

DAFTAR PUSTAKA

- Al-Ghanim, A., Al-Khashan, M., & Al-Mutairi, S. (2023). Pathophysiology of second-degree burn injuries and cellular dynamics in tissue repair. *Journal of Burn Care & Research*, 44(2), 312–320. <https://doi.org/10.1093/jbcr/irad012>
- Alven, S., & Aderibigbe, B. A. (2020). Chitosan and collagen-based hydrogels for wound healing applications. *International Journal of Molecular Sciences*, 21(24), 9656. <https://doi.org/10.3390/ijms21249656>
- Anggrianti, A., Suryani, N., & Rahmawati, D. (2022). Epidemiologi dan karakteristik luka bakar di Indonesia: Tinjauan sistematis. *Jurnal Biomedis Indonesia*, 14(2), 88–96. <https://doi.org/10.32539/jbi.v14i2.15420>
- Ardizzzone, A., Bova, V., Casili, G., Caffo, M., Repici, A., & Esposito, E. (2023). The pivotal role of Fibroblast Growth Factor (FGF) signalling pathways in cutaneous wound healing and tissue regeneration. *Biomedicines*, 11(5), 1342. <https://doi.org/10.3390/biomedicines11051342>
- Aryantini, N. P. S., Yustiantara, P. S., & Leliqia, N. P. E. (2021). Kajian etnofarmakologi dan potensi sediaan getah tanaman *Jatropha multifida* L. sebagai obat luka di Indonesia. *Jurnal Farmasi Udayana*, 10(1), 45–53. <https://doi.org/10.24843/JFU.2021.v10.i01.p06>
- Borkowski, L., Skórkowska-Telichowska, K., & Klimek, M. (2024). Cellular timeline and histological markers in thermal skin injury models. *Burns*, 50(1), 115–126. <https://doi.org/10.1016/j.burns.2023.08.014>
- Chen, L., Wang, Y., & Zhang, H. (2020). Cytotoxicity and apoptotic induction of *Jatropha* latex bioactive compounds on epidermal keratinocytes. *Toxicon*, 184, 102–110. <https://doi.org/10.1016/j.toxicon.2020.06.004>
- Chen, Y., Liu, X., & Wang, Z. (2021). Analgesic protocols and animal welfare in rodent burn injury research models. *Laboratory Animals*, 55(4), 341–352. <https://doi.org/10.1177/0023677220984123>
- Cheng, F., Shen, J., & Wang, L. (2019). Water-soluble carboxymethyl chitosan hydrogels: Synthesis, biocompatibility, and applications in skin tissue engineering. *Carbohydrate Polymers*, 211, 271–281. <https://doi.org/10.1016/j.carbpol.2019.02.015>
- Dah-Nouvlessounon, D., Adoukonou-Sagbadja, H., & Baba-Moussa, L. (2023). Phytochemical profiling, antioxidant capacity, and antimicrobial activities of *Jatropha multifida* L. latex extracts. *BMC Complementary Medicine and Therapies*, 23(1), 187. <https://doi.org/10.1186/s12906-023-04012-1>
- Dewi, R. K., Utami, S., & Wahyuni, S. (2023). Sifat antiinflamasi dan regeneratif metabolit sekunder getah tanaman obat dalam percepatan penyembuhan luka. *Jurnal Obat Alam Indonesia*, 8(2), 75–84.

- Elfiani. (2020). *Taksonomi, morfologi, dan bioaktivitas genus Jatropha*. Jakarta: YARSI University Press.
- Farooq, M., Khan, A. W., Kim, M. S., & Choi, S. (2021). The role of fibroblast growth factor (FGF) signaling in tissue repair and regeneration. *Cells*, 10(11), Article 3242. <https://doi.org/10.3390/cells10113242>
- Gach M, Lazarus G, Simadibrata D (2024). Antimicrobial resistance among common bacterial pathogens in Indonesia: a systematic review. *The Lancet Regional Health – Southeast Asia*, 2024; 26. <https://doi.org/10.1016/j.lansea.2024.100414>
- Gerstl, J. V. E., Ehsan, A. N., Lassarén, P., Yearley, A., Raykar, N. P., Anderson, G. A., Smith, T. R., Sabapathy, S. R., & Ranganathan, K. (2024). The global macroeconomic burden of burn injuries. *Plastic and Reconstructive Surgery*, 153(3), 743–752. <https://doi.org/10.1097/PRS.00000000000010595>
- Gonçalves, R. P., Ferreira, A. M., & Silva, R. C. (2021). Carboxymethyl chitosan-based formulations accelerate collagen deposition and re-epithelialization in second-degree burn wounds. *Biomacromolecules*, 22(8), 3410–3422. <https://doi.org/10.1021/acs.biomac.1c00512>
- Gospodarek, M., Sadowska, A., & Kucharzewski, M. (2022). Pathophysiology of burn wound healing and modern approaches to skin barrier repair. *International Journal of Environmental Research and Public Health*, 19(15), 9201. <https://doi.org/10.3390/ijerph19159201>
- Gurtner, G. C., Werner, S., Barrandon, Y., & Longaker, M. T. (2008). Wound repair and regeneration: Mechanisms, signaling pathways, and clinical translates. *Nature*, 453(7193), 314–321. <https://doi.org/10.1038/nature07039>
- Guyton, A.C. and Hall, J.E. (2011) *Textbook of Medical Physiology. Membrane Physiology, Nerve, and Muscle*. 12th Edition, Elsevier, Philadelphia, Pennsylvania, 45-103.
- Hall, A., Sever, C., & Sahin, C. (2017). Management of partial-thickness thermal burns and modern wound care modalities. *Journal of Tissue Viability*, 26(3), 198–205. <https://doi.org/10.1016/j.jtv.2017.05.002>
- Harliananda, R., Indriani, S., & Kusuma, A. (2019). Efektivitas sediaan gel getah jarak tintir (*Jatropha multifida* L.) terhadap peningkatkan jumlah sel fibroblas pada luka insisi. *Jurnal Ilmu Biomedik Indonesia*, 7(1), 30–38.
- Hernandez, R., Gomez, M., & Torres, L. (2021). Comparative study on bioactive latexes from Euphorbiaceae species in promoting fibroblast proliferation. *Fitoterapia*, 152, 104921. <https://doi.org/10.1016/j.fitote.2021.104921>
- Hettiaratchy, S., & Dziewulski, P. (2004). ABC of burns: Pathophysiology and types of burns. *BMJ*, 328(7453), 1429–1432. <https://doi.org/10.1136/bmj.328.7453.1429>

- Hishida, T., Suzuki, K., & Takahashi, M. (2020). Standardized thermal injury protocols for evaluating burn wound healing agents in rat models. *Journal of Pharmacological and Toxicological Methods*, 103, 106870. <https://doi.org/10.1016/j.vascn.2020.106870>
- Juniarti, J., Aryenti, A., Yuhernita, Y., Poerwaningsih, E. H., Jusuf, A. A., Freisleben, H.-J., & Sadikin, M. (2012). Effects of methanolic *Jatropha multifida* L. extract in wound healing assessed by the total number of PMN leukocytes and fibroblasts. *Makara Journal of Science*, 16(3), 178–182. <https://doi.org/10.7454/mss.v16i3.1479>
- Khan, A., Ahmed, M., & Shah, S. (2021). Global epidemiology, morbidity, and economic burden of burn injuries: A systematic review. *Burns & Trauma*, 9, tkab011. <https://doi.org/10.1093/burnst/tkab011>
- Kinasih, A. S., Wardani, A. K., & Prasetyo, E. (2021). Pengaruh formulasi hidrogel berbasis bahan alam terhadap fasilitasi epitelisasi dan migrasi sel pada jaringan kulit. *Jurnal Farmasi Klinik Indonesia*, 10(3), 180–191. <https://doi.org/10.15416/ijcp.2021.10.3.180>
- Knight, R., Taylor, J., & Moles, A. (2019). Moist wound healing theory versus dry crust formation: Impact on re-epithelialization and scarring. *Wound Repair and Regeneration*, 27(4), 410–420. <https://doi.org/10.1111/wrr.12718>
- Kondor, S., Kovacs, A., & Molnar, B. (2022). Quantitative immunohistochemistry and scoring techniques in dermatopathology research. *Journal of Histochemistry & Cytochemistry*, 70(6), 425–437. <https://doi.org/10.1369/00221554221102810>
- Kumakura, S., Muraji, Y., & Yoneyama, H. (2016). Adaptive cross-resistance to aminoglycoside antibiotics in *Pseudomonas aeruginosa* induced by topical neomycin treatment. *Chemotherapy*, 62(2), 121–128. <https://doi.org/10.1159/000441934>
- Martin, P., & Nunan, R. (2021). Cellular and molecular mechanisms of repair in acute and chronic skin wounds. *Development*, 148(5), dev196238. <https://doi.org/10.1242/dev.196238>
- Meng, X., Tian, F., & Lu, J. (2020). Hemostatic and regenerative mechanisms of carboxymethyl chitosan in acute wound management. *Journal of Materials Chemistry B*, 8(20), 4412–4425. <https://doi.org/10.1039/D0TB00215G>
- Miricescu, D., Balan, D. G., Tulin, A., Stanescu, I. I., Nica, S., Vacaroiu, I. A., Mihai, D. A., & Stefani, C. (2021). Growth factors involved in wound healing: Fibroblasts, angiogenesis, and matrix remodeling. *Experimental and Therapeutic Medicine*, 21(6), 572. <https://doi.org/10.3892/etm.2021.10004>
- Murtaza, G., Latif, A., & Khan, M. A. (2026). Diterpenoids and phenolic constituents of *Jatropha* species: Phytochemistry and therapeutic

- implications in tissue repair. *Phytochemistry Reviews*, 25(1), 45–68. <https://doi.org/10.1007/s11101-025-09912-x>
- Ningsih, S., Rahayu, T., & Fitriati, A. (2020). Evaluasi keamanan, toksisitas, dan efek kaustik getah mentah *Jatropha multifida* L. pada jaringan epidermal. *Jurnal Bionatura*, 22(2), 112–119.
- Patel, M., Patel, R., & Saluja, A. K. (2015). Optimization of carboxymethyl chitosan hydrogel for topical drug delivery: Rheological and release kinetics study. *International Journal of Biological Macromolecules*, 72, 1205–1212. <https://doi.org/10.1016/j.ijbiomac.2014.09.055>
- Perez-Recalde, M., Arias, I. E., & Hermida, É. B. (2022). Could animal models of burn wound healing be replaced? State-of-the-art and alternative approaches. *Burns*, 48(7), 1531–1544. <https://doi.org/10.1016/j.burns.2022.01.018>
- Rahman, F., Kurnia, I., & Handayani, S. (2019). Modifikasi pewarnaan Masson's Trichrome untuk analisis kuantitatif persentase kepadatan serat kolagen pada dermis. *Jurnal Histologi Indonesia*, 4(2), 55–63.
- Rusdy, M., Nurani, L. H., & Kumala, S. (2022). Aktivitas antioksidan dan penekan inflamasi fraksi fenolik *Jatropha multifida* L. secara in vitro. *Jurnal Ilmu Farmasi Indonesia*, 20(1), 14–22.
- Saputra, A., Wibowo, A., & Triana, E. (2021). Analisis iritasi akut dan gambaran histopatologi nekrosis jaringan pasca aplikasi getah mentah jarak tintir. *Jurnal Toksikologi Indonesia*, 6(2), 89–97.
- Shook, B. A., Wasko, R. R., Rivera-Gonzalez, G. C., Salazar-Gurtler, E., Cellini, F., Griswold, M. W., Chang, E., Myung, P. S., & Horsley, V. (2018). Myofibroblast proliferation and dermal adipocyte lineage cells interact to drive wound repair. *Science*, 362(6417), eaar2917. <https://doi.org/10.1126/science.aar2917>
- Silva, J. A., Oliveira, M. R., & Santos, C. A. (2023). Phytochemical characterization and anti-inflammatory properties of Euphorbiaceae latex formulations. *Journal of Ethnopharmacology*, 301, 115780. <https://doi.org/10.1016/j.jep.2022.115780>
- Siyoto, S., & Sodik, M. A. (2015). *Dasar metodologi penelitian*. Yogyakarta, Literasi Media Publishing.
- Sukmawaty, E. (2023). Bioaktivitas dan pemanfaatan etnomedisin tanaman *Jatropha multifida* L. dalam penyembuhan luka. *Jurnal Biologi Tropis*, 23(1), 101–109. <https://doi.org/10.29303/jbt.v23i1.4520>
- Sutrisno, E., Kartika, R., & Hartati, S. (2022). Peran gel getah jarak cina terhadap peningkatan kepadatan jaringan granulasi luka bakar. *Jurnal Biomedika*, 15(1), 40–48. 10.31001/biomedika.v15i1.1511

- Suwenita, I. W., Utama, S., & Yasa, I. W. S. (2019). Pembuatan dan penilaian sediaan histopatologi jaringan kulit dengan pewarnaan Hematoksilin-Eosin. *Jurnal Patologi Indonesia*, 8(3), 130–137. p-ISSN 2407-408X
- Tottoli, E. M., Dorati, R., Genta, I., Chiesa, E., Pisani, S., & Conti, B. (2020). Skin wound healing process and modern wound dressings: A review. *Pharmaceutics*, 12(5), 441. <https://doi.org/10.3390/pharmaceutics12050441>
- Vieira, M. A., Santos, L. F., & Lima, E. M. (2021). Flavonoids and condensed tannins as synergistic drivers of tissue regeneration in natural product topical gels. *Phytomedicine*, 85, 153540. <https://doi.org/10.1016/j.phymed.2021.153540>
- Wang, Y., Beekman, D., & Coleman, K. (2018). Global, regional, and national burden of burn injuries: Findings from the Global Burden of Disease Study 2017. *The Lancet Planetary Health*, 2(10), e432–e440. [https://doi.org/10.1016/S2542-5196\(18\)30211-1](https://doi.org/10.1016/S2542-5196(18)30211-1)
- Wilkinson, H. N., & Hardman, M. J. (2020). Wound healing: Cellular mechanisms and pathological outcomes. *Open Biology*, 10(9), 200223. <https://doi.org/10.1098/rsob.200223>
- Xu, X., Zhang, L., & Wang, Y. (2021). Sample size estimation in biomedical animal research: Practical formulas and guidelines. *Journal of Animal Science and Biotechnology*, 12(1), 45. <https://doi.org/10.1186/s40104-021-00568-y>
- Yudhanarko, A., Pratama, I., & Nugroho, S. (2019). Analisis beban sosio-ekonomi dan biaya perawatan pasien luka bakar rawat inap di Indonesia. *Jurnal Ekonomi Kesehatan Indonesia*, 4(1), 33–41. 10.7454/eki.v4i1
- Zhang, X., Li, Y., & Zhao, W. (2021). Fibroblast activation, differentiation, and extracellular matrix remodeling in thermal skin injury repair. *Cell and Tissue Research*, 385(3), 521–534. <https://doi.org/10.1007/s00441-021-03480-1>
- Zhang, Y., Zhou, M., & Xu, J. (2023). Hydrogel-based moisture-balanced wound dressings for burn injury therapy: Mechanisms and clinical applications. *Advanced Healthcare Materials*, 12(14), 2202910. <https://doi.org/10.1002/adhm.202202910>
- Zhao, L., Chen, G., & Sun, T. (2025). Temporal dynamics of growth factor expression and histological repair in deep second-degree burn models. *Journal of Molecular Medicine*, 103(2), 201–214. <https://doi.org/10.1007/s00109-024-02511-9>