

DAFTAR PUSTAKA

1. Rizqun Nisa Afriyanti. Akne Vulgaris Pada Remaja. *J Major*. 2015;4(6):102–9.
2. Sifatullah N, Zulkarnain Z. Jerawat (Acne vulgaris): Review penyakit infeksi pada kulit. *Pros Semin Nas Biol*. 2021;(November):19–23.
3. O'Neill AM, Gallo RL. Host-microbiome interactions and recent progress into understanding the biology of acne vulgaris. *Microbiome*. 2018;6(1):1–16.
4. Ratu DR, Fifendy M, Advinda L. The Effect of Various Concentrations of Anti-Acne Liquid Soap on the Bacteria of *Staphylococcus aureus* Causes Acne. *Serambi Biol*. 2022;7(4):311–7.
5. Carroll KC, Morse SA, Mietzner T, Miller S. Jawetz, Melnick, & Adelberg's Medical Microbiology. 2016. 867 p.
6. Labruere R, Sona AJ, Turos E. Anti-methicillin-resistant *staphylococcus aureus* nanoantibiotics. *Front Pharmacol*. 2019;10(October):1–24.
7. Foster TJ. Antibiotic resistance in *Staphylococcus aureus*. Current status and future prospects. *FEMS Microbiol Rev*. 2017;41(3):430–49.
8. Karadag AS, Aslan Kayiran M, Wu CY, Chen W, Parish LC. Antibiotic resistance in acne: changes, consequences and concerns. *J Eur Acad Dermatology Venereol*. 2021;35(1):73–8.
9. Mazini L, Rochette L, Amine M, Malka G. Regenerative capacity of adipose derived stem cells (ADSCs), comparison with mesenchymal stem cells (MSCs). *Int J Mol Sci*. 2019;20(10):1–30.
10. Teixeira F, Salgado A. Mesenchymal stem cells secretome: Current trends and future challenges. *Neural Regen Res*. 2020;15(1):75–7.
11. Esfandiyari R, Halabian R, Behzadi E, Sedighian H, Jafari R, Imani Fooladi AA. Performance evaluation of antimicrobial peptide Il-37 and hepcidin and β -defensin-2 secreted by mesenchymal stem cells. *Heliyon*. 2019 Oct;5(10):e02652.
12. Sutton MT, Fletcher D, Ghosh SK, Weinberg A, Van Heeckeren R, Kaur S, et al. Antimicrobial Properties of Mesenchymal Stem Cells: Therapeutic Potential

- for Cystic Fibrosis Infection, and Treatment. *Stem Cells Int.* 2016;2016.
13. Johnson V, Webb T, Norman A, Coy J, Kurihara J, Regan D, et al. Activated Mesenchymal Stem Cells Interact with Antibiotics and Host Innate Immune Responses to Control Chronic Bacterial Infections. *Sci Rep.* 2017;7(1):1–18.
 14. Kasiri MM, .et al. Dying blood mononuclear cell secretome exerts antimicrobial activity. *Eur J Clin Invest.* 2016;46(10):853–63.
 15. Chow L, Johnson V, Impastato R, Coy J, Strumpf A, Dow S. Antibacterial activity of human mesenchymal stem cells mediated directly by constitutively secreted factors and indirectly by activation of innate immune effector cells. *Stem Cells Transl Med.* 2020;9(2):235–49.
 16. Yu Han et al. Mesenchymal Stem Cells for Regenerative Medicine Yu. *Front Neurosci.* 2019;
 17. Halim D, Murti H, Sandra F, Boediono A, Djuwantono T SB. *Stem Cell: Dasar Teori & Aplikasi Klinis.* Astikawati R, editor. Jakarta: Penerbit Erlangga; 2010. 136 p.
 18. Kalra K, Tomar PC. Stem Cell: Basics, Classification and Applications. *Am J Phytomedicine Clin Ther.* 2014;2(7):919–30.
 19. Harman RM, Yang S, He MK, Van De Walle GR. Antimicrobial peptides secreted by equine mesenchymal stromal cells inhibit the growth of bacteria commonly found in skin wounds. *Stem Cell Res Ther.* 2017;8(1):1–14.
 20. Eaves CJ. Hematopoietic stem cells: Concepts, definitions, and the new reality. *Blood.* 2015;125(17):2605–13.
 21. Kfoury Y, Scadden DT. Mesenchymal cell contributions to the stem cell niche. *Cell Stem Cell.* 2015;16(3):239–53.
 22. Frese L, Dijkman PE, Hoerstrup SP. Adipose tissue-derived stem cells in regenerative medicine. *Transfus Med Hemotherapy.* 2016;43(4):268–74.
 23. Damayanti RH, Rusdiana T, Wathoni N. Mesenchymal stem cell secretome for dermatology application: A review. *Clin Cosmet Investig Dermatol.* 2021;14:1401–12.
 24. Pawitan JA. Prospect of Stem Cell Conditioned Medium in. *Biomed Res Int.*

2014;2014:7–9.

25. Taopan. HHMS et al. Characterization Of Mesenchymal Stem Cells From White Adipose Tissue Of Macaca Fascicularis. *J Kedokt Hewan*. 2021;15(4):112–7.
26. Bunnell BA. Adipose Tissue-Derived Mesenchymal Stem Cells. *Cells*. 2021 Dec 6;10(12):3433.
27. Pradifta R. Efek Antiaging Formula Sediaan Krim yang Mengandung Medium Terkondisi Sel Punca Mesenkimal. Universitas Andalas; 2021.
28. Marrazzo P, Pizzuti V, Zia S, Sargenti A, Gazzola D, Roda B, et al. Microfluidic tools for enhanced characterization of therapeutic stem cells and prediction of their potential antimicrobial secretome. *Antibiotics*. 2021;10(7).
29. Marx C, Gardner S, Harman RM, Wagner B, Van de Walle GR. Mesenchymal Stromal Cell-Secreted CCL2 Promotes Antibacterial Defense Mechanisms Through Increased Antimicrobial Peptide Expression in Keratinocytes. *Stem Cells Transl Med*. 2021 Dec 1;10(12):1666–79.
30. Bicer M, Fidan O. Can mesenchymal stem/stromal cells and their secretomes combat bacterial persisters? *World J Microbiol Biotechnol*. 2023 Oct 12;39(10):276.
31. Widhiastuti SS. Aplikasi Media Terkondisi Sel Punca Mesensimal dalam Terapi Penyakit Degeneratif dan Penyembuhan Luka. *Biota J Ilm Ilmu-Ilmu Hayati*. 2020;5(1):48–60.
32. Moeinabadi-Bidgoli K, Rezaee M, Rismanchi H, Mohammadi MM, Babajani A. Mesenchymal Stem Cell-Derived Antimicrobial Peptides as Potential Anti-Neoplastic Agents: New Insight into Anticancer Mechanisms of Stem Cells and Exosomes. *Front Cell Dev Biol*. 2022 Jul 6;10.
33. Khumairoh Ika, Puspitasari IM. Kultur sel. *Farmaka*. 2016;14(2):98–110.
34. ThermoFisher Scientific Inc. Cell Culture Basics Handbook. ThermoFisher Scientific Inc. 2020. 1–132 p.
35. Dewi S. Cara Ampuh Mengobati Jerawat. Jakarta: Buana Pustaka; 2009.
36. Dréno B, Dagnelie MA, Khammari A, Corvec S. The Skin Microbiome: A New Actor in Inflammatory Acne. *Am J Clin Dermatol*. 2020 Sep 10;21(S1):18–24.

37. Fournière M, Latire T, Souak D, Feuilloley MGJ, Bedoux G. *Staphylococcus epidermidis* and *Cutibacterium acnes*: Two Major Sentinels of Skin Microbiota and the Influence of Cosmetics. *Microorganisms*. 2020 Nov 7;8(11):1752.
38. Cavallo I, Sivori F, Truglio M, De Maio F, Lucantoni F, Cardinali G, et al. Skin dysbiosis and *Cutibacterium acnes* biofilm in inflammatory acne lesions of adolescents. *Sci Rep*. 2022 Dec 6;12(1):21104.
39. Wang Y, Kuo S, Shu M, Yu J, Huang S, Dai A, et al. *Staphylococcus epidermidis* in the human skin microbiome mediates fermentation to inhibit the growth of *Propionibacterium acnes*: implications of probiotics in acne vulgaris. *Appl Microbiol Biotechnol*. 2014 Jan 22;98(1):411–24.
40. Hashem NM, Hosny AE-DMS, Abdelrahman AA, Zakeer S. Antimicrobial activities encountered by sulfur nanoparticles combating *Staphylococcal* species harboring *scmeca* recovered from acne vulgaris. *AIMS Microbiol*. 2021;7(4):481–98.
41. Tammi A. Aktivitas Antibakteri Buah Makasar (*Brucea javanica*) terhadap Pertumbuhan *Staphylococcus aureus*. *J Agromed Unila* . 2015;2(2):100.
42. Mahmudah R, Soleha TU, Ekowati C. Identifikasi Methicillin-Resistant *Staphylococcus Aureus* (MRSA) Pada Tenaga Medis Dan Paramedis Di Ruang Intensivecare Unit (ICU) Dan Ruang Perawatan Bedah Rumah Sakit Umum Daerah Abdul Moeloek. *Med J Lampung Univ*. 2013;2(4):70–8.
43. Handayani FW, Muhtadi A, Farmasi F, Padjadjaran U, Dara T, Manis K, et al. Review Artikel : Aktivitas Antibakteri Ekstrak Kulit Buah Manggis (*Garcinia Mangostana* L.) Terhadap Bakteri Penyebab Jerawat. *Farmaka*. 2013;4:322–8.
44. Nugroho R, Widayati R. Terapi Topikal Clindamycin Dibandingkan Dengan Niacinamide + Zinc Pada Acne Vulgaris. *J Kedokt Diponegoro*. 2013;2(1):108796.
45. Dwidjoseputro D. Dasar-dasar mikrobiologi. 11th ed. Jakarta: Djambatan; 1990.
46. Ullah H, Ali S. Classification of Antibacterial Agents and Their Functions. In: *Antibacterial Agents*. 2017.
47. Harti AS. Mikrobiologi Kesehatan. Yogyakarta: ANDI; 2015.

48. Mikdarullah. Aditiya Nugraha, Balai. Teknik Isolasi Bakteri Proteolitik Dari Sumber Air Panas Ciwidey, Bandung. Bul Tek Litkayasa Akuakultur. 2015;15(1):11–4.
49. Pratiwi ST. Mikrobiologi Farmasi. Jakarta: Erlangga; 2008.
50. Yuwono Triwibowo. Teori dan Aplikasi Polymerase Chain Reaction. Yogyakarta: Penerbit Andi; 2006.
51. Purba AM V, Khairani M, Purba DH, Yesti Y, Manalu AI, Puspita R, et al. Mikrobiologi dan Parasitologi. Yayasan Kita Menulis; 2021.
52. Garibyan L, Avashia N. Polymerase chain reaction. J Invest Dermatol. 2013 Mar;133(3):1–4.
53. Weafer RF. Molecular Biology. 3rd ed. New York: Mc Graw Hill Companies Inc; 2001.
54. Jalali M, Zaborowska J, Jalali M. The Polymerase Chain Reaction: PCR, qPCR, and RT-PCR. Basic Sci Methods Clin Res. 2017;1–18.
55. Gummadi S, Kandula VN. A Review on Electrophoresis, Capillary Electrophoresis and Hyphenations. Int J Pharm Sci Res. 2020;11(12):6038.
56. Kent L. Freezing and thawing human embryonic stem cells. J Vis Exp. 2010;(34):17–8.
57. Pradifta R. Efek Antiaging Formula Sediaan Krim yang Mengandung Medium Terkondisi Sel Punca Mesenkimal. Universitas Andalas; 2021.
58. Khairunnisa M, Helmi TZ, Darmawi, Dewi M, Hamzah A. The isolation and identification of Staphylococcus Aureus from goat udder of breed goat etawa (PE). J Ilm Mhs Vet. 2018;2(4):538–45.
59. TIANGEN Biotech (Beijing) Co. L. TIANamp Genomic DNA Kit Handbook. Cat. No. 4. Beijing; 2022.
60. Wilson IG, Cooper JE, Gilmour A. Detection of enterotoxigenic Staphylococcus aureus in dried skimmed milk: Use of the polymerase chain reaction for amplification and detection of staphylococcal enterotoxin genes entB and entC1 and the thermonuclease gene nuc. Appl Environ Microbiol. 1991;57(6):1793–8.
61. Noviyanti Y, Sumiati S. Sensitifitas Bakteri Staphylococcus aureus terhadap

- Senyawa Alkaloid pada Daun Subang-Subang (*Scaevola taccada* L). Pros Semin Nas Ilmu Kesehat. 2016;1(1):47–53.
62. CLSI. Performance Standards for Antimicrobial Susceptibility Testing. 30th ed. Vol. 40, Clsi. Clinical and Laboratory Standards Institute; 2020.
63. Moon KM, Park YH, Lee JS, Chae YB, Kim MM, Kim DS, et al. The effect of secretory factors of adipose-derived stem cells on human keratinocytes. *Int J Mol Sci*. 2012;13(1):1239–57.
64. Kamala MF, Permana D. Sensitivitas Antibiotik Paten Dan Generik Terhadap Beberapa Bakteri Penyebab Jerawat. *Yars J Pharmacol*. 2022;1(2):78–86.
65. Chouaib B, Haack-Sørensen M, Chaubron F, Cuisinier F, Collart-Dutilleul PY. Towards the Standardization of Mesenchymal Stem Cell Secretome-Derived Product Manufacturing for Tissue Regeneration. *Int J Mol Sci*. 2023;24(16).
66. Shaaban F, Salem Sokhn E, Khalil C, Saleh FA. Antimicrobial activity of adipose-derived mesenchymal stromal cell secretome against methicillin-resistant *Staphylococcus aureus*. *Stem Cell Res Ther*. 2025 Jan 23;16(1):21.
67. Putri P, Juanda T. Antibacterial Effects Of Mesenchymal Stem Cell Secretome On The Growth Of Pathogenic Bacteria. *J Stem Cell Res Tissue Eng*. 2026 May 29;10(1):06–11.
68. Dominici M, Le Blanc K, Mueller I, Slaper-Cortenbach I, Marini FC, Krause DS, et al. Minimal criteria for defining multipotent mesenchymal stromal cells. The International Society for Cellular Therapy position statement. *Cytotherapy*. 2006;8(4):315–7.
69. Yang Z, Xiong H. Culture Conditions and Types of Growth Media for Mammalian Cells. In: *Biomedical Tissue Culture*. InTech; 2012. p. 1–16.
70. Thermo Fisher Scientific. DMEM (Dulbecco's Modified Eagle Medium): Product Information Sheet. Waltham, MA; 2022.
71. Freshney RI. *Culture of Animal Cells: A Manual of Basic Technique and Specialized Applications*. 8th ed. John Wiley & Sons; 2021.
72. Pilgrim CR, McCahill KA, Rops JG, Dufour JM, Russell KA, Koch TG. A Review of Fetal Bovine Serum in the Culture of Mesenchymal Stromal Cells

- and Potential Alternatives for Veterinary Medicine. *Front Vet Sci*. 2022;9(May):1–11.
73. Ryu AH, Eckalbar WL, Kreimer A, Yosef N, Ahituv N. Use antibiotics in cell culture with caution: Genome-wide identification of antibiotic-induced changes in gene expression and regulation. *Sci Rep*. 2017;7(1):1–9.
74. Mótyán J, Tóth F, Tózsér J. Research Applications of Proteolytic Enzymes in Molecular Biology. *Biomolecules*. 2013;3(4):923–42.
75. R Maniarasu, Mohan Kumar R. A Mini-Review on CO₂ Role in Cell Culture and Medicinal Applications. *J Cell Sci Ther*. 2022;13(3):1–4.
76. Budi HS, Setyawati MC, Anitasari S, Shen YK, Pebriani I, Ramadan DE. Cell detachment rates and confluence of fibroblast and osteoblast cell culture using different washing solutions. *Brazilian J Biol*. 2024;84:1–8.
77. Phelps J, Sanati-Nezhad A, Ungrin M, Duncan NA, Sen A. Bioprocessing of mesenchymal stem cells and their derivatives: Toward cell-free therapeutics. *Stem Cells Int*. 2018;2018.
78. Kim DS, Lee MW, Yoo KH, Lee TH, Kim HJ, Jang IK, et al. Gene expression profiles of human adipose tissue-derived mesenchymal stem cells are modified by cell culture density. *PLoS One*. 2014;9(1):1–10.
79. Lee JY, Kang MH, Jang JE, Lee JE, Yang Y, Choi JY, et al. Comparative analysis of mesenchymal stem cells cultivated in serum free media. *Sci Rep*. 2022;12(1):1–15.
80. Guiotto M, Raffoul W, Hart AM, Riehle MO, Di Summa PG. Human platelet lysate to substitute fetal bovine serum in hMSC expansion for translational applications: A systematic review. *J Transl Med*. 2020;18(1):1–14.
81. Zaenglein AL, Pathy AL, Schlosser BJ, Alikhan A, Baldwin HE, Berson DS, et al. Guidelines of care for the management of acne vulgaris. *J Am Acad Dermatol*. 2016;74(5):945-973.e33.
82. Fitz-gibbon S, Tomida S, Chiu B, Nguyen L, Du C, Miller JF, et al. Immunological and Metabolic Features of Pancreatic Ductal Adenocarcinoma Define Prognostic Subtypes of Disease. *Clin Cancer Res*. 2014;133(9):2152–60.

83. Izebe KS, Onaolapo JA, Ibrahim K, Ibrahim YKE, Oladosu P, Ya'aba Y, et al. Formulated Sorghum Media as Alternative to Nutrient broth in Cultivation of *Staphylococcus aureus* (NCTC 6571) and *Bacillus subtilis* (NCTC 8241). *Int J Curr Microbiol Appl Sci*. 2020;9(10):1845–51.
84. Cappuccino JG, Welsh C. *Microbiology, a laboratory manual*. Pearson Education Limited. 2018. 1–561 p.
85. Cappuccino. JG, Sherman N. New Features Make the Micro Lab More Clinical Application Gram Staining : The First. Clinical application. 2014. 97–153 p.
86. Tripathi, N; Sapra A. Gram Stain. In: StatPearls. Treasure Island: StatPearls Publishing; 2022.
87. Canene-Adams K. General PCR. *Methods Enzymol*. 2013;529:291–8.
88. Chandrasekar V, Knabel SJ, Anantheswaran RC. Modeling development of inhibition zones in an agar diffusion bioassay. *Food Sci Nutr*. 2015 Sep 27;3(5):394–403.
89. Balouiri M, Sadiki M, Ibensouda SK. Methods for in vitro evaluating antimicrobial activity: A review. *J Pharm Anal*. 2016;6(2):71–9.
90. Alcayaga-Miranda F, Cuenca J, Khoury M. Antimicrobial Activity of Mesenchymal Stem Cells: Current Status and New Perspectives of Antimicrobial Peptide-Based Therapies. *Front Immunol*. 2017 Mar 30;8.
91. Abbireddy S, Joseph J, Bagga B, Shukla S. Mesenchymal stem cell-derived conditioned medium demonstrates novel antibacterial effects in ocular bacterial infections. Freitag NE, editor. *Infect Immun*. 2026 Jun 9;94(6).
92. Wu X, Jin S, Ding C, Wang Y, He D, Liu Y. Mesenchymal Stem Cell-Derived Exosome Therapy of Microbial Diseases: From Bench to Bed. *Front Microbiol*. 2022 Jan 3;12.
93. Castro Ramos A, Widjaja Lomanto MY, Vuong C-K, Ohneda O, Fukushige M. Antibacterial effects of human mesenchymal stem cells and their derivatives: a systematic review. *Front Microbiol*. 2024 Sep 25;15.
94. Hombach M, Ochoa C, Maurer FP, Pfiffner T, Böttger EC, Furrer R. Relative contribution of biological variation and technical variables to zone diameter

variations of disc diffusion susceptibility testing. *J Antimicrob Chemother.* 2016 Jan;71(1):141–51.

95. Nussbaumer-Pröll AK, Knotzer S, Eberl S, Reiter B, Stimpfl T, Jäger W, et al. Impact of erythrocytes on bacterial growth and antimicrobial activity of selected antibiotics. *Eur J Clin Microbiol Infect Dis.* 2019 Mar 28;38(3):485–95.



