, 348(August 2017), 75–83.  
<https://doi.org/10.1016/j.jhazmat.2018.01.033>
- Cheng, A. X., Lou, Y. G., Mao, Y. B., Lu, S., Wang, L. J., & Chen, X. Y. (2007). Plant terpenoids: Biosynthesis and ecological functions. *Journal of Integrative Plant Biology*, 49(2), 179–186. <https://doi.org/10.1111/j.1744-7909.2007.00395.x>
- Cheng, L., Xia, T. S., Wang, Y. F., Zhou, W., Liang, X. Q., Xue, J. Q., ... Ding, Q. (2014). The apoptotic effect of D Rhamnose  $\beta$ -hederin, a novel oleanane-type triterpenoid saponin on breast cancer cells. *PLoS ONE*, 9(3), 1–11. <https://doi.org/10.1371/journal.pone.0090848>
- Cheng, W., Li, J., Wu, Y., Xu, L., Su, C., Qian, Y., ... Chen, H. (2016). Behavior of antibiotics and antibiotic resistance genes in eco-agricultural system : A case study. *Journal of Hazardous Materials Jo*, 304(MMar 5), 18–25. <https://doi.org/10.1016/j.jhazmat.2015.10.037>
- Cheok, C. Y., Salman, H. A. K., & Sulaiman, R. (2014). Extraction and quantification of saponins : A review. *Food Research International Journal*, 59(September 2019), 16–40. <https://doi.org/10.1016/j.foodres.2014.01.057>
- Chérigo, L., Pereda-miranda, R., & Gibbons, S. (2009). Phytochemistry Bacterial resistance modifying tetrasaccharide agents from *Ipomoea murucoides*. *Phytochemistry*, 70(2), 222–227. <https://doi.org/10.1016/j.phytochem.2008.12.005>
- Chew, Y. L., Mahadi, A. M., Wong, K. M., & Goh, J. K. (2018). Anti-methicillin-resistance *Staphylococcus aureus* (MRSA) compounds from *Bauhinia kockiana* Korth. And their mechanism of antibacterial activity. *BMC Complementary and Alternative Medicine*, 18(1), 1–9. <https://doi.org/10.1186/s12906-018-2137-5>
- Choi, Y., Woo, E., & Lee, D. G. (2009). Antibacterial and Synergistic Activity of Isocryptomerin Isolated from *Selaginella tamariscina*. *Journal Microbiology Biotechnology*, 19(2), 204–207. <https://doi.org/10.4014/jmb.0810.566>
- Cowan, M. M. (1999). Plant Products as Antimicrobial Agents. *Clinical Microbiology Reviews*, 12(4), 564–582. <https://doi.org/10.1128/CMR.12.4.564>
- Christensen, G. D., Simpson, W. A., Younger, J. J., Baddour, L. M., Barrett, F. F., Melton, D. M., & Beachey, E. H. (1985). Adherence Of Coagulase-Negative *Staphylococci* To Plastic Tissue Culture Plates: A Quantitative Model For The Adherence Of *Staphylococci* To Medical Devices. *Journal Of Clinical Microbiology*, 22(6), 996–1006.
- Clinical and Laboratory Standards Institute (CLSI). (2012). *Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria That Grow Aerobically; Approved Standard — Ninth Edition* (9th Editio, Vol. 32; F. R. Cockerill, M. A. Wikler, J. Alder, M. N. Dudley, G. M. Eliopoulos, M. J. Ferraro, ... B. L. Zimmer, eds.). Retrieved from [www.clsi.org](http://www.clsi.org)
- Clinical and Laboratory Standards Institute (CLSI). (2016). *M100S Performance Standards for Antimicrobial Susceptibility Testing* (26th Editi; J. B. Patel, F. R. Cockerill, G. M. Eliopoulos, S. G. Jenkins, J. S. Lewis, B. Limbago, ... Barbara L. Zimmer, eds.). Retrieved from [www.clsi.org](http://www.clsi.org)

- Compean, K. L., & Ynalvez, R. A. (2014). Antimicrobial Activity of Plant Secondary Metabolites : A Review. *Journal of Medicinal Plants Research*, 8(5), 204–212. <https://doi.org/10.3923/rjmp.2014.204.213>
- Conlon, B. P., Rowe, S. E., & Lewis, K. (2015). Persister Cells in Biofilm Associated Infections. *Advances in Experimental Medicine and Biology*, 2(831), 1–9. <https://doi.org/10.1007/978-3-319-09782-4>
- Cortés, M. E., Bonilla, J. C., & Sinisterra, R. D. (2011). Biofilm formation , control and novel strategies for eradication. *Science against Microbial Pathogens: Communicating Current Research and Technological Advances*, 896–905.
- Coutinho, H. D. M., Costa, J. G. M., Lima, E. O., Falcão-Silva, V. S., & Siqueira, J. P. (2009). Herbal therapy associated with antibiotic therapy: Potentiation of the antibiotic activity against methicillin - Resistant Staphylococcus aureus by Turnera ulmifolia L. *BMC Complementary and Alternative Medicine*, 9, 1–4. <https://doi.org/10.1186/1472-6882-9-13>
- Crabbé, A., Jensen, P. Ø., Bjarnsholt, T., & Coenye, T. (2019). Antimicrobial Tolerance and Metabolic Adaptations in Microbial Biofilms. *Trends in Microbiology*, 27(10), 850–863. <https://doi.org/10.1016/j.tim.2019.05.003>
- Cushnie, T. P. T., & Lamb, A. J. (2011). Recent advances in understanding the antibacterial properties of flavonoids. *International Journal of Antimicrobial Agents*, 38(2), 99–107. <https://doi.org/10.1016/j.ijantimicag.2011.02.014>
- Czeladzinski, S. 2003. Selaginella at the Barbican. *Plant Heritage* 10 (2): 472-476.
- Dadar, M., Tiwari, R., Karthik, K., Chakraborty, S., Shahali, Y., & Dhama, K. (2018). Candida albicans - Biology, molecular characterization, pathogenicity, and advances in diagnosis and control – An update. *Microbial Pathogenesis*, 117(February), 128–138. <https://doi.org/10.1016/j.micpath.2018.02.028>
- Dadashi, M., Javad, M., Fallah, F., Owlia, P., Hajikhani, B., Emaneini, M., & Mirpour, M. (2018). Methicillin-resistant Staphylococcus aureus (MRSA) in Iran: A systematic review and meta-analysis. *Journal of Global Antimicrobial Resistance*, 12, 96–103. <https://doi.org/10.1016/j.jgar.2017.09.006>
- Dakshayani, S. S., Marulasiddeshwara, M. B., Kumar, M. N. S., Ramesh, G., Kumar, P. R., Devaraja, S., & Hosamani, R. (2019). Antimicrobial, anticoagulant and antiplatelet activities of green synthesized silver nanoparticles using Selaginella (Sanjeevini) plant extract. *International Journal of Biological Macromolecules*, 131, 787–797. <https://doi.org/10.1016/j.ijbiomac.2019.01.222>
- Davey, M. E., & Toole, G. A. O. (2000). Microbial Biofilms : from Ecology to Molecular Genetics. *Microbiology And Molecular Biology REVIEWS*, 64(4), 847–867. <https://doi.org/10.1128/mubr.64.4.847-867.2000>
- De Oliveira, A. R. M., & Szczerbowski, D. (2009). Quinina: 470 anos de história, controvérsias e desenvolvimento. *Quimica Nova*, 32(7), 1971–1974. <https://doi.org/10.1590/S0100-40422009000700048>
- Debnath, B., Singh, W. S., Das, M., Goswami, S., Singh, M. K., Maiti, D., & Manna, K. (2018). Role of plant alkaloids on human health: A review of biological activities. *Materials Today Chemistry*, 9, 56–72. <https://doi.org/10.1016/j.mtchem.2018.05.001>
- Dewanjee, S., Gangopadhyay, M., Bhattacharya, N., Khanra, R., & Dua, T. K. (2015). Bioautography and its scope in the field of natural product chemistry.

- Journal of Pharmaceutical Analysis*, 5(2), 75–84.  
<https://doi.org/10.1016/j.jpha.2014.06.002>
- Dewick, P. M. (2002). A Medicinal Natural Products - A Biosynthetic Approach. In *Pharmaceutical Sciences* (Secong, Vol. 0471496405).  
<https://doi.org/10.1016/j.jbiosc.2010.01.005>
- Dawidowicz, A. L., & Wianowska, D. (2009). Static and dynamic superheated water extraction of essential oil components from *Thymus vulgaris* L Original Paper Static and dynamic superheated water extraction of essential oil components from *Thymus vulgaris* L . *Journal of Separation Science*, 32(September), 3034–3042. <https://doi.org/10.1002/jssc.200900214>
- Dixon, R. A., & Strack, D. (2003). Phytochemistry meets genome analysis, and beyond. *Phytochemistry*, 62(6), 815–816. [https://doi.org/10.1016/S0031-9422\(02\)00712-4](https://doi.org/10.1016/S0031-9422(02)00712-4)
- Dong, J., Liang, W., Wang, T., Sui, J., Wang, J., Deng, Z., & Chen, D. (2019). Saponins regulate intestinal inflammation in colon cancer and IBD. *Pharmacological Research*, 144(April), 66–72. <https://doi.org/10.1016/j.phrs.2019.04.010>
- Donlan, R. M. (2002). Biofilms : Microbial Life on Surfaces. *Emerging Infectious Diseases*, 8(9), 881–890. <https://doi.org/10.3201/eid0809.020063>
- Dowd, F. J. (2007). *Candida Albicans Infections. X-Pharm: The Comprehensive Pharmacology Reference*, 1–5. <https://doi.org/10.1016/B978-008055232-3.60909-2>
- Driffield, K., Miller, K., Bostock, J. M., O’neill, A. J., & Chopra, I. (2008). Increased mutability of *Pseudomonas aeruginosa* in biofilms. *Journal of Antimicrobial Chemotherapy*, 61(5), 1053–1056. <https://doi.org/10.1093/jac/dkn044>
- Dudek, B., Warskulat, A. C., & Schneider, B. (2016). The occurrence of flavonoids and related compounds in flower sections of *Papaver nudicaule*. *Plants*, 5(2), 93–126. <https://doi.org/10.3390/plants5020028>
- Dufour, D., Leung, V., & Lévesque, C. M. (2012). Bacterial biofilm : structure , function, and antimicrobial resistance. *Endodontic Topics*, 22(1), 2–16. <https://doi.org/10.1111/j.1601-1546.2012.00277.x>
- Duong, T., Beniddir, M. A., Genta-jouve, G., Nguyen, H., Nguyen, D., Nguyen, T., ... Pogam, P. Le. (2019). Fitoterapia Further terpenoids from *Euphorbia tirucalli*. *Fitoterapia*, 135(February), 44–51. <https://doi.org/10.1016/j.fitote.2019.04.001>
- Dryden, M. S. (2015). Alternative clinical indications for novel antibiotics licensed for skin and soft tissue infection? *Wolters Kluwer Health*, 28(2), 117–124. <https://doi.org/10.1097/QCO.0000000000000142>
- Dzidic, S., Suskovic, J., & Kos, B. (2008). Antibiotic Resistance Mechanisms in Bacteria : Biochemical and Genetic Aspects. *Food Technol Biotechnol*, 46(1), 11–21.
- Eberhard, A., Burlingame, A. L., Eberhard, C., Kenyon, G. L., Nealson, K. H., & Oppenheimer, N. J. (1981). Structural Identification of Autoinducer of *Photobacterium fischeri* Luciferase. *Biochemistry*, 20(9), 2444–2449. <https://doi.org/10.1021/bi00512a013>



- Efferth, T., & Koch, E. (2010). Complex Interactions between Phytochemicals. The Multi-Target Therapeutic Concept of Phytotherapy. *Current Drug Targets*, 12(1), 122–132. <https://doi.org/10.2174/138945011793591626>
- Elleuch, L., Shaaban, M., Smaoui, S., Mellouli, L., Karray-Rebai, I., Fguira, L. F.-B., ... Received: (2010). Bioactive Secondary Metabolites from a New Terrestrial *Streptomyces* sp. TN262. *Biotechnology and Applied Biochemistry*, 162(2), 579–593. <https://doi.org/10.1007/s12010-009-8808-4>
- Erfani, Y., Rasti, A., Mirsalehian, A., Mirafshar, S. M., & Ownegh, V. (2011). E-test versus disk diffusion method in determining multidrug resistant strains of *Escherichia coli* in urinary tract infection. *African Journal of Microbiology Research*, 5(6), 608–611. <https://doi.org/10.5897/AJMR10.364>
- Fabricant, D. S., & Farnsworth, N. R. (2001). The Value of Plants Used in Traditional Medicine for Drug Discovery. *Environmental Health Perspectives*, 109(2), 69–75. <https://doi.org/10.1289/ehp.01109s169>
- Fang, C., Fernie, A. R., & Luo, J. (2019). Exploring the Diversity of Plant Metabolism. *Trends in Plant Science*, 24(1), 83–98. <https://doi.org/10.1016/j.tplants.2018.09.006>
- Ferrieres, L., Hancock, I., & Klemm, P. (2007). Biofilm exclusion of uropathogenic bacteria by selected asymptomatic bacteriuria *Escherichia coli* strains. *Microbiology*, 153(6), 1711–1719. <https://doi.org/10.1099/mic.0.2006/004721-0>
- Fetsch, A. (2018). *Staphylococcus aureus*. In P. Osborn, J. Truesdell, P. Joseph, & C. Bilbow (Eds.), *Elsevier*. <https://doi.org/10.1192/bjp.112.483.211-a>
- Fitzpatrick, F., Humphreys, H., & O’Gara, J. P. (2005). The genetics of staphylococcal biofilm formation - Will a greater understanding of pathogenesis lead to better management of device-related infection? *Clinical Microbiology and Infection*, 11(12), 967–973. <https://doi.org/10.1111/j.1469-0691.2005.01274.x>
- Flemming, H., & Wingender, J. (2010). The biofilm matrix. *Nature Reviews*, 8(9), 623–633. <https://doi.org/10.1038/nrmicro2415>
- Flemming, H., Wingender, J., Szewzyk, U., Steinberg, P., Rice, S. A., & Kjelleberg, S. (2016). Biofilms : an emergent form of bacterial life. *Nature Reviews*, 14(9), 563–575. <https://doi.org/10.1038/nrmicro.2016.94>
- Fraga-Corral, M., García-Oliveira, P., Pereira, A. G., Lourenço-Lopes, C., Jimenez-Lopez, C., Prieto, M. A., & Simal-Gandara, J. (2020). Technological application of tannin-based extracts. *Molecules*, 25(3), 1–27. <https://doi.org/10.3390/molecules25030614>
- Fraser, J. D., & Proft, T. (2008). The bacterial superantigen and superantigen-like proteins. *Immunological Reviews*, 225(1), 226–243. <https://doi.org/10.1111/j.1600-065X.2008.00681.x>
- Freeman, D. J., Falkiner, F. R., & Patrick, S. (1989). New method for detecting slime production by coagulase negative staphylococci. *Journal of Clinical Pathology*, 42(8), 872–874. <https://doi.org/10.1136/jcp.42.8.872>
- Friedman, W. E. (2011). Plant Genomics : Homoplasy Heaven in a Lycophyte Genome. *Current Biology*, 21(14), R554–R556. <https://doi.org/10.1016/j.cub.2011.05.055>

- Gaff, D. F., & Oliver, M. (2013). The evolution of desiccation tolerance in angiosperm plants: a rare yet common phenomenon. *Functional Plant Biology*, 40(4), 315–328. <https://doi.org/http://dx.doi.org/10.1071/FP12321>
- Galdiero, E., de Alteriis, E., De Natale, A., D'Alterio, A., Siciliano, A., Guida, M., ... Galdiero, S. (2020). Eradication of *Candida albicans* persister cell biofilm by the membranotropic peptide gH625. *Scientific Reports*, 10(1), 1–12. <https://doi.org/10.1038/s41598-020-62746-w>
- Ganiswarna, S. G. (2001). *Farmakologi dan Terapi* (Edisi 4; P. Natriald, Rianto Setiabudy, Frans D. Suyatna, ed.). Jakarta: Fakultas Kedokteran Universitas Indonesia.
- García, L. G., Lemaire, S., Kahl, B. C., Becker, K., Proctor, R. A., Denis, O., ... Bambeke, F. Van. (2013). Antibiotic activity against small-colony variants of *Staphylococcus aureus*: review of in vitro, animal and clinical data. *Journal of Antimicrobial Chemotherapy*, 68(7), 1455–1464. <https://doi.org/10.1093/jac/dkt072>
- García, A. B., Viñuela-Prieto, J. M., López-González, L., & Candel, F. J. (2017). Correlation between resistance mechanisms in *Staphylococcus aureus* and cell wall and septum thickening. *Infection and Drug Resistance*, 10, 353–356. <https://doi.org/10.2147/IDR.S146748>
- Garrity, G. M., Lilburn, T. G., Cole, J. R., Harrison, S. H., Euzéby, J., & Tindall, B. J. (2007). Taxonomic Outline of the Bacteria and Archaea, Release 7.7. *Michigan State University*, 349–539. <https://doi.org/10.1601/TOBA7.7>
- Gatadi, S., Gour, J., & Nanduri, S. (2019). Natural product derived promising anti-MRSA drug leads: A review. *Bioorganic and Medicinal Chemistry*, 27(17), 3760–3774. <https://doi.org/10.1016/j.bmc.2019.07.023>
- Gechev, T. S., Hille, J., Woerdenbag, H. J., Benina, M., Mehterov, N., Toneva, V., ... Mueller-roeber, B. (2014). Natural products from resurrection plants: Potential for medical applications. *Biotechnology Advances*, 32(6), 1091–1101. <https://doi.org/10.1016/j.biotechadv.2014.03.005>
- Gera, K., & McIver, K. S. (2014). Laboratory Growth and Maintenance of *Streptococcus pyogenes* (The Group A Streptococcus, GAS). *Current Protocols Microbiology*, 30, 1–14. <https://doi.org/10.1002/9780471729259.mc09d02s30>
- Gibbons, S., & Gibbons, S. (2004). Anti-staphylococcal plant natural products. *The Royal Society of Chemistry*, 21(2), 29–39. <https://doi.org/10.1039/b212695h>
- Golińska, E., van der Linden, M., Więcek, G., Mikołajczyk, D., Machul, A., Samet, A., ... Strus, M. (2016). Virulence factors of *Streptococcus pyogenes* strains from women in peri-labor with invasive infections. *European Journal of Clinical Microbiology and Infectious Diseases*, 35(5), 747–754. <https://doi.org/10.1007/s10096-016-2593-0>
- Górniak, I., Bartoszewski, R., & Króliczewski, J. (2019). Comprehensive review of antimicrobial activities of plant flavonoids. *Phytochemistry Reviews*, 18(1), 241–272. <https://doi.org/10.1007/s11101-018-9591-z>
- Green, A. E., Rowlands, R. S., Cooper, R. A., & Maddocks, S. E. (2012). The effect of the flavonol morin on adhesion and aggregation of *Streptococcus pyogenes*. *FEMS Microbiology Letters*, 333(1), 54–58. <https://doi.org/10.1111/j.1574-6968.2012.02598.x>

- Grema, H. ali, Geidam, Y. aHmed, Gadzama, G. bala, Ameh, J. A., & Suleiman, A. (2015). Methicillin Resistant Staphylococcus aureus (MRSA): A Review. *Advances in Animal and Veterinary Sciences*, 3(2), 79–98. <https://doi.org/10.14737/journal.aavs/2015/3.2.79.98>
- Grisold, A. J., Leitner, E., Mühlbauer, G., Marth, E., & Kessler, H. H. (2002). Detection of Methicillin-Resistant Staphylococcus aureus and Simultaneous Confirmation by Automated Nucleic Acid Extraction and Real-Time PCR. *Journal Of Clinical Microbiology*, 40(7), 2392–2397. <https://doi.org/10.1128/JCM.40.7.2392>
- Grundmann, H., Aires-de-sousa, M., Boyce, J., & Tiemersma, E. (2006). Emergence and resurgence of methicillin-resistant Staphylococcus aureus as a public-health threat. *The Lancet*, 368(9538), 874–885. [https://doi.org/10.1016/S0140-6736\(06\)68853-3](https://doi.org/10.1016/S0140-6736(06)68853-3)
- Guendouze-Bouchefa, N., Madani, K., Chibane, M., Boulekbache-Makhlouf, L., Hauchard, D., Kiendrebeogo, M., ... Duez, P. (2015). Phenolic compounds, antioxidant and antibacterial activities of three Ericaceae from Algeria. *Industrial Crops and Products*, 70, 459–466. <https://doi.org/10.1016/j.indcrop.2015.03.053>
- Gunsalus, K. T. W., Tornberg-Belanger, S. N., Matthan, N. R., Lichtenstein, A. H., & Kumamoto, C. A. (2015). Manipulation of Host Diet To Reduce Gastrointestinal Colonization by the Opportunistic Pathogen *Candida albicans*. *MSphere*, 1(1), 1–16. <https://doi.org/10.1128/mSphere.00020-15>
- Gutierrez, D., Hidalgo-Cantabrana, C., Rodriguez, A., Garcia, P., & Ruas-Madiedo, P. (2016). Monitoring in Real Time the Formation and Removal of Biofilms from Clinical Related Pathogens Using an Impedance-Based Technology. *PLOS ONE*, 11(10), 1–17. <https://doi.org/10.1371/journal.pone.0163966>
- Hall-stoodley, L., Stoodley, P., Kathju, S., Høiby, N., Moser, C., William, J., ... Bjarnsholt, T. (2012). Towards diagnostic guidelines for biofilm-associated infections. *FEMS Immunology and Medical Microbiology*, 65(2), 127–145. <https://doi.org/10.1111/j.1574-695X.2012.00968.x>
- Handa, S. S., Khanuja, S. P. S., Longo, G., & Rakesh, D. D. (2008). *Extraction Technologies for Medicinal and Aromatic Plants* (S. S. Handa, S. P. S. Khanuja, G. Longo, & D. D. Rakesh, eds.). Retrieved from e-mail: [environment@ics.trieste.it](mailto:environment@ics.trieste.it)
- Harborne, J. B. (1984). *Phytochemical Methods : A Guide to Modern Techniques of Plant Analysis*. second ed., Chapman and Hall, New York, USA. In J. B. Harborne (Ed.), *Chapmer and Hall* (Second Ed). LONDON NEW YORK: Chapman and Hall.
- Hardy, K. J., Hawkey, P. M., Gao, F., & Oppenheim, B. A. (2004). Methicillin resistant Staphylococcus aureus in the critically ill. *British Journal of Anaesthesia*, 92(1), 121–130. <https://doi.org/10.1093/bja/ae008>
- Haslam, E. (1996). Natural polyphenols (vegetable tannins) as drugs: Possible modes of action. *Journal of Natural Products*, 59(2), 205–215. <https://doi.org/10.1021/np960040+>
- Hassan, A., Usman, J., Kaleem, F., Omair, M., Khalid, A., & Iqbal, M. (2011). Evaluation of different detection methods of biofilm formation in the clinical isolates. *The Brazilian Journal of Infectious Diseases*, 15(4), 305–311. [https://doi.org/10.1016/S1413-8670\(11\)70197-0](https://doi.org/10.1016/S1413-8670(11)70197-0)

- Heatley, N. G. (1943). A Method for the Assay of Penicillin. *Biochemical Journal*, 38(1), 61–65. <https://doi.org/10.1042/bj0380061>
- Hebecker, B., Naglik, J. R., Hube, B., & Jacobsen, I. D. (2014). Pathogenicity mechanisms and host response during oral *Candida albicans* infections. *Expert Review of Anti-Infective Therapy*, 12(7), 867–879. <https://doi.org/10.1586/14787210.2014.916210>
- Heyne, K. 1927. *De Nuttige Planten van Nederlands-Indie*. 2nd ed. Vol. 1. ‘s-Gravenhage: Departement van Landbouw, Nijverheid en Handed in Nederlands-Indie.
- Hiller, C. X., Hübner, U., Fajnorova, S., Schwartz, T., & Drewes, J. E. (2019). Antibiotic microbial resistance (AMR) removal efficiencies by conventional and advanced wastewater treatment processes: A review C.X. *Science of the Total Environment*, 685, 596–608. <https://doi.org/10.1016/j.scitotenv.2019.05.315>
- Hiramatsu, K., Cui, L., Kuroda, M., & Ito, T. (2001). The emergence and evolution of methicillin-resistant *Staphylococcus aureus*. *Trends in Biotechnology*, 9(10), 486–493. [https://doi.org/10.1016/S0966-842X\(01\)02175-8](https://doi.org/10.1016/S0966-842X(01)02175-8)
- Holopainen, J. K., Himanen, S. J., J. S. Yuan, F. C., & Stewart, C. N. (2013). Ecological Functions of Terpenoids in Changing Climates. In J. K. Holopainen, S. J. Himanen, A. J. S. Yuan, F. Chen, & C. N. Stewart (Eds.), *Natural Products: Phytochemistry, Botany and Metabolism of Alkaloids, Phenolics and Terpenes* (pp. 2913–2940). <https://doi.org/10.1007/978-3-642-22144-6>
- Højby, N., Bjarnsholt, T., Givskov, M., Molin, S., & Ciofu, O. (2010). Antibiotic resistance of bacterial biofilms. *International Journal of Antimicrobial Agents*, 35(4), 322–332. <https://doi.org/10.1016/j.ijantimicag.2009.12.011>
- Højby, N. (2014). A personal history of research on microbial biofilms and biofilm infections. *Pathogens and Disease*, 70(3), 205–211. <https://doi.org/10.1111/2049-632X.12165>
- Højby, N., Bjarnsholt, T., Moser, C., Bassi, G. L., Coenye, T., Donelli, G., ... Williams, C. (2015). ESCMID\* guideline for the diagnosis and treatment of biofilm infections 2014. *Clinical Microbiology and Infection*, 21(1), s1–s25. <https://doi.org/10.1016/j.cmi.2014.10.024>
- Holden, M. T. G., Feil, E. J., Lindsay, J. A., Peacock, S. J., Day, N. P. J., Enright, M. C., ... Parkhill, J. (2004). Complete genomes of two clinical *Staphylococcus aureus* strains: Evidence for the rapid evolution of virulence and drug resistance. *Proceedings of the National Academy of Sciences of the United States of America*, 101(26), 9786–9791. <https://doi.org/10.1073/pnas.0402521101>
- Hombach, M., Maurer, F. P., Pfiffner, T., Böttger, E. C., & Furrer, R. (2015). Standardization of Operator-Dependent Variables Affecting Precision Susceptibility Testing. *Journal Of Clinical Microbiology*, 53(12), 3864–3869. <https://doi.org/10.1128/JCM.02351-15.Editor>
- Hu, Y., Xiong, L., Huang, W., Cai, H., Luo, Y., Zhang, Y., & Lu, B. (2014). Anti-inflammatory effect and prostate gene expression profiling of steryl ferulate on experimental rats with non-bacterial prostatitis. *Food and Function*, 5(6), 1150–1159. <https://doi.org/10.1039/c4fo00052h>

- Houghton, P. J., & Raman, A. (1998). *Laboratory Handbook for the Fractionation of Natural Extracts*. London: Chapman and Hall.
- Hwang, I. sok, Lee, J., Jin, H. G., Woo, E. R., & Lee, D. G. (2012). Amentoflavone Stimulates Mitochondrial Dysfunction and Induces Apoptotic Cell Death in *Candida albicans*. *Mycopathologia*, 173(4), 207–218. <https://doi.org/10.1007/s11046-011-9503-x>
- Imhof, A., Balajee, S. A., & Marr, K. A. (2003). New Methods To Assess Susceptibilities of *Aspergillus* Isolates to Caspofungin. *Journal Of Clinical Microbiology*, 41(12), 5683–5688. <https://doi.org/10.1128/JCM.41.12.5683>
- Irudayaraj, V., M, J., Johnson, M., & Selvan, N. (2010). Preliminary phytochemical and antimicrobial studies on a spike-moss *S elaginella inaequalifolia* (hook . & grev .) S pring. *Asian Pacific Journal of Tropical Medicine*, 957–960. [https://doi.org/10.1016/S1995-7645\(11\)60008-4](https://doi.org/10.1016/S1995-7645(11)60008-4)
- Jamal, M., Ahmad, W., Andleeb, S., Jalil, F., Imran, M., Asif, M., ... Kamil, M. A. (2018). Bacterial biofilm and associated infections. *Journal of the Chinese Medical Association*, 81, 7–11. <https://doi.org/https://doi.org/10.1016/j.jcma.2017.07.012>
- Janecki, A., & Kolodziej, H. (2010). Anti-adhesive activities of flavan-3-ols and proanthocyanidins in the interaction of group A-streptococci and human epithelial cells. *Molecules*, 15(10), 7139–7152. <https://doi.org/10.3390/molecules15107139>
- Jansen, B., & Kohnen, W. (1995). Prevention of biofilm formation by polymer modification. *Journal of Industrial Microbiology & Biotechnology*, 15(4), 391–396. <https://doi.org/10.1007/BF01569996>
- Jerny, A.C. 1990. Selaginellaceae. In: Kubitzki, K., K.U. Kramer and P.S. Green (eds.). *The Families and Genera of Vascular Plants, 1. Pteridophytes and Gymnosperms*. Berlin: Springer.
- Jiang, Z., Kempinski, C., & Chappell, J. (2016). Extraction and Analysis of Terpenes/ Terpenoids. *Current Protocols in Plant Biology*, 25(3), 289–313. <https://doi.org/110.1016/j.bbi.2017.04.008>
- Jiao, Y., Wickett, N. J., Chanderbali, S., Landherr, L., Ralph, P. E., & Ayyampalayam, S. (2011). Ancestral polyploidy in seed plants and angiosperms. *Nature*, 473. <https://doi.org/10.1038/nature09916>
- Jimenez-Esquilin, A. E., & Roane, T. M. (2005). Antifungal activities of actinomycete strains associated with high-altitude sagebrush rhizosphere. *J Ind Microbiol Biotechnol*, 32, 378–381. <https://doi.org/10.1007/s10295-005-0007-x>
- Jing, H., Liu, J., Liu, H., & Xin, H. (2014). Histochemical Investigation and Kinds of Alkaloids in Leaves of Different Developmental Stages in *Thymus quinquecostatus*. *The Scientific World Journal*, 2014, 1–6. <https://doi.org/10.1155/2014/839548>
- Jorgensen, J. H., Carroll, K. C., & Funke, G. (2015). Manual Of C Linical Microbiology. In M. A. Pfaller, M. L. Landry, S. S. Richter, & D. W. Warnock (Eds.), *ASM Press*. <https://doi.org/10.1128/9781555817381>.
- Jung, H. J., Woo, S. S., Yeo, S. H., Hyun, S. K., Lee, I. S., Woo, E. R., & Dong, G. L. (2006). Antifungal effect of amentoflavone derived from *Selaginella tamariscina*. *Archives of Pharmacal Research*, 29(9), 746–751. <https://doi.org/10.1007/bf02974074>

- Jung, H. J., Park, K., Lee, I. S., Kim, H. S., Yeo, S. H., Woo, E. R., & Lee, D. G. (2007). S-Phase accumulation of *Candida albicans* by anticandidal effect of amentoflavone isolated from *Selaginella tamariscina*. *Biological and Pharmaceutical Bulletin*, 30(10), 1969–1971. <https://doi.org/10.1248/bpb.30.1969>
- Junka, A. F., Anna, Z., Szymczyk, P., Dziadas, M., Bartoszewicz, M., & Fija, K. (2017). A . D . A . M . test ( Antibio fi lm Dressing ' s Activity Measurement ) — Simple method for evaluating anti-bio fi lm activity of drug-saturated dressings against wound pathogens. *Journal of Microbiological Methods*, 143(June), 6–12. <https://doi.org/10.1016/j.mimet.2017.09.014>
- Kanagarajan, M., Deivamarudachalam, T. P. D., Ponnuraj, S., & Jaganathan, D. (2016). Synergistic effect of ethno medicinal plants against biofilm forming streptococcus pyogenes isolated from upper respiratory tract infection. *International Journal of Phytomedicine*, 8(2), 208–216.
- Kang, J. H., Sung, M. K., Kawada, T., Yoo, H., Kim, Y. K., Kim, J. S., & Yu, R. (2005). Soybean saponins suppress the release of proinflammatory mediators by LPS-stimulated peritoneal macrophages. *Cancer Letters*, 230(2), 219–227. <https://doi.org/10.1016/j.canlet.2004.12.041>
- Kapoor, G., Saigal, S., & Elongavan, A. (2017). Action and resistance mechanisms of antibiotics : A guide for clinicians Basic. *Journal of Anaesthesiology Clinical Pharmacology*, 33(3), 300–305. [https://doi.org/10.4103/joacp.JOACP\\_349\\_15](https://doi.org/10.4103/joacp.JOACP_349_15)
- Kerekes, E. B., Deák, É., Takó, M., Tserennadmid, R., Petkovits, T., Vágvölgyi, C., & Krisch, J. (2013). Anti-biofilm forming and anti-quorum sensing activity of selected essential oils and their main components on food-related micro-organisms. *Journal of Applied Microbiology*, 115(4), 933–942. <https://doi.org/10.1111/jam.12289>
- Khan, M. S. A., & Ahmad, I. (2012). Antibiofilm activity of certain phytochemicals and their synergy with fluconazole against *Candida albicans* biofilms. *Journal of Antimicrobial Chemotherapy*, 67(3), 618–621. <https://doi.org/10.1093/jac/dkr512>
- Khan, M. I., Ahmmed, A., Shin, J. H., Baek, J. S., Kim, M. Y., & 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, 12. <https://doi.org/10.1155/2018/3486106>
- Kim, Y., Cha, C., & Cerniglia, C. E. (2002). Purification and characterization of an erythromycin esterase from an erythromycin-resistant *Pseudomonas* sp. *FEMS Microbiology Letters*, 210(2), 239–244. <https://doi.org/10.1111/j.1574-6968.2002.tb11187.x>
- Kim, K. R., Chung, T. Y., Shin, H., Son, S. H., Park, K. K., Choi, J. H., & Chung, W. Y. (2010). Red ginseng saponin extract attenuates murine collagen-induced arthritis by reducing pro-inflammatory responses and matrix metalloproteinase-3 expression. *Biological and Pharmaceutical Bulletin*, 33(4), 604–610. <https://doi.org/10.1248/bpb.33.604>
- Kinghorn, A. D., Pan, L., Fletcher, J. N., & Chai, H. (2011). The relevance of higher plants in lead compound discovery programs. *Journal of Natural Products*, 74(6), 1539–1555. <https://doi.org/10.1021/np200391c>

- Kiranmayee, P., Anitha, K., & Usha, R. (2016). Isolation and identification of steroid triterpenoids from the polar and non-polar fractions of caralluma attenuate (Wight) roots. *International Journal of Pharmacognosy and Phytochemical Research*, 8(6), 912–929.
- Kırmusaoğlu, S. (2019). The Methods for Detection of Biofilm and Screening Antibiofilm Activity of Agents. *Intech Open*, 1–17. <https://doi.org/10.5772/intechopen.84411>
- Klausen, M., Heydorn, A., Ragas, P., Lambertsen, L., Aaes-jørgensen, A., Molin, S., & Tolker-nielsen, T. (2003). Biofilm formation by *Pseudomonas aeruginosa* wild type, flagella and type IV pili mutants. *Molecular Microbiology*, 48, 1511–1524. <https://doi.org/10.1046/j.1365-2958.2003.03525.x>
- Kornitzer, D. (2019). Regulation of candida albicans hyphal morphogenesis by endogenous signals. *Journal of Fungi*, 5(1), 1–15. <https://doi.org/10.3390/jof5010021>
- Ksiezopolska, E., & Gabaldón, T. (2018). Evolutionary emergence of drug resistance in candida opportunistic pathogens. *Genes*, 9(9). <https://doi.org/10.3390/genes9090461>
- Kudva, I. T., Jelacic, S., Tarr, P. I., Youderian, P., & Hovde, C. J. (1999). Biocontrol of *Escherichia coli* O157 with O157-specific bacteriophages. *Applied and Environmental Microbiology*, 65(9), 3767–3773.
- Kumar, A., Alam, A., Rani, M., Ehtesham, N. Z., & Hasnain, S. E. (2017). Biofilms : Survival and defense strategy for pathogens. *International Journal of Medical Microbiology*, 307(January), 481–489. <https://doi.org/10.1016/j.ijmm.2017.09.016>
- Kumar, M. (2016). Multidrug-resistant *Staphylococcus aureus*, India, 2013–2015. *Emerging Infectious Diseases*, 22(9), 1666–1667. <https://doi.org/10.3201/eid2209.160044>
- Kumar, S., & Pandey, A. K. (2013). Chemistry and Biological Activities of Flavonoids: An Overview. *The Scientific World Journal*, 2013, 16. <https://doi.org/10.1155/2013/162750>
- Kumar, S., Kumar, S., Kishore, N., Kumar, P., & Lansdown, R. V. (2019). Morphological studies of the ligules of selected Indian species of *Selaginella* ( *Selaginellaceae* ). *Flora*, 252(January), 69–75. <https://doi.org/10.1016/j.flora.2019.02.009>
- Kwieciński, J., Eick, S., & Wójcik, K. (2009). Effects of tea tree (*Melaleuca alternifolia*) oil on *Staphylococcus aureus* in biofilms and stationary growth phase. *International Journal of Antimicrobial Agents*, 33(4), 343–347. <https://doi.org/10.1016/j.ijantimicag.2008.08.028>
- Lakhundi, S., & Zhang, K. (2018). Methicillin-Resistant *Staphylococcus aureus*: Molecular Characterization, Evolution, and Epidemiology. *Clinical Microbiology Reviews*, 31(4), 1–103. <https://doi.org/10.1128/CMR.00020-18>
- Lambert, R. J. W., Skandamis, P. N., Coote, P. J., & Nychas, G. E. (2001). A study of the minimum inhibitory concentration and mode of action of oregano essential oil, thymol and carvacrol. *Journal of Applied Microbiology* 2001, 91, 453–462.
- Lambert, P. A. (2002). Mechanisms of antibiotic resistance in *Pseudomonas aeruginosa*. *Journal Of The Royal Society Of Medicine*, 95(41), 22–26.

- Lee, J., Choi, Y., Woo, E., & Gun, D. (2009). Biochemical and Biophysical Research Communications Isocryptomerin , a novel membrane-active antifungal compound from *Selaginella tamariscina*. *Biochemical and Biophysical Research Communications*, 379(3), 676–680. <https://doi.org/10.1016/j.bbrc.2008.12.030>
- Lee, J. A., & Chee, H. Y. (2010). In Vitro Antifungal Activity of Equol against *Candida albicans*. *Mycobiology*, 38(4), 328–330. <https://doi.org/10.4489/MYCO.2010.38.4.328>
- Lee, K. A., Moon, S. H., Lee, J. Y., Kim, K. T., Park, Y. S., & Paik, H. D. (2013a). Antibacterial activity of a novel flavonoid, 7-O-butyl naringenin, against methicillin-resistant *Staphylococcus aureus* (MRSA). *Food Science and Biotechnology*, 22(6), 1725–1728. <https://doi.org/10.1007/s10068-013-0272-9>
- Lee, J. H., Park, J. H., Cho, H. S., Joo, S. W., Cho, M. H., & Lee, J. (2013b). Anti-biofilm activities of quercetin and tannic acid against *Staphylococcus aureus*. *Biofouling*, 29(5), 491–499. <https://doi.org/10.1080/08927014.2013.788692>
- Lee, J. H., Kim, Y. G., Khadke, S. K., Yamano, A., Woo, J. T., & Lee, J. (2019). Antimicrobial and antibiofilm activities of prenylated flavanones from *Macaranga tanarius*. *Phytomedicine*, 63(April), 1–8. <https://doi.org/10.1016/j.phymed.2019.153033>
- Li, J., Yu, X., Cao, D., Li, D., Zeng, W., Zhang, G., & Tan, G. (2016). NU SC. *Fitoterapia*. <https://doi.org/10.1016/j.fitote.2016.11.014>
- Li, P., Xu, G., LI, S.-P., Wang, Y.-T., Fan, T.-P., Zhao, Q.-S., & Zhang\*, Q.-W. (2008). Chromatographic Analysis of 10 Diterpenoid Compounds in *Salvia miltiorrhiza* Using Central Composite Design. *Journal Of Agricultural and Food Chemistry*, 56(Ccd), 1164–1171.
- Li, P., Yin, Z., Li, S., Zhang, Q., Huang, X., & Products, N. (2014). Simultaneous Determination Of Eight Flavonoids And Pogostone In *Pogostemon Cablin* By High Performance Liquid. *Journal of Liquid Chromatography & Related Technologies*, (November), 37–41. <https://doi.org/10.1080/10826076.2013.809545>
- Li, Y., Du, M., Chen, L., Liu, Y., & Liang, Z. (2016). Nosocomial Bloodstream Infection Due to *Candida* spp. in China: Species Distribution, Clinical Features, and Outcomes. *Mycopathologia*, 181(7–8), 485–495. <https://doi.org/10.1007/s11046-016-9997-3>
- Lichterman, B.L. (2004). Book: aspirin: the story of a wonder drug. *BMJ: British Medical Journal*, 329(7479), 1404-1408.
- Licitra, G. (2013). Etymologia : *Staphylococcus*. *Emerging Infectious Diseases*, 19(9), 1553. <https://doi.org/10.3201/eid1909.ET1909>
- Limoli, D. H., Jones, C. J., Wozniak, D. J., & Cruz, S. (2015). HHS Public Access. *Microbiol Spectr*, 3(3), 1–30. <https://doi.org/10.1128/microbiolspec.MB-0011-2014.Bacterial>
- Liu, Y., Qiang, M., Sun, Z., & Du, Y. (2015). Optimization of ultrasonic extraction of polysaccharides from *Hovenia dulcis* peduncles and their antioxidant potential Author: *International Journal of Biological Macromolecules*, 80, 350–357. <https://doi.org/10.1016/j.ijbiomac.2015.06.054>



- Lobo, V., Patil, A., Phatak, A., & Chandra, N. (2010). Free radicals , antioxidants and functional foods : Impact on human health. *Pharmacognosy Reviews*, 118–127. <https://doi.org/10.4103/0973-7847.70902>
- Lombardo, L. J., Lee, F. Y., Chen, P., Norris, D., Barrish, J. C., Behnia, K., ... Borzilleri, R. M. (2004). Discovery of N - ( 2-Chloro-6-methyl- phenyl ) -2- ( 6- ( 4- ( 2-hydroxyethyl ) - ( BMS-354825 ) , a Dual Src / Abl Kinase Inhibitor with Potent Antitumor Activity in Preclinical Assays. *Journal of Medicinal Chemistry*, 47, 6658–6661.
- Long, H., Zou, H., Li, F., Li, J., Luo, P., Zou, Z., & Hu, C. (2015). Fitoterapia Involven flavonoides A – F , six new flavonoids with 3 ' -aryl substituent from *Selaginella involvens*. *Fitoterapia*, 105, 254–259. <https://doi.org/10.1016/j.fitote.2015.07.013>
- Lu, T. K., & Collins, J. J. (2007). *Dispersing biofilms with engineered enzymatic bacteriophage*. 27(July 3), 11197–11202. Retrieved from [www.pnas.org/cgi/content/full/0704624104/DC1](http://www.pnas.org/cgi/content/full/0704624104/DC1)
- Lou, Z., Wang, H., Rao, S., Sun, J., Ma, C., & Li, J. (2012). p -Coumaric acid kills bacteria through dual damage mechanisms. *Food Control*, 25(2), 550–554. <https://doi.org/10.1016/j.foodcont.2011.11.022>
- Ludwiczuk, A., Skalicka-Wó zniak, K., & Georgiev, M. I. (2017). Terpenoids. In S. Badal & R. Delgoda (Eds.), *Pharmacognosy* (pp. 233–266). <https://doi.org/10.1016/B978-0-12-802104-0.00011-1>
- Luo, Q., Shang, J., & Feng, X. (2013). PrfA Led to Reduced Biofilm Formation and Contributed to Altered Gene Expression Patterns in Biofilm-Forming *Listeria monocytogenes*. *Curr Microbiol. Springer*, 67, 372–378. <https://doi.org/10.1007/s00284-013-0377-7>
- Ma, Y., Chen, M., Jones, J. E., Ritts, A. C., Yu, Q., & Sun, H. (2012). Inhibition of *Staphylococcus epidermidis* Biofilm by Trimethylsilane Plasma Coating. *Antimicrobial Agents and Chemotherapy*, 56(11), 5923–5937. <https://doi.org/10.1128/AAC.01739-12>
- Ma, J., Shi, H., Sun, H., Li, J., & Bai, Y. (2019). Antifungal effect of photodynamic therapy mediated by curcumin on *Candida albicans* biofilms in vitro. *Photodiagnosis and Photodynamic Therapy*, 27(June), 280–287. <https://doi.org/10.1016/j.pdpdt.2019.06.015>
- Mabona, U., Viljoen, A., Shikanga, E., Marston, A., & Vuuren, S. Van. (2013). Antimicrobial activity of southern African medicinal plants with dermatological relevance: From an ethnopharmacological screening approach , to combination studies and the isolation of a bioactive compound. *Journal of Ethnopharmacology*, 1–11. <https://doi.org/10.1016/j.jep.2013.03.056>
- Macia, M. D., Rojo-Moliner, E., & Oliver, A. (2014). Antimicrobial susceptibility testing in biofilm-growing bacteria. *Clinical Microbiology and Infection*, 20(10), 981–990. <https://doi.org/10.1111/1469-0691.12651>
- Madigan, M. T., Martinko, J. M., Bender, Kelly S., Buckley, Daniel H., & Stahl, David A. (2015). Microorganisms. In K. Churchman, N. McFadden, & A. Williams (Eds.), *PEARSON* (Fourteenth).
- Magaldi, S., Mata-essayag, S., Capriles, C. H. De, Perez, C., Colella, M. T., Olaizola, C., & Ontiveros, Y. (2004). Well diffusion for antifungal

- susceptibility testing. *International Journal of Infectious Diseases*, 8, 39–45. <https://doi.org/10.1016/j.ijid.2003.03.002>
- Mah, T. C., & Toole, G. A. O. (2001). Mechanisms of biofilm resistance to antimicrobial agents. *Trends in Microbiology*, 9(1), 34–39.
- Mahdi-pour, B., Jothy, S. L., Latha, L. Y., Chen, Y., & Sasidharan, S. (2012). Antioxidant activity of methanol extracts of different parts of *Lantana camara*. *Asian Pacific Journal of Tropical Biomedicine*, 2(12), 960–965. [https://doi.org/10.1016/S2221-1691\(13\)60007-6](https://doi.org/10.1016/S2221-1691(13)60007-6)
- Manousi, N., Sarakatsianos, I., & Samanidou, V. (2019). Extraction Techniques of Phenolic Compounds and Other Bioactive Compounds From Medicinal and Aromatic Plants. In *Engineering Tools in the Beverage Industry*. <https://doi.org/10.1016/B978-0-12-815258-4.00010-X>
- Maric, S., & Vranes, J. (2007). Characteristics and significance of microbial biofilm formation. *Period Biol*, 109(2), 1–7. [ISSN 0031-5362](https://doi.org/10.1007/s11241-007-9001-0)
- Martin, S. F. (2002). Evolution of the vinylogous Mannich reaction as a key construction for alkaloid synthesis. *Accounts of Chemical Research*, 35(10), 895–904. <https://doi.org/10.1021/ar950230w>
- Martínez, A., Rojas, N., García, L., González, F., Domínguez, M., & Catalán, A. (2014). In vitro activity of terpenes against *Candida albicans* and ultrastructural alterations. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*, 118(5), 553–559. <https://doi.org/10.1016/j.oooo.2014.07.009>
- Masák, J., Čejková, A., Schreiberová, O., & Řezanka, T. (2014). *Pseudomonas* biofilms: Possibilities of their control. *FEMS Microbiology Ecology*, 89(1), 1–14. <https://doi.org/10.1111/1574-6941.12344>
- Masadeh, M. M., Alzoubi, K. H., Ahmed, W. S., & Magaji, A. S. (2019). In vitro comparison of antibacterial and antibiofilm activities of selected fluoroquinolones against *Pseudomonas aeruginosa* and methicillin-resistant *Staphylococcus aureus*. *Pathogens*, 8(1). <https://doi.org/10.3390/pathogens8010012>
- Maza, L. M. de la, Pezzlo, M. T., & Baron, E. J. (1997). *Colour Atlas of Diagnostic Microbiology*. Mosby, p. 26. St. Louis, Missouri: Mosby-Year Book, Inc.
- McMurry, J. (2015). *Organic Chemistry : with Biological applications* (3rd Editio; J. McMurry, ed.). United States of America: Cengage Learning WCN:
- Menon, T., Umamaheswari, K., Kumarasamy, N., Solomon, S., & Thyagarajan, S. P. (2001). Efficacy of fluconazole and itraconazole in the treatment of oral candidiasis in HIV patients. *Acta Tropica*, 80, 151–154. Retrieved from [www.parasitology-online.com](http://www.parasitology-online.com)
- Meyers, E., & Smith, A. (1969). Use of silicic acid-glass fiber sheets for bioautography substances. *J. Chromatog*, 41, 263–264.
- Mayer, F. L., Wilson, D., & Hube, B. (2013). *Candida albicans* pathogenicity mechanisms. *Landes Bioscience - Virulence*, 4(2), 119–128. <https://doi.org/10.4161/viru.22913>
- Miao, J., Lin, S., Soteyome, T., Peters, B. M., Li, Y., Chen, H., ... harro, J. M. (2019). Biofilm Formation of *Staphylococcus aureus* under Food Heat Processing Conditions: First Report on CML Production within Biofilm. *Scientific Reports*, 9(1), 1–9. <https://doi.org/10.1038/s41598-018-35558-2>

- Miramón, P., & Lorenz, M. C. (2017). A feast for *Candida*: Metabolic plasticity confers an edge for virulence. *PLOS Pathogens*, *13*(2), 1–7. <https://doi.org/10.1371/journal.ppat.1006144>
- Mock, M., Monod, M., R.G., B.-R., & F, P. (1998). Tinea capitis Dermatophytes : Susceptibility to Antifungal Drugs Tested in vitro and in vivo. *Pharmacology and Treatment*, *197*, 361–367. Retrieved from <http://biomednet.com/karger>
- Molin, S., & Tolker-nielsen, T. (2003). Gene transfer occurs with enhanced efficiency in biofilms and induces enhanced stabilisation of the biofilm structure. *Current Opinion in Biotechnology*, *14*(3), 255–261. [https://doi.org/10.1016/S0958-1669\(03\)00036-3](https://doi.org/10.1016/S0958-1669(03)00036-3)
- Monton, C., & Luprasong, C. (2019). Effect of Temperature and Duration Time of Maceration on Nitrate Content of *Vernonia cinerea* ( L .) Less .: Circumscribed. *International Journal of Food Science*, 1–8. <https://doi.org/10.1155/2019/1281635>
- Moody, V., & Needles, H. L. (2004). Antimicrobial Agents. *Tufted Carpet*, 145–153. <https://doi.org/10.1016/B978-1-884207-99-0.50015-4>
- Moreau, R. A., Whitaker, B. D., & Hicks, K. B. (2002). Phytosterols, phytostanols, and their conjugates in foods: Structural diversity, quantitative analysis, and health-promoting uses. *Progress in Lipid Research*, *41*(6), 457–500. [https://doi.org/10.1016/S0163-7827\(02\)00006-1](https://doi.org/10.1016/S0163-7827(02)00006-1)
- Mothana, R. A., Al-musayeib, N. M., Al-ajmi, M. F., Cos, P., & Maes, L. (2014). Evaluation of the In Vitro Antiplasmodial , Antileishmanial , and Antitrypanosomal Activity of Medicinal Plants Used in Saudi and Yemeni Traditional Medicine. *Evidence-Based Complementary and Alternative Medicine*, *2014*, 7. <https://doi.org/10.1155/2014/905639>
- Moyes, D. L., Runglall, M., Murciano, C., Shen, C., Nayar, D., Thavaraj, S., ... Naglik, J. R. (2010). A Biphasic Innate Immune MAPK Response Discriminates between the Yeast and Hyphal Forms of *Candida albicans* in Epithelial Cells. *Cell Host and Microbe*, *8*(3), 225–235. <https://doi.org/10.1016/j.chom.2010.08.002>
- Moyes, D. L., Murciano, C., Runglall, M., Islam, A., Thavaraj, S., & Julian, R. (2011a). *Candida albicans* Yeast and Hyphae are Discriminated by MAPK Signaling in Vaginal Epithelial Cells. *PLOS ONE*, *6*(11), 1–6. <https://doi.org/10.1371/journal.pone.0026580>
- Moyes, D. L., & Naglik, J. R. (2011b). Mucosal immunity and *Candida albicans* infection. *Clinical and Developmental Immunology*, *2011*, 1–9. <https://doi.org/10.1155/2011/346307>
- Moyes, D. L., Murciano, C., Runglall, M., Kohli, A., Islam, A., & Naglik, J. R. (2012). Activation of MAPK/c-Fos induced responses in oral epithelial cells is specific to *Candida albicans* and *Candida dubliniensis* hyphae. *Medical Microbiology and Immunology*, *201*(1), 93–101. <https://doi.org/10.1007/s00430-011-0209-y>
- Moyes, D. L., Wilson, D., Jonathan, P., Höfs, S., Gratacap, R. L., Robbins, J., ... Wheeler, R. T. (2016). Candidalysin is a fungal peptide toxin critical for mucosal infection. *Nature*, *532*(7597), 64–68. <https://doi.org/10.1038/nature17625>

- Mueller-Harvey, I. (2001). Analysis of hydrolysable tannins. *Animal Feed Science and Technology*, 91(1–2), 3–20. [https://doi.org/10.1016/S0377-8401\(01\)00227-9](https://doi.org/10.1016/S0377-8401(01)00227-9)
- Munita, J. M., & Arias, C. A. (2016). Mechanisms of Antibiotic Resistance. *Microbiology Spectrum Journal*, 4(2), 1–37. <https://doi.org/10.1128/microbiolspec.VMBF-0016-2015.Mechanisms>
- Murciano, C., Moyes, D. L., Runglall, M., Islam, A., Mille, C., Fradin, C., ... Naglik, J. R. (2011). Candida albicans Cell Wall Glycosylation May Be Indirectly Required for Activation of Epithelial Cell Proinflammatory Responses. *Infection And Immunity*, 79(12), 4902–4911. <https://doi.org/10.1128/IAI.05591-11>
- Murciano, C., Moyes, D. L., Runglall, M., Tobouti, P., Islam, A., Lois, L., & Naglik, J. R. (2012). Evaluation of the Role of Candida albicans Agglutinin-Like Sequence ( Als ) Proteins in Human Oral Epithelial Cell Interactions. *PLOS ONE*, 7(3), 1–9. <https://doi.org/10.1371/journal.pone.0033362>
- Murima, P., Mckinney, J. D., & Pethe, K. (2014). Targeting Bacterial Central Metabolism for Drug Development. *Chemistry & Biology*, 21(11), 1423–1432. <https://doi.org/10.1016/j.chembiol.2014.08.020>
- Murray, Patrick R. (2018). Basic Medical Microbiology. In *Elsevier* (First edit). <https://doi.org/10.1136/jcp.44.11.968-b>
- Naczka, M., & Shahidi, F. (2004). Extraction and analysis of phenolics in food. *Journal of Chromatography A*, 1054, 95–111. <https://doi.org/10.1016/j.chroma.2004.08.059>
- Naglik, J. R., & Moyes, D. (2011). Epithelial cell innate response to Candida albicans. *Advances in Dental Research*, 23(1), 50–55. <https://doi.org/10.1177/0022034511399285>
- Naglik, J. R., Moyes, D. L., Wächtler, B., & Hube, B. (2012). Candida albicans interactions with epithelial cells and mucosal immunity. *Microbes and Infection*, 13(12–13), 963–976. <https://doi.org/10.1016/j.micinf.2011.06.009>
- Nazlı, O., Baygar, T., Elif, Ç., Dönmez, D., Dere, Ö., & İhsan, A. (2019). Bioorganic Chemistry Antimicrobial and antibiofilm activity of polyurethane / Hypericum perforatum extract ( PHPE ) composite. *Bioorganic Chemistry*, 82(August 2018), 224–228. <https://doi.org/10.1016/j.bioorg.2018.08.017>
- Nazzaro, F., Fratianni, F., & Martino, L. De. (2013). Effect of Essential Oils on Pathogenic Bacteria. *Pharmaceuticals*, 6, 1451–1474. <https://doi.org/10.3390/ph6121451>
- Neopane, P., Nepal, H. P., Shrestha, R., Uehara, O., & Abiko, Y. (2018). In vitro biofilm formation by Staphylococcus aureus isolated from wounds of hospital-admitted patients and their association with antimicrobial resistance. *International Journal of General Medicine*, 11, 25–32. <https://doi.org/10.2147/IJGM.S153268>
- Newman, D. J., & Cragg, G. M. (2012). Natural products as sources of new drugs over the 30 years from 1981 to 2010. *Journal of Natural Products*, 75(3), 311–335. <https://doi.org/10.1021/np200906s>
- Newman, D.J., Cragg, G.M., Kingston, D.G.I. (2015). In: Wermuth, C.G., Aldous, D., Raboisson, P., Rognan, D. (Eds.), *The Practice of Medicinal Chemistry*, 4th ed. Elsevier, Amsterdam, pp. 101–139.

- Nguyen, Q. T., Merlo, M. E., Medema, M. H., Jankevics, A., Breitling, R., & Takano, E. (2012). Metabolomics methods for the synthetic biology of secondary metabolism. *FEBS Letters*, 586(15), 2177–2183. <https://doi.org/10.1016/j.febslet.2012.02.008>
- Nijs, A., Cartuyvels, R., Mewis, A., Peeters, V., Rummens, J. L., & Magerman, K. (2003). Comparison and Evaluation of Osiris and Sirscan 2000 Antimicrobial Susceptibility Systems in the Clinical Microbiology Laboratory. *Journal Of Clinical Microbiology*, 41(8), 3627–3630. <https://doi.org/10.1128/JCM.41.8.3627>
- Nickerson, K. W., Atkin, A. L., & Hornby, J. M. (2006). Quorum sensing in dimorphic fungi: Farnesol and beyond. *Applied and Environmental Microbiology*, 72(6), 3805–3813. <https://doi.org/10.1128/AEM.02765-05>
- Nikolić, M., Vasić, S., Đurđević, J., Stefanović, O., & Čomić, L. (2014). Antibacterial and anti-biofilm activity of ginger (*Zingiber officinale* (Roscoe) ethanolic extract. *Kragujevac J. Sci.*, 36(January), 129–136. <https://doi.org/10.5937/KgJSci1436129N>
- Nicholls, S., Maccallum, D. M., Kaffarnik, F. A. R., Selway, L., Peck, S. C., & Brown, A. J. P. (2011). Activation of the heat shock transcription factor Hsf1 is essential for the full virulence of the fungal pathogen *Candida albicans*. *Fungal Genetics and Biology*, 48(3), 297–305. <https://doi.org/10.1016/j.fgb.2010.08.010>
- Nzogong, R. T., Ndjateu, F. S. T., Ekom, S. E., Fosso, J. A. M., Awouafack, M. D., Tene, M., ... Tamokou, J. de D. (2018). Antimicrobial and antioxidant activities of triterpenoid and phenolic derivatives from two Cameroonian Melastomataceae plants: *Dissotis senegambiensis* and *Amphiblemma monticola*. *BMC Complementary and Alternative Medicine*, 18(1), 1–11. <https://doi.org/10.1186/s12906-018-2229-2>
- Oh, J. K., Hyun, S. Y., Oh, H. R., Jung, J. W., Park, C., Lee, S. Y., ... Ryu, J. H. (2007). Effects of *Anemarrhena asphodeloides* on focal ischemic brain injury induced by middle cerebral artery occlusion in rats. *Biological and Pharmaceutical Bulletin*, 30(1), 38–43. <https://doi.org/10.1248/bpb.30.38>
- Ohshima, T., Ikawa, S., Kitano, K., & Maeda, N. (2018). A Proposal of Remedies for Oral Diseases Caused by *Candida*: A Mini Review. *Frontiers in Microbiology*, 9(July), 1522. <https://doi.org/10.3389/fmicb.2018.01522>
- Olson, M. E., Ceri, H., Morck, D. W., Buret, A. G., & Read, R. R. (2002). Biofilm bacteria: formation and comparative susceptibility to antibiotics. *The Canadian Journal of Veterinary Research*, 66(2), 86–92.
- Onanuga, A., & Temedie, T. C. (2011). Multidrug-resistant intestinal *Staphylococcus aureus* among self-medicated healthy adults in Amassoma, South-South, Nigeria. *Journal of Health, Population and Nutrition*, 29(5), 446–453. <https://doi.org/10.3329/jhpn.v29i5.8898>
- O'Neill, E., Pozzi, C., Houston, P., Smyth, D., Humphreys, H., Robinson, D. A., & O'Gara, J. P. (2007). Association between methicillin susceptibility and biofilm regulation in *Staphylococcus aureus* isolates from device-related infections. *Journal of Clinical Microbiology*, 45(5), 1379–1388. <https://doi.org/10.1128/JCM.02280-06>
- Onsare, J. G., & Arora, D. S. (2015). Antibiofilm potential of flavonoids extracted from *Moringa oleifera* seed coat against *Staphylococcus aureus*,

- Pseudomonas aeruginosa* and *Candida albicans*. *Journal of Applied Microbiology*, 118(2), 313–325. <https://doi.org/10.1111/jam.12701>
- Otto, M. (2013). Staphylococcal Infections : Mechanisms of Biofilm Maturation and Detachment as Critical Determinants of. *The Annual Review of Medicine*, (July), 1–14. <https://doi.org/10.1146/annurev-med-042711-140023>
- Pankuch, G. A., Lin, G., Hoellman, D. B., Good, C. E., Jacobs, M. R., & Appelbaum, P. C. (2006). Activity of Retapamulin against *Streptococcus pyogenes* and *Staphylococcus aureus* Evaluated by Agar Dilution , Microdilution , E-Test , and Disk Diffusion Methodologies. *Antimicrobial Agents and Chemotherapy*, 50(5), 1727–1730. <https://doi.org/10.1128/AAC.50.5.1727>
- Pang, Z., Raudonis, R., Glick, B. R., Lin, T., & Cheng, Z. (2019). Antibiotic resistance in *Pseudomonas aeruginosa*: mechanisms and alternative therapeutic strategies. *Biotechnology Advances*, 37(1), 177–192. <https://doi.org/10.1016/j.biotechadv.2018.11.013>
- Parsek, M. R., & Greenberg, E. P. (2005). Sociomicrobiology : the connections between quorum sensing and biofilms. *Trends in Microbiology*, 13(1), 27–33. <https://doi.org/10.1016/j.tim.2004.11.007>
- Passàli, D., Lauriello, M., Passàli, G. C., Passàli, F. M., & Bellussi, L. (2007). Group A streptococcus and its antibiotic resistance. *Acta Otorhinolaryngologica Italica : Organo Ufficiale Della Società Italiana Di Otorinolaringologia e Chirurgia Cervico-Facciale*, 27(1), 27–32. <https://doi.org/10.1155/2019/5739247>
- Patel, K., & Patel, D. K. (2019). The Beneficial Role of Rutin , A Naturally Occurring Flavonoid in Health Promotion and Disease Prevention : A Systematic Review and Update. In *Bioactive Food as Dietary Interventions for Arthritis and Related Inflammatory Diseases* (2nd ed.). <https://doi.org/10.1016/B978-0-12-813820-5.00026-X>
- Percival, S. L., Malic, S., Cruz, H., & Williams, D. W. (2011). Introduction to Biofilms. *Biofilms and Veterinary Medicine*, (June), 41–68. <https://doi.org/10.1007/978-3-642-21289-5>
- Percival, S. L., Mccarty, S. M., & Lipsky, B. (2015). Biofilms and Wounds : An Overview of the Evidence. *Advances In Wound Care*, 4(7), 373–381. <https://doi.org/10.1089/wound.2014.0557>
- Pelczar, M.J., dan Chan, E.C.S., 1986, *Dasar-Dasar Mikrobiologi*, Jilid 1, Alih Bahasa: Hadioetomo, R. S., Imas, T., Tjitrosomo, S.S., dan Angka, S.L., UI-Press, Jakarta, hal 117 dan 145-148.
- Pfaller, M. A., & Diekema, D. J. (2007). Epidemiology of Invasive Candidiasis: a Persistent Public Health Problem. *Clinical Microbiology Reviews*, 20(1), 133–163. <https://doi.org/10.1128/CMR.00029-06>
- Plancot, B., Gügi, B., Mollet, J., Loutelier-bourhis, C., Ramasandra, S., Lerouge, P., ... Driouich, A. (2019). Desiccation tolerance in plants : Structural characterization of the cell wall hemicellulosic polysaccharides in three *Selaginella* species. *Carbohydrate Polymers*, 208(August 2018), 180–190. <https://doi.org/10.1016/j.carbpol.2018.12.051>
- Pongrácz, J., Juhász, E., Iván, M., & Kristóf, K. (2015). Significance Of Yeasts In Bloodstream Infection: Epidemiology And Predisposing Factors Of Candidaemia In Adult Patients At A University Hospital (2010–2014). *Acta*

- Microbiologica Et Immunologica Hungarica*, 62(3), 317–329.  
<https://doi.org/10.1556/030.62.2015.3.9>
- Poole, K. (2004). Resistance to  $\beta$ -lactam antibiotics. *Cellular and Molecular Life Sciences Review*, 61, 2200–2223. <https://doi.org/10.1007/s00018-004-4060-9>
- Presterl, E., Schahawi, M. D., & Reilly, J. S. (2019). Basic Microbiology and Infection Control for Midwives. In E. Presterl, M. D.-E. Schahawi, & J. S. Reilly (Eds.), *Springer Nature*. <https://doi.org/10.1007/978-3-030-02026-2>
- Quiason, S. (2011). *Concise History of Drug Discovery Drug Discoveries and Invention. A Global Perspective*. 3-23, 154-225.
- Raj, Y., Won, J., Young, J., Woo, H., Gwang, H., Woo, E., & Wook, K. (2006). Potent inhibition of the inductions of inducible nitric oxide synthase and cyclooxygenase-2 by *taiwania X avone*. 15, 217–225. <https://doi.org/10.1016/j.niox.2006.01.001>
- Randhawa, E., Woytanowski, J., Sibliss, K., & Sheffer, I. (2018). Streptococcus pyogenes and invasive central nervous system infection. *SAGE Open Medical Case Reports*, 6, 1–3. <https://doi.org/10.1177/2050313X18775584>
- Rai, A., Saito, K., & Yamazaki, M. (2017). Integrated omics analysis of specialized metabolism in medicinal plants. *The Plant Journal*, 90(4), 764–787. <https://doi.org/10.1111/tpj.13485>
- Raut, J. S., Shinde, R. B., Chauhan, N. M., & Mohan Karuppayil, S. (2013). Terpenoids of plant origin inhibit morphogenesis, adhesion, and biofilm formation by *Candida albicans*. *Biofouling*, 29(1), 87–96. <https://doi.org/10.1080/08927014.2012.749398>
- Reddy, L. J., Gopu, S., Jose, B., & Jalli, R. D. (2012). Evaluation of Antibacterial & DPPH Radical Scavenging Activities of The Leaf Essential Oils of *Pongamia Pinnatta* & *Eucalyptus Maculata*. 2(3), 25–32.
- Reglinski, M., & Srisikandan, S. (2015). Streptococcus pyogenes. In *Molecular Medical Microbiology* (Three-Volu). <https://doi.org/10.1016/B978-0-12-397169-2.00038-X>
- Reynolds, P. E. (1989). Structure, Biochemistry and Mechanism of Action of Glycopeptide Antibiotics CO- CO- CO-. *Eur. J. Clin. Microbiol. Infect. Dis.*, 8(11), 943–950.
- Richard, H., Carpenter, E. J., Komada, T., Palmer, P. T., & Rochman, C. M. (2019). Science of the Total Environment Bio film facilitates metal accumulation onto microplastics in estuarine waters. *Science of the Total Environment*, 683, 600–608. <https://doi.org/10.1016/j.scitotenv.2019.04.331>
- Roberto, J., Almeida, S., Guilherme, P., Sá, S. De, Alves, L., & Federal, U. (2013). Phytochemistry of the genus *Selaginella* (Selaginellaceae). *Journal of Medicinal Plants Research*, 7(25), 1858–1868. <https://doi.org/10.5897/JMPR12.1223>
- Robles-Zepeda, R. E., Vela-zquez-Contreras, C. A., Garibay-Escobar, A., Ga-lvez-Ruiz, J. C., & Ruiz-Bustos, E. (2011). Antimicrobial Activity of Northwestern Mexican Plants Against *Helicobacter pylori*. *Journal of Medicinal Food*, 14(March), 1280–1283. <https://doi.org/10.1089/jmf.2010.0263>

- Roger, T., Bhakoo, M., & Zhang, Z. (2008). Bacterial adhesion and biofilms on surfaces. *Progress in Natural Science*, 18, 1049–1056. <https://doi.org/10.1016/j.pnsc.2008.04.001>
- Roy, R., Tiwari, M., Donelli, G., & Tiwari, V. (2018). Strategies for combating bacterial biofilms: A focus on anti-biofilm agents and their mechanisms of action. *Virulence*, 9(1), 522–554. <https://doi.org/10.1080/21505594.2017.1313372>
- Runyoro, D. K. B., Matee, M. I. N., Ngassapa, O. D., Joseph, C. C., & Mbwambo, Z. H. (2006). Screening of Tanzanian medicinal plants for anti-Candida activity. *BMC Complementary and Alternative Medicine*, 10(11), 1–10. <https://doi.org/10.1186/1472-6882-6-11>
- Siadi, K. (2012). Ekstrak bungkil biji jarak pagar (*Jatropha curcas*) sebagai biopestisida yang efektif dengan penambahan larutan NaCl. *Jurnal MIPA*, 35(1).
- Šaric, M. M., Jasprica, I., Mornar, A., & Maleš, Ž. (2007). Application of TLC in the Isolation and Analysis of Flavonoids. In Monika Waksundzka Hajnos, J. Sherma, & T. Kowalska (Eds.), *Thin Layer Chromatography in Phytochemistry* (80th ed., pp. 405–424). Retrieved from <http://www.taylorandfrancis.com>
- Satish, S., Raghavendra, M. P., & Raveesha, K. A. (2007). *Evaluation of the Antibacterial Potential of Some Plants Against Human Pathogenic Bacteria*. (November).
- Satpathy, S., Kumar, S., Pattanaik, S., & Raut, S. (2016). Review on bacterial biofilm : An universal cause of contamination. *Biocatalysis and Agricultural Biotechnology*, 7(4), 56–66. <https://doi.org/http://dx.doi.org/10.1016/j.bcab.2016.05.002>
- Scalbert, A. (1991). Antimicrobial Properties Of Tannins. *Phytochemistry*, 30(12), 3875–3883. <https://doi.org/10.1016/j.anifeedsci.2005.02.019>
- Schneider, H., Smith, A. R., Hovenkamp, P., Prado, J., Rouhan, G., Almeida, E., ... Pereira, J. B. D. S. (2016). *A community-derived classification for extant lycophytes and ferns*. 54(6). <https://doi.org/10.1111/jse.12229>
- Schulz, V., Hänsel R. Tyler VE. (1998). *Rational Phytotherapy* (Third edit). A Physician's Guide to Herbal Medicine. 4th ed. Berlin: Springer-Verlag; 2001. p. 306. <https://doi.org/10.1007/978-3-642-97704-6>
- Setyawan, A. D., & Darusman, L. K. (2008). REVIEW : Senyawa Biflavonoid pada Selaginella Pal . Beauv . dan Pemanfaatannya Review : Biflavonoid compounds of Selaginella Pal . Beauv . and its benefit. *Biodiversitas*, 9, 64–81. <https://doi.org/10.13057/biodiv/d090115>
- Setyawan, A. D. W. I. (2011). *Review : Natural products from Genus Selaginella ( Selaginellaceae )*. 3(1), 44–58.
- Setyawan, A. D. W. I., Supriatna, J., & Darnaedi, D. (2016). Diversity of Selaginella across altitudinal gradient of the tropical region. *Biodiversitas*, 17(1), 384–400. <https://doi.org/10.13057/biodiv/d170152>
- Sfeir, J., Lefrançois, C., Baudoux, D., Derbré, S., & Licznar, P. (2013). In vitro antibacterial activity of essential oils against streptococcus pyogenes. *Evidence-Based Complementary and Alternative Medicine*, 2013, 9. <https://doi.org/10.1155/2013/269161>



- Shah, N. P., Tran, C., Lee, F. Y., Chen, P., Norris, D., & Charles, L. (2016). Overriding Imatinib Resistance with a Novel ABL Kinase Inhibitor. *American Association for the Advancement of Science*, 305(5682), 399–401. Retrieved from <http://www.jstor.org/stable/3837516>
- Shi, J., Yu, J., Pohorly, J., Young, J. C., Bryan, M., & Wu, Y. (2003). Optimization of the extraction of polyphenols from grape seed meal by aqueous ethanol solution. *Food, Agriculture & Environment*, 1(2), 42–47. <https://doi.org/10.1234/4.2003.337>
- Shunmugaperum, T. (1965). Biofilm Eradication And Prevention: A Pharmaceutical Approach to Medical Device Infections. In *The British Journal of Psychiatry* (Vol. 111). <https://doi.org/10.1192/bjp.111.479.1009-a>
- Silva, E. M., Souza, J. N. S., Rogez, H., Rees, J. F., & Larondelle, Y. (2007). Food Chemistry Antioxidant activities and polyphenolic contents of fifteen selected plant species from the Amazonian region. *Food Chemistry*, 101, 1012–1018. <https://doi.org/10.1016/j.foodchem.2006.02.055>
- Simoës, M., Simoës, L. C., & Vieira, M. J. (2010). A review of current and emergent biofilm control strategies Manuel. *LWT - Food Science and Technology*, 43, 573–583. <https://doi.org/10.1016/j.lwt.2009.12.008>
- Siriwong, S., Krubphachaya, P., Thumanu, K., & Eumkeb, G. (2013). Synergy effect of ceftazidime with flavonoids against *Streptococcus pyogenes*. *Thai Journal of Pharmaceutical Sciences*, 38(SUPPL.), 115–119.
- Siriwong, S., Thumanu, K., Hengpratom, T., & Eumkeb, G. (2015). Synergy and Mode of Action of Ceftazidime plus Quercetin or Luteolin on *Streptococcus pyogenes*. *Evidence-Based Complementary and Alternative Medicine*, 2015. <https://doi.org/10.1155/2015/759459>
- Sjollema, J., Zaat, S. A. J., Fontaine, V., Ramstedt, M., Luginbuehl, R., Thevissen, K., ... Busscher, H. J. (2018). Acta Biomaterialia In vitro methods for the evaluation of antimicrobial surface designs. *Acta Biomaterialia*, 70, 12–24. <https://doi.org/10.1016/j.actbio.2018.02.001>
- Smith, T. C. (2010). *Deadly Diseases and Epidemics : Streptococcus (Group A)* (Second; H. Babcock, ed.). New York. NY: Chelsea House.
- Spigno, G., Tramelli, L., & Faveri, D. M. De. (2007). Effects of extraction time , temperature and solvent on concentration and antioxidant activity of grape marc phenolics. *Journal of Food Engineering*, 81(1), 200–208. <https://doi.org/10.1016/j.jfoodeng.2006.10.021>
- Stalikas, C. D. (2007). Extraction , separation , and detection methods for phenolic acids and flavonoids. *Journal of Separation Science*, 30, 3268–3295. <https://doi.org/10.1002/jssc.200700261>
- Staniszewska, M., Bondaryk, M., Piłat, J., Siennicka, K., Magda, U., & Kurzatkowski, W. (2012). [Virulence factors of *Candida albicans*]. *Przegląd Epidemiologiczny*, 66(4), 629–633. [https://doi.org/10.1016/S0966-842X\(01\)02094-7](https://doi.org/10.1016/S0966-842X(01)02094-7)
- Stankovic, M. S., Niciforovic, N., Topuzovic, M., & Solujic, S. (2014). Total phenolic content, flavonoid concentrations and and plant parts extracts from *teucrium montanum* l. Var. *Montanum*, f. *Supinum* (l.) Reichenb. *Biotechnology & Biotechnological Equipment*, 25(1), 2222–2227. <https://doi.org/10.5504/BBEQ.2011.0020>

- Stapleton, P. D., Shah, S., Hamilton-miller, J. M. T., Hara, Y., Nagaoka, Y., Kumagai, A., ... Taylor, P. W. (2004). *Anti- Staphylococcus aureus activity and oxacillin resistance modulating capacity of 3- O -acyl-catechins*. 24, 374–380. <https://doi.org/10.1016/j.ijantimicag.2004.03.024>
- Stapleton, P. D., & Taylor, P. W. (2007). Methicillin resistance in *Staphylococcus aureus*: mechanisms and modulation. *Science Progress*, 85(1), 57–72.
- Stepanovic, S., Vukovic, D., Hola, V., Bonaventura, G. Di, Djukic, S., Circovic, I., & Ruzicka, F. (2007). Quantification of biofilm in microtiter plates : overview of testing conditions and practical recommendations for assessment of biofilm production by staphylococci. *Acta Pathologica, Microbiologica, et Immunologica Scandinavia*, 115(8), 891–899. [https://doi.org/10.1111/j.1600-0463.2007.apm\\_630.x](https://doi.org/10.1111/j.1600-0463.2007.apm_630.x)
- Stoodley, P., Sauer, K., Davies, D. G., & Costerton, J. W. (2002). Biofilms As Complex Differentiated Communities. *Annual Review of Microbiology*, 56, 187–209. <https://doi.org/10.1146/annurev.micro.56.012302.160705>
- Sudirman, L. I. (2005). Detection of Antimicrobial Compounds Isolated from Several Tropical Lentinus by Bioautographic Method. *HAYATI Journal of Biosciences*, 12(2), 67–72. [https://doi.org/10.1016/S1978-3019\(16\)30327-8](https://doi.org/10.1016/S1978-3019(16)30327-8)
- Sun, A., Xu, X., Lin, J., Cui, X., & Xu, R. (2015). Neuroprotection by saponins. *Phytotherapy Research*, 29(2), 187–200. <https://doi.org/10.1002/ptr.5246>
- Sulaiman, I. S. che, Basri, M., Reza, H., Masoumi, F., Chee, W. J., & Ashari, S. E. (2017). Effects of temperature , time , and solvent ratio on the extraction of phenolic compounds and the anti - radical activity of *Clinacanthus nutans* Lindau leaves by response surface methodology. *Chemistry Central Journal*, 11(54), 1–11. <https://doi.org/10.1186/s13065-017-0285-1>
- Susanto, D. F., Aparamarta, H. W., Widjaja, A., & Gunawan, S. (2017). Identification of phytochemical compounds in *Calophyllum inophyllum* leaves. *Asian Pacific Journal of Tropical Biomedicine*, 7(9), 773–781. <https://doi.org/10.1016/j.apjtb.2017.08.001>
- Sutherland, I. W. (2001). The biofilm matrix – an immobilized but dynamic microbial environment. *TRENDS in Microbiology*, 9(5), 222–227. [https://doi.org/S0966-842X\(01\)02012-1](https://doi.org/S0966-842X(01)02012-1)
- Ta, C. A. K., & Arnason, J. T. (2016). Mini review of phytochemicals and plant taxa with activity as microbial biofilm and quorum sensing inhibitors. *Molecules*, 21(1). <https://doi.org/10.3390/molecules21010029>
- Tagousop, C. N., Tamokou, J. D. D., Kengne, I. C., Ngnokam, D., & Laurence Voutquenne Nazabadioko. (2018). Antimicrobial activities of saponins from *Melanthera elliptica* and their synergistic effects with antibiotics against pathogenic phenotypes. *Chemistry Central Journal*, 12(1), 1–9. <https://doi.org/10.1186/s13065-018-0466-6>
- Tang, H. J., Chen, C. C., Ko, W. C., Yu, W. L., Chiang, S. R., & Chuang, Y. C. (2011). In vitro efficacy of antimicrobial agents against high-inoculum or biofilm-embedded methicillin-resistant *Staphylococcus aureus* with vancomycin minimal inhibitory concentrations equal to 2?g/mL (VA2-MRSA). *International Journal of Antimicrobial Agents*, 38(1), 46–51. <https://doi.org/10.1016/j.ijantimicag.2011.02.013>
- Taylor, P., Feng, W., Chen, H., Zheng, X., & Wang, Y. (2009). Two new secolignans from *Selaginella sinensis* ( Desv .) Spring. *Journal of Asian*

- Natural Products Research*, (January 2015), 37–41.  
<https://doi.org/10.1080/10286020902971011>
- Taylor, P., Zou, H., Xu, K., Li, F., Zou, Z., Long, H., ... Tan, G. (2013). *Journal of Asian Natural Products* Uncinataflavone , a new flavonoid with a methyl benzoate substituent from *Selaginella uncinata*. (March), 37–41.  
<https://doi.org/10.1080/10286020.2013.771345>
- Terao, Y. (2012). The virulence factors and pathogenic mechanisms of *Streptococcus pyogenes*. *Journal of Oral Biosciences*, 54(2), 96–100.  
<https://doi.org/10.1016/j.job.2012.02.004>
- Theuretzbacher, U. (2015). ScienceDirect Global antimicrobial resistance in Gram-negative pathogens and clinical need. *Current Opinion in Microbiology*, 39(Figure 1), 106–112. <https://doi.org/10.1016/j.mib.2017.10.028>
- Thirumurugan, D., Cholarajan, A., Raja, S. S. S., & Vijayakumar, R. (2018). An Introductory Chapter: Secondary Metabolites. *Intech Open*, 1–21.  
<https://doi.org/10.5772/intechopen.79766>
- Tian, S., Hao, C., Xu, G., Yang, J., & Sun, R. (2016). ScienceDirect Optimization conditions for extracting polysaccharide from *Angelica sinensis* and its antioxidant activities. *Journal of Food and Drug Analysis*, 25(4), 766–775.  
<https://doi.org/10.1016/j.jfda.2016.08.012>
- Tiitto, R. J., Nenadis, N., Neugart, S., Robson, M., Agati, G., Vepsäläinen, J., ... Jansen, M. A. K. (2014). Assessing the response of plant flavonoids to UV radiation : an overview of appropriate techniques. *Phytochemistry Reviews*, 14, 273–297. <https://doi.org/10.1007/s11101-014-9362-4>
- Trombetta, D., Saija, A., Bisignano, G., Arena, S., Caruso, S., & Mazzanti, G. (2002). Study on the mechanisms of the antibacterial action of some plant  $\alpha, \beta$ -unsaturated aldehydes. *The Society for Applied Microbiology*, 36, 285–290.
- Truong, D., Nguyen, D. H., Thuy, N., Ta, A., Bui, A. V., & Do, T. H. (2019). Evaluation of the Use of Different Solvents for Phytochemical Constituents , Antioxidants , and In Vitro Anti-Inflammatory Activities of *Severinia buxifolia*. *Journal of Food Quality*, 2019, 1–9.  
<https://doi.org/doi.org/10.1155/2019/8178294>
- Uzayisenga, R., Ayeka, P. A., & Wang, Y. (2014). Anti-diabetic potential of *Panax notoginseng* saponins (PNS): A review. *Phytotherapy Research*, 28(4), 510–516. <https://doi.org/10.1002/ptr.5026>
- Valdir Cechinel-Filho. (n.d.). *Plant Bioactives and Drug Discovery: Principles, Practice, and Perspectives* (Valdir Cechinel-Filho, ed.).  
<https://doi.org/10.1002/9781118260005>
- Valgas, C., Souza, S. M. De, Smânia, E. F. A., & Jr, A. S. (2007). Screening Methods To Determine Antibacterial Activity Of Natural Products. *Brazilian Journal of Microbiology*, 38, 369–380. [ISSN 1517-8382](https://doi.org/10.1590/S1517-83822007000300004)
- Vardanyan, R., & Hruby, V. (2016). *Synthesis of Best-Seller Drugs* (1st ed).  
<https://doi.org/10.1016/B978-0-12-411492-0.00030-4>
- Varela, N. P., Friendship, R., Dewey, C., & Valdivieso, A. (2008). Comparison of Agar Dilution and E-test for antimicrobial susceptibility testing of *Campylobacter coli* isolates recovered from 80 Ontario swine farms. *The Canadian Journal of Veterinary Research*, 72(519), 168–174.

- Vasconcelos, N. G., Croda, J., & Simionatto, S. (2018). Antibacterial mechanisms of cinnamon and its constituents : A review. *Microbial Pathogenesis Journal*, 120(April), 198–203. <https://doi.org/10.1016/j.micpath.2018.04.036>
- Veerman, E. C. I., Valentijn-Benz, M., Nazmi, K., Ruissen, A. L. A., Walgreen-Weterings, E., Van Marle, J., ... Amerongen, A. V. N. (2007). Energy depletion protects *Candida albicans* against antimicrobial peptides by rigidifying its cell membrane. *Journal of Biological Chemistry*, 282(26), 18831–18841. <https://doi.org/10.1074/jbc.M610555200>
- Veerachamy, S., Yarlagadda, T., & Manivasagam, G. (2014). Bacterial adherence and biofilm formation on medical implants: A review. *Journal Of Engineering in Medicine*, 228(10), 1083–1099. <https://doi.org/10.1177/0954411914556137>
- Venugopal, R., & Hai, R. (2012). Phytochemicals in diets for breast cancer prevention : The importance of resveratrol and ursolic acid. *Food Science and Human Wellness*, 1(1), 1–13. <https://doi.org/10.1016/j.fshw.2012.12.001>
- Verbeke, F., De Craemer, S., Debunne, N., Janssens, Y., Wynendaele, E., Van de Wiele, C., & De Spiegeleer, B. (2017). Peptides as quorum sensing molecules: Measurement techniques and obtained levels in vitro and in vivo. *Frontiers in Neuroscience*, 11(APR), 1–18. <https://doi.org/10.3389/fnins.2017.00183>
- Verstraeten, N., Braeken, K., Debkumari, B., Fauvart, M., Fransaer, J., Vermant, J., & Michiels, J. (2008). Living on a surface : swarming and biofilm formation. *Trends in Microbiology*, (September), 496–506. <https://doi.org/10.1016/j.tim.2008.07.004>
- Vongsangnak, W., Gua, J., Chauvatcharin, S., & Zhong, J. (2004). Towards efficient extraction of notoginseng saponins from cultured cells of *Panax notoginseng*. *Biochemical Engineering Journal*, 18, 115–120. [https://doi.org/10.1016/S1369-703X\(03\)00197-9](https://doi.org/10.1016/S1369-703X(03)00197-9)
- Wall, G., Montelongo-jauregui, D., Bonifacio, B. V., Lopez-ribot, J. L., & Uppuluri, P. (2019). *Candida albicans* biofilm growth and dispersal: contributions to pathogenesis. *Current Opinion in Microbiology*, 52, 1–6. <https://doi.org/10.1016/j.mib.2019.04.001>
- Wang, Y., Sun, Q., Yang, F., Long, C., & Zhao, F. (2010). Neolignans and Caffeoyl Derivatives from *Selaginella moellendorffii*. *Verlag Helvetica Chimica Acta*, 93, 2467–2477.
- Wang, Y., Du, G., Zhao, H., Song, Y., & Zhang, Q. (2011). Rapid simultaneous determination of isoflavones in *Radix puerariae* using high- performance liquid chromatography – triple quadrupole mass spectrometry with novel shell-type column. *Jss-Journal*, 34, 2576–2585. <https://doi.org/10.1002/jssc.201100295>
- Wang, T., Di, G., Yang, L., Dun, Y., Sun, Z., Wan, J., ... Yuan, D. (2015). Saponins from *Panax japonicus* attenuate D-galactose-induced cognitive impairment through its anti-oxidative and anti-apoptotic effects in rats. *Journal of Pharmacy and Pharmacology*, 67(9), 1284–1296. <https://doi.org/10.1111/jphp.12413>
- Wagner, H. (2011). Synergy research : Approaching a new generation of phytopharmaceuticals. *Fitoterapia*, 82(1), 34–37. <https://doi.org/10.1016/j.fitote.2010.11.016>

- Weststrand, S., & Korall, P. (2016). *A subgeneric classification of Selaginella (Selaginellaceae)*. *103*(12), 2160–2169. <https://doi.org/10.3732/ajb.1600288>
- White, T. C., Holleman, S., Dy, F., Mirels, L. F., & Stevens, D. A. (2014). *Sport and Recreation Services Active Ipswich : Physical Activity Strategy Sport and Recreation Services Active Ipswich : Physical Activity Strategy*. *46*(May 2009), 1704–1713. <https://doi.org/10.1128/AAC.46.6.1704>
- Wijesundara, N. M., & Vasantha Rupasinghe, H. P. (2019). Bactericidal and anti-biofilm activity of ethanol extracts derived from selected medicinal plants against streptococcus pyogenes. *Molecules*, *24*(6). <https://doi.org/10.3390/molecules24061165>
- Wilkins, & Williams. (2005). *Antibiotics in Laboratory Medicine* (5th Editio; V. Lorian, P. G. Ambrose, D. Amsterdam, D. A. Andes, & J. M. Ascenzi, eds.). Walnut Street, Philadelphia, PA 19106 USA.
- World Health Organization (WHO). (2002). *Traditional Medicine Strategy*. Geneva 27, Switzerland.
- World Health Organization (WHO). (2010). *Traditional Medicine in Republic of Indonesian Traditional Medicine*. 23–36. Retrieved from [http://www.searo.who.int/entity/medicines/topics/traditional\\_medicines\\_in\\_republic\\_of\\_indonesia.pdf](http://www.searo.who.int/entity/medicines/topics/traditional_medicines_in_republic_of_indonesia.pdf)
- World Health Organization (WHO). (2014). WHO Traditional Medicine Strategy Plan 2014-2020. *WHO Traditional Medicine Strategy*, (March 2014), 120–125. Retrieved from [https://www.who.int/medicines/publications/traditional/trm\\_strategy14\\_23/en/](https://www.who.int/medicines/publications/traditional/trm_strategy14_23/en/)
- Won, J., Raj, Y., Kim, M., Woo, E., Kyoon, H., & Wook, K. (2006). *Inhibition of inducible nitric oxide synthase by sumaflavone isolated from Selaginella tamariscina*. *105*, 107–113. <https://doi.org/10.1016/j.jep.2005.10.001>
- Wu, B., & Wang, J. (2011). Phenolic Compounds from *Selaginella moellendorffii*. *Chemistry & Biodiversity*, *8*, 1735–1747.
- Wu, S., Yang, Z., Liu, F., Peng, W., Qu, S., & Li, Q. (2019). Antibacterial Effect and Mode of Action of Flavonoids From Licorice Against Methicillin-Resistant *Staphylococcus aureus*. *Frontiers in Microbiology*, *10*(November), 1–14. <https://doi.org/10.3389/fmicb.2019.02489>
- Wu, Y., Bai, J., Zhong, K., Huang, Y., Qi, H., Jiang, Y., & Gao, H. (2016). Antibacterial Activity and Membrane-Disruptive Mechanism of 3- p - trans - Coumaroyl-2-hydroxyquinic Acid, a Novel Phenolic Compound from Pine Needles of *Cedrus deodara* , against *Staphylococcus aureus*. *Molecules*, *21*, 2–3. <https://doi.org/10.3390/molecules21081084>
- Wu, Y., Cheng, N., & Cheng, C. (2018). Biofilms in Chronic Wounds : Pathogenesis and Diagnosis. *Trends in Biotechnology*, *37*(5), 505–517. <https://doi.org/10.1016/j.tibtech.2018.10.011>
- Xie, Y., Yang, W., Tang, F., Chen, X., & Ren, L. (2014). Antibacterial Activities of Flavonoids: Structure-Activity Relationship and Mechanism. *Current Medicinal Chemistry*, *22*(1), 132–149. <https://doi.org/10.2174/0929867321666140916113443>
- Xu, K., Zou, H., Tan, Q., Li, F., Liu, J., & Xiang, H. (2011a). *Selaginellins I and J , two new alkynyl phenols , from Selaginella tamariscina ( Beauv .) Spring*. *13*(2), 93–96. <https://doi.org/10.1080/10286020.2010.536535>

- Xu, K., Zou, H., Li, F., & Xiang, H. (2011b). *Journal of Asian Natural Products* Two new selaginellin derivatives from *Selaginella tamariscina* ( Beauv .) Spring. (December 2014), 37–41. <https://doi.org/10.1080/10286020.2011.558840>
- Xu, K., Zou, H., Tan, Q., & Li, F. (2011c). Selaginellins I and J , two new alkynyl phenols , from *Selaginella tamariscina* ( Beauv .) Spring. *Journal of Asian Natural Products Research*, (November 2014), 37–41. <https://doi.org/10.1080/10286020.2010.536535>
- Xu, K., Li, J., Zhu, G., He, X., & Li, F. (2015a). *Journal of Asian Natural Products* New Selaginellin derivatives from *Selaginella tamariscina*. (April), 37–41. <https://doi.org/10.1080/10286020.2015.1016001>
- Xu, K., Li, J., Zhu, G., He, X., & Li, F. (2015b). New Selaginellin derivatives from *Selaginella tamariscina*. *Journal of Asian Natural Products Research*, (April), 37–41. <https://doi.org/10.1080/10286020.2015.1016001>
- Xu, X. H., Li, T., Fong, C. M. V., Chen, X., Chen, X. J., Wang, Y. T., ... Lu, J. J. (2016). Saponins from chinese medicines as anticancer agents. *Molecules*, 21(10), 1–27. <https://doi.org/10.3390/molecules21101326>
- Xu, Z., Xin, T., Bartels, D., Li, Y., Gu, W., Yao, H., ... Chen, S. (2018). Genome Analysis of the Ancient Tracheophyte *Selaginella tamariscina* Reveals Evolutionary Features Relevant to the Acquisition of Desiccation Tolerance. *Molecular Plant*, 11(7), 983–994. <https://doi.org/10.1016/j.molp.2018.05.003>
- Xu, J., Yang, L., Wang, R., Zeng, K., Fan, B., & Zhao, Z. (2019). The biflavonoids as protein tyrosine phosphatase 1B inhibitors from *Selaginella uncinata* and their antihyperglycemic action. *Fitoterapia*, 137(July), 104255. <https://doi.org/10.1016/j.fitote.2019.104255>
- Yang, L., Liu, Y., Wu, H., Song, Z., Høiby, N., Molin, S., & Givskov, M. (2012). Combating biofilm. *FEMS Immunology & Medical Microbiology*, 65(2), 146–157. <https://doi.org/10.1111/j.1574-695X.2011.00858.x>
- Yao, W., Huang, R., Hua, J., Zhang, B., Wang, C., Liang, D., & Wang, H. (2017). Selagintamarlin A: A Selaginellin Analogue Possessing a 1H - 2- Benzopyran Core from *Selaginella tamariscina*. *American Chemical Society*, 2178–2183. <https://doi.org/10.1021/acsomega.7b00209>
- Yi, Y., Zhang, Q., Li, S., Wang, Y., Ye, W., Zhao, J., & Wang, Y. (2012). Simultaneous quantification of major flavonoids in ““ Bawanghua ””, the edible flower of *Hylocereus undatus* using pressurised liquid extraction and high performance liquid chromatography. *Food Chemistry*, 135(2), 528–533. <https://doi.org/10.1016/j.foodchem.2012.05.010>
- Yinduo, J. (2014). *Methicillin-resistant Staphylococcus aureus (mrsa) protocols* (Second Ed; Y. Ji, ed.). <https://doi.org/10.1007/978-1-62703-664-1>
- Yobi, A., Wone, B. W. M., Xu, W., Alexander, D. C., Guo, L., Ryals, J. A., ... Cushman, J. C. (2012). *Comparative metabolic profiling between desiccation-sensitive and desiccation-tolerant species of Selaginella reveals insights into the resurrection trait.* 983–999. <https://doi.org/10.1111/tpj.12008>
- Yoneyama, H., & Katsumata, R. (2006). Antibiotic Resistance in Bacteria and Its Future for Novel Antibiotic Development. *Biosci. Biotechnol. Biochem*, 70(5), 1060–1075.

- Yubin, J., Miao, Y., Bing, W., & Yao, Z. (2014). The extraction, separation and purification of alkaloids in the natural medicine. *Journal of Chemical and Pharmaceutical Research*, 6(1), 338–345.
- Zaborskyte, G., Andersen, J. B., Kragh, K. N., & Ciofu, O. (2017). Real-Time Monitoring of nfxB Mutant Occurrence and Dynamics in *Pseudomonas aeruginosa* Biofilm Exposed to Subinhibitory Concentrations of Ciprofloxacin. *Antimicrobial Agents and Chemotherapy*, 61(3), 1–14. <https://doi.org/10.1128/AAC.02292-16>.
- Zainuddin, M (2014). *Metodologi Penelitian : Kefarmasian dan Kesehatan* (Ed 2; Airlangga University Pers, ed.). Surabaya: Pusat Penerbitan dan Percetakan Unair.
- Zeng, W., Yao, C., Xu, P., Zhang, G., Liu, Z., Xu, K., ... Tan, G. (2017). A new neolignan from *Selaginella moellendorffii* Hieron. *Natural Product Research*, 6419(March), 0. <https://doi.org/10.1080/14786419.2017.1297935>
- Zervou, F. N., Zacharioudakis, I. M., Ziakas, P. D., Rich, J. D., & Mylonakis, E. (2014). Prevalence of and Risk Factors for Methicillin- Resistant *Staphylococcus aureus* Colonization in HIV Infection: A Meta-Analysis. *Clinical Infectious Diseases*, 59(9), 1302–1311. <https://doi.org/10.1093/cid/ciu559>
- Zhang, L., Liang, Y., Wei, X., & Cheng, D. (2007). A New Unusual Natural Pigment from *Selaginella sinensis* and Its Noticeable Physicochemical Properties. *J. Org. Chem.*, 1, 3921–3924.
- Zhang, Q. W., Lin, L. G., & Ye, W. C. (2018). Techniques for extraction and isolation of natural products : a comprehensive review. *Chinese Medicine*, 1–26. <https://doi.org/10.1186/s13020-018-0177-x>
- Zhang, J., Wei, Q., Mao, F., Zhang, L., He, Y., Tong, Y. W., & Loh, K.-C. (2019). Effects of activated carbon on anaerobic digestion – Methanogenic metabolism, mechanisms of antibiotics and antibiotic resistance genes removal. *Bioresource Technology Reports*, 5(November 2018), 113–120. <https://doi.org/10.1016/j.biteb.2019.01.002>
- Zhou, X., & Zhang, L. (2015). A classification of *Selaginella* (*Selaginellaceae*) based on molecular (chloroplast and nuclear), macromorphological, and spore features. 64(December), 1117–1140. Retrieved from orcid: XMZ, LBZ, <http://orcid.org/0000-0002-4905-040X%0ADOI>
- Zhu, T. M., Chen, K. L., & Zhou, W. B. (2008). A new flavone glycoside from *Selaginella moellendorffii* Hieron . *Chinese Chemical Letters*, 19, 1456–1458. <https://doi.org/10.1016/j.cclet.2008.09.042>
- Ziakas, P. D., Pliakos, E. E., Zervou, F. N., Knoll, B. M., Rice, L. B., & Mylonakis, E. (2014a). MRSA and VRE Colonization in Solid Organ Transplantation: A Meta-Analysis of Published Studies. *American Journal of Transplantation*, 14(9), 1887–1894. <https://doi.org/10.1111/ajt.12784>
- Ziakas, P. D., Anagnostou, T., & Mylonakis, E. (2014b). The Prevalence and Significance of Methicillin-Resistant *Staphylococcus aureus* Colonization at Admission in the General ICU Setting: A Meta-Analysis of Published Studies. *Critical Care Medicine*, 42(2), 433–444. <https://doi.org/10.1097/CCM.0b013e3182a66bb8>
- Zimbro, M. (2003). Difco & BBL Manual : Manual of Microbiological Culture Media. In M. J. Zimbro, D. A. Power, S. M. Miller, G. E. Wilson, & J. A.

- Johnson (Eds.), *Manual of Microbiological Culture Media. BD* (Second). Retrieved from <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Difco+&+BBL+Manual#1>
- Zore, G. B., Thakre, A. D., Jadhav, S., & Karuppayil, S. M. (2011). Terpenoids inhibit *Candida albicans* growth by affecting membrane integrity and arrest of cell cycle. *Phytomedicine*, 18(13), 1181–1190. <https://doi.org/10.1016/j.phymed.2011.03.008>
- Zou, Z., Xu, K., Li, F., Zou, H., Liu, M., Zhang, Q., ... Tan, G. (2013a). Original article A new pyrrole alkaloid from *Selaginella moellendorffii* Hieron. *Chinese Chemical Letters*, 24(2), 114–116. <https://doi.org/10.1016/j.ccllet.2013.01.028>
- Zou, H., Xu, K., Zou, Z., Long, H., Li, F., Li, J., ... Tan, G. (2013b). *Journal of Asian Natural Products* A new flavonoid with 6-phenyl substituent from *Selaginella uncinata*. (October), 37–41. <https://doi.org/10.1080/10286020.2012.745515>
- Zou, H., Xu, K., Li, F., Zou, Z., Liu, R., Liu, R., ... Tan, G. (2014). Fitoterapia Unciflavones A – F , six novel flavonoids from *Selaginella uncinata* ( Desv .) Spring. *Fitoterapia*, 99, 328–333. <https://doi.org/10.1016/j.fitote.2014.10.012>
- Zou, Z., Xu, P., Wu, C., Zhu, W., Zhu, G., He, X., ... Tan, G. (2016a). *Fitoterapia*, Carboxymethyl flavonoids and a chalcone with antimicrobial activity from *Selaginella moellendorffii* Hieron. 111, 124–129. <https://doi.org/10.1016/j.fitote.2016.04.022>
- Zou, H., Xu, P., Liu, R., Zou, Z., Li, J., Zhong, A., & Hu, J. (2016b). Selacyclicbiflavone A , an unusual macrocyclic biflavone from *Selaginella uncinata* ( Desv .) Spring. *Tetrahedron Letters*, 37, 37–39. <https://doi.org/10.1016/j.tetlet.2016.01.038>