

## DAFTAR PUSTAKA

- Ankrum, J.A., Ong, J.F. and Jeffrey M. K. 2014. Mesenchymal stem cells: immune evasive, not immune privileged. *Nature Biotechnology* 32(3):252-260.
- Baghaei, K., Hashemi, S.M., Tokhanbigli, S., Rad, A.A., Assadzadeh-Aghdaei, H., Sharifian, A., and Mohammad R.Z. 2017. Isolation, differentiation, and characterization of mesenchymal stem cells from human bone marrow. *Gastroenterology and Hepatology from Bed to Bench* 10(3): 208–213.
- Bailon-Moscoso, N., Cevallos-Solorzano, G., Romero-Benavides, J.C., and Maria I.R.O. 2017. Natural Compounds as Modulators of Cell Cycle Arrest: Application for Anticancer Chemotherapies. *Current Genomics* 18(2): 108.
- Biorad. 2014. *Flow Cytometry Basics Guide*. <https://www.bio-rad-antibodies.com/static/2017/flow/flow-cytometry-basics-guide.pdf>. Diakses pada tanggal 12 Mei 2018.
- Blanpain, C., Lowry, W.E., Geoghegan, A., Polak, L. and Fuchs, E. 2004. Self-Renewal, Multipotency, and the Existence of Two Cell Populations within an Epithelial Stem Cell Niche. *Cell* 118: 635-648.
- Bongso, A. and Chui-Yee F. 2012. The Therapeutic Potential, Challenges and Future Clinical Directions of Stem Cells from the Wharton's Jelly of the Human Umbilical Cord. *Stem Cell Reviews and Reports* 9(2):227.
- Chen, S., Wu, B and Jianhua L. 2012. Effect of intravenous transplantation of bone marrow mesenchymal stem cells on neurotransmitters and synapsins in rats with spinal cord injury. *Research and Report : Stem Cells and Neural Regeneration* 7(19):1445.
- Coppe, J.P., Boysen, M., Sun, C.H., Wong, B.J., Kang, M.K., Park, N.H., Desprez, P.Y., Campisi, J. and Krtolica, A. 2008. A role for fibroblasts in mediating the effects of tobacco-induced epithelial cell growth and invasion. *Molecular Cancer Research* 6:1087–1088.
- Craig, W., Kay, R., Cutler, R.L., Lansdorp, P.M. 1993. Expression of thy-1 on human hematopoietic progenitor cells. *Journal of Experimental Medicine* 177:1331–1342.
- Dominici, M., Le Blanc K., Mueller, I., Slaper-Cortenbach, I., Marini, F., Krause, D., Deans, R., Keating, A., Prockop, D. and Horwitz E. 2006. Minimal criteria for defining multipotent mesenchymal stromal cells. *Cytotherapy* 8 315-317.
- Dorak, M.T. 2006. *Real-Time PCR*. Taylor and Francis Group. Oxford, p. 24-25.
- Erlich, H.A. 1989. *PCR Technology: Principles and Applications for DNA Amplification*. Stockton Press. New York.
- Eslaminejad, M.B., Rouhi, L., Arabnajafi, M. and Baharvand H. 2009. Rat marrow- derived mesenchymal stem cells developed in a medium supplemented with the autologous versus bovine serum. *Cell Biology International* 33:608.
- Farrell, R.E. 2010. *RNA Methodologies: A Laboratory Guide for Isolation and Characterization*. Academic Press. New York, p. 170.
- Frenette, P.S., Pinho, S., Lucas, D. and Scheiermann, C. 2013. Mesenchymal Stem Cell: Keystone of the Hematopoietic Stem Cell Niche and a Stepping-

- Stone for Regenerative Medicine. *Annual Review of Immunology* 31: 285-316.
- Garibyan, L. and Nidhi A. 2013. Research Techniques Made Simple: Polymerase Chain Reaction (PCR). *Journal of Investigative Dermatology* 133(3): e6.
- Geissler, S., Textor, M., Kuhnisch, J., Konnig, D., Klein, O., Ode, A., Pfitzner, T., Adjaye, J., Kasper, G. and Duda G.N. 2012. Functional comparison of chronological and in vitro aging: Differential role of the cytoskeleton and mitochondria in mesenchymal stromal cells. *PLoS ONE* 7: e52700.
- Harbour, J.W., Luo, R.X., Dei, S.A., Postigo, A.A. and Dean D.C. 1999. Cdk phosphorylation triggers sequential intramolecular interactions that progressively block Rb functions as cells move through G1. *Cell* 98(6):859-869.
- Hulspas, R., O’Gorman, M.R.G., Wood, B.L., Gratama, J.W. and Sutherland D. R. 2009. Considerations for the Control of Background Fluorescence in Clinical Flow Cytometry. *Clinical Cytometry* 76B:355-364.
- Horwitz E.M., Le Blanc K., Dominici M., Mueller I., Slaper-Cortenbach I., Marini F.C., Deans R.J., Krause D.S. and Keating A. 2005. Clarification of the nomenclature for MSC: The International Society for Cellular Therapy position statement. *Cytotherapy* 7(5):393-5.
- Jacobs, J.J., Kieboom, K., Marino, S., DePinho, R.A. and Maarten V.L. 1999. The oncogene and Polycombgroup gene bmi-1 regulates cell proliferation and senescence through the INK4A locus. *Nature* 397:164-168.
- Jensen, J., Hyllner, J. and Björquist P. 2009. Human embryonic stem cell technologies and drug discovery. *Journal of Cell Physiology* 219:513-519.
- Jin, H.J., Bae, Y.K., Kim, M., Kwon, S., Jeon, H.B., Choi, S.J., Kim, S.W., Yang, Y.S., Oh, W. and Chang J.W. 2013. Comparative Analysis of Human Mesenchymal Stem Cells from Bone Marrow, Adipose Tissue, and Umbilical Cord Blood as Sources of Cell Therapy. *International Journal of Molecular Sciences* 14(9): 17986-18001.
- Kern, S., Eichler, H., Stoeve, J., Klüter H and Bieback K. 2006. Comparative analysis of mesenchymal stem cells from bone marrow, umbilical cord blood, or adipose tissue. *Stem Cells* 24(5): 1294-12301.
- Kolios, G. and Moodley, Y. 2013. Introduction to Stem Cells and Regenerative Medicine. *Respiration* 85: 3-10.
- Kurniawan, F.D., Andarini, S.L. and Faisal Y. 2011. Peranan Penuaan dan Senescence Seluler dalam Patogenesis PPOK. *Jurnal Respirologi Indonesia* 31(4):224.
- Lazarev, V.F., Mikhaylova, E.R., Dutysheva, E.A., Suezov, R.V., Guzhova, I.V. and Margulis B.A. 2017. A hydrocortisone derivative binds to *GAPDH* and reduces the toxicity of extracellular polyglutamine-containing aggregates. *Biochemical and Biophysical Research Communications* 487 (3): 725.
- Lee, K.S., Cha, S.H., Kang, H.W., Song, J.Y., Lee, K.W., Ko, K.B. and Lee H.T. 2013. Effects of Serial Passage on the Characteristics and Chondrogenic Differentiation of Canine Umbilical Cord Matrix Derived Mesenchymal Stem Cells. *Asian-Australasian Journal of Animal Science* 26(4): 590.
- Leeper, N.J., Hunter, A.L. and J.P. Cooke. 2010. Stem Cell Therapy for Vascular Regeneration Adult, Embryonic, and Induced Pluripotent Stem Cells. *Circulation* 122:517-518.

- Malgieri, A., Eugenia K., Maria P.P. and Stefano G. 2010. Bone marrow and umbilical cord blood human mesenchymal stem cells: state of the art. *International Journal of Clinical and Experimental Medicine* 3(4): 248–269.
- Mather, J.P. and Roberts P.E. 1998. *Introduction to Cell and Tissue Culture Theory and Technique*. Plenum Press. New York, p. 210.
- Merck. 2018. *RT-PCR and RT-qPCR*. [https://www.sigmaaldrich.com/lifescience/molecular-biology/molecular-biology\\_products.html?TablePage=9620584](https://www.sigmaaldrich.com/lifescience/molecular-biology/molecular-biology_products.html?TablePage=9620584). Diakses pada tanggal 5 Juni 2018.
- Livak, K.J. and T.D. Schmittgen. 2001. Analysis of Relative Gene Expression Data Using Real-Time Quantitative PCR and the  $2^{-\Delta\Delta Ct}$  Method. *Methods* 25:402-408.
- Moore K.E., Mills J.F. and M.M. Thornton. 2006. Alternative sources of adult stem cells: a possible solution to the embryonic stem cell debate. *Gender Medicine* 3(3):161-168.
- Munti3n, S., Ramos, T.L., Diez-Campelo, M., Ros3n, B., S3nchez-Abarca, L.I., Misiewicz-Krzeminska, I., Preciado, S., Sarasquete, M., Rivas, J., Gonz3lez, M., S3nchez-Guijo, F. and Mar3a-Consuelo C. 2016. Microvesicles from Mesenchymal Stromal Cells Are Involved in HPC-Microenvironment Crosstalk in Myelodysplastic Patients. *PLoS ONE* 11(2): e0146722.
- Murry, C.E. and Keller G. 2008. Differentiation of embryonic stem cells to clinically relevant populations: lessons from embryonic development. *Cell* 132:661-680.
- Nan, W., Liu, R., Chen, H., Xu, Z., Chen, J., Wang, M., Yuan Z. 2015. Umbilical Cord Mesenchymal Stem Cells Combined with a Collagen-fibrin Double-layered Membrane Accelerates Wound Healing. *Wounds* 27(5):136.
- Nassiri, F., Cusimano, M.D., Scheithauer, B.W., Rotondo F., Fazio A., Yousef, G.M., Syro, L.V., Kovacs, K., Lloyd, R.V. 2011. Endoglin (CD105): A review of its role in angiogenesis and tumor diagnosis, progression and therapy. *Anticancer Research* 31:2283–2290.
- NIH. 2016. *Stem Cell Information Home Page*. In Stem Cell Information. Bethesda, MD: National Institutes of Health, U.S. Department of Health and Human Services [cited January 23, 2018] Available at <[//stemcells.nih.gov/info/basics/1.htm](http://stemcells.nih.gov/info/basics/1.htm)>
- Olsen J.V., Ong S.E., Mann M. 2004. Trypsin cleaves exclusively C-terminal to arginine and lysine residues. *Molecular & Cellular Proteomics* 3(6):608-14
- Park I.K., Morrison S.J. and Clarke M.F. 2004. Bmi1, stem cells, and senescence regulation. *Journal of Clinical Investigation* 113:175–179.
- \_\_\_\_\_, Qian D., Kiel M., Becker M.W., Pihalja M., Weissman I.L., Morrison S.J. and Michael FC. 2003. Bmi-1 is required for maintenance of adult self-renewing haematopoietic stem cells. *Nature* 423:302–305.
- Piccinato, C.A., Sertie, A.L., Torres, N., Ferretti, M. and Eliane A. 2015. High OCT4 and Low p16INK4A Expressions Determine In Vitro Lifespan of Mesenchymal Stem Cells. *Stem Cells International* 2015:1-2.
- Pittenger, M.F., Mackay, A.M., Beck, S.C., Jaiswal, R.K., Douglas, R., Mosca, J.D., Moorman, M.A., Simonetti, D.W., Craig, S. and Marshak, D. R. 1999. Multilineage potential of adult human mesenchymal stem cells. *Science* 284: 143–147

- R&D Systems. 2018. Flow Cytometry Protocol for Analysis of Cell Viability using Propidium Iodide. <https://www.rndsystems.com/resources/protocols/flow-cytometry-protocol-analysis-cell-viability-using-propidium-iodide>. Diakses pada tanggal 16 Juli 2018.
- Rodier, F., Munoz, D.P., Teachenor, R. Chu, V., Le, O. Bhaumik, D., Coppe, J.P., Campeau, E., Beausejour, C.M. and Kim, S.H. 2011. DNA-SCARS: Distinct nuclear structures that sustain damage-induced senescence growth arrest and inflammatory cytokine secretion. *Journal of Cell Science* 124:70.
- Sellner, L. N. and Turbett G.R. 1998. Comparison of three RT-PCR methods. *Biotechniques* 25(2):230–234.
- Shibata, K.R., Aoyama, T., Shima, Y., Fukiage, K., Otsuka, S., Furu, M., Kohno, Y., Ito, K., Fujibayashi, S., Neo, M., Nakayama, T., Namakamura, T. and Toguchida J. 2007. Expression of the p16INK4A Gene Is Associated Closely with Senescence of Human Mesenchymal Stem Cells and Is Potentially Silenced by DNA Methylation During In Vitro Expansion. *Stem Cells* 25:2372.
- Sino Biological. 2016. Flow Cytometry (FCM) /FACS | Fluorescence-activated cell sorting (FACS). <http://www.sinobiological.com/flow-cytometry-fcm-facs-fluorescence-activated-cell-sorting-facs.html>. Diakses pada tanggal 5 Juni 2018.
- Takahashi, K. and Yamanaka, S. 2006. Induction of pluripotentstem cells from mouse embryonic and adult fibroblast cultures by defined factors. *Cell* 126: 663–676.
- Tamajusuku, A.S., Carrillo-Sepulveda, M.A., Braganhol, E., Wink, M.R., Sarkis, J.J., Barreto-Chaves, M.L. and Battastini A.M. 2006. Activity and expression of ecto-5'-nucleotidase/CD73 are increased by thyroid hormones in vascular smooth muscle cells. *Molecular and Cellular Biochemistry* 289:65–72
- Tomlinson, M.J., Tomlinson, S., Yang, X.B. and Kirkham J. 2012. Cell separation : terminology and practical considerations. *Journal of Tissue Engineering* 4.
- Turinetto, V., Vitale, E., and Claudia G. 2016. Senescence in Human Mesenchymal Stem Cells: Functional Changes and Implications in Stem Cell-Based Therapy. *International Journal of Molecular Sciences* 17(7): 1164.
- Ullah, I., Subbarao RB. and Gyu JR. 2015. Human mesenchymal stem cells – current trends and future prospective. *Bioscience Reports* 35(2): 1-2.
- Vandenberk, B., Brouwers, B., Hatse, S. and Hans W. 2011. P16INKa : A central player in cellular senescence and a promising aging biomarker in elderly cancer patients. *Journal of Geriatric Oncology* 2(4):259-269.
- Wang, C., Kaltenboeck, B. and Freeman M.D (Eds). 2012. *Veterinary PCR Diagnostics*. Bentham Science. Netherland, 3-17.
- Wang, S., Hao, Z., Ji, M., Zhang, X. and Jun Lu. 2016. Cruciate ligament-derived mesenchymal stem cells: a potential cell source for cartilage regeneration. *Annals of Joint* 1:6.
- Wagner, W., Horn, P., Castoldi, M., Diehlmann, A., Bork, S., Saffrich, R., Benes, V., Blake, J., Pfister, S., Eckstein, V. and A. D. Ho. 2008. Replicative

- senescence of mesenchymal stem cells: a continuous and organized process. *PLoS ONE* 3(5): e2213.
- Wei, X., Yang, X., Han, Z.P., Qu F.F., Shao L. and Shi Y.F. 2013. Mesenchymal stem cells: a new trend for cell therapy. *Acta Pharmacologica Sinica* 34(6):747-54.
- Weiss, M.L. and Troyer D.L. 2006. Stem Cells in the Umbilical Cord. *Stem Cell Reviews and Report* 2(2): 155–162.
- Williams, A.R., Hare, J.M., Dimmeler, S. and Douglas L. 2011. Mesenchymal Stem Cells Biology, Pathophysiology, Translational Findings, and Therapeutic Implications for Cardiac Disease. *Circulation Research* 109:923-940.
- Xu J., Woods, C.R., Mora, A.L., Joodi, R., Brigham, K.L., Iyer, S. and Rojas M. 2007. Prevention of endotoxin-induced systemic response by bone marrow-derived mesenchymal stem cells in mice. *Am J Physiol Lung Cell Mol Physiol* 293(1):L131-141.
- Yamanaka, S. 2009. A Fresh Look at iPS Cells. *Cell* 137: 13-17.