

REFERENCES

- Agrawal, H., Selokar, N. L., Saini, M., Singh, M. K., Chauhan, M. S., Palta, P., & Manik, R. S. (2018). Epigenetic alteration of donor cells with histone deacetylase inhibitor m-carboxycinnamic acid bishydroxymide improves the *in vitro* developmental competence of buffalo (*Bubalus bubalis*) cloned embryos. *Cellular reprogramming*, 20(1), 76-88.
- Aigner, B., Renner, S., Kessler, B., Klymiuk, N., Kurome, M., Wünsch, A., & Wolf, E. (2010). Transgenic pigs as models for translational biomedical research. *Journal of molecular medicine*, 88, 653-664.
- Akiyama, T., Kim, J. M., Nagata, M., & Aoki, F. (2004). Regulation of histone acetylation during meiotic maturation in mouse oocytes. *Molecular Reproduction and Development: Incorporating Gamete Research*, 69(2), 222-227.
- Anastasia, L., Sampaolesi, M., Papini, N., Oleari, D., Lamorte, G., Tringali, C., & Venerando, B. (2006). Reversine-treated fibroblasts acquire myogenic competence *in vitro* and in regenerating skeletal muscle. *Cell Death & Differentiation*, 13(12), 2042-2051.
- Baguisi, A., Behboodi, E., Melican, D. T., Pollock, J. S., Destrempes, M. M., Cammuso, C., & Midura, P. (1999). Production of goats by somatic cell nuclear transfer. *Nature biotechnology*, 17(5), 456-461.
- Bannister, A. J., & Kouzarides, T. (2011). Regulation of chromatin by histone modifications. *Cell research*, 21(3), 381-395.
- Berger, S. L., Kouzarides, T., Shiekhattar, R., & Shilatifard, A. (2009). An operational definition of epigenetics. *Genes & development*, 23(7), 781-783.
- Bird, A. (2002). DNA methylation patterns and epigenetic memory. *Genes & development*, 16(1), 6-21.
- Blackwell, L., Norris, J., Suto, C. M., & Janzen, W. P. (2008). The use of diversity profiling to characterize chemical modulators of the histone deacetylases. *Life sciences*, 82(21-22), 1050-105.
- Boquest, A. C., Grupen, C. G., Harrison, S. J., McIlpatrick, S. M., Ashman, R. J., d'Apice, A. J. F., & Nottle, M. B. (2002). Production of Cloned Pigs from Cultured Fetal Fibroblast Cells. *Biology of reproduction*, 66(5), 1283-1287. doi:10.1095/biolreprod66.5.1283.

- Bou G, Guo S, & Guo J. Effect of NANOG overexpression on porcine embryonic development and pluripotent embryonic stem cell formation *in vitro*. *Zygote*. 2022;30(3):324-329. doi:10.1017/S0967199421000678
- Bourc'his, D., Le Bourhis, D., Patin, D., Niveleau, A., Comizzoli, P., & Renard, J. P. (2001). Delayed and incomplete reprogramming of chromosome methylation patterns in bovine cloned embryos. *Curr. Biol.* 11, 1542–1546. doi: 10.1016/s0960-9822(01)00480-8.
- Brinster, R. L., Chen, H. Y., Trumbauer, M. E., Yagle, M. K., & Palmiter, R. D. (1985). Factors affecting the efficiency of introducing foreign DNA into mice by microinjecting eggs. *Proceedings of the National Academy of Sciences*, 82(13), 4438-4442.
- Bui, H. T., Kwon, D. N., Kang, M. H., Oh, M. H., Park, M. R., Park, W. J., & Kim, J. H. (2012). Epigenetic reprogramming in somatic cells induced by extract from germinal vesicle stage pig oocytes. *Development*, 139(23), 4330-4340.
- Bwanga, C. O., De Braganca, M. M., Einarsson, S., & Rodriguez-Martinez, H. (1990). Cryopreservation of boar semen in mini-and maxi-straws. *Journal of Veterinary Medicine Series A*, 37(1 -10), 651-658.
- Cao, S., Han, J., Wu, J., Li, Q., Liu, S., Zhang, W., & Li, N. (2014). Specific gene-regulation networks during the pre-implantation development of the pig embryo as revealed by deep sequencing. *BMC genomics*, 15, 1-13.
- Cao, Z., Li, Y., Chen, Z., Wang, H., Zhang, M., Zhou, N., & Zhang, Y. (2015). Genome-wide dynamic profiling of histone methylation during nuclear transfer-mediated porcine somatic cell reprogramming. *PloS one*, 10(12), e0144897.
- Cao, Z., Sui, L., Li, Y., Ji, S., Zhang, X., & Zhang, Y. (2012). Effects of chemically defined medium on early development of porcine embryos derived from parthenogenetic activation and cloning. *Zygote*, 20(3), 229-236.
- Chai, Z., Wu, J., Qi, Z., Liu, Y., Lv, Y., Zhang, Y., & Liu, Z. (2024). Molecular characterizations and functional roles of NANOG in early development of porcine embryos. *Gene*, 892, 147856.
- Chang, C.-C., Gao, S., Sung, L.-Y., Corry, G. N., Ma, Y., & Nagy, Z. P. (2010). Rapid elimination of the histone variant MacroH2A from somatic cell heterochromatin after nuclear transfer. *Cell. Reprogram.* 12, 43–53. doi: 10. 1089/cell.2009.0043.
- Chawalit, S., Nguyen, N. T., Tseng, J. K., Lo, N. W., Tu, C. F., & Ju, J. C. (2012). Trichostatin A and ascorbic acid assist in the development of porcine handmade cloned embryos via different physiologic pathways. *Reproductive Sciences*, 19(9), 976-986.

- Chen, S., Takanashi, S., Zhang, Q., Xiong, W., Zhu, S., Peters, E. C., & Schultz, P. G. (2007). Reversine increases the plasticity of lineage-committed mammalian cells. *Proceedings of the National Academy of Sciences*, 104(25), 10482-10487.
- Chen, S., Zhang, Q., Wu, X., Schultz, P. G., & Ding, S. (2004). Dedifferentiation of lineage-committed cells by a small molecule. *Journal of the American Chemical Society*, 126(2), 410-411.
- Chen, Z., & Zhang, Y. (2020). Role of mammalian DNA methyltransferases in development. *Annual review of biochemistry*, 89(1), 135-158.
- Chesné, P., Adenot, P. G., Viglietta, C., Baratte, M., Boulanger, L., & Renard, J.-P. (2002). Cloned rabbits produced by nuclear transfer from adult somatic cells. *Nature biotechnology*, 20(4), 366-369.
- Choudhary, K. K., Kavya, K. M., Jerome, A., & Sharma, R. K. (2016). Advances in reproductive biotechnologies. *Veterinary world*, 9(4), 388.
- Cibelli, J. B., Stice, S. L., Golueke, P. J., Kane, J. J., Jerry, J., Blackwell, C., & Robl, J. M. (1998). Cloned transgenic calves produced from nonquiescent fetal fibroblasts. *Science*, 280(5367), 1256-1258.
- Cooper, D. K., Gollackner, B., & Sachs, D. H. (2002). Will the pig solve the transplantation backlog?. *Annual review of medicine*, 53(1), 133-147.
- Costa, Y., Ding, J., Theunissen, T. W., Faiola, F., Hore, T. A., Shliha, P. V., & Wang, J. (2013). NANOG-dependent function of TET1 and TET2 in establishment of pluripotency. *Nature*, 495(7441), 370-374.
- Czernik, M., Anzalone, D. A., Palazzese, L., Oikawa, M., & Loi, P. (2019). Somatic cell nuclear transfer: Failures, successes and the challenges ahead. *International Journal of Developmental Biology*, 63(3-4-5), 123-130.
- Dean, W., Santos, F., Stojkovic, M., Zakhartchenko, V., Walter, J., Wolf, E., & Reik, W. (2001). Conservation of methylation reprogramming in mammalian development: aberrant reprogramming in cloned embryos. *Proceedings of the National Academy of Sciences*, 98(24), 13734-13738.
- Dejosez, M., & Zwaka, T. P. (2012). Pluripotency and nuclear reprogramming. *Annual review of biochemistry*, 81(1), 737-765.
- Deshmukh, R. S., Østrup, O., Østrup, E., Vejlsted, M., Niemann, H., Lucas-Hahn, A., & Hyttel, P. (2011). DNA methylation in porcine preimplantation embryos developed *in vivo* and produced by *in vitro* fertilization, parthenogenetic activation and somatic cell nuclear transfer. *Epigenetics*, 6(2), 177-187.

- Endo, T., Naito, K., Aoki, F., Kume, S., & Tojo, H. (2005). Changes in histone modifications during *in vitro* maturation of porcine oocytes. *Molecular Reproduction and Development: Incorporating Gamete Research*, 71(1), 123-128.
- Enright, B. P., Kubota, C., Yang, X., & Tian, X. C. (2003). Epigenetic characteristics and development of embryos cloned from donor cells treated by trichostatin A or 5-aza-2'-deoxycytidine. *Biology of reproduction*, 69(3), 896-901.
- Fauquet, C. M., Mayo, M. A., Maniloff, J., Desselberger, U., & Ball, L. A. (Eds.). (2005). *Virus taxonomy: VIIIth report of the International Committee on Taxonomy of Viruses*. Academic Press.
- Finnin, M. S., Donigian, J. R., Cohen, A., Richon, V. M., Rifkind, R. A., Marks, P. A., & Pavletich, N. P. (1999). Structures of a histone deacetylase homologue bound to the TSA and SAHA inhibitors. *Nature*, 401(6749), 188-193.
- Fischer, K., Kraner-Scheiber, S., Petersen, B., Rieblinger, B., Buermann, A., Flisikowska, T., & Schnieke, A. (2016). Efficient production of multi-modified pigs for xenotransplantation by 'combineering', gene stacking and gene editing. *Scientific reports*, 6(1), 29081.
- Fischle, W., Wang, Y., & Allis, C. D. (2003). Histone and chromatin cross-talk. *Current opinion in cell biology*, 15(2), 172-183.
- Fulka, J., Fulka, H., Slavik, T., Okada, K., & Fulka, J. (2006). DNA methylation pattern in pig *in vivo* produced embryos. *Histochemistry and cell biology*, 126, 213-217.
- Galli, C., & Lazzari, G. (2021). 25th ANNIVERSARY OF CLONING BY SOMATIC-CELL NUCLEAR TRANSFER: Current applications of SCNT in advanced breeding and genome editing in livestock. *Reproduction*, 162(1), F23-F32.
- Galli, C., Lagutina, I., Crotti, G., Colleoni, S., Turini, P., Ponderato, N., & Lazzari, G. (2003). A cloned horse born to its dam twin. *Nature*, 424(6949), 635-635.
- Gao, S., Chung, Y. G., Parseghian, M. H., King, G. J., Adashi, E. Y., & Latham, K. E. (2004). Rapid H1 linker histone transitions following fertilization or somatic cell nuclear transfer: evidence for a uniform developmental program in mice. *Developmental biology*, 266(1), 62-75.
- George, A., Sharma, R., Singh, K. P., Panda, S. K., Singla, S. K., Palta, P., & Chauhan, M. S. (2011). Production of cloned and transgenic embryos using buffalo (*Bubalus bubalis*) embryonic stem cell-like cells isolated from *in vitro* fertilized and cloned blastocysts. *Cellular Reprogramming (Formerly "Cloning and Stem Cells")*, 13(3), 263-272.
- Gioia, L., Barboni, B., Turriani, M., Capacchietti, G., Pistilli, M. G., Berardinelli, P., & Mattioli, M. (2005). The capability of reprogramming the male chromatin after

- fertilization is dependent on the quality of oocyte maturation. *Reproduction*, 130(1), 29-39.
- Guenther, M. G., Levine, S. S., Boyer, L. A., Jaenisch, R., & Young, R. A. (2007). A chromatin landmark and transcription initiation at most promoters in human cells. *Cell*, 130(1), 77-88.
- Gurdon, J. B., & Wilmut, I. (2011). Nuclear transfer to eggs and oocytes. *Cold Spring Harbor Perspectives in Biology*, 3(6), a002659.
- Hao, Y., Mathialagan, N., Walters, E., Mao, J., Lai, L., Becker, D., & Prather, R. S. (2006). Osteopontin reduces polyspermy during *in vitro* fertilization of porcine oocytes. *Biology of reproduction*, 75(5), 726-733.
- He, R., Liu, B., Geng, B., Li, N., & Geng, Q. (2023). The role of HDAC3 and its inhibitors in regulation of oxidative stress and chronic diseases. *Cell Death Discovery*, 9(1), 131.
- Heytens, E., Soleimani, R., Lierman, S., De Meester, S., Gerris, J., Dhont, M., & De Sutter, P. (2008). Effect of ionomycin on oocyte activation and embryo development in mouse. *Reproductive biomedicine online*, 17(6), 764-771.
- Hou, L., Ma, F., Yang, J., Riaz, H., Wang, Y., Wu, W., & Xiong, Y. (2014). Effects of histone deacetylase inhibitor oxamflatin on *in vitro* porcine somatic cell nuclear transfer embryos. *Cellular Reprogramming (Formerly" Cloning and Stem Cells")*, 16(4), 253-265.
- Houdebine, L. M., Dinnyés, A., Bánáti, D., Kleiner, J., & Carlander, D. (2008). Animal cloning for food: epigenetics, health, welfare and food safety aspects. *Trends in Food Science & Technology*, 19, S88-S95.
- Huan, Y. J., Zhu, J., Wang, H. M., Wu, Z. F., Zhang, J. G., Xie, B. T., & He, H. B. (2014). Epigenetic modification agents improve genomic methylation reprogramming in porcine cloned embryos. *Journal of Reproduction and Development*, 60(5), 377-382.
- Huang, J., Zhang, H., Yao, J., Qin, G., Wang, F., Wang, X., & Zhao, J. (2016). BIX-01294 increases pig cloning efficiency by improving epigenetic reprogramming of somatic cell nuclei. *Reproduction*, 151(1), 39-49.
- Hyttel, P., Laurincik, J., Rosenkranz, C., Rath, D., Niemann, H., Ochs, R. L., & Schellander, K. (2000). Nucleolar proteins and ultrastructure in preimplantation porcine embryos developed *in vivo*. *Biology of reproduction*, 63(6), 1848-1856.
- Ibtisham, F., Fahd Qadir, M. M., Xiao, M., & An, L. (2017). Animal cloning applications and issues. *Russian Journal of Genetics*, 53(9), 965-971.

- Iqbal, K., Jin, S. G., Pfeifer, G. P., & Szabo, P. E. (2011). Reprogramming of the paternal genome upon fertilization involves genome-wide oxidation of 5-methylcytosine. *Proceedings of the National Academy of Sciences of the United States of America*, 108(9), 3642–3647. doi: 10.1073/pnas.1014033108.
- Ito, S., D'Alessio, A. C., Taranova, O. V., Hong, K., Sowers, L. C., & Zhang, Y. (2010). Role of Tet proteins in 5mC to 5hmC conversion, ES-cell self-renewal and inner cell mass specification. *Nature* 466, 1129–1133. doi: 10.1038/nature09303.
- Ivanova, E., Canovas, S., Garcia-Martínez, S., Romar, R., Lopes, J. S., & Rizos, D., (2020). DNA Methylation Changes during Preimplantation Development Reveal Interspecies Differences and Reprogramming Events at Imprinted Genes. *Clin. Epigenet* 12 (1), 64. doi:10.1186/s13148-020-00857-x
- Izzo, A., & Schneider, R. (2010). Chatting histone modifications in mammals. *Brief. Funct. Genomics* 9, 429–443. doi: 10.1093/bfgp/elq024.
- Jeong, P. S., Yang, H. J., Park, S. H., Gwon, M. A., Joo, Y. E., Kim, M. J., & Sim, B. W. (2021). Combined chaetocin/trichostatin A treatment improves the epigenetic modification and developmental competence of porcine somatic cell nuclear transfer embryos. *Frontiers in Cell and Developmental Biology*, 9, 709574.
- Jin, J. X., Lee, S., Taweetchaipaisankul, A., Kim, G. A., & Lee, B. C. (2017). The HDAC Inhibitor LAQ824 Enhances Epigenetic Reprogramming and *In Vitro* Development of Porcine SCNT Embryos. *Cell Physiol Biochem*, 41(3), 1255–1266. doi:10.1159/000464389
- Jin, L., Guo, Q., Zhang, G. L., Xing, X. X., Xuan, M. F., Luo, Q. R., & Kang, J. D. (2018). The histone deacetylase inhibitor, CI994, improves nuclear reprogramming and *in vitro* developmental potential of cloned pig embryos. *Cellular reprogramming*, 20(3), 205–213.
- Jung, D. W., & Williams, D. R. (2011). Novel chemically defined approach to produce multipotent cells from terminally differentiated tissue syncytia. *ACS chemical biology*, 6(6), 553–562.
- Kato, Y., Tani, T., Sotomaru, Y., Kurokawa, K., Kato, J.-y., Doguchi, H., & Tsunoda, Y. (1998). Eight calves cloned from somatic cells of a single adult. *Science*, 282(5396), 2095–2098.
- Kavarana, S., Kwon, J. H., Zilinskas, K., Kang, L., Turek, J. W., Mohiuddin, M. M., & Rajab, T. K. (2022). Recent advances in porcine cardiac xenotransplantation: from aortic valve replacement to heart transplantation. *Expert Review of Cardiovascular Therapy*, 20(8), 597–608.

- Keefer, C. L. (2015). Artificial cloning of domestic animals. *Proceedings of the National Academy of Sciences*, 112(29), 8874-8878.
- Kemter, E., Schnieke, A., Fischer, K., Cowan, P. J., & Wolf, E. (2020). Xeno-organ donor pigs with multiple genetic modifications—the more the better?. *Current Opinion in Genetics & Development*, 64, 60-65.
- Keramari, M., Razavi, J., Ingman, K. A., Patsch, C., Edenhofer, F., Ward, C. M., & Kimber, S. J. (2010). Sox2 is essential for formation of trophectoderm in the preimplantation embryo. *PloS one*, 5(11), e13952.
- Kim, M., Yi, S. A., Lee, H., Bang, S. Y., Park, E. K., Lee, M. G., & Han, J. W. (2014). Reversine induces multipotency of lineage-committed cells through epigenetic silencing of miR-133a. *Biochemical and biophysical research communications*, 445(1), 255-262.
- Kim, Y. K., Choi, H. Y., Kim, N. H., Lee, W., Seo, D. W., Kang, D. W., & Kim, S. N. (2007). Reversine stimulates adipocyte differentiation and downregulates Akt and p70s6k signaling pathways in 3T3-L1 cells. *Biochemical and biophysical research communications*, 358(2), 553-558.
- Kirchhof, N., Carnwath, J. W., Lemme, E., Anastassiadis, K., Scholer, H., & Niemann, H. (2000). Expression pattern of Oct-4 in preimplantation embryos of different species. *Biology of reproduction*, 63(6), 1698-1705.
- Kobayashi, W., & Kurumizaka, H. (2019). Structural transition of the nucleosome during chromatin remodeling and transcription. *Current opinion in structural biology*, 59, 107-114.
- Kuo, C. H., Lu, Y. C., Tseng, Y. S., Shi, C. S., Chen, S. H., Chen, P. T., & Lee, Y. R. (2014). Reversine induces cell cycle arrest, polyploidy, and apoptosis in human breast cancer cells. *Breast Cancer*, 21(3), 358-369.
- Lai, L., Kolber-Simonds, D., Park, K. W., Cheong, H. T., Greenstein, J. L., Im, G. S., & Prather, R. S. (2002). Production of α -1, 3-galactosyltransferase knockout pigs by nuclear transfer cloning. *Science*, 295(5557), 1089-1092.
- Lai, L., & Prather, R. S. (2003). Creating genetically modified pigs by using nuclear transfer. *Reproductive Biology and Endocrinology*, 1(1), 1-6.
- Lee, B. C., Kim, M. K., Jang, G., Oh, H. J., Yuda, F., Kim, H. J., & Schatten, G. (2005). Dogs cloned from adult somatic cells. *Nature*, 436(7051), 641-641.
- Lee, K., & Prather, R. S. (2013). Advancements in somatic cell nuclear transfer and future perspectives. *Animal Frontiers*, 3(4), 56-61.
- Lee, K., Uh, K., & Farrell, K. (2020). Current progress of genome editing in livestock. *Theriogenology*, 150, 229-235.

- Lee, K., Farrell, K., & Uh, K. (2020). Application of genome-editing systems to enhance available pig resources for agriculture and biomedicine. *Reproduction, Fertility and Development*, 32(2), 40-49.
- Lee, Y. R., Wu, W. C., Ji, W. T., Chen, J. Y. F., Cheng, Y. P., Chiang, M. K., & Chen, H. R. (2012). Reversine suppresses oral squamous cell carcinoma via cell cycle arrest and concomitantly apoptosis and autophagy. *Journal of biomedical science*, 19(1), 1-12.
- Lewis, I. M., French, A. J., Tecirlioglu, R. T., Vajta, G., McClintock, A. E., Nicholas, K. R., & Trounson, A. O. (2004). Commercial aspects of cloning and genetic modification in cattle. *Australian Journal of Experimental Agriculture*, 44(11), 1105-1111.
- Li, E., & Zhang, Y. (2014). DNA methylation in mammals. *Cold Spring Harbor perspectives in biology*, 6(5), a019133.
- Li, Z., Sun, X., Chen, J., Liu, X., Wisely, S. M., Zhou, Q., & Engelhardt, J. F. (2006). Cloned ferrets produced by somatic cell nuclear transfer. *Developmental biology*, 293(2), 439-448.
- Liang, G., Lin, J. C., Wei, V., Yoo, C., Cheng, J. C., Nguyen, C. T., & Jones, P. A. (2004). Distinct localization of histone H3 acetylation and H3-K4 methylation to the transcription start sites in the human genome. *Proceedings of the National Academy of Sciences*, 101(19), 7357-7362.
- Ling, L., Hu, F., Ying, X., Ge, J., & Wang, Q. (2018). HDAC6 inhibition disrupts maturational progression and meiotic apparatus assembly in mouse oocytes. *Cell Cycle*, 17(5), 550-556.
- Liu, L., Liu, Y., Gao, F., Song, G., Wen, J., Guan, J., & Li, Z. (2012). Embryonic development and gene expression of porcine SCNT embryos treated with sodium butyrate. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*, 318(3), 224-234.
- Liu, S., Bou, G., Sun, R., Guo, S., Xue, B., Wei, R., & Liu, Z. (2015). Sox2 is the faithful marker for pluripotency in pig: evidence from embryonic studies. *Developmental dynamics*, 244(4), 619-627.
- Liu, W., Liu, X., Wang, C., Gao, Y., Gao, R., Kou, X., & Gao, S. (2016). Identification of key factors conquering developmental arrest of somatic cell cloned embryos by combining embryo biopsy and single-cell sequencing. *Cell discovery*, 2(1), 1-15.
- Liu, X., Wang, Y., Gao, Y., Su, J., Zhang, J., Xing, X., & Zhang, Y. (2018). H3K9 demethylase KDM4E is an epigenetic regulator for bovine embryonic development and a defective factor for nuclear reprogramming. *Development*, 145(4), dev158261.

- Loh, Y. H., Wu, Q., Chew, J. L., Vega, V. B., Zhang, W., Chen, X., & Ng, H. H. (2006). The Oct4 and Nanog transcription network regulates pluripotency in mouse embryonic stem cells. *Nature genetics*, 38(4), 431-440.
- Loi, P., Iuso, D., Czernik, M., & Ogura, A. (2016). A new, dynamic era for somatic cell nuclear transfer?. *Trends in biotechnology*, 34(10), 791-797.
- Lu, C. H., Liu, Y. W., Hua, S. C., Yu, H. I., Chang, Y. P., & Lee, Y. R. (2012). Autophagy induction of Reversine on human follicular thyroid cancer cells. *Biomedicine & Pharmacotherapy*, 66(8), 642-647.
- Lu, F., Shi, D., Wei, J., Yang, S., & Wei, Y. (2005). Development of embryos reconstructed by interspecies nuclear transfer of adult fibroblasts between buffalo (*Bubalus bubalis*) and cattle (*Bos indicus*). *Theriogenology*, 64(6), 1309-1319.
- Lu, T., Yang, B., Wang, R., & Qin, C. (2020). Xenotransplantation: current status in preclinical research. *Frontiers in immunology*, 10, 3060.
- Lu, Y. C., Lee, Y. R., Liao, J. D., Lin, C. Y., Chen, Y. Y., Chen, P. T., & Tseng, Y. S. (2016). Reversine induced multinucleated cells, cell apoptosis and autophagy in human non-small cell lung cancer cells. *PLoS one*, 11(7), e0158587.
- Lv, L., Lu, X., Feng, T., ur Rehman, S., Sun, J., Wu, Z., & Cui, K. (2020). Valproic acid enhances *in vitro* developmental competence of porcine handmade cloned embryos. *Livestock Science*, 233, 103957.
- Ma, P., & Schultz, R. M. (2016). HDAC1 and HDAC2 in mouse oocytes and preimplantation embryos: Specificity versus compensation. *Cell Death & Differentiation*, 23(7), 1119-1127.
- Marks, P. A., & Dokmanovic, M. (2005). Histone deacetylase inhibitors: discovery and development as anticancer agents. *Expert opinion on investigational drugs*, 14(12), 1497-1511.
- Marks, P. A., Richon, V. M., Breslow, R., & Rifkind, R. A. (2001). Histone deacetylase inhibitors as new cancer drugs. *Current opinion in oncology*, 13(6), 477-483.
- Masui, S., Nakatake, Y., Toyooka, Y., Shimosato, D., Yagi, R., Takahashi, K., & Niwa, H. (2007). Pluripotency governed by Sox2 via regulation of Oct3/4 expression in mouse embryonic stem cells. *Nature cell biology*, 9(6), 625-635.
- Matoba, S., Liu, Y., Lu, F., Iwabuchi, K. A., Shen, L., Inoue, A., & Zhang, Y. (2014). Embryonic development following somatic cell nuclear transfer impeded by persisting histone methylation. *Cell*, 159(4), 884-895.
- Men, H., Walters, E. M., Nagashima, H., & Prather, R. S. (2012). Emerging applications of sperm, embryo and somatic cell cryopreservation in maintenance, relocation and rederivation of swine genetics. *Theriogenology*, 78(8), 1720-1729.

- Meuwissen, T. H., Hayes, B. J., & Goddard, M. (2001). Prediction of total genetic value using genome-wide dense marker maps. *Genetics*, 157(4), 1819-1829.
- Miyamoto, K., Tsukiyama, T., Yang, Y., Li, N., Minami, N., Yamada, M., & Imai, H. (2009). Cell-free extracts from mammalian oocytes partially induce nuclear reprogramming in somatic cells. *Biology of reproduction*, 80(5), 935-943.
- Miyoshi, K., Mori, H., Mizobe, Y., Himaki, T., Yoshida, M., & Sato, M. (2010). Beneficial effects of Reversine on *in vitro* development of miniature pig somatic cell nuclear transfer embryos. *Journal of reproduction and Development*, 1001220245-1001220245.
- Montgomery, R. A., Stern, J. M., Lonze, B. E., Tatapudi, V. S., Mangiola, M., Wu, M., & Stewart, Z. A. (2022). Results of two cases of pig-to-human kidney xenotransplantation. *New England Journal of Medicine*, 386(20), 1889-1898.
- Nga, B. T. T., Tran Anh Dao, B., Nguyen Thi, L., Osaki, M., Kawashima, K., Song, D., & Le, V. P. (2020). Clinical and pathological study of the first outbreak cases of African swine fever in Vietnam, 2019. *Frontiers in Veterinary Science*, 7, 392.
- Niemann, H. (2016). Epigenetic reprogramming in mammalian species after SCNT-based cloning. *Theriogenology*, 86, 80–90. doi: 10.1016/j.theriogenology. 2016.04.021.
- Niemann, H., & Lucas-Hahn, A. (2012). Somatic cell nuclear transfer cloning: practical applications and current legislation. *Reproduction in Domestic Animals*, 47, 2-10.
- Ninova, M., Fejes Tóth, K., & Aravin, A. A. (2019). The control of gene expression and cell identity by H3K9 trimethylation. *Development*, 146(19), dev181180.
- Niu, D., Wei, H. J., Lin, L., George, H., Wang, T., Lee, I. H., & Yang, L. (2017). Inactivation of porcine endogenous retrovirus in pigs using CRISPR-Cas9. *Science*, 357(6357), 1303-1307.
- Oliveira, C. S., Saraiva, N. Z., de Souza, M. M., Tetzner, T. A., de Lima, M. R., & Garcia, J. M. (2010). Effects of histone hyperacetylation on the preimplantation development of male and female bovine embryos. *Reproduction, Fertility and Development*, 22(6), 1041-1048.
- Onishi, A., Iwamoto, M., Akita, T., Mikawa, S., Takeda, K., Awata, T., & Perry, A. C. (2000). Pig cloning by microinjection of fetal fibroblast nuclei. *Science*, 289(5482), 1188-1190.
- Ono, T., Li, C., Mizutani, E., Terashita, Y., Yamagata, K., & Wakayama, T. (2010). Inhibition of class IIb histone deacetylase significantly improves cloning efficiency in mice. *Biology of reproduction*, 83(6), 929-937.

- Pan, H., O'Brien, M. J., Wigglesworth, K., Eppig, J. J., & Schultz, R. M. (2005). Transcript profiling during mouse oocyte development and the effect of gonadotropin priming and development *in vitro*. *Developmental biology*, 286(2), 493-506.
- Park, S. J., Park, H. J., Koo, O. J., Choi, W. J., Moon, J. H., Kwon, D. K., & Lee, B. C. (2012). Oxamflatin improves developmental competence of porcine somatic cell nuclear transfer embryos. *Cellular Reprogramming* (Formerly "Cloning and Stem Cells"), 14(5), 398-406.
- Paterson, L., DeSousa, P., Ritchie, W., King, T., & Wilmut, I. (2003). Application of reproductive biotechnology in animals: implications and potentials: applications of reproductive cloning. *Animal reproduction science*, 79(3-4), 137-143.
- Peat, J. R., & Reik, W. (2012). Incomplete methylation reprogramming in SCNT embryos. *Nature genetics*, 44(9), 965-966.
- Perota, A., Lagutina, I., Duchi, R., Zanfrini, E., Lazzari, G., Judor, J. P., & Galli, C. (2019). Generation of cattle knockout for galactose- α 1, 3-galactose and N-glycolylneuraminic acid antigens. *Xenotransplantation*, 26(5), e12524.
- Polejaeva, I. A., Chen, S. H., Vaught, T. D., Page, R. L., Mullins, J., Ball, S., & Campbell, K. H. (2000). Cloned pigs produced by nuclear transfer from adult somatic cells. *Nature*, 407(6800), 86-90.
- Prather, R. S., Shen, M., & Dai, Y. (2008). Genetically modified pigs for medicine and agriculture. *Biotechnology and Genetic Engineering Reviews*, 25(1), 245-266.
- Prather, R., Hawley, R., Carter, D., Lai, L., & Greenstein, J. (2003). Transgenic swine for biomedicine and agriculture. *Theriogenology*, 59(1), 115-123.
- Qin, H., Zhao, A., Zhang, C., & Fu, X. (2016). Epigenetic control of reprogramming and transdifferentiation by histone modifications. *Stem Cell Reviews and Reports*, 12, 708-720.
- Reik, W., Dean, W., & Walter, J. (2001). Epigenetic reprogramming in mammalian development. *Science* 293, 1089–1093. doi: 10.1126/science. 1063443.
- Reik, W., Santos, F., Mitsuya, K., Morgan, H., & Dean, W. (2003). Epigenetic asymmetry in the mammalian zygote and early embryo: relationship to lineage commitment?. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, 358(1436), 1403-1409.
- Reynard, O., Jacquot, F., Evanno, G., Mai, H. L., Salama, A., Martinet, B., & Soulillou, J. P. (2016). Anti-EBOV GP IgGs lacking α 1-3-Galactose and Neu5Gc prolong survival and decrease blood viral load in EBOV-infected Guinea pigs. *PLoS One*, 11(6), e0156775.

- Roth, J., Korenchuk, S., Zhang, T., Loboda, A., Hardwick, J., Harrington, E., & Fantin, V. (2007). Mechanisms of *in vitro* acquired resistance to vorinostat (suberoylanilide hydroxamic acid, SAHA). *Cancer Research*, 67(9), 694-694.
- Ruijter, A. J. D., GENNIP, A. H. V., Caron, H. N., Kemp, S., & KUILENBURG, A. B. V. (2003). Histone deacetylases (HDACs): characterization of the classical HDAC family. *Biochemical Journal*, 370(3), 737-749.
- Rybouchkin, A., Kato, Y., & Tsunoda, Y. (2006). Role of histone acetylation in reprogramming of somatic nuclei following nuclear transfer. *Biology of Reproduction*, 74(6), 1083-1089.
- Sánchez-Vizcaíno, J. M., Mur, L., & Martínez-López, B. (2013). African swine fever (ASF): five years around Europe. *Veterinary microbiology*, 165(1-2), 45-50.
- Santos, F., & Dean, W. (2006). Using immunofluorescence to observe methylation changes in mammalian preimplantation embryos. *Nuclear Reprogramming: Methods and Protocols*, 129-138.
- Saraiya, M., Nasser, R., Zeng, Y., Addya, S., Ponnappan, R. K., Fortina, P., & Risbud, M. V. (2010). Reversine enhances generation of progenitor-like cells by dedifferentiation of annulus fibrosus cells. *Tissue Engineering Part A*, 16(4), 1443-1455.
- Schnieke, A. E., Kind, A. J., Ritchie, W. A., Mycock, K., Scott, A. R., Ritchie, M., & Campbell, K. H. (1997). Human factor IX transgenic sheep produced by transfer of nuclei from transfected fetal fibroblasts. *Science*, 278(5346), 2130-2133.
- Schultz, R. M. (2002). The molecular foundations of the maternal to zygotic transition in the preimplantation embryo. *Human reproduction update*, 8(4), 323-331.
- Shen, L., Wu, H., Diep, D., Yamaguchi, S., D'Alessio, A. C., & Fung, H. L. (2013). Genome-wide analysis reveals TET- and TDG-dependent 5-methylcytosine oxidation dynamics. *Cell* 153, 692–706. doi: 10.1016/j.cell.2013.04.002.
- Shi, Ai, J., Ouyang, Y., Huang, J., Lei, Z., Wang, Q., & Chen, D. (2008). Trichostatin A and nuclear reprogramming of cloned rabbit embryos. *Journal of animal science*, 86(5), 1106-1113.
- Shi, Zakhartchenko, V., & Wolf, E. (2003). Epigenetic reprogramming in mammalian nuclear transfer. *Differentiation: REVIEW*, 71(2), 91-113.
- Shin, T., Kraemer, D., Pryor, J., Liu, L., Rugila, J., Howe, L., & Westhusin, M. (2002). A cat cloned by nuclear transplantation. *Nature*, 415(6874), 859-859.
- Simmet, K., Wolf, E., & Zakhartchenko, V. (2020). Manipulating the epigenome in nuclear transfer cloning: Where, when and how. *International Journal of Molecular Sciences*, 22(1), 236.

- Smith, L. C., Bordignon, V., Babkine, M., Fecteau, G., & Keefer, C. (2000). Benefits and problems with cloning animals. *The Canadian Veterinary Journal*, 41(12), 919.
- Smith, Z. D., & Meissner, A. (2013). DNA methylation: roles in mammalian development. *Nature Reviews Genetics*, 14(3), 204-220.
- Sproul, D., Gilbert, N., & Bickmore, W. A. (2005). The role of chromatin structure in regulating the expression of clustered genes. *Nature Reviews Genetics*, 6(10), 775-781.
- Srirattana, K., Kaneda, M., & Parnpai, R. (2022). Strategies to improve the efficiency of somatic cell nuclear transfer. *International Journal of Molecular Sciences*, 23(4), 1969.
- Stuart, H. T., Van Oosten, A. L., Radzsheuskaya, A., Martello, G., Miller, A., Dietmann, S., & Silva, J. C. (2014). NANOG amplifies STAT3 activation and they synergistically induce the naive pluripotent program. *Current Biology*, 24(3), 340-346.
- Su, G. H., Sohn, T. A., Ryu, B., & Kern, S. E. (2000). A novel histone deacetylase inhibitor identified by high-throughput transcriptional screening of a compound library. *Cancer research*, 60(12), 3137-3142.
- Sun, J. M., Spencer, V. A., Chen, H. Y., Li, L., & Davie, J. R. (2003). Measurement of histone acetyltransferase and histone deacetylase activities and kinetics of histone acetylation. *Methods*, 31(1), 12-23.
- Sun, J., Cui, K., Li, Z., Gao, B., Jiang, J., Liu, Q., & Shi, D. (2020). Histone hyperacetylation may improve the preimplantation development and epigenetic status of cloned embryos. *Reproductive biology*, 20(2), 237-246.
- Sun, J., Liu, Q., Lv, L., Sun, R., Li, Z. P., Huang, B., & Shi, D. (2021). HDAC6 is involved in the histone deacetylation of *in vitro* maturation oocytes and the reprogramming of nuclear transplantation in pig. *Reproductive Sciences*, 28, 2630-2640.
- Suzuki, K., Asano, A., Eriksson, B., Niwa, K., Nagai, T., & Rodriguez-Martinez, H. (2002). Capacitation status and *in vitro* fertility of boar spermatozoa: Effects of seminal plasma, cumulus-oocyte-complexes-conditioned medium and hyaluronan. *International journal of andrology*, 25(2), 84-93.
- Taweekhaipaisankul, A., Jin, J. X., Lee, S., Kim, G. A., Suh, Y. H., Ahn, M. S., & Lee, B. C. (2019). Improved early development of porcine cloned embryos by treatment with quisinostat, a potent histone deacetylase inhibitor. *Journal of Reproduction and Development*, 65(2), 103-112.
- Thouas, G., Korfiatis, N., French, A. J., Jones, G. M., & Trounson, A. O. (2001). Simplified technique for differential staining of inner cell mass and trophectoderm cells

- of mouse and bovine blastocysts. *Reproductive biomedicine online*, 3(1), 25-29.
- Van Thuan, N., Bui, H. T., Kim, J. H., Hikichi, T., Wakayama, S., Kishigami, S., & Wakayama, T. (2009). The histone deacetylase inhibitor scriptaid enhances nascent mRNA production and rescues full-term development in cloned inbred mice. *Reproduction*, 138(2), 309.
- Waddington, C. H. (2012). The epigenotype. *International journal of epidemiology*, 41(1), 10-13.
- Wakayama, T., Perry, A. C., Zuccotti, M., Johnson, K. R., & Yanagimachi, R. (1998). Full-term development of mice from enucleated oocytes injected with cumulus cell nuclei. *Nature*, 394(6691), 369-374.
- Wang, F., Kou, Z., Zhang, Y., & Gao, S. (2007). Dynamic reprogramming of histone acetylation and methylation in the first cell cycle of cloned mouse embryos. *Biology of reproduction*, 77(6), 1007-1016.
- Wang, K. Y., Chen, C. C., & Shen, C. K. (2014). Active DNA demethylation of the vertebrate genomes by DNA methyltransferases: deaminase, dehydroxymethylase or demethylase? *Epigenomics* 6, 353-363. doi: 10.2217/epi.14.21.
- Wang, X., Qu, J., Li, J., He, H., Liu, Z., & Huan, Y. (2020). Epigenetic reprogramming during somatic cell nuclear transfer: recent progress and future directions. *Frontiers in Genetics*, 11, 205.
- Wang, Y. S., Xiong, X. R., An, Z. X., Wang, L. J., Liu, J., Quan, F. S., & Zhang, Y. (2011). Production of cloned calves by combination treatment of both donor cells and early cloned embryos with 5-aza-2'-deoxycytidine and trichostatin A. *Theriogenology*, 75(5), 819-825.
- Wang, Y., Su, J., Wang, L., Xu, W., Quan, F., Liu, J., & Zhang, Y. (2011). The effects of 5-aza-2'-deoxycytidine and trichostatin A on gene expression and DNA methylation status in cloned bovine blastocysts. *Cellular Reprogramming (Formerly "Cloning and Stem Cells")*, 13(4), 297-306.
- Wang, Z., Oron, E., Nelson, B., Razis, S., & Ivanova, N. (2012). Distinct lineage specification roles for NANOG, OCT4, and SOX2 in human embryonic stem cells. *Cell stem cell*, 10(4), 440-454.
- Wani, N. A., Wernery, U., Hassan, F., Wernery, R., & Skidmore, J. (2010). Production of the first cloned camel by somatic cell nuclear transfer. *Biology of reproduction*, 82(2), 373-379.

- Wen, D., Banaszynski, L. A., Rosenwaks, Z., Allis, C. D., & Rafii, S. (2014). H3.3 replacement facilitates epigenetic reprogramming of donor nuclei in somatic cell nuclear transfer embryos. *Nucleus* 5, 369–375. doi: 10.4161/nucl.36231.
- Whitworth, K. M., Mao, J., Lee, K., Spollen, W. G., Samuel, M. S., Walters, E. M., & Prather, R. S. (2015). Transcriptome analysis of pig *in vivo*, *in vitro*–fertilized, and nuclear transfer blastocyst-stage embryos treated with histone deacetylase inhibitors postfusion and activation reveals changes in the lysosomal pathway. *Cellular Reprogramming (Formerly "Cloning and Stem Cells")*, 17(4), 243-258.
- Whyte, J. J., & Prather, R. S. (2011). Genetic modifications of pigs for medicine and agriculture. *Molecular reproduction and development*, 78(10-11), 879-891.
- Wilmut, I., Beaujean, N., De Sousa, P., Dinnyes, A., King, T., Paterson, L., & Young, L. (2002). Somatic cell nuclear transfer. *Nature*, 419(6907), 583-587.
- Wilmut, I., Schnieke, A. E., McWhir, J., Kind, A. J., & Campbell, K. H. S. (1997). Viable offspring derived from fetal and adult mammalian cells. *Nature*, 385(6619), 810-813. doi:10.1038/385810a0.
- Woods, G. L., White, K. L., Vanderwall, D. K., Li, G.-P., Aston, K. I., Bunch, T. D., & Pate, B. J. (2003). A mule cloned from fetal cells by nuclear transfer. *Science*, 301(5636), 1063-1063.
- Xie, B., Zhang, H., Wei, R., Li, Q., Weng, X., Kong, Q. (2016). Histone H3 lysine 27 trimethylation acts as an epigenetic barrier in porcine nuclear reprogramming. *Reproduction* 151, 9–16. doi: 10.1530/REP-15-0338.
- Xu, W., Li, Z., Yu, B., He, X., Shi, J., Zhou, R., & Wu, Z. (2013). Effects of DNMT1 and HDAC inhibitors on gene-specific methylation reprogramming during porcine somatic cell nuclear transfer. *PloS one*, 8(5), e64705.
- Yamanaka, K. I., Sakatani, M., Kubota, K., Balboula, A. Z., Sawai, K., & Takahashi, M. (2011). Effects of downregulating DNA methyltransferase 1 transcript by RNA interference on DNA methylation status of the satellite I region and *in vitro* development of bovine somatic cell nuclear transfer embryos. *Journal of Reproduction and Development*, 57(3), 393-402.
- Yamanaka, K. I., Sugimura, S., Wakai, T., Kawahara, M., & Sato, E. (2009). Acetylation level of histone H3 in early embryonic stages affects subsequent development of miniature pig somatic cell nuclear transfer embryos. *Journal of Reproduction and Development*, 55(6), 638-644.
- Yang, X., Smith, S. L., Tian, X. C., Lewin, H. A., Renard, J. P., & Wakayama, T. (2007). Nuclear reprogramming of cloned embryos and its implications for therapeutic cloning. *Nature genetics*, 39(3), 295-302.

- Yi, S. J., & Kim, K. (2018). Histone tail cleavage as a novel epigenetic regulatory mechanism for gene expression. *BMB reports*, 51(5), 211.
- Yoisungnern, T., Srirattana, K., Punyawai, K., Aree-uea, A., phongnimit, T., kim J.H. & parnpai, R. (2011). The effects of reversine treatment on developmental potential of bovine cloned embryos. *Proceeding of the 8th Annual conference of the Asian Reproductive Biotechnology Society*, 25-30 October 2011, Guiin City, Guangxi, China.
- Yoisungnern, T., Srirattana, K., Punyawai, K., Putkhao, K., Aree-uea, A., kim J.H., & Parnpai, R. (2012). Effects of suberoylanilide hydroxamic acid (SAHA) treatment on the development of cloned bovine embryos. *Proceeding of the 105th Meeting of the Society for Reproduction and Development*, 5-8 September, 2012, University of Tsukuba, Japan.
- Yoshioka, K., Suzuki, C., & Onishi, A. (2008). Defined system for *in vitro* production of porcine embryos using a single basic medium. *Journal of Reproduction and Development*, 54(3), 208-213.
- Zhai, Y., Zhang, Z., Yu, H., Su, L., Yao, G., Ma, X., & Li, Z. (2018). Dynamic methylation changes of DNA and H3K4 by RG108 improve epigenetic reprogramming of somatic cell nuclear transfer embryos in pigs. *Cellular Physiology and Biochemistry*, 50(4), 1376-1397.
- Zhang, Z., Zhai, Y., Ma, X., Zhang, S., An, X., Yu, H., & Li, Z. (2018). Down-regulation of H3K4me3 by MM-102 facilitates epigenetic reprogramming of porcine somatic cell nuclear transfer embryos. *Cellular Physiology and Biochemistry*, 45(4), 1529-1540.
- Zhao, J., Hao, Y., Ross, J. W., Spate, L. D., Walters, E. M., Samuel, M. S., & Prather, R. S. (2010). Histone deacetylase inhibitors improve *in vitro* and *in vivo* developmental competence of somatic cell nuclear transfer porcine embryos. *Cellular Reprogramming (Formerly "Cloning and Stem Cells")*, 12(1), 75-83.
- Zhao, J., Ross, J. W., Hao, Y., Spate, L. D., Walters, E. M., Samuel, M. S., & Prather, R. S. (2009). Significant improvement in cloning efficiency of an inbred miniature pig by histone deacetylase inhibitor treatment after somatic cell nuclear transfer. *Biology of reproduction*, 81(3), 525-530.
- Zhou, C., Wang, Y., Zhang, J., Su, J., An, Q., Liu, X., & Zhang, Y. (2019). H3K27me3 is an epigenetic barrier while KDM6A overexpression improves nuclear reprogramming efficiency. *The FASEB Journal*, 33(3), 4638-4652.

- Zhou, D., Choi, Y. J., & Kim, J. H. (2017). Histone deacetylase 6 (HDAC6) is an essential factor for oocyte maturation and asymmetric division in mice. *Scientific reports*, 7(1), 1-8.
- Ziegler-Birling, C., Daujat, S., Schneider, R., & Torres-Padilla, M. E. (2016). Dynamics of histone H3 acetylation in the nucleosome core during mouse pre-implantation development. *Epigenetics*, 11(8), 553-5.