

CURRICULUM VITAE

CHANCHAO LORTHONGPANICH, Ph.D

Senior Researcher

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Faculty of Medicine Siriraj Hospital,
Mahidol University, Bangkok, THAILAND 10700
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Education:

2009 - 2013 Senior postdoctoral research fellow

Mammalian Development Laboratory, Institute of Medical Biology (IMB),
Biopolis, Singapore

2003 - 2007 Ph.D. (Biotechnology), Suranaree University of Technology, Thailand

Thesis Title: Embryonic Stem cell lines establishment from mouse single
blastomeres

2000 - 2003 M.Sc. (Biotechnology), Suranaree University of Technology, Thailand

Thesis Title: Cloning of cat embryos by using ear fibroblast cells and
granulosa cells as donor cells.

1996 - 2000 B.Sc. (Animal Production Technology), Suranaree University of
Technology, Thailand

Training courses:

2012 Towards Managing a Research Group (Institute of Medical Biology, Singapore)

2011 Image J and live-cell imaging
(Institute of Medical Biology, Singapore)

2006 Confocal Microscopy (Department of Human Genetics, Emory University School
of Medicine, Atlanta, Georgia, U.S.A)

- 2005** Culturing and maintaining human ES cells (Stem Cell Research center, Mizmedi Hospital, Seoul, South Korea)
- 2003** IVF (Department of Animal Reproductive Biotechnology, Guangxi University, Nanning, China)

Visiting scholar:

- 2010** *Biohealth Science, Institute of Biological Sciences,*
Faculty of Science, University of Malaya. Hosted by Prof. Dr. Ramli Abdullah.
Division of Embryology, National Institute for Basic Biology,
Okazaki Aichi, Japan. Hosted by Dr. Toshihiko Fujimori
- 2008** *Institute of Biotechnology, Vietnamese Academy of Sciences & Technology,*
Hanoi, Vietnam, Hosted by Dr. Nguyen Bui Xuan
- 2006** *Department of Human genetics, Emory University School of Medicine,*
Atlanta, Georgia, U.S.A. Hosted by Asst.Prof.Dr. Anthony W.S.Chan
- 2005** *Department of Animal Sciences, University of Wisconsin-Madison,*
WI, U.S.A

Academic and professional awards/honors:

Outstanding Graduate Student Award, Suranaree University of Technology, 2007,
Nakon Ratchasima, Thailand.

Outstanding Master's thesis, Thai Society of Biotechnology in 2004 in the title of
"Cloning of cat embryos by using ear fibroblast cells and granulosa cells as donor
cells"

Excellent poster presentation awarded by Asian Reproductive Biotechnology Society
(ARBs) in 8th ARBs meeting in China, 25-30, October, 2011.

Excellent poster presentation awarded by Asian Reproductive Biotechnology Society
(ARBs) in 4th ARBs meeting in Singapore, 24-26, November, 2007.

Outstanding of research and oral presentation at the 41st Kasetsart University Annual
Conference, 3-6 February, 2003. Bangkok, Thailand. In the title of "Finding the
optimum fusion parameter for cloning of cat embryos by using ear fibroblasts as
donor cells"

Fellowship:

2003 - 2007 Royal Golden Jubilee Ph.D. fellowship

Thailand Research Fund, Thailand.

2005 National Center for Genetic Engineering and Biotechnology,

National Science Technology Development Agency (BIOTEC) of Thailand

Professional Society

2013-present The International Society for Stem Cell Research (ISSCR)

2003-present The Asian Reproductive Biotechnology Society (ARBS)

Editorial activities:

Board of Reviewing Editors Thai Journal of Veterinary Medicine

Area of interest:

- Hippo-Yap signaling pathway in embryo development and cancer cells development
- Disease specific stem cells
- Factors effecting cell fate determination and differentiation in cancer cells
- Nuclear reprogramming

Patent:

Electro cell fusion generator; Appl.No. 91442 (0401002131)

School of Biotechnology, Suranaree University of Technology, Nakhon Ratchasima, Thailand.

Peer-Reviewed publications

Lorthongpanich, C., Cheow, L.F., Balu, S., Quake, S.R., Knowles, B.B., Burkholder, W., Solter, D and Messerschmidt, D.M. 2013. Single-cell DNA-methylation analysis reveals epigenetic chimerism in preimplantation embryos. *Science* 341: 1110-1112.

Lim, A.K., **Lorthongpanich, C.**, Chew, T.G., Tan, C.W., Shue, Y.T., Kuramochi-Miyagawa, S., Mauzuk, M., Chuma, S., Messerschmidt, D.M., Solter, D and

- Knowles, B.B. 2013. The nuage mediates piRNA-dependent retrotransposon silencing in mouse primordial ovarian follicles. *Development* 140: 3819-3825.
- Lorthongpanich, C.**, Messerschmidt, D.M., Chan, S.W., Hong, W., Knowles, B.B and Solter, D. 2013. Temporal reduction of LATS1/2 kinases in the early preimplantation embryo prevents ICM lineage differentiation. *Genes Dev.* 27: 1441-1446.
- Chew, T.G., Peaston, A., Lim, A.K., **Lorthongpanich, C.**, Knowles, B.B and Solter, D.S. 2013. A Tudor domain protein SPINDLIN1 interacts with mRNA-binding protein SERBP1 and is involved in mouse meiotic resumption. *PLoS One* 8(7): e69764
- Dang, V. D., Ueda, J., Messerschmidt, D.M., **Lorthongpanich, C.**, Zhou, Y., Feng, B., Guo, G., Lin, P.J., Hossain, M.D., Zhang, W., Moh, A., Wu, Q., Robson, P., Ng, H.H., Poellinger, L., Knowles, B.B., Solter, D and Fu, X.Y. 2013. A genetic and developmental pathway from STAT3 to the OCT4-NANOG circuit is essential for maintenance of ICM-lineages *in vivo*. *Genes Dev.* 27: 1378-1390.
- Lorthongpanich, C.**, Tham, P.Y., Limviphuvadh, V., Knowles, B.B and Solter, D. 2012. Developmental fate and lineage commitment of “singled” mouse blastomeres, *Development* 139: 3722-3731.
- Chew, T.G., **Lorthongpanich, C.**, Ang, W.X., Knowles, B.B and Solter, D. 2012. Symmetric cell division of the mouse zygote requires an actin network. *Cytoskeleton* 69: 1040-1046.
- Thumanu, K., Tanthanuch, W., **Lorthongpanich, C.**, Heraud, P and R. Parnpai. 2011. Spectroscopic signature of mouse embryonic stem cell-derived hepatocytes using synchrotron fourier transform infrared microscopy. *J. Biomed. opt.* 16, 057005 doi:10.1117/1.3580253.
- Imsoonthornruksa, S., **Lorthongpanich, C.**, Sangmalee, A., Srirattana, K, Laowtammathron, C., Tunwattana, W., Somsa, W., Ketudat-Cairns, M. and Parnpai, R. 2011. The effects of manipulation medium, culture system and

- recipient cytoplasm on *in vitro* development of intraspecies and intergeneric felid embryos. *J.Reprod. Dev.* 57: 385-392.
- Imsoonthornruksa, S., **Lorthongpanich, C.**, Sangmalee, A., Srirattana, K, Laowtammathron, C., Tunwattana, W., Somsa, W., Ketudat-Cairns, M. and Parnpai, R. 2010. Abnormalities in the transcription of reprogramming genes related to global epigenetic event of cloned endangered felid embryos. *Reprod. Fert. Dev.* 22: 613-624.
- Thumanu, K., Tanthanuch, W., **Lorthongpanich, C.**, Parnpai, R and Heraud, P. 2010. Neural differentiation of mouse embryonic stem cells studied by FTIR spectroscopy. *J. Molecular structure* 967: 189-195.
- Thumanu, K., Tanthanuch, W., **Lorthongpanich, C.**, Heraud, P and R. Parnpai. 2009. FTIR microspectroscopic imaging as a new tool to distinguish chemical composition of Mouse Blastocyst. *J. Molecular structure.* 933: 104-111.
- Srirattana, L., **Lorthongpanich, C.**, Laowtammathron, C., Imsoonthornruksa, S., Ketudat-Cairns, Phermthai, T, Nagai., T and Parnpai, R. 2009. Effect of donor cell types on developmental potential of cattle (*Bos Taurus*) and swamp buffalo (*Bulalus bubalis*) cloned embryos. *J. Reprod. Dev.* 56: 49-54.
- Lorthongpanich, C.**, Laowtammathron, C., Chan, AWS., Ketudat-Cairns, M., Parnpai, R. 2008. Development of interspecies cloned monkey embryos reconstructed with bovine enucleated oocytes. *J. Reprod. Dev.* 54: 306-313.
- Lorthongpanich, C.**, Yang, SH, Piotrowska-Nitsche, K., Parnpai, R. and Chan, A.W.S. 2008. Development of single blastomere derived mouse embryos, outgrowths and embryonic stem cells. *Reproduction* 135: 805-813.
- Lorthongpanich, C.**, Yang, S.H., Piotrowska-Nitsche, K. Parnpai, R. and Chan, A.W.S. 2008. Chemical enhancement the ES cell establishment from single blastomere. *Cloning and Stem Cells* 10: 503-512.
- Lorthongpanich, C.**, Srirattana, K., Imsoonthornruksa, S., Sripunya, N., Laowtammathron, C., Kumpong, O., Ketudat-Cairns, M and Parnpai, R. 2007.

Expression and distribution of Oct-4 in interspecies-cloned long tailed monkey (*Macaca fascicularis*) embryos. *Reprod. Fert. Dev.* 19: 149.

Chan, AWS., **Lorthongpanich, C.**, Yang, S.H., Piotrowska-Nitsche, K and Parnpai, R. 2007. Competence of early embryonic blastomeres for the establishment of embryonic stem cell line. *Fertility and Sterility*, 88: 396.

Imsoonthornruksa, S., **Lorthongpanich, C.**, Srirattana, K., Sripunya, N., Laowtammathron, C., Ketudat-Cairns, M. and Parnpai, R. 2007. Effect of manipulation medium on the development of reconstructed domestic cat embryos. *Reprod. Fert. Dev.* 19: 141.

Laowtammathron, C., **Lorthongpanich, C.**, Ketudat-Cairns, M., Hochi, S., and Parnpai, R. 2005. Factors effecting cryosurvival of nuclear-transferred bovine and swamp buffalo blastocysts: the effects of hatching stage, linoleic acid albumin in culture medium and ficoll supplementation solution. *Theriogenology* 64: 1185-1196.

Lorthongpanich, C., Laowtammathron, C., Muenthaisong, S., Vetchayan, T., Ketudat-Cairns, M., Likitdecharote, B. and Parnpai, R. 2004. In vitro development of enucleated domestic cat oocytes reconstructed with skin fibroblasts of domestic and leopard cats. *Reprod.Fert.Dev.* 16: 149.

Reviews and Book Chapters:

Lorthongpanich, C., Lim, C.Y. and Solter, D. 2013. Nuclear Transfer. In S. Maloy D and Hughes K (ed.) *Encyclopedia of Genetics, 2nd Edition*, pp 113-117. Elsevier, New York

Lim, C.Y., **Lorthongpanich, C.** and Solter, D. 2013. Cloned organisms, Eukaryotic. In S. Maloy D and Hughes K (ed.) *Encyclopedia of Genetics, 2nd Edition*, pp 46-48. Elsevier, New York

Lorthongpanich, C., Laowtammathron, C. and Parnpai, R. 2011. From microsurgery to single blastomere biopsy for ES cell establishment. *Thai J Vet Med.* 41: 11-22.

Lorthongpanich, C., Lim, C.Y. and Solter, D. 2010. Nuclear reprogramming in zygote. *Int. J.Dev.Biol.* 1632-1640.

Presentation Lectures at Scientific Conferences:

Lorthongpanich, C. Issaragrisilp, S., Knowles, B and Solter, D. 2014. Role of the Hippo signaling pathway in lineage specification of mammalian pre-implantation embryos and their pluripotency. 2014. *Asian Reproductive Biotechnology Society, Bangkok, Thailand.*

Lorthongpanich, C., Jiamvoraphong, N., Wattanapanitch, M., Laowtammathorn, C., Klincumhom, N and Issaragrisil, S. 2014. Probing of signaling activity in hematological malignancy. *International Society for Stem cell Research. Vancouver, Canada.* p 379.

Lorthongpanich, C., Chan, S.W., Knowles, B. and Solter, D. 2013. The Hippo signaling components LATS1/2 kinases are essential for mouse embryo development. *Keystone Symposia on Molecular and Cellular Biology, Monterey, CA, USA.* p 53

Lorthongpanich, C. Knowles, B and Solter, D. Role of Hippo signaling pathway in mammalian embryo development. 2013. *Thai Society for Stem Cell Research, Bangkok, Thailand.*

Lorthongpanich, C., Knowles, B. and Solter, D. 2012. Cell-cell interaction is required for proper lineage specification of the pre-implantation mouse embryo. *Singapore-UK Stem Cells Meeting, Biopolis, Singapore.* p 21

Lorthongpanich, C., Knowles, B. and Solter, D. 2011. Cell-cell interaction is required for proper lineage specification of the pre-implantation mouse embryo. *Annual Conference of Asian Reproductive Biotechnology Society, Guilin, China.* p 73.

Lorthongpanich, C., Knowles, B. and Solter, D. 2010. Tracing blastomere fate decisions. *Differentiation* 80, p 23.

Lorthongpanich, C. Lim, CY. Knowles, B. and Solter, D. 2009. Specific gene silencing in mouse embryo by small interfering RNAs. *Proc. Asian Reproductive Biotechnology, Siem Reap, Cambodia:* p 36.

- Lorthongpanich, C.**, Lim., C.Y., Knowles, B. and Solter, D. Specific gene silencing in mouse embryo by small interfering RNAs. 2009. *Asian Reproductive Biotechnology Society*, Siem Reap, Cambodia.
- Lorthongpanich, C.** Establishment and characterization of mouse ES cells from fertilized and nuclear transfer embryos. 2009. *Suranaree University of Technology Stem Cell Workshop*. Suranaree University of Technology, Nakhon Ratchasima, Thailand.
- Lorthongpanich, C.** Embryonic stem cell characterization. 2007. *Proc. Embryonic Stem Cell and Application in Biomedical Science Workshop, Suranaree University of Technology, Nakhon ratchasima, Thailand*. 20-32.
- Lorthongpanich, C.** Yang S.H., Piotrowska-Niches, K. Parnpai R. and Chan, A.W.S. 2007. Embryonic stem cell establishment from mouse single blastomere. *Proc. Asian Reproductive Biotechnology, National University of Singapore, Singapore*: p 112.
- Lorthongpanich., C.** Laowtammathron., C. Somsa., W. Kongsila., A. Kretapol., K. Ketudat-Cairns., M. and Parnpai., R. 2006. *In vitro* development of iSCNT produced long tailed monkey (*Macaca fascicularis*) embryos. *Proc. The Thai society for biotechnology, Bangkok, Thailand*. p 121.
- Lorthongpanich, C.,** Srirattana, K., Imsoonthornruksa, S., Sripunya, N., Laowtammathron, C., Somsa, W., Kongsila, A., Kretapol, K., Ketudat-Cairns, M and Parnpai, R. 2006. Development of interspecies cloned long tailed monkey (*Macaca fascicularis*) embryos after reconstructed with bovine enucleated oocyte and culturing in different condition. *Proc. Asian Reproductive Biotechnology, Hanoi, Vietnam*, p 110.
- Lorthongpanich, C.,** Laowtammathron C., Monson R.L., M. Wiltbank., Sangsitavong S., Rarnpai R. and J.J. Rutledge. 2005. Kinetic changes of *in vitro* produced bovine sexed pre-implantation embryos. *Proc. Asian Reproductive Biotechnology, Bangkok, Thailand*. p 157.
- Lorthongpanich, C.,** Laowtammathron, C., Muenthaisong, S., Vetchayan, T., Wongviriyaya, W, Ketudat-Cairns, M., Likitdecharote, B. and Parnpai, R. 2004. Cloning of leopard cat embryos using enucleated domestic cat oocytes as

recipient cytoplasm. *Proc. Asian Reproductive Biotechnology Society, Hochiminh city, Vietnam*. 1: 61.

Lorthongpanich, C., Laowtammathron, C., Terao, T. Muenthaisong, S., Vetchayan, T., Hochi, S., and Parnpai, R. 2003. Developmental potential of cloned swamp buffalo embryo reconstructed with vitrified matured oocytes. *Proc. Stem cells and somatic cells cloning research: present status and future trends, Chulalongkorn University, Bangkok, Thailand*. 43-47.

Laowtammathron, C., **Lorthongpanich, C.**, Muenthaisong, S., Vetchayan, T., Somwan, S., Mernkatoke, P., Patitung, S., and Parnpai, R. 2003. Production of dairy and beef cattle by cloning technology. *Tri-University International Joint Seminar and Symposium, Mie University, Japan*. 10: 389-393.

Past and present trainees:

2013-present: Mr. Phatchanat Klaihmon (Ph.D student, Faculty of Medicine, Mahidol University, Thailand)

Mr. Nattapol Attatippaholkun (Ph.D - MD student, Faculty of Medicine, Mahidol University, Thailand)

2011-2012: Ms. Ang Wei Xia (Undergraduate student, Final Year Project mentor, Nanyang Technical University, Singapore)

Teaching experience:

2014-present Course coordinator and lecture Stem Cell Science (SIIM616), Department of Immunology, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand

Lecture Molecular Immunology (SIIM611), Department of Immunology, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand

2007 Teaching Assistant for Stem cell course
School of Biotechnology, Suranaree University of Technology,
Nakhon Ratchasima, Thailand.

2006 Teaching Assistant for Animal Biotechnology Course
Suranaree University of Technology, Nakhon Ratchasima, Thailand.

- 2007** Program coordinator of “*Chiang Mai International workshop on A.R.T*”
- 2007** Division of Reproductive Medicine, Department of Obstetrics and Gynecology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand.
Program coordinator of “*Embryonic stem cell and Application in Biomedical Science Workshop*” School of Biotechnology, Suranaree University of Technology, Nakhon Ratchasima, Thailand.
- 2005** Program coordinator of “*The 2nd Asian Reproductive Biotechnology Conference*” Bangkok, Thailand.
- 2003 – 2007** Mentoring graduate students in the cloning and stem cell course, Suranaree University of Technology, Nakhon Ratchasima, Thailand.