

## DAFTAR PUSTAKA

- Ahmed, L., Al-Massri, K., 2022. New Approaches for Enhancement of the Efficacy of Mesenchymal Stem Cell-Derived Exosomes in Cardiovascular Diseases. *Tissue Engineering and Regenerative Medicine*. 19(6):1129–1146.
- Arianto, S., 2021. Peran SNP rs3735520 dan rs 12536657 Gen Hepatocyte Growth Factor dan MET+110703 Gen Reseptor cMET Sebagai Faktor Predisposisi Miopia Role of SNP rs3735520 and rs12536657 Hepatocyte Growth Factor Genes and MET+110703 cMET Receptor Genes as Predisposing Factors for Myopia. *Hermina Health Sciences Journal*. 1(1):1-6.
- Bigatto, V., De Bacco, F., Casanova, E., Reato, G., Lanzetti, L., Isella, C., Sarotto, I., Comoglio, P.M., Boccaccio, C., 2015. TNF- $\alpha$  promotes invasive growth through the MET signaling pathway. *Molecular Oncology*. 9(2):377–388.
- Bui, T.V.A., Hwang, J.W., Lee, J.H., Park, H.J., Ban, K., 2021. Challenges and limitations of strategies to promote therapeutic potential of human mesenchymal stem cells for cell-based cardiac repair. *Korean Circulation Journal*. 51(2):97–113.
- Caffi V., Espinosa G., Gajardo G., Morales N., Durán M.C., Uberti B., Morán G., Plaza A., Henríquez C. 2020. Pre-conditioning of Equine Bone Marrow-Derived Mesenchymal Stromal Cells Increases Their Immunomodulatory Capacity. *Front. Vet. Sci*. 7(318): 1-13.
- Chang, C.P., Chio, C.C., Cheong, C.U., Chao, C.M., Cheng, B.C., Lin, M.T., 2013. Hypoxic preconditioning enhances the therapeutic potential of the secretome from cultured human mesenchymal stem cells in experimental traumatic brain injury. *Clinical Science*. 124(3):165–176.
- Chen, Q. H., Liu, A. R., Qiu, H. B., Yang, Y. 2015. Interaction between mesenchymal stem cells and endothelial cells restores endothelial permeability via paracrine hepatocyte growth factor in vitro. *Stem cell research & therapy*, 6(44): 1-12.
- Chen, S., Sun, F., Qian, H., Xu, W., Jiang, J., 2022. Preconditioning and Engineering Strategies for Improving the Efficacy of Mesenchymal Stem Cell-Derived Exosomes in Cell-Free Therapy. *Stem Cells International*. 2022: 1-18.
- Choi, W., Lee, Jaeman, Lee, Junghun, Lee, S.H., Kim, S., 2019. Hepatocyte growth factor regulates macrophage transition to the M2 phenotype and promotes murine skeletal muscle regeneration. *Frontiers in Physiology*. 10(914):1-11.
- Dahlan, M.S., 2012. *Statistik Untuk Kedokteran dan Kesehatan Edisi 5*. Penerbit Salemba, Jakarta.
- Damayanti, R.H., Rusdiana, T., Wathoni, N., 2021. Mesenchymal Stem Cell Secretome for Dermatology Application: A Review. *Dove Medical Press Lt*. 2021(14):1401–1412.
- Daneshmandi, L., Shah, S., Jafari, T., Bhattacharjee, M., Momah, D., Saveh-Shemshaki, N., Lo, K.W.H., Laurencin, C.T., 2020. Emergence of the Stem Cell Secretome in Regenerative Engineering', *Trends in Biotechnology*. 38(12):1373–1384.
- Dominici, M., Le Blanc, K., Mueller, I., Slaper-Cortenbach, I., Marini, F.C., Krause, D.S., Deans, R.J., Keating, A., Prockop, D.J., Horwitz, E.M., 2006. Minimal criteria for defining multipotent mesenchymal stromal cells. The

- International Society for Cellular Therapy position statement. *Cytotherapy*. 8(4):315–317.
- Eleuteri, S., Fierabracci, A. 2019. Insights into the Secretome of Mesenchymal Stem Cells and Its Potential Applications. *International Journal of Molecular Sciences*. 20(18): 1 – 22.
- Elshaer, S.L., Bahram, S.H., Rajashekar, P., Gangaraju, R., El-Remessy, A.B., 2022. Modulation of Mesenchymal Stem Cells for Enhanced Therapeutic Utility in Ischemic Vascular Diseases. *International Journal of Molecular Sciences*. 23(1):1-32.
- Ferraro, R. A., Ogunmoroti, O., Zhao, D., Ndumele, C. E., Rao, V., Pandey, A., Larson, N. B., Bielinski, S. J., Michos, E. D. 2021. Hepatocyte Growth Factor and Incident Heart Failure Subtypes: The Multi-Ethnic Study of Atherosclerosis (MESA). *Journal of Cardiac Failure* 27(9): 981–990.
- Ferreira, J.R., Teixeira, G.Q., Santos, S.G., Barbosa, M.A., Almeida-Porada, G., Gonçalves, R.M., 2018. Mesenchymal stromal cell secretome: Influencing therapeutic potential by cellular pre-conditioning. *Frontiers in Immunology*. 2837(9): 1-17.
- Finisguerra, V., Di Conza, G., Di Matteo, M., Serneels, J., Costa, S., Thompson, A. A., Wauters, E., Walmsley, S., Prenen, H., Granot, Z., Casazza, A., Mazzone, M. 2015. MET is required for the recruitment of anti-tumoural neutrophils. *Nature* 522(7556): 349–353.
- Fu, X., Liu, G., Halim, A., Ju, Y., Luo, Q., Song, G., 2019. Mesenchymal stem cell migration and tissue repair. *Cells MDPI Journal*. 8(784):1-17.
- Gong, X., Fan, G., Wang, W., Wang, G., 2014. Trimetazidin Protects Umbilical Cord Mesenchymal Stem Cells Against Hypoxia and Serum Deprivation Induced Apoptosis by Activation of Akt. *Cellular Physiology and Biochemistry*. 34(6):2245–2255.
- Guo, Y., Pan, W., Liu, S., Shen, Z., Xu, Y., Hu, L. 2019. ERK/MAPK Signalling Pathway and Tumorigenesis (Review). *EXPERIMENTAL AND THERAPEUTIC MEDICINE*. 19(3): 1997-2007.
- Han, Y., Yang, J., Fang, J., Zhou, Y., Candi, E., Wang J., Hua, D., Shao, C., Shi, Y. 2022. The secretion profile of mesenchymal stem cells and potential applications in treating human diseases. *Signal Transduction and Targeted Therapy*. 7(92): 1 – 19.
- Harrell, C.R., Fellabaum, C., Jovicic, N., Djonov, V., Arsenijevic, N., Volarevic, V., 2019. Molecular Mechanisms Responsible for Therapeutic Potential of Mesenchymal Stem Cell-Derived Secretome. *Cells MDPI Journal*. 8(467):1-34.
- Ishibe, S., Karihaloo, A., Ma, H., Zhang, J., Marlier, A., Mitobe, M., Togawa, A., Schmitt, R., Czyczk, J., Kashgarian, M., Geller, D. S., Thorgeirsson, S. S., Cantley, L. G. 2009. Met and The Epidermal Growth Factor Receptor Act Cooperatively to Regulate Final Nephron Number and Maintain Collecting Duct Morphology. *Development (Cambridge, England)*. 136(2): 337–345.
- Jahandideh, S., Maghsood, F., Ghahhari, N.M., Lotfinia, M., Mohammadi, M., Johari, B., Kadivar, M., 2017. The Effect of Trimetazidin and Diazoxide on Immunomodulatory Activity of Human Embryonic Stem Cell-Derived Mesenchymal Stem Cell Secretome. *Tissue and Cell*. 49(5):597–602.

- Kato, T. 2017. Biological Roles of Hepatocyte Growth Factor-Met Signaling from Genetically Modified Animals (Review). *Biomedical Reports* 7(9): 495-503.
- Kent L. 2009. Culture and Maintenance of Human Embryonic Stem Cells. *Journal of Visualized Experiments : JoVE*. 34(1427): 1 – 3.
- Komaratih, E., Rindiastuti, Y., Wirohadidjojo, Y., Rantam, F., Dinaryati, A., Lestari, N., Prakoeswa, C. 2019. The Resveratrol Increase of Hepatocyte Growth Factor (HGF) and Epidermal Growth Factor (EGF) Levels in Wharton's Jelly Mesenchymal Stem Cells (WJ-MSCS) Secretome: Toward Cell Free Therapy in Dry Eye Disease (DED). *Biochemical and Cellular Archives*. 19 (2): 4737 – 4743.
- Kroy, D.C., Schumacher, F., Ramadori, P., Hatting, M., Bergheim, I., Gassler, N., Boekschoten, M.V., Müller, M., Streetz, K.L., Trautwein, C. 2014. Hepatocyte specific deletion of c-Met leads to the development of severe non-alcoholic–steatohepatitis in mice. *Journal of Hepatology* 16(4): 883-890.
- Lee, N., Lee, J., Lee, S. H., Kim, S., Kim, S. 2018. Disproportionately High Levels of HGF Induce The Degradation of The C-Met Receptor Through The Proteasomal Degradation Pathway. *Biochemical And Biophysical Research Communications*. 505(3): 925–930.
- Lopes-Pacheco, M., Rocco, P.R.M., 2023. Functional Enhancement Strategies to Potentiate The Therapeutic Properties of Mesenchymal Stromal Cells for Respiratory Diseases. *Frontiers in Pharmacology*. 14(1067422):1-23.
- Maghsoud Behrooz, F., Nastaran, J., Ghahhari, M., Moradi, M., Kadivar, M., 2020. Conditioned Medium of Lipopolysaccharide-Treated Embryonic Stem Cell-Derived Mesenchymal Stem Cells Modulates In Vitro Secretion of Inflammatory Cytokines. *The Thai Journal of Pharmaceutical Sciences*. 44(3):152-158.
- Malatino, L. S., Cataliotti, A., Benedetto, F. A., Stancanelli, B., Bellanuova, I., Belluardo, P., Bonaiuto, L., Tripepi, G., Mallamaci, F., Castellino, P., Zoccali, C. 2003. Hepatocyte Growth Factor and Left Ventricular Geometry in End-Stage Renal Disease. *Hypertension*. 41(1): 88–92.
- Meiliana, A., Dewi, N.M., Wijaya, A., 2019. Mesenchymal Stem Cell Secretome: Cell-Free Therapeutic Strategy In Regenerative Medicine. *Indonesian Biomedical Journal*. 11(2):113–124.
- Meng, H. fang, Jin, J., Wang, H., Wang, L. Sheng., Wu, C. Tse., 2022. Recent Advances in The Therapeutic Efficacy of Hepatocyte Growth Factor Gene-Modified Mesenchymal Stem Cells in Multiple Disease Settings. *Journal of Cellular and Molecular Medicine*. 2022(26):4745–4755.
- Mitchell, A., Rivas, K. A., Smith, R., 3rd, Watts, A. E. 2015. Cryopreservation of equine mesenchymal stem cells in 95% autologous serum and 5% DMSO does not alter post-thaw growth or morphology in vitro compared to fetal bovine serum or allogeneic serum at 20 or 95% and DMSO at 10 or 5. *Stem cell research & therapy*. 6(231): 1-12.
- Moeinabadi-Bidgoli, K., Babajani, A., Yazdanpanah, G., Farhadhosseinabadi, B., Jamshidi, E., Bahrami, S., Niknejad, H. 2021. Translational Insights Into



- Stem Cell Preconditioning: from Molecular Mechanisms to Preclinical Applications. *Biomedicine & Pharmacotherapy*. 142(112026): 1 – 18.
- Mousavinejad, M., Andrews, P.W., Shoraki, E.K., 2016. Current Biosafety Considerations in Stem Cell Therapy. *Cell journal*. 18(2):281–287.
- Nakamura, T., Mizuno, S., 2010. The discovery of Hepatocyte Growth Factor (HGF) and its Significance for Cell Biology, Life Sciences and Clinical Medicine. *Proceedings of the Japan Academy Series B: Physical and Biological Sciences*. 86(6):588–610.
- Noronha Nc, N.D.C., Mizukami, A., Caliári-Oliveira, C., Cominal, J.G., Rocha, J.L.M., Covas, D.T., Swiech, K., Malmegrim, K.C.R., 2019. Priming Approaches to Improve The Efficacy of Mesenchymal Stromal Cell-Based Therapies. *Stem Cell Research and Therapy*. 10(131):1-21.
- Ölander, M., Handin, N., Artursson, P. 2019. Image-Based Quantification of Cell Debris as a Measure of Apoptosis. *Analytical Chemistry*. 91(9): 5548 – 5552.
- Phelps, J., Sanati-Nezhad, A., Ungrin, M., Duncan, N.A., Sen, A., 2018. Bioprocessing of Mesenchymal Stem Cells And Their Derivatives: Toward Cell-Free Therapeutics. *Stem Cells International*. 2018(9415367):1-23.
- Pittenger, M.F., Discher, D.E., Péault, B.M., Phinney, D.G., Hare, J.M., Caplan, A.I., 2019. Mesenchymal Stem Cell Perspective: Cell Biology to Clinical Progress. *npj Regenerative Medicine*. 2019(22):1-15.
- Pulido-Escribano, V., Torrecillas-Baena, B., Camacho-Cardenosa, M., Dorado, G., Gálvez-Moreno, M.Á., Casado-Díaz, A., 2022. Role of Hypoxia Preconditioning in Therapeutic Potential of Mesenchymal Stem-Cell-Derived Extracellular Vesicles. *World Journal of Stem Cells*. 14(7):453–472.
- Putra, A., 2019. *Basic Molecular Stem Cell*. Unissula Press, Semarang.
- Sagaradze, G., Grigorieva, O., Nimiritsky, P., Basalova, N., Kalinina, N., Akopyan, Z., Efimenko, A., 2019. Conditioned Medium from Human Mesenchymal Stromal Cells: Towards the Clinical Translation. *International Journal of Molecular Sciences*, 20(7):1-16.
- Segeritz, C.P., Vallier, L., 2017. Cell Culture: Growing Cells as Model Systems In Vitro. *Basic Science Methods for Clinical Researchers*. 2017(9):151–172.
- Skrtic, S., Ohlsson, C. 2000. Cortisol Decreases Hepatocyte Growth Factor Levels in Human Osteoblast-Like Cells. *Calcified Tissue International*. 66(2): 108–112.
- Song, P., Han, T., Xiang, X., Wang, Y., Fang, H., Niu, Y., Shen, C. 2020. The Role of Hepatocyte Growth Factor in Mesenchymal Stem Cell-Induced Recovery in Spinal Cord Injured Rats. *Stem Cell Research & Therapy*. 11(178): 1-14.
- Su, Y., Xu, C., Cheng, W., Zhao, Yanmei, Sui, L., Zhao, Y., 2023. Pretreated Mesenchymal Stem Cells and Their Secretome: Enhanced Immunotherapeutic Strategies. *International Journal of Molecular Sciences*. 24(1277):1-38.
- Suparno, A.C., Rubinadzari, N., Kasasiah, A., 2022. Generasi Berikutnya: Sel Punca Mesenkim Sebagai Sistem Penghantaran Obat Berbasis Sel. *Majalah Farmasetika*. 7(2):121-140.

- Talukder, M. A., Menyuk, C. R., Kostov, Y. 2018. Distinguishing Between Whole Cells and Cell Debris Using Surface Plasmon Coupled Emission. *Biomedical Optics Express*. 9(4): 1977–1991.
- Tan, M.I., Alfarafisa, N.M., Septiani, P., Barlian, A., Firmansyah, M., Faizal, A., Melani, L., Nugrahapraja, H., 2022. Potential Cell-Based and Cell-Free Therapy for Patients with COVID-19. *Cells*. 11(2319):1-20.
- Tang, H., Gamdzyk, M., Huang, L., Gao, L., Lenahan, C., Kang, R., Tang, J., Xia, Y., Zhang, J. H. 2020. Delayed Recanalization After MCAO Ameliorates Ischemic Stroke By Inhibiting Apoptosis Via HGF/C-Met/STAT3/Bcl-2 Pathway in Rats. *Experimental Neurology*, 330(113359): 1-11.
- Thermo-Fisher Scientific (2023) *Subculturing Adherent Cells*. Available at: <https://www.thermofisher.com/id/en/home/references/gibco-cell-culture-basics/cell-culture-protocols/subculturing-adherent-cells.html> (Accessed: 20 September 2023).
- Tietze, S., Kräter, M., Jacobi, A., Taubenberger, A., Herbig, M., Wehner, R., Schmitz, M., Otto, O., List, C., Kaya, B., Wobus, M., Bornhäuser, M., Guck, J., 2019. Spheroid Culture of Mesenchymal Stromal Cells Results in Morphorheological Properties Appropriate for Improved Microcirculation. *Advanced Science*. 6(8):1-10.
- Wisel, S., Khan, M., Kuppusamy, M.L., Mohan, I.K., Chacko, S.M., Rivera, B.K., Sun, B.C., Hideg, K., Kuppusamy, P., 2009. Pharmacological Preconditioning of Mesenchymal Stem Cells with Trimetazidin (1-[2,3,4-Trimethoxybenzyl]Piperazine) Protects Hypoxic Cells Against Oxidative Stress and Enhances Recovery of Myocardial Function in Infarcted Heart Through Bcl-2 Expression. *Journal of Pharmacology and Experimental Therapeutics*, 329(2):543–550.
- Wu, Q., Qi, B., Liu, Y., Cheng, B., Liu, L., Li, Y., Wang, Q. 2013. Mechanisms underlying protective effects of trimetazidine on endothelial progenitor cells biological functions against H<sub>2</sub>O<sub>2</sub>-induced injury: involvement of antioxidation and Akt/eNOS signaling pathways. *European journal of pharmacology*, 707(3), 87–94.
- Wu, Z., Yu, L., Li, X., Li, X., 2021. Protective Mechanism of Trimetazidin in Myocardial Cells in Myocardial Infarction Rats through ERK Signaling Pathway. *BioMed Research International*. 2021(9924549):1-8.
- Yao, J. F., Li, X. J., Yan, L. K., He, S., Zheng, J. B., Wang, X. R., Zhou, P. H., Zhang, L., Wei, G. B., Sun, X. J. 2019. Role Of HGF/C-Met in The Treatment of Colorectal Cancer with Liver Metastasis. *Journal of Biochemical and Molecular Toxicology*, 33(6): 1 – 9.
- Yao, J., Ke, J., Zhou, Z., Tan, G., Yin, Y., Liu, M., Chen, J., Wu, W., 2019. Combination of HGF and IGF-1 Promotes Connexin 43 Expression and Improves Ventricular Arrhythmia After Myocardial Infarction Through Activating the MAPK/ERK and MAPK/p38 Signaling Pathways in A Rat Model. *Cardiovascular Diagnosis and Therapy*. 9(4):346–354.
- Zambelas, J. M., Karmouty-Quintana, H. 2023. Snakes and Ladders: A Potential Therapy of Hepatocyte Growth Factor and Pigment Epithelium-derived Factor in Pulmonary Hypertension. *American Journal of Respiratory Cell and Molecular Biology*. 69(1), 10–12.

- Zhao, L., Liu, X., Zhang, Y., Liang, X., Ding, Y., Xu, Y., Fang, Z., Zhang, F. (2016). Enhanced Cell Survival and Paracrine Effects of Mesenchymal Stem Cells Overexpressing Hepatocyte Growth Factor Promote Cardioprotection in Myocardial Infarction. *Experimental Cell Research*, 344(1), 30–39.
- Zhao, Y., Ye, W., Wang, Y.D., Chen, W.D., 2022. HGF/c-Met: A Key Promoter in Liver Regeneration. *Frontiers in Pharmacology*. 13(808855):1-10.
- Zhong ,W., Zhao, Y.,Tian, Y., Chen, M.,Lai, X. 2018. The Protective Effects of HGF Against Apoptosis in Vascular Endothelial Cells Caused by Peripheral Vascular Injury. *Acta Biochimica et Biophysica Sinica*. 50(7): 701–708.

