

## DAFTAR PUSTAKA

- Abdi, R., Fiorina, P., Adra, C.N., Atkinson, M., dan Sayegh M.H. 2008. Immunomodulation by mesenchymal stem cells a potential therapeutic strategy for type 1 diabetes. *Diabetes*. 57 : 1759-1767
- Ahmed, R., Ramayya, P.J., Raju, N.K.B., Kumar, R.V.S., dan Rao, S.D. 2014. Microscopic studies on islets of langerhans of pancreas of adult albino rat. *Indian J Vet Anat*. 26 (2) : 97-98
- Akash, M.S.H., Shen, Q., Rehman, K., dan Chen, S. 2012. Interleukin-1 reseptor antagonis : a new therapy for type 2 diabetes mellitus. *J Pharm Sci*. 101 (5) : 1647-1658
- Akinola, O., Gabriel, M., Suleiman, A., dan Olorunsogbon, F. 2012. Treatment of alloxan-induced diabetic rats with metformin or glitazones is associated with amelioration of hyperglycaemia and neuroprotection. *Open Diab J*. 5 : 8-12
- American Diabetes Association*. 2011. Standards of Medical Care in Diabetes-2011. *Diab Care*. 34 : S11-S61
- American Diabetes Association*. 2015. Standards of medical care in diabetes-2015. *Diab Care*. 38 (1) : 1-94
- American Veterinary Medical Association*. 2013. The AVMA Guidelines for the Euthanasia of Animals : 2013 Edition
- Ansari, M.M., Sreekuma, T.R., Chandra, V., Dubey, P.K., Kumar. G.S., Amarpal dan Sharma, G.T. 2013. Therapeutic Potential of Canine Bone Marrow Derived Mesenchymal Stem Cells and its Conditioned Media in Diabetic Rat Wound Healing. *Stem Cell Res Ther*. 3:3
- Arslan, F., Lai, R.C., Smeets, M.B., Akeroyd, L., Choo, A., dan Agnor, E.N.E. 2013. Mesenchymal stem cell-derived exosomes increase ATP levels, decrease oxidative stress and activate PI3K/Akt pathway to enhance myocardial viability and prevent adverse remodeling after myocardial ischemia/reperfusion injury. *Stem Cell Res*. 10 : 301-12
- Atkinson, M.A., dan Eisenbarth G.S. 2001. Type 1 diabetes : new perspectives on disease pathogenesis and treatment. *Lancet*. 358 (9277) : 221 – 229
- Baglio, S.R., Pegtel, D.M., dan Baldini N. 2012. Mesenchymal stem cell secreted vesicles provide novel opportunities in (stem) cell-free therapy. *Front Physio*. 3 : 359

- Bansal, V.S., Raja, C.P., Venkataraman, K., dan Vijayalakshmi, M.A. 2013. Genes involved in pancreatic islet cell rejuvenation. *Indian J Med Res.* 137 (4) : 695–703
- Bollini, S., Gentili, C., Tasso, R., dan Cancedda, R. 2013. The regenerative role of the fetal and adult stem cell secretome. *J Clin Med.* 307-309
- Bonner-Weir, S., dan Weir, G.C. 2005. New source of pancreatic  $\beta$ cells. *Nat Biotechnol.* 23 : 857–861.
- Bruno, S., Deregibus, M.C., dan Camussi, G. 2015. The secretome of mesenchymal stromal cells : Role of extracellular vesicles in immunomodulation. *Immunol Lett.*
- Can A. 2012. Adult and Embryonic Stem Cells. 1st ed. Springer : Ottawa
- Caplan, A.I. dan Dennis, J.E. 2006. Mesenchymal stem cells as trophic mediators. *J Cell Biochem.* 98 : 1076–1084
- Carpanetto, A., Gai, C., Favaro, E., Zanone, M.M., dan Camussi, G. 2015. Potential immune modulatory action of mesenchymal stem cell-derived extracellular vesicles in type 1 diabetes. *Int J Stem Cell Res Ther.* 2 : 012
- Carpenter, J.W. 2013. *Exotic Animal Formulary Fourth Edition.* Elsevier Inc. : Missouri
- Carvalho, E.N., Carvalho, N.A.S., dan Ferreira, L.M. 2003. Experimental model of induction of diabetes mellitus in rats. *Acta Cir Bras.* 8
- Chung, C.H., Hao, E., Piran, R., Keinan, E., dan Levine, F. 2010. Pancreatic  $\beta$ -cell neogenesis by direct conversion from mature  $\alpha$ -cells. *Stem Cells.* 28 (9) : 1630-1638
- Collino, F., Deregibus, M.C., Bruno, S., Sterpone, L., dan Aghemo, G. 2010. Microvesicles derived from adult human bone marrow and tissue specific mesenchymal stem cells shuttle selected pattern of miRNAs. *PLoS One.* 5: e11803
- De Breuck, S., Lardon, J., Rooman, I., dan Bouwens, L. 2003. Netrin1 expression in fetal and regenerating rat pancreas and its effect on the migration of human pancreatic duct and porcine islet precursor cells. *Diabetologia.* 46 : 926 – 933
- Dellmann, H.D., dan Brown, E.M., 1992. *Buku Teks Histologi Veteriner edisi 3.* UI-Press : Jakarta

- Ding, D.C., Shyu, W.C., dan Lin, S.Z. 2011. Mesenchymal stem cells. *Cell Transplant.* 20 : 5-14
- Dipiro, J.T, Talbert, R.L., Yee, G.C., Matzke, G.R., Wells, B.G., dan Posey, L.M. 2008. *Pharmacotherapy a pathophysiologic approach ed. 7<sup>th</sup>*. The McGraw-Hill Companies : United States of America Inc. ; 1333-1368.
- Drigo, R.A., Ali, Y., Diez, J., Srinivasan, D.K., Berggren, P.O., dan Boehm, B.O. 2015. New insights into the architecture of the islet of Langerhans : a focused cross-species assessment. *Diabetologia.* 58 : 2218-2228
- Eberhard, D., Kragl, M., dan Lammert, E. 2010. ‘Giving and taking’: endothelial and  $\beta$ -cells in the islets of Langerhans. *Trends endocrin Met.* 21 (8) : 457–463
- Elayat, A.A., Nanggar, M.M., dan Tahir, M. 1995. An Immunocytochemical and Morphometric Study of Rat Pancreatic Islet. *J Analyt Chem.* 186 : 629-637
- Elsner, M., Gurgul-Convey, E., dan Lenzen, S. 2008. Relation between triketone structure, generation of reactive oxygen species, and selective toxicity of the diabetogenic agent alloxan. *Antioxid Redox Signal.* 10 (4) : 691 - 699
- Ezquer, M., Arango-Rodriguez, M., Giraud-Billoud, M., dan Ezquer, F. 2014. Mesenchymal stem cell therapy in type 1 diabetes mellitus and its main complications: from experimental findings to clinical practice. *J Stem Cell Res Ther.* 4 : 227
- Fitri, E., Andayani, T.M., dan Suparniati, E. 2015. Analisis biaya penyakit diabetes mellitus. *J Manaj Phar Prac.* 5 (1) : 61-66
- Gasa, R., Mrejen, C., Lynn, F.C., Cox, P., Sanchez, L., dan Yang, K.Y. 2008. Induction of pancreatic islet cell differentiation by the neurogenin—neuro D cascade. *Differentiation.* 76 : 381–391.
- Greenstein, B. dan Wood, D. 2010. *At a Glance : sistem endokrin edisi ke dua.* Erlangga : Jakarta
- Hill, J.T., Chao, C.S., Anderson, K.R., Kaufman, F., Johnson, C.W., dan Sussel, L. 2010. Nkx2.2 activates the ghrelin promoter in pancreatic islet cells. *Mol Endocrinol.* 24 : 381–390.
- Himawan, I.W., Pulungan, A.B., Tridjaja, B., dan Batubara, J.R.L. 2009. Komplikasi Jangka pendek dan jangka panjang diabetes mellitus tipe 1. *Sari Pediatri.* 10(6) : 367-372

- Ikawati, Z. 2014. *Farmakologi Molekuler Target Aksi Obat Dan Mekanisme Molukulernya*. Gadjah Mada University Press : Yogyakarta ; 121-123
- Jin, H.J., Bae Y.K., Kim, M., Kwon, S.J., Jeon, H.B., dan Choi, S.J. 2013. Comparative analysis of human mesenchymal stem cells from bone marrow, adipose tissue, and umbilical cord blood as sources of cell therapy. *Int J Mol Sci*. 14 : 17986-8001
- Jo, J., Choi, M.Y., dan Koh, D-S. 2007. Size distribution of mouse Langerhans islets. *Biophys J*. 93 : 2655-2666
- Johnson, J.D., Ahmed, N.T., Luciani, D.S., Han, Z., Tran, H., Fujita, J., dkk. 2003. Increased islet apoptosis in Pdx1<sup>+/-</sup> mice. *J Clin Invest*. 111 : 1147 – 1160.
- Johnson, K.E. 1993. *Histology and Cell Biology*. Cetakan I. Penerbit Binarupa aksara : Jakarta ; 311-315
- Julio, C.F., Jessica, B.V., Liliana, C.G., dan Deisy, C.L. 2013. Anti-diabetic effect of coffea Arabica, in alloxan-induced diabetic rats. *Emir J Food Agric*. 25(10) : 772 - 777
- Kandulska, K., Szkudelski, T., dan Nogowski, L. 1999. Lipolysis induced by alloxan in rat adipocytes is not inhibited by insulin. *Physiol Res*. 48 : 113-117
- Karabulut, S., Coskun, Z.M., dan Bolkent, S. 2015. Immunohistochemical, apoptosis, and biochemical changes by dipeptidyl peptidase-4 inhibitor-sitagliptin in type-2 diabetic rats. *Pharmacol Rep*. 275 : 1-8
- Karen, G.B. dan Iris, R. 2010. *Imunologi Dasar*. Fakultas Kedokteran Universitas Indonesia : Jakarta
- Katsuda, T., Kosaka, N., Takeshita, F., dan Ochiya, T. 2013. The therapeutic potential of mesenchymal stem cell-derived extracellular vesicles. *Proteomics*. 13 : 1637–1653
- Kharouta, M., Miller, K., Kim, A., Wojcik, P., Kilimnik, G., Dey, A., Steiner, D.F., dan Hara, M. 2009. No Mantle formation in rodent islets – the prototype of islet revisited. *Diabetes Res Clin Pract*. 85 (3) : 252-257
- <sup>1</sup>Kim, A., Miller, K., Jo, J., Kilimnik, G., Wojcik, P., dan Hara, M. 2009. Islet architecture A comparative study. *Islets*. 1 (2) : 129-136
- <sup>2</sup>Kim, J.Y., Song, S.H., Kim, K.L., Ko, J.J., Im, J.E., Yie, S.W., Ahn, Y.K., Kim, D.K., dan Suh, W. 2010. Human cord blood derived endothelial progenitor cells and their conditioned media exhibit therapeutic

equivalence for diabetic wound healing. *Cell Transplant.* 19 (12) : 1635-1644

- <sup>3</sup>Kim, H.S., Choi, D.Y., Yun, S.J., Choi, S.M., Kang, J.W., Jung, J.W., Hwang, D., Kim, K.P., dan Kim, D.W. 2012. Proteomic analysis of microvesicles derived from human mesenchymal stem cells. *J Proteome Res.* 11 : 839–849
- <sup>4</sup>Kim, S., Choi, Y., Ko, E., Lim, S., Lee, C., dan Kim, D. 2012. Glucose-stimulated insulin secretion of various mesenchymal stem cells after insulin-producing cell differentiation. *J Biosci Bioeng.* 113 (6) : 771-777
- <sup>5</sup>Kim, H.O., Choi, S-M., dan Kim, H-S. 2013. Mesenchymal stem cell-derived secretome and microvesicles as a cell-free therapeutics for neurodegenerative disorders. *Tissue Eng Regen Med.* 10 (3) : 93-101
- Konala, V.B.R., Mamidi, M.K., Bhonde, R., Das, A.K., Pochampally, R. dan Pal, R. 2015. The current landscape of mesenchymal stromal cell secretome: A new paradigm for cell-free regeneration. *Cytother.*
- Kong, P., Xie, X., Li, F., Liu, Y., dan Lu, Y. 2013. Placenta mesenchymal stem cell accelerates wound healing by enhancing angiogenesis in diabetic Goto-Kakizaki (GK) rats. *Biochem Biophys Res Commun.* 438 : 410–419
- Kotmakci, M., dan Cetintas, V.B. 2015. Extracellular vesicles as natural nanosized delivery sistem for small-molecule drugs and genetic material : steps towards the future nanomedicines. *J Pharm Pharm Sci.* 18 (3) : 396-413
- Kourembanas, S. 2015. Exosomes : vehicles of intercellular signaling, biomarkers, and vectors of cell therapy. *Ann Rev Phys.* 77 : 13-27
- Kozakowska, M., Kotlinowski, J., Grochot-Przeczek, A., Ciesla, M., Pilecki, B., Derlacz, R., Dulak, J., dan Jozkowicz, A. 2015. Myoblast-conditioned media improve regeneration and revascularization of ischemic muscles in diabetic mice. *Stem Cell Res Ther.* 6 : 61
- Kresno, S.B. 2013. *Imunologi : Diagnosis dan Prosedur Laboratorium, edisi kelima.* Badan Penerbit Fakultas Kedokteran Universitas Indonesia : Jakarta
- Kuroda, Y., dan Dezawa M. 2014. Mesenchymal stem cells and their subpopulation, pluripotent muse cells, in basic research and regenerative medicine. *Anat Rec.* 297 : 98-110

- Lai, R.C., Yeo, R.W., Tan, K.H., dan Lim, S.K. 2012. Exosomes for drug delivery—A novel application for the mesenchymal stem cell. *Biotechnol Adv.* 109 : 724–728
- Lee, C.S., Sund, N.J., Vatamaniuk, M.Z., Matschinsky, F.M., Stoffers, D.A., dan Kaestner, K.H. 2002. Foxa2 controls Pdx1 gene expression in pancreatic  $\beta$ cells in vivo. *Diabetes.* 51 : 2546–2551.
- Lenzen, S. 2007. Alloxan and streptozotocin diabetes. *Endocr.* 119–138
- Lenzen, S. 2008. The mechanisms of alloxan and streptozotocin-induced diabetes. *Diabetologia.* 51 : 216-226
- Leon, D.D.D. dan Stanley, C.A. 2007. Mechanisms of disease : advances in diagnosis and treatment of hyperinsulinism in neonates. *Nat Clin Prac Endocrin Met.* 3 (1) : 57-68
- Li, L., Yi, Z., Seno, M., dan Kojima, I. 2004. Activin A and betacellulin: effect on regeneration of pancreatic beta-cells in neonatal streptozotocin-treated rats. *Diabetes.* 53 (3) : 608-615.
- Li, M., Zhao, Y., Hao, H., Dai, H., Han, Q., Tong, C., Liu, J., Han, W., dan Fu, X. 2015. Mesenchymal stem cell-conditioned medium improves the proliferation and migration of keratinocytes in a diabetes-like microenvironment. *Int J Lower Extrem Wounds.* 14 (1) : 73-86
- Liu, M. dan Han, Z.C. 2008. Mesenchymal stem cells : biology and clinical potential in type 1 diabetes therapy. *J Cell Mol Med.* 12 (4) : 1155-1168
- Liu, S.H., Huang, J.P., Lee, R.K., Huang, M.C., Wu, Y.H., Chen, C.Y., dan Chen, C.P. 2010. Paracrine factors from human placental multipotent mesenchymal stromal cells protect endothelium from oxidative injury via STAT3 and manganese superoxide dismutase activation. *Biol Reprod.*, 82 : 905–913
- Madrigal, M., Rao, K.S., dan Riordan, N.H. 2014. A review of therapeutic effect of mesenchymal stem cell secretions and induction of secretory modification by different culture methods *J Translat Med.* 12(1): 260
- Maguire, G., Friedman, P., McCarthy, D., Friedman, R., dan Maniotis, A. 2013. Stem cell released molecules and exosomes in tissue engineering. *Proced Eng.* 59 : 270-278
- Mandrup-Poulsen, T., Pickersgill, L., dan Donath, M.Y. 2010. Blockade of interleukin 1 in type 1 diabetes mellitus. *Nat Rev Endocrinol.* 6 : 158-166

- Mao, S-Y., Javois, L.C., dan Kent, U.M. 1999. Overview of antibody use in immunocytochemistry dalam *Immunocytochemical methods and protocols 2<sup>nd</sup> ed.* Humana Press : New Jersey
- Matheka, M.D., Kitua, M., dan Alkizim, F.O. 2012. Peculiar glycemc patterns in alloxan-induced diabetes animal model. *Afr J Pharmacol Ther.* 1 (1) : 30-34
- Mu, J., Woods, J., Zhou, Y.P., Roy, R.S., Li, Z., dan Zycband, E. 2006. Chronic inhibition of dipeptidyl peptidase-4 with a sitagliptin analog preserves pancreatic  $\beta$ cell mass and function in a rodent model of type 2 diabetes. *Diabetes.* 55 : 1674–1695.
- Nichirei Biociences's. 2005. Principle and protocol detection system for rat tissue sections N-Histofine<sup>®</sup> Simple Stain Rat MAXPO. [https://www.nichirei.co.jp/bio/english/tech\\_info/pap/414191f.html](https://www.nichirei.co.jp/bio/english/tech_info/pap/414191f.html). (diakses tanggal 2 Desember 2015)
- Nugroho, A.E. 2006. Hewan Percobaan Diabetes Mellitus : Patologi dan Mekanisme Aksi Diabetogenik. *Biodiversitas*, 7 : 378 – 382
- Nugroho, A.E., Andrie, M., Warditiani, N.K., Siswanto, E., Pramono, S., dan Lukitaningsih, E. 2012. antidiabetic and antihyperlipidemic effect of *Andrographis paniculata* (Burm. f.) Nees and andrographolide in high-fructose-fat-fed rats. *Indian J Pharmacol.* 44 : 377-381
- Oreffo, R.O.C., Cooper, C., Mason, C., dan Clements, M. 2005. Mesenchymal stem cells lineage, plasticity, and skeletal the therapeutic potential. *Stem Cell Rev.* 1 : 169-178
- Paul, G., dan Anisimov, S.V. 2013. The secretome of mesenchymal stem cell : Potential implication for neuroregeneration. *Biochi.* 95 : 2245-2256
- Pawitan, J.A. 2014. Prospect of stem cell conditioned medium in regenerative medicine. *Biomed Res Int.*
- Pittenger, G.L., Taylor-Fishwick, D., dan Vinik, A.I. 2009. The role of islet neogenesis associated protein (INGAP) in pancreatic islet neogenesis. *Curr Protein Pept Sci.* 10 : 37 – 45
- Ranganath, S.H., Levy, O., Inamdar, M.S., dan Karp, J.M. 2012. Harnessing the mesenchymal stem cell secretome for the treatment of cardiovascular disease. *Cell Stem Cell.* 10 : 244–258.
- Rani, S., Ryan, A.E., Griffin, M.D., dan Ritter, T. 2015. Mesenchymal stem cell-derived extracellular vesicles : toward cell-free therapeutic applications. *Mol Ther.*

- Rees, D.A., dan Alcolado, J.C. 2005. Animal models of diabetes mellitus. *Diabetic Med.* 22 : 359-370
- Renjith, R.S., dan Rajamohan T. 2012. Protective and curative effects of *cocos nucifera* inflorescence on alloxan-induced pancreatic cytotoxicity in rats. 44(5) : 555-559
- Rohilla, A., dan Ali, S. 2012. Alloxan Induced Diabetes: Mechanisms and Effects. *Int. J. Res. Pharm. Biomed. Sci.* 3(2) : 819-823
- Rosenberg, L., Lipsett, M., Yoon, J.W., Prentki, M., Wang, R., dan Jun, H.S. 2004. A pentadecapeptide fragment of islet neogenesis associated protein increases  $\beta$ -cell mass and reverses diabetes in C57BL/6J mice. *Ann Surg.* 240 : 875-884
- Salomon, C., Ryan, J., Sobrevia, L., Kobayashi, M., Ashman, K., Mitchell, M., dan Rice, G.E. 2013. Exosomal signaling during hypoxia mediates microvascular endothelial cell migration and vasculogenesis. *PLoS One* : 8
- Sander, M., Sussel, L., Connors, J., Scheel, D., Kalamaras, J., dan Cruz, F.D. 2000. Homeobox gene Nkx6.1 lies downstream of Nkx2.2 in the major pathway of  $\beta$ cell formation in the pancreas. *Development.* 127 : 5533 – 5540
- Sandra, F., Sudiono J., Sidharta, E.A., Sunata, E.P., Sungkono, D.J., Dirgantara, Y., dan Chouw, A. 2014. Conditioned Media of human umbilical cord blood mesenchymal stem cell-derived secretome induced apoptosis and inhibited growth of HeLa cells. *Indonesia Biomed J.* 6(1) : 57-62
- Seymour, P.A., Freude, K.K., Tran, M.N., Mayes, E.E., Jensen, J., dan Kist, R. 2006. SOX9 is required for maintenance of the pancreatic progenitor cell pool. *Proc. Natl. Acad. Sci. USA.* 104 : 1865-1870
- Shapiro, A.M., Lakey, J.R., Ryan, E.A., Korbitt, G.S., Toth, E., Warnock, G.L., Kneteman, N.M., dan Rajotte, R.V. 2000. Islet transplantation in seven patient with type 1 diabetes mellitus using a glucocorticoid-free immunosuppressive regimen. *N Engl J Med.* 343 (4) : 230-238
- Shrestha, C., Zhao, L., Chen, K., He, H., dan Mo, Z. 2013. Enhanced healing of diabetic wounds by subcutaneous administration of human umbilical cord derived stem cells and their conditioned media. *Int J Endocr.*
- Song, I., Patel, O., Himpe, E., Muller, C.J.F., dan Bouwens, L., 2015. Beta Cell Mass Restoration in Alloxan-Diabetic Mice Treated with EGF and Gastrin. *PLoS ONE.* 10 (10) : 140-148

- Sosa-Pineda, B., Chowdry, K., Torres, M., Oliver, G., dan Gruss, P. 1997. The Pax4 gene is essential for differentiation of insulinproducing  $\beta$ cells in mammalian pancreas. *Nature*. 386 : 399–402
- Stanekzai, J., Isenovic, E.R., dan Mousa, S.A. 2012. Treatment options for diabetes : potential role of stem cells. *Diab Res Clin Pract*. 98 (3) : 361-368
- Suarez-Pinzon, W.L., Lakey, J.R., Brand, S.J., dan Rabinovitch, A. 2005. Combination therapy with epidermal growth factor and gastrin induces neogenesis of human islet  $\beta$ cells from pancreatic duct cells and an increase in functional  $\beta$ -cells mass. *J Clin Endocrinol Metab*. 90 : 3401 – 3409
- Suarez-Pinzon, W.L., Power, R.F., Yan, Y., Wasserfall, C., Atkinson, M., dan Rabinovitch, A. 2008. Combination therapy with glucagon like peptide-1 and gastrin restores normoglycemia in diabetic NOD mice. *Diabetes*. 57 : 3281–3288
- Subowo. 1992. *Histologi Umum Cetakan ke-II*. Penerbit Bumi Aksara : Jakarta ; 38-39
- Syamsudin dan Darmono. 2011. *Buku ajar farmakologi eksperimental*. Penerbit Universitas Indonesia (UI-Press) : Jakarta
- Szkudelski, T. 2001. The Mechanism of Alloxan and Streptozotocin Action in B Cell of the Rat Pancreas. *Physiol Res*. 50 : 534 -546
- Szkudelski, T., Kandulska, K., dan Okulicz, M. 1998. Alloxan in vivo does not only exert deleterious effects on pancreatic  $\beta$  cells. *Physiol Res*. 47 : 343 -346
- Tambajong, J. 1995. *Sinopsis Histologi. Cetakan I*. EGC : Jakarta ; 138-141
- Tan, X., Gong, Y-Z., Wu, P., Liao, D-F., dan Zheng, X-L. 2014. Mesenchymal stem cells-derived microparticles : A promising therapeutic strategy. *Int J Mol Sci*. 15 : 14348-14363
- Taniguchi, H., Yamato, E., Tashiro, F., Ikegami, H., Ogihara, T., dan Miyazaki, J. 2003.  $\beta$ cell neogenesis induced by adenovirus mediated gene delivery of transcription factor pdx1 into mouse pancreas. *Gene Therapy*. 10 : 15–23
- Tasaka, Y., Matsumoto, H., Inoue, Y., dan Hirata, Y. 1989. Contents and secretion of glucagon and insulin rat pancreatic islets from the viewpoint of their localization in pancreas. *J.Exp. Med*. 159 : 123-130

- Tiedge, M., Lortz, S., Drinkgern, J., dan Lenzen, S. 1997. Relation between antioxidant enzyme gene expression and antioxidative defense status of insulin-producing cells. *Diabetes*. 46 : 1733-1742
- Tran, C. dan Damaser, M.S. 2014. Stem cell as drug delivery methods : application of stem cell for regeneration. *Adv Drug Deliv Rev*.
- Trivedi, N.A., Mazumdar, B., Bhatt, J.D., dan Hemavathi, K.G. 2004. Effect of shilajit on blood glucose and lipid profile in alloxan-induced diabetic rats. *Indian J Pharmacol*. 36 (6) : 373-376
- Vija, L., Farge, D., Gautier, J.F., Vexiau, P., Dumitrache, C., Bourgarit, A., Verracchia, F., dan Larghero, J. 2009. Mesenchymal stem cells : stem cell therapy perspectives for type 1 diabetes. *Diab & Met*. 35 (2) : 85-93
- Wagers, A.J., dan Weissman, I.L. 2004. Plasticity of adult stem cells. *Cell*. 116 : 639-648
- Wakao, S., Kuroda, Y., Ogura, F., Shigemoto, T., dan Dezawa, M., 2012. Regenerative effects of mesenchymal stem cells: Contribution of muse cells, a novel pluripotent stem cell type that resides in mesenchymal cells. *Cells*. 1 : 1045-1060
- Walde, S.S., Dohle, C., Schott-Ohly, P., dan Gleichmann, H. 2002. Molecular target structures in alloxan-induced diabetes in mice. *Life Sci*. 71 : 1681-1694
- Wang, X., Misawa, R., Zielinski, M.C., Cowen, P., dan Jo, J. 2013. Regional Differences in Islet Distribution in the Human Pancreas - Preferential Beta-Cell Loss in the Head Region in Patients with Type 2 Diabetes. *PLoS ONE*. 8 (6): e67454
- Wheeler, M.B. dan Mac-Donald, P.E. 2003. Voltage-dependent K(+) channels in pancreatic beta cells: role, regulation and potential as therapeutic targets. *PubMed*. 46 (8) : 1046-62
- Wilcox, G. 2005. Insulin and Insulin Resistance. *Clin Biochem Rev*. 26 (2): 19-39
- Wild, S., Roglic, S., Green, A., Sicree, R., dan King, H. 2004. Global prevalence of diabetes : estimates for the year 2000 and projection for 2030. *Diab Care*. 27 (5) : 1047 - 1053
- Wilson, G.L., Patton, N.J., McCord, J.M., Mullins, D.W., dan Mossman, B.T. 1984. Mechanisms of streptozotocin- and alloxan-induced damage in rat  $\beta$  cells. *Diabetologia*, 27 (6) : 587-591

- Wobus, A.M., dan Boheler, K.R. 2005. Embryonic Stem Cells : Prospects for Developmental Biology and Cell Therapy. *Physiol Rev.* 85 : 635–678
- Wu, D. C., Boyd, A. S., dan Wood, K. J. 2007. Embryonic stem cell transplantation : Potential applicability in cell replacement therapy and regenerative medicine. *Front Biosci.* 12: 4525–4535
- Xiao, Y., Li, X., Hao, H., Cui, Y., Chen, M., Liu, L., dan Liu, Z. 2013. Secretome of mesenchymal stem cells. *Essent Mesen Stem Cell Biol Clin Translat.* 33-46
- Yamamoto, K., Miyagawa, J., Waguri, M., Sasada, R., Igarashi, K., Li, M., Nammo, T., Moriwaki, M., Imagawa, A., Yamagata, K., Nakajima, H., Namba, M., Tochino, Y., Hanafusa, T., dan Matsuzawa, Y. 200. Recombinant Human Betacellulin Promotes the Neogenesis of  $\beta$ -Cells and Ameliorates Glucose Intolerance in Mice With Diabetes Induced by Selective Alloxan Perfusion. *Diabetes.* 49 : 2021 - 2027
- Yoon, J.W., dan Jun, H.S. 2001. Cellular and molecular pathogenic mechanisms of insulin-dependent diabetes mellitus. *Annals New York Academ Sci.* 928 : 200 – 211
- Yu, B., Zhang, X., dan Li, X. 2014. Exosomes derived from mesenchymal stem cells. *Int J Mol Sci.* 15 : 4142-4157
- Zhang, H., Ables, E.T., Pope, C.F., Washington, M.K., Hipkens, S., dan Means, A.L. 2009. Multiple, temporalspecific roles for HNF6 in pancreatic endocrine and ductal differentiation. *Mech. Dev.* 126 : 958–973.