UNIVERSITAS
GADJAH MADA
Efektivitas Antibakteri Formula Facial Wash dengan Filtrat Ekstrak Gliserin Bunga Telang (Clitoria ternatea L.)
Benediktus Erik Kurniawan, Prof. Dr. Rarastoeti Pratiwi, M.Sc.; Sari Darmasiwi, S.Si., M.Biotech., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Daftar Pustaka

Abubakar, A.R. and Haque, M. 2020. Preparation of medicinal plants: basic extraction and fractionation procedures for experimental purposes, *Journal of Pharmacy and Bioallied Sciences*, 12(1):1–10.

Admi, M., Sitorus, A.A., Rindiar, A., Sutriana, A., Rosmaidar and Sugito. 2021. The sensitivity level of gentamicine, chloramphenicol and penicillin inhibiting the growth of *Pseudomonas aeruginosa* bacteria isolate from aceh bull prepuce. *Jurnal Medika Veterinaria*, 15(1): 1–6.

Ali, A., Zam, W. and Husein, F. 2021. Study of antimicrobial activity of thyme and oregano extracted by glycerin using maceration. International *Journal of Medical Microbiology & Immunology*, 1(1): 1–5.

Amelia, R.E., Hasibuan, R. and Irvan. 2023. Pemanfaatan tandan pisang kepok sebagai sumber alkali pada pembuatan sabun cair. *Jurnal Teknik Kimia USU*, 12(1): 18–23.

Ardiansyah, S. D., Suryandari, A. S., Kimia, J. T., Malang, P. N., Soekarno, J., and No, H. 2021. Seleksi proses dan penentuan kapasitas produksi industri sabun cair berbahan baku Virgin Coconut Oil (VCO). *Distilat Jurnal Teknologi Separasi*, 7(2): 139–146.

Artanti, A.N., Prabawati, N., Prihapsara, F.I. and Rakhmawati, R. 2021. Pengaruh variasi konsentrasi natrium klorida dalam formulasi sediaan facial wash kombinasi ekstrak spirulina (*Spirulina platensis*) dan minyak nyamplung (*Calophyllum inophyllum*). *Jurnal Farmasi Udayana*, 10(1): 93–99.

Aziza, V., Ulimaz, T.A., Ustari, D., Suganda, T., Concibido, V., Irawan, B. and Karuniawan, A. 2021. Keragaman fenotipik bunga telang double petal asal Indonesia dan Thailand berdasarkan morfologi bunga. *Al-Kauniyah: Jurnal Biologi*, 14(1): 78–89.

Becerra, S.C., Roy, D.C., Sanchez, C.J., Christy, R.J., and Burmeister, D.M. 2016. An optimized staining technique for the detection of gram-positive and gram-negative bacteria within tissue. *BMC Res. Notes*, 9: 216.

Bhandari, S., Ghorpade, P., Garje, S. and Gaffar, S. 2024. Review article comprehensive on face wash. *International Research Journal of Modernization in Engineering Technology and Science*, 6(3): 2277 - 2284.

Brini, E., Fennell, C.J., Fernandez-Serra, M., Hribar-Lee, B., Lukšič, M. and Dill, K.A. 2017. How water's properties are encoded in its molecular structure and energies. *Chemical Reviews*, 117(19): 12385–12414.

Camila, D., Ulfa, A.M., and Elsyana, V. 2022. Formulasi dan uji antibakteri sediaan sabun cair antiseptik ekstrak etanol bunga telang

UNIVERSITAS
GADJAH MADA
Efektivitas Antibakteri Formula Facial Wash dengan Filtrat Ekstrak Gliserin Bunga Telang (Clitoria ternatea L.)
Benediktus Erik Kurniawan, Prof. Dr. Rarastoeti Pratiwi, M.Sc.; Sari Darmasiwi, S.Si., M.Biotech., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

(*Clitoria ternatea* L.) terhadap *Staphylococcus aureus*. *Jurnal Ilmu Kedokteran dan Kesehatan*, 9(2): 710–720.

Carreira-Casais, A., Otero, P., Garcia-Perez, P., Garcia-Oliveira, P., Pereira, A.G., Carpena, M., Soria-Lopez, A., Simal-Gandara, J. and Prieto, M.A. 2021. Benefits and drawbacks of ultrasound-assisted extraction for the recovery of bioactive compounds from marine algae. *International Journal of Environmental Research and Public Health*, 18(17): 9153.

Chen, X., Lan, W. and Xie, J. 2024. Natural phenolic compounds: antimicrobial properties, antimicrobial mechanisms, and potential utilization in the preservation of aquatic products. *Food Chemistry*, 440: 138198.

Daris, U.S., Syam, H. and Sukainah, A. 2023. Uji Daya Hambat serta Penentuan Minimum Inhibitor Concentration (MIC) dan Minimum Bactericidal Concentration (MBC) Ekstrak Daun Bidara terhadap Bakteri Patogen. *Jurnal Pendidikan Teknologi Pertanian*, 9(2): 223–234.

Devi, S. and Mulyani, T. 2017. Uji aktivitas antibakteri ekstrak etanol daun pacar kuku (*Lawsonia intermis* Linn) pada Bakteri *Pseudomonas aeruginosa*. *Journal of Current Pharmaceutical Sciences*. 1(1): 30 - 35.

Dominica, D. and Handayani, D. 2019. Formulasi dan evaluasi sediaan lotion dari ekstrak daun lengkeng (*Dimocarpus longan*) sebagai antioksidan. *Jurnal Farmasi dan Ilmu Kefarmasian Indonesia*, 6(1): 1–6.

Du, X.N., He, Y., Chen, Y.W., Liu, Q., Sun, L., Sun, H.M., Wu, X.F. and Lu, Y. 2024. Decoding cosmetic complexities: a comprehensive guide to matrix composition and pretreatment technology. *Molecules*, 29(2): 411.

Escher, G.B., Wen, M., Zhang, L., Rosso, N.D. and Granato, D. 2020. Phenolic composition by UHPLC-Q-TOF-MS/MS and stability of anthocyanins from *Clitoria ternatea* L. (butterfly pea) blue petals. Food Chemistry, 331: 127341.

Ewansiha, J.U., Garba, S.A., Galadima, M., Daniyan, S.Y. and Monica, N.E. 2016. Successive extraction and antibacterial screening of *Cymbopogon citratus* (lemon grass) against some gram positive and gram negative pathogens. *Journal of International Research in Medical and Pharmaceutical Sciences*, 10(4): 206–215.

Fauziyah, N., Sutresna, Y. and Widyasanti, A. 2022. Kajian pengaruh konsentrasi etanol terhadap karakteristik oleoresin ampas jahe merah (*Zingiber officinale* Roscoe) limbah penyulingan. *Teknotan*, 16(3): 169 – 175.

Febrianti, F., Widyasanti, A. and Nurhasanah, S. 2022. Aktivitas antibakteri ekstrak bunga telang (*Clitoria ternatea* L.) terhadap bakteri pathogen. *Alchemy*, 18(2): 234 – 241.

Fitri, D.R., Mustikawati, H. and Afianty, D.T. 2020. Formulasi sediaan sabun mandi cair ekstrak etanol buah nangka (*Artocarpus*

UNIVERSITAS
GADJAH MADA
Efektivitas Antibakteri Formula Facial Wash dengan Filtrat Ekstrak Gliserin Bunga Telang (Clitoria ternatea L.)
Benediktus Erik Kurniawan, Prof. Dr. Rarastoeti Pratiwi, M.Sc.; Sari Darmasiwi, S.Si., M.Biotech., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

heterophyllus Lam.). *IONTech*, 1(1): 26–32.

Fitri, A.S., Sari, D.K. and Sutanto, T.D. 2023. Formulasi dan evaluasi sediaan sabun padat dengan menggunakan ekstrak kunyit (*Curcuma domestica* L.). *Bencoolen Journal of Pharmacy*, 3(1): 19–26.

Fitriana, F. and Fitri, N. 2019. Uji lipid pada minyak kelapa, margarin, dan gliserol. *Jurnal Sainteks*, 16(1): 19–23.

Fu, X., Wu, Q., Wang, J., Chen, Y., Zhu, G. and Zhu, Z. 2021. Spectral characteristic, storage stability and antioxidant properties of anthocyanin extracts from flowers of butterfly pea (*Clitoria ternatea* L.). *Molecules*, 26(22): 7000.

Gew, L.T., Teoh, W.J., Lein, L.L., Lim, M.W., Cognet, P. and Aroua, M.K. 2024 Glycerol-based extract of *Clitoria ternatea* (butterfly pea flower) with enhanced antioxidant potential. *PeerJ Analytical Chemistry*, 6(30): 1 - 29.

Global Biodiversity Information Facility. 2023. *Clitoria ternatea* (Linnaeus, 1753). Available at: https://www.gbif.org/species/2946519.

Green, K.J., Dods, K. and Hammer, K.A. 2020. Development and validation of a new microplate assay that utilises optical density to quantify the antibacterial activity of honeys including Jarrah, Marri and Manuka. *PLoS ONE*, 15(12): e0243246.

Grobelak, A., Sobczyk, M. and Całus, K. 2020. *Drug and multidrug resistance in waterborne pathogens. In: Waterborne Pathogens: Detection and Treatment*. Elsevier, pp. 279–300.

Hendiani, I., Susanto, A., Carolina, D.N., Ibrahim, R. and Balaffi, F. 2020. Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of mangosteen (*Garcinia mangostana* Linn.) rind extract against *Aggregatibacter actinomycetemcomitans*. Padjadjaran Journal of Dentistry, 32(2): 131–135.

Hoerr, V., Zbytnuik, L., Leger, C., Tam, P.P.C., Kubes, P., and Vogel, H.J. 2012. Gram-negative and Gram-positive bacterial infections give rise to a different metabolic response in a mouse model. *J. Proteome Res*., 11(1): 3231–3245.

Holderman, M.V., de Queljoe, E., and Rondonuwu, S.B. 2017. Identifikasi bakteri pada pegangan eskalator di salah satu pusat perbelanjaan di Kota Manado. *Jurnal Ilmiah Sains*, 17(1): 13–18.

Hossain, M.L., Lim, L.Y., Hammer, K., Hettiarachchi, D. and Locher, C. 2022. A review of commonly used methodologies for assessing the antibacterial activity of honey and honey products. *Antibiotics*, 11(7): 975.

Hossain, T.J. 2024. Methods for screening and evaluation of antimicrobial activity: a review of protocols, advantages, and limitations. *European Journal of Microbiology and Immunology (Budapest)*, 14(2): 97–115

UNIVERSITAS
GADJAH MADA
Efektivitas Antibakteri Formula Facial Wash dengan Filtrat Ekstrak Gliserin Bunga Telang (Clitoria ternatea L.)
Benediktus Erik Kurniawan, Prof. Dr. Rarastoeti Pratiwi, M.Sc.; Sari Darmasiwi, S.Si., M.Biotech., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Imasari, T., & Emasari, F. A. 2021. Deteksi bakteri *Staphylococcus* sp. penyebab jerawat dengan tingkat pengetahuan perawatan wajah pada siswa kelas XI di SMK Negeri 1 Pagerwojo. *Jurnal Sintesis*, 2(2): 58–65.

Iskandar, B., Sidabutar, S.E.B. and Leny, L. 2021. Formulation and evaluation of avocado extract (*Persea americana*) lotion as a skin moisturizer. *Journal of Islamic Pharmacy*, 6(1): 14–21.

Jérôme, F. and Luque, R. 2017. *Bio-Based Solvents*. First Edition. Chichester: John Wiley & Sons Ltd.

Jeyaraj, E.J., Lim, Y.Y. and Choo, W.S. 2022. Antioxidant, cytotoxic, and antibacterial activities of *Clitoria ternatea* flower extracts and anthocyanin-rich fraction. *Scientific Reports*, 12(1): 14890.

Karim, N., Arisanty, and Pakadan, S.R. 2022. Formulasi dan uji stabilitas sediaan lotion ekstrak air buah tomat (*Solanum lycopersicum* L.). *Akfar Indo*, 7(2): 100-107.

Khasanah, N.I., Fatmawi, E.F. and Royani, S. 2023. Skrining fitokimia dan evaluasi fisik sediaan facial wash gel ekstrak daun sirsak (*Annona muricata* L.). *Journal of Pharmacopollium*, 6(3): 76–83.

Khoiroh, I.U., Nugroho, S.A., Rosdiana, E., Asmono, S.L., Novenda, I.L., and Pujiastuti. 2024. Karakteristik dan uji hedonik sabun berbahan limbah ampas kopi. *Biosense: Jurnal Ilmiah Biologi*, 7(2): 189–197.

Kong, P.S., Aroua, M.K., and Daud, W.M.A.W. 2016. Conversion of crude and pure glycerol into derivatives: a feasibility evaluation. *Renew Sustain Energy Rev*, 63 (1): 533 – 555.

Kowalska, G., Wyrostek, J., Kowalski, R. and Pankiewicz, U. 2021. Evaluation of glycerol usage for the extraction of anthocyanins from black chokeberry and elderberry fruits. *Journal of Applied Research on Medicinal and Aromatic Plants*, 22: 100296.

Krawczyk, S.J., Leśniczak-Staszak, M., Gowin, E. and Szaflarski, W. 2024. Mechanistic insights into clinically relevant ribosome-targeting antibiotics. *Biomolecules*, 14(10): 1263.

Khumairoh, L. Susilo, J. & Laila, V. R. (2020) Perbedaan pelarut etanol 96% dan etil asetat pada uji aktivitas antibakteri ekstrak bunga telang *(clitoria ternatea* L.*)* terhadap *Propionibacterium acnes.* Skripsi, Universitas Ngudi Waluyo, Ungaran.

Kumalasari, E. and Musiam, S. 2022. Perbandingan pelarut etanol-air dalam proses ekstraksi daun bawang dayak (*Eleutherine palmifolia* L.) terhadap aktivitas antioksidan dengan metode DPPH. *Jurnal Insan Farmasi Indonesia*, 2(1): 98–107.

Kurniadi, A., Sartika, D. and Herdiana, N. 2024. Kajian formulasi ekstrak bunga telang (*Clitoria ternatea*) terhadap aktivitas antioksidan pada minuman fungsional. *Jurnal Agroindustri Berkelanjutan*, 3(1): 13–20.

Lajoie, L., Fabiano-Tixier, A. and Chemat, F. 2022. Water as green

UNIVERSITAS
GADJAH MADA
Efektivitas Antibakteri Formula Facial Wash dengan Filtrat Ekstrak Gliserin Bunga Telang (Clitoria ternatea L.)
Benediktus Erik Kurniawan, Prof. Dr. Rarastoeti Pratiwi, M.Sc.; Sari Darmasiwi, S.Si., M.Biotech., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

solvent: methods of solubilisation and extraction of natural products-past, present and future solution. *Pharmaceuticals*, 15(12): 1507.

Lim, M.W., Tang, Y.Q., Aroua, M.K., and Gew, L.T. 2024. Glycerin as a solvent: A study on its extraction efficiency and applications. *ACS Omega*, 9(12): 14388-14405.

Liu, K., Ke, Z., Chen, P., Zhu, S., Yin, H., Li, Z., and Chen, Z. 2021. Classification of two species of gram-positive bacteria through hyperspectral microscopy coupled with machine learning. *Biomed. Opt. Express*, 12(12): 7906–7916.

Lotfollahi, Z. 2024. The anatomy, physiology and function of all skin layers and the impact of ageing on the skin. *Wound Practice and Research*, 32(1): 6 – 10.

Ma, Y., Ding, S., Fei, Y., Liu, G., Jiang, H. and Fang, J. 2019. Antimicrobial activity of anthocyanins and catechins against foodborne pathogens *Escherichia coli* and *Salmonella*. *Food Control*, 106: 106712.

Maia, N.M.A., Andressa, I., Cunha, J.S., Costa, N.A., Borges, L.L.R., Fontes, E.A.F., Oliveira, E.B., Leite Júnior, B.R.C., Bhering, L.L. and Saldaña, M.D.A. 2025. Optimization of ultrasound-assisted obtention of bluish anthocyanin extracts from butterfly pea (*Clitoria ternatea*) petal powders using natural deep eutectic solvents. *Plants*, 14: 1042.

Maisarah, M., Chatri, M., Advinda, L. and Violita. 2023. Karakteristik dan fungsi alkaloid sebagai antifungi pada tumbuhan. *Serambi Biologi*, 8(2): 231 – 236.

Makris, D.P. and Lalas, S. 2020. Glycerol and glycerol-based deep eutectic mixtures as emerging green solvents for polyphenol extraction: the evidence so far. *Molecules*, 25(24): 5842.

Mao, Z. 2025. Physical and chemical analysis of facial cleansers: methods and innovations. *Academic Journal of Materials & Chemistry*, 6(1): 73–81.

Maraz, K.M., and Khan, R.A. 2021. An overview on impact and application of microorganisms on human health, medicine and environment. *GSC Biological and Pharmaceutical Sciences*, 16(1): 89–104.

Marpaung, A.M., 2020. Tinjauan manfaat bunga telang (*Clitoria Ternatea* L.) bagi kesehatan manusia. *Journal of Functional Food and Nutraceutical*, 1(1):63–85.

Masykuroh, A. and Puspasari, H. 2021. Aktivitas anti bakteri nano partikel perak (NPP) hasil biosintesis menggunakan ekstrak keladi sarawak Alocasia macrorrhizos terhadap *Staphylococcus aureus* dan *Escherichia coli*. *Bioma: Jurnal Biologi Makassar*, 7(1): 76–85.

Maulida, R., Rahmawati, I. and Aisyah, S. 2021. Potensi antibakteri sediaan sabun cair ekstrak kulit nanas (*Ananas comosus* l. merr.)

UNIVERSITAS
GADJAH MADA
Efektivitas Antibakteri Formula Facial Wash dengan Filtrat Ekstrak Gliserin Bunga Telang (Clitoria ternatea L.)
Benediktus Erik Kurniawan, Prof. Dr. Rarastoeti Pratiwi, M.Sc.; Sari Darmasiwi, S.Si., M.Biotech., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

terhadap bakteri *Staphylococcus aureus* ATCC 25923. *Jurnal Farmasi & Sains Indonesia*, 4(2): 1 - 11.

Melani, A., Atikah, A., Robiah, R. and Khasanah, N. 2022. Kajian pengaruh variasi pelarut, kecepatan pengadukan dan waktu pada proses ekstraksi kalium dari abu kulit buah semangka (*Citrullus lanatus*). *Distilasi*, 7(2): 29–36.

Ming-Yang, W. and Xu, Y. 2024. Skin microbiota and the skin barrier. *International Journal of Dermatology and Venerology*, 7(1): 18 – 26.

Mira, P., Yeh, P. and Hall, B.G. 2022. Estimating microbial population data from optical density. *PLoS ONE*, 17(10): 1 - 8.

Mukarromah, M.L., Yulia, N. and Mardhiyah, M. 2024. Differences in antioxidant activity of butterfly pea flower infusion (*Clitoria ternatea* L.) with the addition of lemon and lime. *Indonesian Journal of Pharmaceutical Education*, 4(3): 473–486.

Munita, J.M., and Arias, C.A. 2016. Mechanisms of antibiotic resistance. *Microbiol. Spectr*., 4(2): 485–501.

Nabila, F.S., Radhityaningtyas, D., Yurisna, V.C. and Listyaningrum, F. 2022. Potensi bunga telang (*Clitoria ternatea* L.) sebagai antibakteri pada produk pangan. *Jurnal Teknologi dan Industri Pangan UNISRI*, 7(1): 68 – 77.

Nafi, P.A. 2024. Potensi ekstrak metanolik daun telang (*Clitoria Ternatea* L.) sebagai nanobiopestisida terhadap bakteri *Xanthomonas oryzae* Pv. oryzae penyebab penyakit hawar daun tanaman padi. Skripsi, Universitas Gadjah Mada, Yogyakarta.

Nguyen, K.N., Nguyen, G.K., Nguyen, P.Q., Ang, K.H., Dedon, P.C. and Tam, J.P. 2016. Immunostimulating and Gram-negative-specific antibacterial cyclotides from the butterfly pea (*Clitoria ternatea*). *FEBS Journal*, 283(11): 2067–2090.

Nofita, D. & Dewangga, R. 2021. Optimasi perbandingan pelarut etanol air terhadap kadar tannin pada daun matoa (*Pometia pinnata* J.R & G. Forst) secara spektrofotometri. *Chemica et Natura Acta*, 9(3): 102 – 106.

Ningsih, I.S., Chatri, M., Advinda, L. and Violita 2023. Senyawa aktif flavonoid yang terdapat pada tumbuhan. *Serambi Biologi*, 8(2): 126 -132.

Nugrahaeni, F., Srifiana, Y. and Fauzi, F. 2023. Formulasi sabun mandi cair ekstrak etanol 70% daun sirsak (*Annona muricata* L). *Indonesia Natural Research Pharmaceutical Journal*, 8(1): 33–43.

Novaryatiin, S., Valensky, L. and Ardhany, S.D. 2024. Formulasi dan evaluasi facial wash berbasis ekstrak umbi bawang dayak (*Eleutherine bulbosa* (Mill.) Urb.) sebagai anti jerawat. *Jurnal Surya Medika (JSM)*, 10(3): 348–355.

Novicdahilah, Y., Wibawa, A.D., Setiabudi, R.J., Wahyunitasari, M.R., Wiqoyah, N. and Zuhria, I. 2025. Antibiofilm efficacy of butterfly

UNIVERSITAS
GADJAH MADA
Efektivitas Antibakteri Formula Facial Wash dengan Filtrat Ekstrak Gliserin Bunga Telang (Clitoria ternatea L.)
Benediktus Erik Kurniawan, Prof. Dr. Rarastoeti Pratiwi, M.Sc.; Sari Darmasiwi, S.Si., M.Biotech., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

pea flower extract on pathogens in contact lens-related infections. *Asian Journal of Green Chemistry*, 9: 43–56.

Oliveira, A.N., Melchiorre, M., Costa, A.A.F., Silva, L.S., Paiva, R.J., Auvigne, A., Ouyang, W., Luque, R., Rocha Filho, G.N., Noronha, R.C.R., Esposito, R., Nascimento, L.A.S., and Len, C. 2024. Glycerol: A green solvent for synthetic chemistry. *Sustainable Chemistry and Pharmacy*, 41: 101656.

Ozkan, J., Willcox, M., & Coroneo, M. 2022. A comparative analysis of the cephalic microbiome: The ocular, aural, nasal/nasopharyngeal, oral and facial dermal niches. *Experimental Eye Research*, 220: 109130.

Widyasanti, A., Farddani, C.L. and Rohdiana, D. 2016. Pembuatan sabun padat transparan menggunakan minyak kelapa sawit (palm oil) dengan penambahan bahan aktif ekstrak teh putih (*Camellia sinensis*). *Jurnal Teknik Pertanian Lampung*, 5(4): 125–136.

Widyasanti, A., Fauziyah, R. and Rosalinda, S. 2024. Aplikasi proses dan formulasi face mist dengan penambahan ekstrak bunga telang (*Clitoria ternatea* L.) sebagai sediaan antijerawat. *Agrointek: Jurnal Teknologi Industri Pertanian*, 18(1): 136–147.

Widyasanti, A. and Febrianti, F. 2024. Aktivitas antibakteri ekstrak bunga telang (*Clitoria ternatea* L.) terhadap pertumbuhan bakteri *Staphylococcus aureus* dan *Escherichia coli*. *Rekayasa: Journal of Science and Technology*, 17(2): 198–205.

Pertiwi, F. D., Rezaldi, F. dan Puspitasari, R. 2022. Uji aktivitas antibakteri ekstrak etanol bunga telang (*Clitoria ternatea* L.) terhadap bakteri *Staphylococcus epidermidis*. *Jurnal Ilmiah Biosaintropis (Bioscience-Tropic)*, 7(2): 57–68.

Poddębniak, P. and Kalinowska-Lis, U. 2024. A survey of preservatives used in cosmetic products. *Applied Sciences*, 14: 1581.

Purwanto, U.M.S., Aprilia, K., and Sulistiyani, S. 2022. Antioxidant activity of telang (*Clitoria ternatea* L.) extract in inhibiting lipid peroxidation. *Current Biochemistry*, 9(1): 26–37.

Putri, P.A., Chatri, M., Advinda, L. and Violita 2023. Karakteristik saponin senyawa metabolit sekunder pada tumbuhan. *Serambi Biologi*, 8(2): 251 – 258.

Rachmadani, A.D., Nurlaila, S.R. and Harismah, K. 2022. Formulasi dan uji stabilitas sediaan pembersih wajah (cleansing oil) berbahan dasar minyak jarak (*Ricinus communis*). *Jurnal Farmasi Klinik dan Sains*, 2(1): 104–118.

Ramadhani, A., Budiono, and Suhartono. 2017. Gambaran keberadaan bakteri *Staphylococcus aureus*, kondisi lingkungan fisik, dan angka lempeng total di udara ruang rawat inap RSUD Prof. Dr. M.A. Hanafiah SM Batusangkar. *Jurnal Kesehatan Masyarakat*, 5(5): 492–501.

Ray, R. 2024. Antibiofilm activities of the floral extract of *Clitoria*

UNIVERSITAS
GADJAH MADA
Efektivitas Antibakteri Formula Facial Wash dengan Filtrat Ekstrak Gliserin Bunga Telang (Clitoria ternatea L.)
Benediktus Erik Kurniawan, Prof. Dr. Rarastoeti Pratiwi, M.Sc.; Sari Darmasiwi, S.Si., M.Biotech., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

ternatea against the biofilm of two nosocomial pathogens, namely *Staphylococcus aureus* and *Pseudomonas aeruginosa*. Pharmaceutical Sciences Asia, 51(2): 133–144.

Renda, Y.K., Pote, L.L. and Nadut, A. 2023. Isolasi dan karakterisasi senyawa alkaloid dari kulit batang tumbuhan halay (*Alstonia spectabilis* R. Br) asal desa wee rame kabupaten sumba barat daya. *Jurnal Sains dan Edukasi Sains*, 6(1): 44 – 50.

Riyanto, E.F., Nurjanah, A.N., Ismi, S.N. and Suharti, R. 2019. Daya hambat ekstrak etanol bunga telang (*Clitoria ternatea* L.) terhadap bakteri perusak pangan. *Jurnal Kesehatan Bakti Tunas Husada*, 19(2): 218 – 225.

Rodríguez, B., Pacheco, L., Bernal, I. and Piña, M. 2023. Mechanisms of action of flavonoids: antioxidant, antibacterial and antifungal properties. *Ciencia, Ambiente y Clima*, 6(2): 33–66.

Rohmani, S., Ningrum, S.K., Wardhani, W.D., Ermawati, D.E. and Kundarto, W. 2022. Pengaruh variasi konsentrasi surfaktan Iselux Ultra Mild pada formulasi hydrating facial wash potassium azeloyl diglycinate. *Jurnal Kefarmasian Indonesia*, 12(1): 58–68.

Sahoo, P. 2024. Complementary supramolecular drug associates in perfecting the multidrug therapy against multidrug resistant bacteria. *Frontiers in Immunology*, 15: 1352483.

Satria, D., Sofyanti, E., Wulandari, P., Pakpahan, S.D. and Limbong, S.A. 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.

Seko, M.H., Sabuna, A.C. and Ngginak, J. 2021. Ekstrak etanol daun ajeran sebagai antibakteri terhadap *Staphylococcus aureus*. *Jurnal Biosains*, 7(1): 1–7.

Shafaat, K., Kumar, P., Kumar, A., Kumar, S., Kumar, A., Raj, R. and Kumar, L. 2025. A comprehensive insights into face wash: formulation, function, and applications. *Internationale Pharmaceutica Sciencia*, 18(1): 10–14.

Singh, C.P., Mathur, M., Dadhich, H. and Ganguly, S. 2018. Molecular characterization of *Staphylococcus aureus* of camel (*Camelus dromedarius*) skin origin. International Journal of Current Microbiology and Applied Sciences, 7(1): 3486–3490.

Sleem, A.S., Salman, S.S., Shehata, W.A. and Dawoud, A.M. 2023. Evaluation of glycerol antiseptic effect on Gram positive and Gram negative bacteria. *Menoufia Medical Journal*, 36(3): 71–77.

Smith, A., Dumbrava, R., Ghori, N.U.H., Foster, R., Campbell, J., Duthie, A., Hoyne, G., Rademaker, M., and Bowen, A.C. 2025. An overview of the skin microbiome, the potential for pathogen shift, and dysbiosis in common skin pathologies. *Microorganisms*, 13(1): 54.

Soni, J., Sinha, S., and Pandey, R. 2024. Understanding bacterial

UNIVERSITAS
GADJAH MADA
Efektivitas Antibakteri Formula Facial Wash dengan Filtrat Ekstrak Gliserin Bunga Telang (Clitoria ternatea L.)
Benediktus Erik Kurniawan, Prof. Dr. Rarastoeti Pratiwi, M.Sc.; Sari Darmasiwi, S.Si., M.Biotech., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

pathogenicity: a closer look at the journey of harmful microbes. *Front. Microbiol*, 15:1370818.

Sulastri, E., Mappiratu, M., and Sari, A.K. 2016. Uji aktivitas antibakteri krim asam laurat terhadap *Staphylococcus aureus* ATCC 25923 dan *Pseudomonas aeruginosa* ATCC 27853. *Jurnal Farmasi Galenika*, 2(2): 59–67.

Sutarna, T.H. 2022. Formulation of liquid soap contains cow's milk frim middle small enterprise in cimahi. *Indonesian Journal of Pharmaceutical Science and Technology*, 9(2): 9 -16.

Tjandra, R.F., Fatimawali and Datu, O.S. 2020. Analisis senyawa alkaloid dan uji daya hambat ekstrak buah sirih (*Piper betle* L.) terhadap bakteri *Staphylococcus epidermis*. *eBiomedik*, 8(2): 173 – 179.

Triandini, I.G.A.A.H, and Wangiyana, I.G.A.S 2021. Mini-review uji hedonik pada produk teh herbal hutan. *Jurnal Silva Samalas*, 5(1): 12–19.

Triyani, W.U., Arisandy, D.A. and Susanti, I. 2024. Uji antibakteri sari pati daun pandan wangi (*Pandanus amaryllifolius* Roxb.) terhadap zona hambat *Pseudomonas aeruginosa*. *Jurnal Medika Malahayati*, 8(3). 652 - 659.

Ulinnuha, A., Fauziah, Kurniasih, K.I., Nawangsari, D. and Prabandari, R. 2024. Evaluasi fisik facial wash ekstrak daun sirsak (*Annona muricata* L.) berbasis gelling agent. *Pharmacy Genius*, 3(3): 136–148.

Widhowati, D., Musayannah, B.G., and Nussa, O.R.P.A. 2017. Efek ekstrak bunga telang (*Clitoria ternatea* L.) sebagai antibakteri alami terhadap pertumbuhan bakteri *Staphylococcus aureus*. *VITEK: Bidang Kedokteran Hewan*, 13(1): 1–7.

Xue, Y., Zhou, J., Xu, B., Bao, W., Cheng, X. L., He, Y., Xu, C. P., Ren, J., Zheng, Y. R. and Jia, C. Y. 2022. Global burden of bacterial skin diseases: a systematic analysis combined with sociodemographic index, 1990 – 2019. *Frontiers in Medicine*, 9.

Yudhatama, A.Y. 2025. Aktivitas antibakteri formula facial wash dengan bahan aktif ekstrak air bunga telang (*Clitoria ternatea* L.). Skripsi, Universitas Gadjah Mada, Yogyakarta.

Yuliani, H. and Rasyid, M.I. 2019. Efek perbedaan pelarut terhadap uji toksisitas ekstrak pineung nyen teusalee. *Jurnal Fitofarmaka Indonesia*, 6(2): 347–352.

Zahra, M. 2022. Ulasan singkat: deskripsi bunga telang (*Clitoria ternatea* L.) dan manfaatnya. *Jurnal Jeumpa*, 9(2): 719 – 728.

Zhang, P., Wei, Q., Yuan, X., and Xu, K. 2020. Newly reported alkaloids produced by marine-derived *Penicillium* species (covering 2014-2018). *Bioorganic chemistry*, 99: 103840.

Zurairah, M. 2024. Uji sifat gliserin dengan standarisasi. *Jurnal Cakrawala Ilmiah*, 4(4):453 – 458.