Daftar Pustaka

Abdelrahman, M., Hirata, S., Mukae, T., Yamada, T., Sawada, Y., El-Syaed, M., Yamada, Y., Sato, M., Hirai, M. Y., & Shigyo, M. (2021). Comprehensive metabolite profiling in genetic resources of garlic (Allium sativum L.) collected from different geographical regions. *Molecules*, *26*(5). https://doi.org/10.3390/molecules26051415

Abraham, E. J., & Kellogg, J. J. (2021a). Chemometric-Guided Approaches for Profiling and Authenticating Botanical Materials. In *Frontiers in Nutrition* (Vol. 8). Frontiers Media S.A. https://doi.org/10.3389/fnut.2021.780228

Adaninggar, R., Sumarawati, T., & Chodidjah. (2025). Topical Antioxidant Potential of Telang Flower Extract (Clitoria ternatea L.) on IL-6 and VEGF Regulation in UV-B Exposure: An In Vivo Experimental Study. *Gema Lingkungan Kesehatan*, *23*(2), 251–257. https://doi.org/10.36568/gelinkes.v23i2.204

Alami, M. M., Guo, S., Mei, Z., Yang, G., & Wang, X. (2024). Environmental factors on secondary metabolism in medicinal plants: exploring accelerating factors. In *Medicinal Plant Biology* (Vol. 3). Maximum Academic Press. https://doi.org/10.48130/mpb-0024-0016

Antony, A., & Farid, M. (2022). Effect of Temperatures on Polyphenols during Extraction. In *Applied Sciences (Switzerland)* (Vol. 12, Number 4). MDPI. https://doi.org/10.3390/app12042107

Anuar, M., & Ahad, B. (2022). *BEHAVIOURAL AND HIPPOCAMPAL NEUROPLASTICITY EFFECTS OF A BIOACTIVE FRACTION FROM CLITORIA TERNATEA LINN. ROOT EXTRACT IN A RAT MODEL OF CHRONIC CEREBRAL HYPOPERFUSION MOHAMAD ANUAR BIN AHAD UNIVERSITI SAINS MALAYSIA 2022 BEHAVIOURAL AND HIPPOCAMPAL NEUROPLASTICITY EFFECTS OF A BIOACTIVE FRACTION FROM CLITORIA TERNATEA LINN. ROOT EXTRACT IN A RAT MODEL OF CHRONIC CEREBRAL HYPOPERFUSION*.

Arsianti, A., Pasha Mahindra, S., Nur Azizah, N., Megawati Fajrin, A., & Dameria Nadapdap, L. (2022). Phytochemical Analysis, Antioxidant and Anticancer Effects of Clitoria ternatae Extract on Breast T47D Cancer Cells. *Indonesian Journal of Medical Chemistry and Bioinformatics*, *1*(1). https://doi.org/10.7454/ijmcb.v1i1.1003

Bauermeister, A., Mannochio-Russo, H., Costa-Lotufo, L. V, Jarmusch, A. K., Dorrestein, P. C., & contributions PCD, A. (2022). *Mass spectrometry-*

based metabolomics in microbiome investigations HHS Public Access. https://doi.org/10.1038/s415XX-XXX-XXXX-X

Bento-Silva, A., Koistinen, V. M., Mena, P., Bronze, M. R., Hanhineva, K., Sahlstrøm, S., Kitrytė, V., Moco, S., & Aura, A. M. (2020). Factors affecting intake, metabolism and health benefits of phenolic acids: do we understand individual variability? In *European Journal of Nutrition* (Vol. 59, Number 4, pp. 1275–1293). Springer. https://doi.org/10.1007/s00394-019-01987-6

Bhardwaj, R. (n.d.). *Environmental Factors Affecting the Crops' Growth and Development: An Analytical Study*. Retrieved www.researchgate.net

Biotechnology Division, M. R. (2022). *Studies on biochemical and molecular characterization of isolated nodule-associated bacteria from Mimosa pudica L. and their plant growth promoting activities on Vigna radiata L. (Wilczek)*.

Campbell, S. M. (2020a). *GERMINATION, GROWTH, FLOWER PRODUCTION AND QUALITY OF BUTTERFLY PEA (CLITORIA TERNATEA): A PLANT WITH A UNIQUE PH-DEPENDENT SENSORY QUALITY*.

Chanana, S., Thomas, C. S., Zhang, F., Rajski, S. R., & Bugni, T. S. (2020a). HCAPCA: Automated hierarchical clustering and principal component analysis of large metabolomic datasets in R. *Metabolites*, *10*(7), 1–15. https://doi.org/10.3390/metabo10070297

Chen, Y., Li, E. M., & Xu, L. Y. (2022). Guide to Metabolomics Analysis: A Bioinformatics Workflow. In *Metabolites* (Vol. 12, Number 4). MDPI. https://doi.org/10.3390/metabo12040357

Contreras, R. A., Pizarro, M., & Batista-Gonzalez, A. (2025). *Exploring Plant Metabolites for Functional Food Applications: A Review of Bioactive Compounds and Their Potential Use in The Food Industry*. https://doi.org/10.20944/preprints202504.0688.v1

Dahibhate, N. L., Dwivedi, P., & Kumar, K. (2022). GC–MS and UHPLC-HRMS based metabolite profiling of Bruguiera gymnorhiza reveals key bioactive compounds. *South African Journal of Botany*, *149*, 1044–1048. https://doi.org/10.1016/j.sajb.2022.02.004

Dar, R. A., Shahnawaz, M., Ahanger, M. A., & Majid, I. ul. (2023). Exploring the Diverse Bioactive Compounds from Medicinal Plants: A Review. *The Journal of Phytopharmacology*, *12*(3), 189–195. https://doi.org/10.31254/phyto.2023.12307

Degreef, M., Berry, E. M., Covaci, A., Maudens, K. E. K., & van Nuijs, A. L. N. (2022). Qualitative and semi-quantitative screening of selected psychoactive drugs in blood: Usefulness of liquid chromatography – triple quadrupole and quadrupole time-of-flight mass spectrometry in routine toxicological analyses. *Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences*, *1206*. https://doi.org/10.1016/j.jchromb.2022.123279

Dudek, A., Spiegel, M., Strugała-Danak, P., & Gabrielska, J. (2022). Analytical and Theoretical Studies of Antioxidant Properties of Chosen Anthocyanins; A Structure-Dependent Relationships. *International Journal of Molecular Sciences*, *23*(10). https://doi.org/10.3390/ijms23105432

Eisen, M. B., Spellman, P. T., Brown, P. O., & Botstein, D. (1998). Cluster analysis and display of genome-wide expression patterns. In *Genetics* (Vol. 95). www.pnas.org.

Elshafie, H. S., Camele, I., & Mohamed, A. A. (2023a). A Comprehensive Review on the Biological, Agricultural and Pharmaceutical Properties of Secondary Metabolites Based-Plant Origin. In *International Journal of Molecular Sciences* (Vol. 24, Number 4). MDPI. https://doi.org/10.3390/ijms24043266

Elshafie, H. S., Camele, I., & Mohamed, A. A. (2023b). A Comprehensive Review on the Biological, Agricultural and Pharmaceutical Properties of Secondary Metabolites Based-Plant Origin. In *International Journal of Molecular Sciences* (Vol. 24, Number 4). MDPI. https://doi.org/10.3390/ijms24043266

Febrianti, F., Widyasanti, A., & Nurhasanah, S. (2022). Aktivitas Antibakteri Ekstrak Bunga Telang (Clitoria ternatea L.) terhadap Bakteri Patogen. *ALCHEMY Jurnal Penelitian Kimia*, *18*(2), 234. https://doi.org/10.20961/alchemy.18.2.52508.234-241

Filio, Y. L., Maulana, H., Aulia, R., Suganda, T., Ulimaz, T. A., Aziza, V., Concibido, V., & Karuniawan, A. (2023). Evaluation of Indonesian Butterfly Pea (Clitoria ternatea L.) Using Stability Analysis and Sustainability Index. *Sustainability (Switzerland)*, *15*(3). https://doi.org/10.3390/su15032459

Finn, G. M., Charmer, B., Burton, O. E., Asif, A., Byrne, M. H. V., Brennan, N., & Brown, M. E. L. (2023). How to … define clinical education research terminology: A glossary. *Clinical Teacher*, *20*(4). https://doi.org/10.1111/tct.13605

Fortuna Santosa, D. (2023). Beneficial health effects of butterfly pea (Clitoria ternatea): A literature review. *Indonesia Journal of Biomedical Science (IJBS) 2023*, *17*(1), 244–247. https://doi.org/10.15562/ijbs.v17i1.486

Fu, J., Zhang, Y., Wang, Y., Zhang, H., Liu, J., Tang, J., Yang, Q., Sun, H., Qiu, W., Ma, Y., Li, Z., Zheng, M., & Zhu, F. (2022). Optimization of metabolomic data processing using NOREVA. In *Nature Protocols* (Vol. 17, Number 1, pp. 129–151). Nature Research. https://doi.org/10.1038/s41596-021-00636-9

Fu, X., Wu, Q., Wang, J., Chen, Y., Zhu, G., & Zhu, Z. (2021). Spectral characteristic, storage stability and antioxidant properties of anthocyanin extracts from flowers of butterfly pea (Clitoria ternatea l.). *Molecules*, *26*(22). https://doi.org/10.3390/molecules26227000

Gaudêncio, S. P., Bayram, E., Lukić Bilela, L., Cueto, M., Díaz-Marrero, A. R., Haznedaroglu, B. Z., Jimenez, C., Mandalakis, M., Pereira, F., Reyes, F., & Tasdemir, D. (2023). Advanced Methods for Natural Products Discovery: Bioactivity Screening, Dereplication, Metabolomics Profiling, Genomic Sequencing, Databases and Informatic Tools, and Structure Elucidation. In *Marine Drugs* (Vol. 21, Number 5). MDPI. https://doi.org/10.3390/md21050308

Hashim, A. M., Alharbi, B. M., Abdulmajeed, A. M., Elkelish, A., Hassan, H. M., & Hozzein, W. N. (2020). Oxidative stress responses of some endemic plants to high altitudes by intensifying antioxidants and secondary metabolites content. *Plants*, *9*(7), 1–23. https://doi.org/10.3390/plants9070869

Hazimah Putri, A., & Yawahar, J. (2023). Kajian agro sosiologi dan potensi metabolit sekunder bunga telang (Clitoria ternatea) sebagai peningkat imunitas tubuh. *JASSU Journal of Agrosociology and Sustainability JASSU*, *1*(1). https://doi.org/10.61511/jassu

Huda, H. S. A., Majid, N. B. A., Chen, Y., Adnan, M., Ashraf, S. A., Roszko, M., Bryła, M., Kieliszek, M., & Sasidharan, S. (2024). Exploring the ancient roots and modern global brews of tea and herbal beverages: A comprehensive review of origins, types, health benefits, market dynamics, and future trends. In *Food Science and Nutrition* (Vol. 12, Number 10, pp. 6938–6955). John Wiley and Sons Inc. https://doi.org/10.1002/fsn3.4346

Ibrahim, I. A., Jabbour, A. A., Abdulmajeed, A. M., Elhady, M. E., Almaroai, Y. A., & Hashim, A. M. (2022). Adaptive Responses of Four Medicinal Plants to High Altitude Oxidative Stresses through the Regulation of

Antioxidants and Secondary Metabolites. *Agronomy*, *12*(12). https://doi.org/10.3390/agronomy12123032

Islam, M. A., Mondal, S. K., Islam, S., Akther Shorna, M. N., Biswas, S., Uddin, M. S., Zaman, S., & Saleh, M. A. (2023). Antioxidant, Cytotoxicity, Antimicrobial Activity, and In Silico Analysis of the Methanolic Leaf and Flower Extracts of Clitoria ternatea. *Biochemistry Research International*, *2023*. https://doi.org/10.1155/2023/8847876

Ivanisevic, J., Benton, H. P., Rinehart, D., Epstein, A., Kurczy, M. E., Boska, M. D., Gendelman, H. E., & Siuzdak, G. (2015). An interactive cluster heat map to visualize and explore multidimensional metabolomic data. *Metabolomics*, *11*(4), 1029–1034. https://doi.org/10.1007/s11306-014-0759-2

Iwanycki Ahlstrand, N., Havskov Reghev, N., Markussen, B., Hansen, H. C. B., Eiriksson, F. F., Thorsteinsdóttir, M., Rønsted, N., & Barnes, C. J. (2018). Untargeted metabolic profiling reveals geography as the strongest predictor of metabolic phenotypes of a cosmopolitan weed. *Ecology and Evolution*, *8*(13), 6812–6826. https://doi.org/10.1002/ece3.4195

Jan, R., Asaf, S., Numan, M., Lubna, & Kim, K. M. (2021). Plant secondary metabolite biosynthesis and transcriptional regulation in response to biotic and abiotic stress conditions. In *Agronomy* (Vol. 11, Number 5).

Jeyaraj, E. J., Lim, Y. Y., & Choo, W. S. (2022). Antioxidant, cytotoxic, and antibacterial activities of Clitoria ternatea flower extracts and anthocyanin-rich fraction. *Scientific Reports*, *12*(1). https://doi.org/10.1038/s41598-022-19146-z

Jollife, I. T., & Cadima, J. (2016). Principal component analysis: A review and recent developments. In *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* (Vol. 374, Number 2065). Royal Society of London. https://doi.org/10.1098/rsta.2015.0202

Juswardi, Rina Yuliana, Nina Tanzerina, Harmida, Hanifa Marisa, & Mustafa Kamal. (2024). Metabolite profiling of butterfly pea flower (Clitoria ternatea L.) in the flowering development phase. *Open Access Research Journal of Biology and Pharmacy*, *11*(1), 049–057. https://doi.org/10.53022/oarjbp.2024.11.1.0022

Kuswantoro, F., & Li'aini, A. S. (2024). Factors Affecting Telang (Clitoria ternatea L.) Germination: Systematic Literature Review. *Agro Bali*, *7*(1), 104–117. https://doi.org/10.37637/ab.v7i1.1537

Lee, S., Oh, D. G., Singh, D., Lee, J. S., Lee, S., & Lee, C. H. (2020). Exploring the metabolomic diversity of plant species across spatial (leaf and stem)

components and phylogenic groups. *BMC Plant Biology*, *20*(1). https://doi.org/10.1186/s12870-019-2231-y

Lembong, E., Nurmilah, S., & Utama, G. L. (2025). Metabolomic fingerprinting of Indonesian beetroot across Java agroecological zones: A tool for geographical authentication and quality assessment. *Food Chemistry: X*, *31*. https://doi.org/10.1016/j.fochx.2025.102990

Lestari, S., Aryani, R. D., & Palupi, D. (2021). Pengaruh Ketinggian Tempat Tumbuh Terhadap Kandungan Fitokimia dan Antioksidan Ekstrak Akar Sawi Langit (Vernonia cinerea L.). *BIOTROPIC The Journal of Tropical Biology*, *5*(2). http://jurnalsaintek.uinsby.ac.id/index.php/biotropic

Li, C., Tang, W., Chen, S., He, J., Li, X., Zhu, X., Li, H., & Peng, Y. (2022a). Phytochemical Properties and In Vitro Biological Activities of Phenolic Compounds from Flower of Clitoria ternatea L. *Molecules*, *27*(19). https://doi.org/10.3390/molecules27196336

Li, Z., Wang, H., Feng, L., Song, L., Lu, Y., Li, H., Li, Y., Tian, G., Yang, Y., Li, H., Mei, X., & Peng, L. (2022). Comparative metabolomics provides novel insights into correlation between dominant habitat factors and constituents of Stellaria Radix (Stellaria dichotoma L. var. lanceolata Bge.). *Frontiers in Plant Science*, *13*. https://doi.org/10.3389/fpls.2022.1035712

Liu, W., Li, S., Wu, Y. K., Yan, X., Zhu, Y. M., Jiang, F. Y., Jiang, Y., Zou, L. H., & Wang, T. T. (2020). Metabolic profiling of rats poisoned with paraquat and treated with Xuebijing using a UPLC-QTOF-MS/MS metabolomics approach. *Analytical Methods*, *12*(37), 4562–4571. https://doi.org/10.1039/d0ay00968g

Maia, N. M. A., Andressa, I., Cunha, J. S., Costa, N. de A., de Oliveira, E. B., Leite Júnior, B. R. de C., & Vieira, É. N. R. (2025a). Clitoria ternatea: Perspectives on Its Application in Foods and Potential Health Benefits. In *Plants* (Vol. 14, Number 21). Multidisciplinary Digital Publishing Institute (MDPI). https://doi.org/10.3390/plants14213322

Mannochio-Russo, H., de Almeida, R. F., Nunes, W. D. G., Bueno, P. C. P., Caraballo-Rodríguez, A. M., Bauermeister, A., Dorrestein, P. C., & Bolzani, V. S. (2022). Untargeted Metabolomics Sheds Light on the Diversity of Major Classes of Secondary Metabolites in the Malpighiaceae Botanical Family. *Frontiers in Plant Science*, *13*. https://doi.org/10.3389/fpls.2022.854842

Mi, Y., Hu, W., Li, W., Wan, S., Xu, X., Liu, M., Wang, H., Mei, Q., Chen, Q., Yang, Y., Chen, B., Jiang, M., Li, X., Yang, W., & Guo, D. (2022).

Systematic Qualitative and Quantitative Analyses of Wenxin Granule via Ultra-High Performance Liquid Chromatography Coupled with Ion Mobility Quadrupole Time-of-Flight Mass Spectrometry and Triple Quadrupole–Linear Ion Trap Mass Spectrometry. *Molecules*, *27*(11). https://doi.org/10.3390/molecules27113647

Mishra, S., Parveen, Z., Kumar, N., Babulal, K. S., & Singh, R. (2025a). Phytochemical Profiling and Morphological Characterization of Hibiscus rosa-sinensis and Clitoria ternatea Flower Petal Extracts. *Biomedical and Pharmacology Journal*, *18*(2), 1372–1380. https://doi.org/10.13005/bpj/3175

Mohammed, D. M., Abdelazeez, W. M. A., Suliman, A. A., Sief-Eldein, A. G. M., & Aboueldis, G. R. (2025a). The phytochemical analysis and biological activities assessment of secondary metabolites in callus cultures of Clitoria ternatea L. *Plant Cell, Tissue and Organ Culture*, *163*(3). https://doi.org/10.1007/s11240-025-03281-2

Mohammed, H. A., & Khan, R. A. (2022). Anthocyanins: Traditional Uses, Structural and Functional Variations, Approaches to Increase Yields and Products' Quality, Hepatoprotection, Liver Longevity, and Commercial Products. In *International Journal of Molecular Sciences* (Vol. 23, Number 4). MDPI. https://doi.org/10.3390/ijms23042149

Najihah Yusof, S., Fadhillah Mohamed Azmin, N., Firdaus Abd Wahab, M., & Liza Asnawi, A. (2023d). A BIBLIOMETRIC ANALYSIS OF CLITORIA TERNATEA. In *Chemical and Natural Resources Engineering Journal* (Vol. 7, Number 2).

Najmi, A., Javed, S. A., Al Bratty, M., & Alhazmi, H. A. (2022). Modern Approaches in the Discovery and Development of Plant-Based Natural Products and Their Analogues as Potential Therapeutic Agents. In *Molecules* (Vol. 27, Number 2). MDPI. https://doi.org/10.3390/molecules27020349

Ngan, N. T. (2025). Comparative evaluation of phenolic content, antioxidant, anti-inflammatory, and antidiabetic properties of Clitoria ternatea flowers and leaves from Vietnam. In *Malays. J. Anal. Sci* (Vol. 29).

Ninasara, Y. A., Wibowo, J. W., & Isradji, I. (2025). The effect of butterfly pea flower (Clitoria ternatea) extract gel on TNF-α and caspase-3 expression in wound tissue of wistar rats. *AcTion: Aceh Nutrition Journal*, *10*(2), 280. https://doi.org/10.30867/action.v10i2.2441

Nugroho, B. D. A., Arif, C., Suryandika, F., Annisa, H. N., & Wijayanti, S. I. (2024). Relationships Among Global Climate Indices, Rainfall Patterns,

and Crop Productivity in the Southern Part of Java, Indonesia. *Ecological Engineering and Environmental Technology*, *25*(10), 87–95. https://doi.org/10.12912/27197050/191332

Nurcholis, W., Iqbal, T. M., Sulistiyani, S., & Liwanda, N. (2023a). Profile of Secondary Metabolites in Different Parts of the Butterfly Pea (Clitoria ternatea) Plant with Antioxidant Activity. *Yuzuncu Yil University Journal of Agricultural Sciences*, *33*(2), 231–247. https://doi.org/10.29133/yyutbd.1251495

Nurhasanah, Hindersah, R., Suganda, T., Concibido, V., Sundari, & Karuniawan, A. (2023). The First Report on the Application of ISSR Markers in Genetic Variance Detection among Butterfly Pea (Clitoria ternatea L.) Accession in North Maluku Province, Indonesia. *Horticulturae*, *9*(9). https://doi.org/10.3390/horticulturae9091059

Nurzyńska-Wierdak, R. (2023). Phenolic Compounds from New Natural Sources—Plant Genotype and Ontogenetic Variation. In *Molecules* (Vol. 28, Number 4). MDPI. https://doi.org/10.3390/molecules28041731

O'Callaghan, K. M., & Roth, D. E. (2020). Standardization of laboratory practices and reporting of biomarker data in clinical nutrition research. In *American Journal of Clinical Nutrition* (Vol. 112, pp. 453S-457S). Oxford University Press. https://doi.org/10.1093/ajcn/nqaa036

Okechukwu Ohiagu, F., Chikezie, P. C., & Chikezie, C. M. (2021). Toxicological Significance of Bioactive Compounds of Plant Origin. *Pharmacognosy Communications*, *11*(2), 67–77. https://doi.org/10.5530/pc.2021.2.15

Pang, Z., Zhou, G., Chong, J., & Xia, J. (2021). Comprehensive meta-analysis of covid-19 global metabolomics datasets. *Metabolites*, *11*(1), 1–14. https://doi.org/10.3390/metabo11010044

Pant, P., Pandey, S., & Dall'Acqua, S. (2021a). The Influence of Environmental Conditions on Secondary Metabolites in Medicinal Plants: A Literature Review. In *Chemistry and Biodiversity* (Vol. 18, Number 11). John Wiley and Sons Inc. https://doi.org/10.1002/cbdv.202100345

Patel, M. K., Pandey, S., Kumar, M., Haque, M. I., Pal, S., & Yadav, N. S. (2021b). Plants metabolome study: Emerging tools and techniques. *Plants*, *10*(11). https://doi.org/10.3390/plants10112409

Pei, H., Su, W., Gui, M., Dou, M., Zhang, Y., Wang, C., & Lu, D. (2021). Comparative analysis of chemical constituents in different parts of lotus

by UPLC and QToF-MS. *Molecules*, *26*(7). https://doi.org/10.3390/molecules26071855

Purwitasari, N., & Agil, M. (2022a). Metabolite Profiling of Extract and Fractions of Bidara Upas (Merremia Mammosa (Lour.) Hallier F.) Tuber Using UPLC-QToF-MS/MS. *Biomedical and Pharmacology Journal*, *15*(4), 2025–2041. https://doi.org/10.13005/bpj/2540

Puspitojati, E. (2024a). THE POTENTIAL OF TELANG FLOWER (Clitoria ternatea) IN FUNCTIONAL FOOD DIVERSIFICATION IN INDONESIA. *Jurnal Ilmu-Ilmu Pertanian*, *31*(2), 79–85. https://doi.org/10.55259/jiip.v31i1.36

Putra, I. G. A. M., Dewi, P. J. N., Yuarini, D. A. A., Al Hakim, M. E., & Mahatmananda, I. B. G. (2024). Characteristics of Takokak (Solanum torvum Sw.) Leaves Herbal Tea Based on Drying Temperature. *International Journal on Food, Agriculture and Natural Resources*, *5*(1), 44–48. https://doi.org/10.46676/ij-fanres.v5i1.299

Qaderi, M. M., Martel, A. B., & Strugnell, C. A. (2023a). Environmental Factors Regulate Plant Secondary Metabolites. In *Plants* (Vol. 12, Number 3). MDPI. https://doi.org/10.3390/plants12030447

Rodionova, O., Kucheryavskiy, S., & Pomerantsev, A. (2021). Efficient tools for principal component analysis of complex data— a tutorial. *Chemometrics and Intelligent Laboratory Systems*, *213*. https://doi.org/10.1016/j.chemolab.2021.104304

Roth-Nebelsick, A., & Krause, M. (2023). The Plant Leaf: A Biomimetic Resource for Multifunctional and Economic Design. In *Biomimetics* (Vol. 8, Number 2). MDPI. https://doi.org/10.3390/biomimetics8020145

Salam, U., Ullah, S., Tang, Z. H., Elateeq, A. A., Khan, Y., Khan, J., Khan, A., & Ali, S. (2023). Plant Metabolomics: An Overview of the Role of Primary and Secondary Metabolites against Different Environmental Stress Factors. In *Life* (Vol. 13, Number 3). MDPI. https://doi.org/10.3390/life13030706

Salem, M. A., De Souza, L. P., Serag, A., Fernie, A. R., Farag, M. A., Ezzat, S. M., & Alseekh, S. (2020a). Metabolomics in the context of plant natural products research: From sample preparation to metabolite analysis. In *Metabolites* (Vol. 10, Number 1). MDPI AG. https://doi.org/10.3390/metabo10010037

Sardans, J., Gargallo-Garriga, A., Urban, O., Klem, K., Walker, T. W. N., Holub, P., Janssens, I. A., & Peñuelas, J. (2020). Ecometabolomics for a better understanding of plant responses and acclimation to abiotic factors

linked to global change. In *Metabolites* (Vol. 10, Number 6, pp. 1–20). MDPI AG. https://doi.org/10.3390/metabo10060239

Sasse, M., & Rainer, M. (2022). Mass Spectrometric Methods for Non-Targeted Screening of Metabolites: A Future Perspective for the Identification of Unknown Compounds in Plant Extracts. In *Separations* (Vol. 9, Number 12). MDPI. https://doi.org/10.3390/separations9120415

Schmidt, L., Falk, T., Siegmund-Schultze, M., & Spangenberg, J. H. (2020). The Objectives of Stakeholder Involvement in Transdisciplinary Research. A Conceptual Framework for a Reflective and Reflexive Practise. *Ecological Economics*, *176*. https://doi.org/10.1016/j.ecolecon.2020.106751

Sen, S., Chakraborty, R., Sridhar, C., Reddy, Y. S. R., & De, B. (n.d.). FREE RADICALS, ANTIOXIDANTS, DISEASES AND PHYTOMEDICINES: CURRENT STATUS AND FUTURE PROSPECT. In *International Journal of Pharmaceutical Sciences Review and Research* (Vol. 3, Number 1). Retrieved www.globalresearchonline.net

Shamsudin, N. F., Ahmed, Q. U., Mahmood, S., Shah, S. A. A., Sarian, M. N., Khattak, M. M. A. K., Khatib, A., Sabere, A. S. M., Yusoff, Y. M., & Latip, J. (2022). Flavonoids as Antidiabetic and Anti-Inflammatory Agents: A Review on Structural Activity Relationship-Based Studies and Meta-Analysis. In *International Journal of Molecular Sciences* (Vol. 23, Number 20). MDPI. https://doi.org/10.3390/ijms232012605

Sharma, M. K. (2024). Exploring the Biochemical Profiles of Medicinal Plants Cultivated Under Stressful Environmental Conditions. *Current Agriculture Research Journal*, *12*(1), 81–103. https://doi.org/10.12944/carj.12.1.07

Sowmya, R., Supriya, V., & Rajkumar, M. (2023). Clitoria ternatea (Butterfly Pea) – A Plant with Antioxidant and Antidiabetic Properties. *Indian Journal Of Science And Technology*, *16*(31), 2431–2440. https://doi.org/10.17485/IJST/v16i31.1166

Suarna, W., & Wijaya, M. S. (2021c). Butterfly pea (clitoria ternatea L.: Fabaceae) and its morphological variations in Bali. *Journal of Tropical Biodiversity and Biotechnology*, *6*(2). https://doi.org/10.22146/JTBB.63013

Sukor, N. S. M., Zakri, Z. H. M., Rasol, N. E., & Salim, F. (2023). Annotation and Identification of Phytochemicals from Eleusine indica Using High-Performance Liquid Chromatography Tandem Mass Spectrometry:

Databases-Driven Approach. *Molecules*, *28*(7). https://doi.org/10.3390/molecules28073111

Thuy, N. M., Minh, V. Q., Ben, T. C., Nguyen, M. T. T., Ha, H. T. N., & Van Tai, N. (2021). Identification of anthocyanin compounds in butterfly pea flowers (Clitoria ternatea L.) by ultra performance liquid chromatography/ultraviolet coupled to mass spectrometry. *Molecules*, *26*(15). https://doi.org/10.3390/molecules26154539

Torres, R. C., Parcon, Ma. R. V., Esmundo, H. J. N., Canillo, D. C. P., & Ramil, C. C. (2022). Antioxidant activity and phytochemical constituents of Philippine Clitoria ternatea flowers as a potential therapeutic agent against infectious diseases. *Issues in Biological Sciences and Pharmaceutical Research*, *10*(2). https://doi.org/10.15739/ibspr.22.003

Tuan Putra, T. N. M., Zainol, M. K., Mohdisa, N. S., & Mohdmaidin, N. (2021). Chemical characterization of ethanolic extract of butterfly pea flower (Clitoria ternatea). *Food Research*, *5*(4), 127–134. https://doi.org/10.26656/fr.2017.5(4).744

Tumilaar, S. G., Hardianto, A., Dohi, H., & Kurnia, D. (2023). A Comprehensive Review of Free Radicals, Oxidative Stress, and Antioxidants: Overview, Clinical Applications, Global Perspectives, Future Directions, and Mechanisms of Antioxidant Activity of Flavonoid Compounds. In *Journal of Chemistry* (Vol. 2024). Hindawi Limited. https://doi.org/10.1155/2024/5594386

Van Der Hooft, J. J. J., Mohimani, H., Bauermeister, A., Dorrestein, P. C., Duncan, K. R., & Medema, M. H. (2020). Linking genomics and metabolomics to chart specialized metabolic diversity. In *Chemical Society Reviews* (Vol. 49, Number 11, pp. 3297–3314). Royal Society of Chemistry. https://doi.org/10.1039/d0cs00162g

Vanitha Madhuri T, Manasa Krishna Pandreka, Geetha Gayatri B, Yamini M, Abhishek G, Edward Raju Gope, Raghava D, & Nageswara Rao K. (2024). Advances in High-Performance Liquid Chromatography (HPLC) and Ultra-Performance Liquid Chromatography (UPLC). *Journal of Pharma Insights and Research*, *2*(6), 039–046. https://doi.org/10.69613/t4nhz921

Vidana Gamage, G. C., Lim, Y. Y., & Choo, W. S. (2021a). Anthocyanins From Clitoria ternatea Flower: Biosynthesis, Extraction, Stability, Antioxidant Activity, and Applications. In *Frontiers in Plant Science* (Vol. 12). Frontiers Media S.A. https://doi.org/10.3389/fpls.2021.792303

Widowati, W., Darsono, L., Natariza, M. R., Waluyo, N. W., Gleyriena Tenda, A. M., Siahaan, B. H., Oktaviani, R., Zahiroh, F. H., Utomo, H. S., & Rizal, R. (2024). Antidiabetic, antidyslipidemia, and renoprotector potency of butterfly pea flower extract (Clitorea ternatea L.) in diabetes mellitus and dyslipidemia rats model. *Open Veterinary Journal*, *14*(5), 1135–1145. https://doi.org/10.5455/OVJ.2024.v14.i5.7

Worley, B., & Powers, R. (2013). Multivariate Analysis in Metabolomics. *Current Metabolomics*, *1*(1), 92–107. https://doi.org/10.2174/2213235x11301010092

Wu, X., Zhu, S., He, L., Cheng, G., Li, T., Meng, W., & Wen, F. (2025b). Phenylalanine Ammonia-Lyase: A Core Regulator of Plant Carbon Metabolic Flux Redistribution—From Molecular Mechanisms and Growth Modulation to Stress Adaptability. In *Plants* (Vol. 14, Number 24). Multidisciplinary Digital Publishing Institute (MDPI). https://doi.org/10.3390/plants14243811

Xia, J., Psychogios, N., Young, N., & Wishart, D. S. (2009). MetaboAnalyst: A web server for metabolomic data analysis and interpretation. *Nucleic Acids Research*, *37*(SUPPL. 2). https://doi.org/10.1093/nar/gkp356

Xia, J., Sinelnikov, I. V., Han, B., & Wishart, D. S. (2015a). MetaboAnalyst 3.0-making metabolomics more meaningful. *Nucleic Acids Research*, *43*(W1), W251–W257. https://doi.org/10.1093/nar/gkv380

Yadav, N. K., Patel, A. B., Debbarma, S., Priyadarshini, M. B., & Priyadarshi, H. (2024). Characterization of Bioactive Metabolites and Antioxidant Activities in Solid and Liquid Fractions of Fresh Duckweed (Wolffia globosa) Subjected to Different Cell Wall Rupture Methods. *ACS Omega*, *9*(18), 19940–19955. https://doi.org/10.1021/acsomega.3c09674

Zhang, F., Zhang, G., Wang, C., Xu, H., Che, K., Sun, T., Yao, Q., Xiong, Y., Zhou, N., Chen, M., Yu, H., & Chen, H. (2024). Geographical variation in metabolite profiles and bioactivity of Thesium chinense Turcz. revealed by UPLC-Q-TOF-MS-based metabolomics. *Frontiers in Plant Science*, *15*. https://doi.org/10.3389/fpls.2024.1471729

Zhou, Y., Wang, Z., Li, Y., Li, Z., Liu, H., & Zhou, W. (2020). Metabolite Profiling of Sorghum Seeds of Different Colors from Different Sweet Sorghum Cultivars Using a Widely Targeted Metabolomics Approach. *International Journal of Genomics*, *2020*. https://doi.org/10.1155/2020/6247429