

DAFTAR PUSTAKA

- Abdullah NA, Hean CG, Azman EM, Zainal Abedin NH. (2025 Agu 22). Evaluation of Butterfly Pea (*Clitoria ternatea*) Extract with Different Ethanol-Water Solutions for Potential Natural Colorant Indicator. *Food Sci. Eng.*:263–275.doi:10.37256/fse.6220256856.
- Abedon ST. (2019). Phage-Antibiotic Combination Treatments: Antagonistic Impacts of Antibiotics on the Pharmacodynamics of Phage Therapy? *Antibiotics*. 8(4):182.doi:10.3390/antibiotics8040182.
- Ahmad-Mansour N, Loubet P, Pouget C, Dunyach-Remy C, Sotto A, Lavigne J-P, Molle V. (2021). Staphylococcus aureus Toxins: An Update on Their Pathogenic Properties and Potential Treatments. *Toxins*. 13(10):677.doi:10.3390/toxins13100677.
- AOAC. (2006). *Official Method of Analysis of The Association of Official Analytical of Chemist*. Ed ke-22. New York: Oxford University Press. [diunduh 2025 Jul 30]. Tersedia pada: <https://academic.oup.com/aoac-publications/book/45491/chapter/445544911>
- Bani O, Taslim, Iriany, Sinaga M, Violleta S. (2024). Extraction, concentration, and storage of butterfly pea anthocyanin for commercialization. *Case Stud. Chem. Environ. Eng.* 10:100860.doi:10.1016/j.cscee.2024.100860.
- Bedair HM, Samir TM, Mansour FR. (2024). Antibacterial and antifungal activities of natural deep eutectic solvents. *Appl. Microbiol. Biotechnol.* 108(1):198.doi:10.1007/s00253-024-13044-2.
- Benchikh Y, Aissaoui A, Allouch R, Mohellebi N. (2021). Optimising anthocyanin extraction from strawberry fruits using response surface methodology and application in yoghurt as natural colorants and antioxidants. *J. Food Sci. Technol.* 58(5):1987–1995.doi:10.1007/s13197-020-04710-0.
- Bernatová S, Samek O, Pilát Z, Šerý M, Ježek J, Ják P, Šiler M, Krzyžánek V, Zemánek P, Holá V, *et al.* (2013). Following the Mechanisms of Bacteriostatic versus Bactericidal Action Using Raman Spectroscopy. *Molecules*. 18(11):13188–13199.doi:10.3390/molecules181113188.
- Bertrand RL. (2019). Lag Phase Is a Dynamic, Organized, Adaptive, and Evolvable Period That Prepares Bacteria for Cell Division. Margolin W, editor.[editorial]. *J. Bacteriol.* 201(7).doi:10.1128/JB.00697-18. [diunduh 2025 Des 20]. Tersedia pada: <https://journals.asm.org/doi/10.1128/JB.00697-18>

- Bhattacharya M, Horswill AR. (2024). The role of human extracellular matrix proteins in defining *Staphylococcus aureus* biofilm infections. *FEMS Microbiol. Rev.* 48(1):fuae002.doi:10.1093/femsre/fuae002.
- Bouarab-Chibane L, Forquet V, Lantéri P, Clément Y, Léonard-Akkari L, Oulahal N, Degraeve P, Bordes C. (2019). Antibacterial Properties of Polyphenols: Characterization and QSAR (Quantitative Structure–Activity Relationship) Models. *Front. Microbiol.* 10:829.doi:10.3389/fmicb.2019.00829.
- Bouyahya A, Chamkhi I, Balahbib A, Rebezov M, Shariati MA, Wilairatana P, Mubarak MS, Benali T, El Omari N. (2022). Mechanisms, Anti-Quorum-Sensing Actions, and Clinical Trials of Medicinal Plant Bioactive Compounds against Bacteria: A Comprehensive Review. *Molecules.* 27(5):1484.doi:10.3390/molecules27051484.
- Călinescu I, Vinatoru M, Ghimpețeanu D, Lavric V, Mason TJ. (2021). A new reactor for process intensification involving the simultaneous application of adjustable ultrasound and microwave radiation. *Ultrason. Sonochem.* 77:105701.doi:10.1016/j.ultsonch.2021.105701.
- Carreira-Casais A, Otero P, Garcia-Perez P, Garcia-Oliveira P, Pereira AG, Carpena M, Soria-Lopez A, Simal-Gandara J, Prieto MA. (2021). Benefits and Drawbacks of Ultrasound-Assisted Extraction for the Recovery of Bioactive Compounds from Marine Algae. *Int. J. Environ. Res. Public Health.* 18(17):9153.doi:10.3390/ijerph18179153.
- Chanoca A, Kovinich N, Burkel B, Stecha S, Bohorquez-Restrepo A, Ueda T, Eliceiri KW, Grotewold E, Otegui MS. (2015). Anthocyanin Vacuolar Inclusions Form by a Microautophagy Mechanism. *Plant Cell.* 27(9):2545–2559.doi:10.1105/tpc.15.00589.
- Chayaratanasin P, Caobi A, Suparpprom C, Saenset S, Pasukamonset P, Suanpairintr N, Barbieri MA, Adisakwattana S. (2019). Clitoria ternatea Flower Petal Extract Inhibits Adipogenesis and Lipid Accumulation in 3T3-L1 Preadipocytes by Downregulating Adipogenic Gene Expression. *Molecules.* 24(10):1894.doi:10.3390/molecules24101894.
- Che ZMS, Yeoh JX, Lee SY, Shaari K. (2021). Physicochemical Properties of Choline Chloride-Based Natural Deep Eutectic Solvents (NaDES) and Their Applicability for Extracting Oil Palm Flavonoids. *Sustainability.* 13(23):12981.doi:10.3390/su132312981.
- Chemat F, Abert-Vian M, Fabiano-Tixier AS, Strube J, Uhlenbrock L, Gunjevic V, Cravotto G. (2019). Green extraction of natural products. Origins, current status, and future challenges. *TrAC Trends Anal. Chem.* 118:248–263.doi:10.1016/j.trac.2019.05.037.
- Chemat F, Rombaut N, Sicaire A-G, Meullemiestre A, Fabiano-Tixier A-S, Abert-Vian M. (2017). Ultrasound assisted extraction of food and natural

- products. Mechanisms, techniques, combinations, protocols and applications. A review. *Ultrason. Sonochem.* 34:540–560.doi:10.1016/j.ultsonch.2016.06.035.
- Choi YH, Verpoorte R. (2019). Green solvents for the extraction of bioactive compounds from natural products using ionic liquids and deep eutectic solvents. *Curr. Opin. Food Sci.* 26:87–93.doi:10.1016/j.cofs.2019.04.003.
- De Oliveira DMP, Forde BM, Kidd TJ, Harris PNA, Schembri MA, Beatson SA, Paterson DL, Walker MJ. (2020). Antimicrobial Resistance in ESKAPE Pathogens. *Clin. Microbiol. Rev.* 33(3):e00181-19.doi:10.1128/CMR.00181-19.
- Deepa P, Hong M, Sowndhararajan K, Kim S. (2023). A Review of the Role of an Anthocyanin, Cyanidin-3-O- β -glucoside in Obesity-Related Complications. *Plants*. 12(22):3889.doi:10.3390/plants12223889.
- Deng H, Zhu J, Tong Y, Kong Y, Tan C, Wang M, Wan M, Meng X. (2021). Antibacterial characteristics and mechanisms of action of Aronia melanocarpa anthocyanins against Escherichia coli. *LWT*. 150:112018.doi:10.1016/j.lwt.2021.112018.
- Devirizanty D, Nurmalawati S, Hartanto C. (2021). Perbandingan Unjuk Kinerja Berbagai Tipe Ph Meter Digital Di Laboratorium Kimia. *J. Pengelolaan Lab. Sains Dan Teknol.* 1(1):1–9.doi:10.33369/labsaintek.v1i1.15460.
- Dhanasekaran S, Rajesh A, Mathimani T, Melvin Samuel S, Shanmuganathan R, Brindhadevi K. (2019). Efficacy of crude extracts of Clitoria ternatea for antibacterial activity against gram negative bacterium (Proteus mirabilis). *Biocatal. Agric. Biotechnol.* 21:101328.doi:10.1016/j.bcab.2019.101328.
- Dirar AI, Alsaadi DHM, Wada M, Mohamed MA, Watanabe T, Devkota HP. (2019). Effects of extraction solvents on total phenolic and flavonoid contents and biological activities of extracts from Sudanese medicinal plants. *South Afr. J. Bot.* 120:261–267.doi:10.1016/j.sajb.2018.07.003.
- Dixon J, MacPherson E, Manyau S, Nayiga S, Khine Zaw Y, Kayendeke M, Nabirye C, Denyer Willis L, De Lima Hutchison C, Chandler CIR. (2019). The ‘Drug Bag’ method: lessons from anthropological studies of antibiotic use in Africa and South-East Asia. *Glob. Health Action*. 12(sup1):1639388.doi:10.1080/16549716.2019.1639388.
- Doern CD. (2014). When Does 2 Plus 2 Equal 5? A Review of Antimicrobial Synergy Testing. Carroll KC, editor.[editorial]. *J. Clin. Microbiol.* 52(12):4124–4128.doi:10.1128/JCM.01121-14.
- Dong Y, Yang C, Zhong W, Shu Y, Zhang Y, Yang D. (2022). Antibacterial effect and mechanism of anthocyanin from Lycium ruthenicum Murr. *Front. Microbiol.* 13:974602.doi:10.3389/fmicb.2022.974602.

- Duda HJ, Syafruddin D, Utami YE. (2021). Kualitas Sensorik Sirup Pepaya (*Carica papaya* L.) Dengan Penambahan Daun Salam (*Eugenia Polyantha*) Sensoric Quality Of Papaya Syrup (*Carica papaya* L.) With Addition Of Salam Leaf (*Eugenia polyantha*).
- Efendi R, Pradana RI, Dewi LK, Cahyani C. (2023). The Effect of Drying on Anthocyanin Content and Antioxidant Activity in Red Cabbage and White Cabbage. *Reaktor*. 22(3):86–91.doi:10.14710/reaktor.22.3.86-91.
- Ezeh CK, Eze CN, Dibua MEU, Emencheta SC. (2023). A meta-analysis on the prevalence of resistance of *Staphylococcus aureus* to different antibiotics in Nigeria. *Antimicrob. Resist. Infect. Control*. 12(1):40.doi:10.1186/s13756-023-01243-x.
- Fadhilah RI, Arifin AZ, Saputro EA. (2024). Calculation of capillarity constants in Ostwald viscometer using the water viscosity approach. *J. Tek. Kim*. 9(4):11295–11300.
- Fassi R, Ez-Zoubi A, Mbarkiou L, Amar A, Farah A, Bouchamma EO. (2024). Antibacterial and antioxidant activities of *Chlorella vulgaris* and *Scenedesmus incrassatulus* using natural deep eutectic solvent under microwave assisted by ultrasound. *Heliyon*. 10(15):e35071.doi:10.1016/j.heliyon.2024.e35071.
- Fik-Jaskółka M, Mittova V, Motsonelidze C, Vakhania M, Vicidomini C, Roviello GN. (2024). Antimicrobial Metabolites of Caucasian Medicinal Plants as Alternatives to Antibiotics. *Antibiotics*. 13(6):487.doi:10.3390/antibiotics13060487.
- Frost HM, Keith A, Fletcher DR, Sebastian T, Dominguez SR, Kurtz M, Parker SK, Wilson ML, Jenkins TC. (2024). Clinical Outcomes Associated with Amoxicillin Treatment for Acute Otitis Media in Children. *J. Pediatr. Infect. Dis. Soc*. 13(3):203–210.doi:10.1093/jpids/piae010.
- Fu X, Wang D, Belwal T, Xie J, Xu Y, Li L, Zou L, Zhang L, Luo Z. (2021). Natural deep eutectic solvent enhanced pulse-ultrasonication assisted extraction as a multi-stability protective and efficient green strategy to extract anthocyanin from blueberry pomace. *LWT*. 144:111220.doi:10.1016/j.lwt.2021.111220.
- Garza-Cervantes JA, León-Buitimea A. (2024). Editorial: Synergistic combinatorial treatments to overcome antibiotic resistance. *Front. Cell. Infect. Microbiol*. 14:1369264.doi:10.3389/fcimb.2024.1369264.
- Górniak I, Bartoszewski R, Króliczewski J. (2019). Comprehensive review of antimicrobial activities of plant flavonoids. *Phytochem. Rev*. 18(1):241–272.doi:10.1007/s11101-018-9591-z.

- Goti D, Dasgupta DrS. (2023). A comprehensive review of conventional and non-conventional solvent extraction techniques. *J. Pharmacogn. Phytochem.* 12(3):202–211.doi:10.22271/phyto.2023.v12.i3c.14682.
- Guo Y, Song G, Sun M, Wang J, Wang Y. (2020). Prevalence and Therapies of Antibiotic-Resistance in *Staphylococcus aureus*. *Front. Cell. Infect. Microbiol.* 10:107.doi:10.3389/fcimb.2020.00107.
- Ha VTN, Le NTH. (2022). Extraction of anthocyanins from *Clitoria ternatea* L. petals in Vietnam and determination of its antioxidant and antimicrobial activities. *Jordan J. Pharm. Sci.* 15(2):145–157.doi:10.35516/jjps.v15i2.302.
- Hamzah H, Pratiwi S. (2024). Antibacterial and Antibiofilm Activities of Ternate Blue Pea (*Clitoria ternatea*) Flower Extract against *Staphylococcus aureus*. *Trop. J. Nat. Prod. Res.* 8(1).doi:10.26538/tjnpr/v8i1.40. [diunduh 2025 Jun 28]. Tersedia pada: <https://tjnpr.org/index.php/home/article/view/3407>
- Hijazi S, Girasole M, Dinarelli S, Bettati S, Martedì R, Frangipani E, Longo G. (2025). Unveiling the real-time behaviour of *Staphylococcus aureus* through nanomotion sensing. *Sci. Rep.* 15(1):32957.doi:10.1038/s41598-025-16164-5.
- Hikmawanti NPE, Ramadon D, Jantan I, Mun'im A. (2021). Natural Deep Eutectic Solvents (NADES): Phytochemical Extraction Performance Enhancer for Pharmaceutical and Nutraceutical Product Development. *Plants.* 10(10):2091.doi:10.3390/plants10102091.
- Hikmawanti NPE, Saputri FC, Yanuar A, Jantan I, Ningrum RA, Juanssilfero AB, Mun'im A. (2024). Choline chloride-urea-based natural deep eutectic solvent for highly efficient extraction of polyphenolic antioxidants from *Pluchea indica* (L.) Less leaves. *Arab. J. Chem.* 17(2):105537.doi:10.1016/j.arabjc.2023.105537.
- Hou Z, Liu L, Wei J, Xu B. (2023). Progress in the Prevalence, Classification and Drug Resistance Mechanisms of Methicillin-Resistant *Staphylococcus aureus*. *Infect. Drug Resist.* Volume 16:3271–3292.doi:10.2147/IDR.S412308.
- Hudzicki J. (2016). Kirby-Bauer disk diffusion susceptibility test protocol.
- Hutchings MI, Truman AW, Wilkinson B. (2019). Antibiotics: past, present and future. *Curr. Opin. Microbiol.* 51:72–80.doi:10.1016/j.mib.2019.10.008.
- Ijardar SP, Singh V, Gardas RL. (2022). Revisiting the Physicochemical Properties and Applications of Deep Eutectic Solvents. *Molecules.* 27(4):1368.doi:10.3390/molecules27041368.
- Indrianingsih AW, Wulanjati MP, Windarsih A, Bhattacharjya DK, Suzuki T, Katayama T. (2021). In vitro studies of antioxidant, antidiabetic, and

- antibacterial activities of *Theobroma cacao*, *Annona muricata* and *Clitoria ternatea*. *Biocatal. Agric. Biotechnol.* 33:101995.doi:10.1016/j.bcab.2021.101995.
- Ishak A, Mazonakis N, Spernovasilis N, Akinosoglou K, Tsioutis C. (2025). Bactericidal versus bacteriostatic antibacterials: clinical significance, differences and synergistic potential in clinical practice. *J. Antimicrob. Chemother.* 80(1):1–17.doi:10.1093/jac/dkae380.
- Ivanović M, Grujić D, Cerar J, Islamčević Razboršek M, Topalić-Trivunović L, Savić A, Kočar D, Kolar M. (2022). Extraction of Bioactive Metabolites from *Achillea millefolium* L. with Choline Chloride Based Natural Deep Eutectic Solvents: A Study of the Antioxidant and Antimicrobial Activity. *Antioxidants.* 11(4):724.doi:10.3390/antiox11040724.
- Iyer V, Raut J, Dasgupta A. (2021). Impact of pH on growth of *Staphylococcus epidermidis* and *Staphylococcus aureus* in vitro. *J. Med. Microbiol.* 70(9).doi:10.1099/jmm.0.001421. [diunduh 2025 Jul 29]. Tersedia pada: <https://www.microbiologyresearch.org/content/journal/jmm/10.1099/jmm.0.001421>
- Jaberi R, Kaban G, Kaya M. (2022). Effects of Some Extraction Parameters on Anthocyanin Content of Barberry (*Berberis vulgaris* L.) and Its Antioxidant Activity. *Türkiye Tarımsal Araştırmalar Derg.* 9(1):41–48.doi:10.19159/tutad.1034137.
- Jauregi P, Esnal-Yeregi L, Labidi J. (2024). Natural deep eutectic solvents (NADES) for the extraction of bioactives: emerging opportunities in biorefinery applications. *PeerJ Anal. Chem.* 6:e32.doi:10.7717/peerj-achem.32.
- Jeyaraj EJ, Lim YY, Choo WS. (2022). Antioxidant, cytotoxic, and antibacterial activities of *Clitoria ternatea* flower extracts and anthocyanin-rich fraction. *Sci. Rep.* 12(1):14890.doi:10.1038/s41598-022-19146-z.
- Jeyaraj EJ, Vidana Gamage GC, Cintrat J-C, Choo WS. (2023). Acylated and non-acylated anthocyanins as antibacterial and antibiofilm agents. *Discov. Food.* 3(1):21.doi:10.1007/s44187-023-00062-8.
- Kalhor P, Ghandi K. (2019). Deep Eutectic Solvents for Pretreatment, Extraction, and Catalysis of Biomass and Food Waste. *Molecules.* 24(22):4012.doi:10.3390/molecules24224012.
- Kawai Y, Kawai M, Mackenzie ES, Dashti Y, Kepplinger B, Waldron KJ, Errington J. (2023). On the mechanisms of lysis triggered by perturbations of bacterial cell wall biosynthesis. *Nat. Commun.* 14(1):4123.doi:10.1038/s41467-023-39723-8.

- Khameneh B, Iranshahy M, Soheili V, Fazly Bazzaz BS. (2019). Review on plant antimicrobials: a mechanistic viewpoint. *Antimicrob. Resist. Infect. Control.* 8(1):118.doi:10.1186/s13756-019-0559-6.
- Kulinowska M, Grzegorzczak A, Dresler S, Skalska-Kamińska A, Dubaj K, Strzemiński M. (2025). Evaluation of the Antioxidant and Antimicrobial Activity of Natural Deep Eutectic Solvents (NADESs) Based on Primary and Specialized Plant Metabolites. *Molecules.* 30(21):4219.doi:10.3390/molecules30214219.
- Laux C, Peschel A, Krismer B. (2019). *Staphylococcus aureus* Colonization of the Human Nose and Interaction with Other Microbiome Members. Fischetti VA, Novick RP, Ferretti JJ, Portnoy DA, Braunstein M, Rood JI, editor.[editorial]. *Microbiol. Spectr.* 7(2):7.2.34.doi:10.1128/microbiolspec.GPP3-0029-2018.
- Lee J-E, Jayakody J, Kim J-I, Jeong J-W, Choi K-M, Kim T-S, Seo C, Azimi I, Hyun J, Ryu B. (2024). The Influence of Solvent Choice on the Extraction of Bioactive Compounds from Asteraceae: A Comparative Review. *Foods.* 13(19):3151.doi:10.3390/foods13193151.
- Lee S, Lee DK. (2018). What is the proper way to apply the multiple comparison test? *Korean J. Anesthesiol.* 71(5):353–360.doi:10.4097/kja.d.18.00242.
- Li C, Jiang Z, Liu Z, Dong X, Zhu L, Yan S. (2023). Drug Resistance Mechanism and Detection Method of Salmonella. *Int. J. Biol. Life Sci.* 2(3):57–65.doi:10.54097/ijbls.v2i3.8654.
- Li D. (2022). Natural deep eutectic solvents in phytonutrient extraction and other applications. *Front. Plant Sci.* 13:1004332.doi:10.3389/fpls.2022.1004332.
- Linz MS, Mattappallil A, Finkel D, Parker D. (2023). Clinical Impact of *Staphylococcus aureus* Skin and Soft Tissue Infections. *Antibiotics.* 12(3):557.doi:10.3390/antibiotics12030557.
- Lobritz MA, Belenky P, Porter CBM, Gutierrez A, Yang JH, Schwarz EG, Dwyer DJ, Khalil AS, Collins JJ. (2015). Antibiotic efficacy is linked to bacterial cellular respiration. *Proc. Natl. Acad. Sci.* 112(27):8173–8180.doi:10.1073/pnas.1509743112.
- Maia NMA, Andressa I, Cunha JS, Costa NDA, Borges LLR, Fontes EAF, Oliveira EBD, Leite Júnior BRDC, Bhering LL, Saldaña MDA, *et al.* (2025). Optimization of Ultrasound-Assisted Obtention of Bluish Anthocyanin Extracts from Butterfly Pea (*Clitoria ternatea*) Petal Powders Using Natural Deep Eutectic Solvents. *Plants.* 14(7):1042.doi:10.3390/plants14071042.
- Mansinhos I, Gonçalves S, Rodríguez-Solana R, Ordóñez-Díaz JL, Moreno-Rojas JM, Romano A. (2021). Ultrasonic-Assisted Extraction and Natural Deep

- Eutectic Solvents Combination: A Green Strategy to Improve the Recovery of Phenolic Compounds from *Lavandula pedunculata* subsp. *lusitanica* (Chaytor) Franco. *Antioxidants*. 10(4):582.doi:10.3390/antiox10040582.
- Maset RG, Hapeshi A, Lapage J, Harrington N, Littler J, Perrier S, Harrison F. (2023). Combining SNAPs with antibiotics shows enhanced synergistic efficacy against *S. aureus* and *P. aeruginosa* biofilms. *Npj Biofilms Microbiomes*. 9(1):36.doi:10.1038/s41522-023-00401-8.
- Mittal R, Debs LH, Patel AP, Nguyen D, Blackwelder P, Yan D, Weckwerth PH, Liu XZ. (2019). Otopathogenic *Staphylococcus aureus* Invades Human Middle Ear Epithelial Cells Primarily through Cholesterol Dependent Pathway. *Sci. Rep.* 9(1):10777.doi:10.1038/s41598-019-47079-7.
- Mlynarczyk-Bonikowska B, Kowalewski C, Krolak-Ulinska A, Marusza W. (2022). Molecular Mechanisms of Drug Resistance in *Staphylococcus aureus*. *Int. J. Mol. Sci.* 23(15):8088.doi:10.3390/ijms23158088.
- Mlynek KD, Callahan MT, Shimkevitch AV, Farmer JT, Endres JL, Marchand M, Bayles KW, Horswill AR, Kaplan JB. (2016). Effects of Low-Dose Amoxicillin on *Staphylococcus aureus* USA300 Biofilms. *Antimicrob. Agents Chemother.* 60(5):2639–2651.doi:10.1128/AAC.02070-15.
- Mohd Fuad F, Mohd Nadzir M, Harun@Kamaruddin A. (2021). Hydrophilic natural deep eutectic solvent : A review on physicochemical properties and extractability of bioactive compounds. *J. Mol. Liq.* 339:116923.doi:10.1016/j.molliq.2021.116923.
- Morales-Durán N, León-Buitimea A, Morones-Ramírez JR. (2024). Unraveling resistance mechanisms in combination therapy: A comprehensive review of recent advances and future directions. *Heliyon*. 10(6):e27984.doi:10.1016/j.heliyon.2024.e27984.
- Nemeth J, Oesch G, Kuster SP. (2015). Bacteriostatic versus bactericidal antibiotics for patients with serious bacterial infections: systematic review and meta-analysis. *J. Antimicrob. Chemother.* 70(2):382–395.doi:10.1093/jac/dku379.
- Nortjie E, Basitere M, Moyo D, Nyamukamba P. (2022). Extraction Methods, Quantitative and Qualitative Phytochemical Screening of Medicinal Plants for Antimicrobial Textiles: A Review. *Plants*. 11(15):2011.doi:10.3390/plants11152011.
- Oancea S. (2021). A Review of the Current Knowledge of Thermal Stability of Anthocyanins and Approaches to Their Stabilization to Heat. *Antioxidants*. 10(9):1337.doi:10.3390/antiox10091337.

- Othman L, Sleiman A, Abdel-Massih RM. (2019). Antimicrobial Activity of Polyphenols and Alkaloids in Middle Eastern Plants. *Front. Microbiol.* 10:911.doi:10.3389/fmicb.2019.00911.
- Parks D, Hugenholtz P. (2024). Genome Taxonomy Database r214.1. doi:10.15468/DPZG84. [diunduh 2025 Jun 28]. Tersedia pada: <https://www.gbif.org/dataset/a97f36e5-ded1-49cc-bdec-ac6170fc7b9c>
- Prasasty VI, Prima SR, Damayantie W. (2025). Phytochemical Screening Of Saponin And Antibacterial Activity Of 96% Ethanol Extract Of *Costus Speciosus* Against *E. Coli* And *S. Aureus*. *Al Makki Health Inform. J.* 3(4):148–157.doi:10.57185/hij.v3i4.56.
- Prof. Dr. Sugiyono D. (2023). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Dua. Bandung: ALFABETA.
- Pulithara Sebastian AS, Vaiyapuri M, Badireddy MR. (2023). Vancomycin and Methicillin Resistance in *Staphylococcus aureus*: What Is the Next? Di dalam: Mothadaka MP, Vaiyapuri M, Rao Badireddy M, Nagarajrao Ravishankar C, Bhatia R, Jena J, editor. *Handbook on Antimicrobial Resistance*. [internet] Singapore. Singapore: Springer Nature Singapore. hlm. 1–19. [diunduh 2025 Jun 28]. Tersedia pada: https://link.springer.com/10.1007/978-981-16-9723-4_17-1
- Putri CDR, Etty Fitria Ruliatna, Retnoningsih D, Rahayu SI, Noorhamdani. (2024). Comparison of synergistic effects of multiple combinations of anti-pseudomonas antibiotics against *Pseudomonas aeruginosa* pan drug resistance in in vitro test with AZDAST Method. *J. Clin. Microbiol. Infect. Dis.* 4(1):11–15.doi:10.51559/jcmid.v4i1.48.
- Raineri EJM, Altulea D, van Dijk JM. (2022). Staphylococcal trafficking and infection—from ‘nose to gut’ and back. *FEMS Microbiol. Rev.* 46(1):fuab041.doi:10.1093/femsre/fuab041.
- Ribeiro J, Silva V, Igrejas G, Barros L, Heleno SA, Reis FS, Poeta P. (2025). Phenolic Compounds from *Pyrus communis* Residues: Mechanisms of Antibacterial Action and Therapeutic Applications. *Antibiotics.* 14(3):280.doi:10.3390/antibiotics14030280.
- Salacheep S, Kasemsiri P, Pongsa U, Okhawilai M, Chindaprasirt P, Hiziroglu S. (2020). Optimization of ultrasound-assisted extraction of anthocyanins and bioactive compounds from butterfly pea petals using Taguchi method and Grey relational analysis. *J. Food Sci. Technol.* 57(10):3720–3730.doi:10.1007/s13197-020-04404-7.
- Satria D, Sofyanti E, Wulandari P, Fajarini F, Pakpahan SD, Limbong SA. (2022). Antibacterial activity of Medan Butterfly pea (*Clitoria ternatea* L.) corolla extract against *Streptococcus mutans* ATCC®25175™ and *Staphylococcus*

aureus ATCC®6538™. *Pharmacia*.
69(1):195–202.doi:10.3897/pharmacia.69.e77076.

- Schilder AGM, Chonmaitree T, Cripps AW, Rosenfeld RM, Casselbrant ML, Haggard MP, Venekamp RP. (2016). Otitis media. *Nat. Rev. Dis. Primer*. 2(1):16063.doi:10.1038/nrdp.2016.63.
- Schiller H, Young C, Schulze S, Tripepi M, Pohlschroder M. (2022). A Twist to the Kirby-Bauer Disk Diffusion Susceptibility Test: an Accessible Laboratory Experiment Comparing *Haloferax volcanii* and *Escherichia coli* Antibiotic Susceptibility to Highlight the Unique Cell Biology of Archaea. *J. Microbiol. Biol. Educ*. 23(1):e00234-21.doi:10.1128/jmbe.00234-21.
- Sebbah T, Yahla I, Cunha E, Riazi A, Amorim CG, Rodriguez-Diaz JM, Montenegro MCBSM. (2025). Enhanced Extraction and Separation with HPLC-DAD of Phenolic and Flavonoid Antioxidants from *Portulaca oleracea* L. Leaves Using Tailored Terpenoid-Based NADES: Comparative Assessment of Antiradical and Antimicrobial Activities. *Antioxidants*. 14(2):132.doi:10.3390/antiox14020132.
- Senevirathna N, Hassanpour M, O'Hara I, Karim A. (2025). Sustainable Extraction of Fresh Banana Inflorescence by ASE: Optimization and Characterization of Anthocyanin Rich Extracts by LC-UV-MS/MS. *Foods*. 14(8):1299.doi:10.3390/foods14081299.
- Shen L, Pang S, Zhong M, Sun Y, Qayum A, Liu Y, Rashid A, Xu B, Liang Q, Ma H, *et al.* (2023). A comprehensive review of ultrasonic assisted extraction (UAE) for bioactive components: Principles, advantages, equipment, and combined technologies. *Ultrason. Sonochem*. 101:106646.doi:10.1016/j.ultsonch.2023.106646.
- Siahaan S, Herman MJ, Fitri N. (2022). Antimicrobial Resistance Situation in Indonesia: A Challenge of Multisector and Global Coordination. Wang M, editor.[editorial]. *J. Trop. Med*. 2022:1–10.doi:10.1155/2022/2783300.
- Suarna IW, Wijaya IMS. (2021). Butterfly Pea (*Clitoria ternatea* L.: Fabaceae) and Its Morphological Variations in Bali. *J. Trop. Biodivers. Biotechnol*. 6(2):63013.doi:10.22146/jtbb.63013.
- Taghavi T, Patel H, Rafie R. (2022). Comparing pH differential and methanol-based methods for anthocyanin assessments of strawberries. *Food Sci. Nutr*. 10(7):2123–2131.doi:10.1002/fsn3.2065.
- Taheri-Araghi S. (2024). Synergistic action of antimicrobial peptides and antibiotics: current understanding and future directions. *Front. Microbiol*. 15:1390765.doi:10.3389/fmicb.2024.1390765.

- Tan Xiaona, Li K, Wang Z, Zhu K, Tan Xiaoli, Cao J. (2019). A Review of Plant Vacuoles: Formation, Located Proteins, and Functions. *Plants*. 8(9):327.doi:10.3390/plants8090327.
- Tan Z, Deng J, Ye Q, Zhang Z. (2022). The Antibacterial Activity of Natural-derived Flavonoids. *Curr. Top. Med. Chem.* 22(12):1009–1019.doi:10.2174/1568026622666220221110506.
- Tantri Dwi Lestari, Tatiana Siska Wardani, Vivin Marwiyati Rohmana. (2025). Uji Efektivitas Antibakteri Ekstrak dan Fraksi Bunga Telang (*Clitoria ternatea* L.) terhadap Pertumbuhan *Staphylococcus Aureus* ATCC 25923: Penelitian. *J. Pengabd. Masy. Dan Ris. Pendidik.* 3(3):248–264.doi:10.31004/jerkin.v3i3.389.
- Thomas G, Kay WT, Fones HN. (2024). Life on a leaf: the epiphyte to pathogen continuum and interplay in the phyllosphere. *BMC Biol.* 22(1):168.doi:10.1186/s12915-024-01967-1.
- Touaitia R, Mairi A, Ibrahim NA, Basher NS, Idres T, Touati A. (2025). *Staphylococcus aureus*: A Review of the Pathogenesis and Virulence Mechanisms. *Antibiotics*. 14(5):470.doi:10.3390/antibiotics14050470.
- Trendafilova A, Raykova D, Ivanova V, Novakovic M, Nedialkov P, Paunova-Krasteva T, Veleva R, Topouzova-Hristova T. (2025). Phytochemical Characterization and Anti-Biofilm Activity of *Primula veris* L. Roots. *Molecules*. 30(8):1702.doi:10.3390/molecules30081702.
- Tussipkan D, Chaohua C, Aidarkhan K, Caisheng Q, Xixia S, Lili T, Dandan L, Toktarbay Z, Zhalel A, Manabayeva S. (2025). Atomistic insights into the intermolecular interactions of Cistanoside A from *Cistanche deserticola* with natural deep eutectic solvents. *Discov. Appl. Sci.* 7(9):956.doi:10.1007/s42452-025-07553-6.
- Vanda H, Dai Y, Wilson EG, Verpoorte R, Choi YH. (2018). Green solvents from ionic liquids and deep eutectic solvents to natural deep eutectic solvents. *Comptes Rendus Chim.* 21(6):628–638.doi:10.1016/j.crci.2018.04.002.
- Vidana GC, Lim YY, Choo WS. (2021). Anthocyanins From *Clitoria ternatea* Flower: Biosynthesis, Extraction, Stability, Antioxidant Activity, and Applications. *Front. Plant Sci.* 12:792303.doi:10.3389/fpls.2021.792303.
- Vidana GC, Lim YY, Choo WS. (2022). Sources and relative stabilities of acylated and nonacylated anthocyanins in beverage systems. *J. Food Sci. Technol.* 59(3):831–845.doi:10.1007/s13197-021-05054-z.
- Wang Z, Tian Y, Yang M, Yang J, Wang Y, Tao L, Sheng J, Shi C. (2024). Extraction of phenolic compounds from *Moringa oleifera* Lam. leaves with ultrasonic-assisted deep eutectic solvents. *Front. Nutr.* 11:1405128.doi:10.3389/fnut.2024.1405128.

- Webber DM, Wallace MA, Burnham C-AD. (2022). Stop Waiting for Tomorrow: Disk Diffusion Performed on Early Growth Is an Accurate Method for Antimicrobial Susceptibility Testing with Reduced Turnaround Time. McElvania E, editor.[editorial]. *J. Clin. Microbiol.* 60(5):e03007-20.doi:10.1128/jcm.03007-20.
- Widhowati D, Musayannah BG, Nussa ORPA. (2022). Efek ekstrak bunga telang (*Clitoria ternatea*) sebagai anti bakteri alami terhadap pertumbuhan bakteri *Staphylococcus aureus*. *VITEK Bid. Kedokt. Hewan.* 12(1):17–21.doi:10.30742/jv.v12i1.99.
- Wrońska N, Szlaur M, Zawadzka K, Lisowska K. (2022). The Synergistic Effect of Triterpenoids and Flavonoids—New Approaches for Treating Bacterial Infections? *Molecules.* 27(3):847.doi:10.3390/molecules27030847.
- Xie Z, Peng Y, Li C, Luo X, Wei Z, Li X, Yao Y, Fang T, Huang L. (2020). Growth kinetics of *Staphylococcus aureus* and background microorganisms in camel milk. *J. Dairy Sci.* 103(11):9958–9968.doi:10.3168/jds.2020-18616.
- Yan Y, Li X, Zhang C, Lv L, Gao B, Li M. (2021). Research Progress on Antibacterial Activities and Mechanisms of Natural Alkaloids: A Review. *Antibiotics.* 10(3):318.doi:10.3390/antibiotics10030318.
- Yang J, Barra JT, Fung DK, Wang JD. (2022). *Bacillus subtilis* produces (p)ppGpp in response to the bacteriostatic antibiotic chloramphenicol to prevent its potential bactericidal effect. *mLife.* 1(2):101–113.doi:10.1002/mlf2.12031.
- Yao Q, Gao L, Xu T, Chen Y, Yang X, Han M, He X, Li C, Zhou R, Yang Y. (2019). Amoxicillin Administration Regimen and Resistance Mechanisms of *Staphylococcus aureus* Established in Tissue Cage Infection Model. *Front. Microbiol.* 10:1638.doi:10.3389/fmicb.2019.01638.
- Yin D, Guo Y, Li M, Wu W, Tang J, Liu Y, Chen F, Ni Y, Sun J, Zhang H, *et al.* (2021). Performance of VITEK 2, E-test, Kirby–Bauer disk diffusion, and modified Kirby–Bauer disk diffusion compared to reference broth microdilution for testing tigecycline susceptibility of carbapenem-resistant *K. pneumoniae* and *A. baumannii* in a multicenter study in China. *Eur. J. Clin. Microbiol. Infect. Dis.* 40(6):1149–1154.doi:10.1007/s10096-020-04123-z.
- Zhang Q-W, Lin L-G, Ye W-C. (2018). Techniques for extraction and isolation of natural products: a comprehensive review. *Chin. Med.* 13(1):20.doi:10.1186/s13020-018-0177-x.
- Zhang S, Lin S, Zhang J, Liu W. (2024). Ultrasound-assisted natural deep eutectic solvent extraction of anthocyanin from *Vitis davidii* Foex. pomace:

Optimization, identification, antioxidant activity and stability. *Heliyon*. 10(12):e33066.doi:10.1016/j.heliyon.2024.e33066.

Zhou C, Fey PD. (2020). The acid response network of *Staphylococcus aureus*. *Curr. Opin. Microbiol.* 55:67–73.doi:10.1016/j.mib.2020.03.006.

Ziaei-Daroukalei N, Ameri M, Zahraei-Salehi T, Ziaei-Daroukalei O, Mohajer-Tabrizi T, Bornaei L. (2016). AZDAST the new horizon in antimicrobial synergism detection. *MethodsX*. 3:43–52.doi:10.1016/j.mex.2016.01.002.