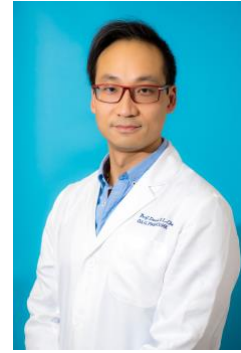


CURRICULUM VITAE
[David Yiu Leung CHAN]



PERSONAL DATA

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ORCID: 0000-0002-4736-8262

EDUCATION

2011, DPhil, University of Oxford, 07/2006-03/2010; Thesis title: Analysis of Artificial Chromosomes and Factors Affecting Stability in Murine and Human Cultured and Embryonic Stem Cells; Supervisor: Dr. Zoia Larin Monaco;

2006, MPhil, The Chinese University of Hong Kong, 08/2004-06/2006; Thesis Title: Lovastatin sensitized human glioblastoma cells to TRAIL-induced apoptosis; Supervisor: Prof. Wai Sun Poon;

2002, BSc (1st Hon) Biotechnology, University of Ulster.

PROFESSIONAL EXPERIENCE

08/2021-Present, **Assistant Professor**, CUHK, Department of Obstetrics and Gynaecology, Prince of Wales Hospital;
09/2021-Present, **Service Consultant**, CUHK-Medical Centre, Obstetrics and Gynaecology, CUHK;
6/2020-Present, **Deputy Course Director**, MSc in Reproductive Medicine and Clinical Embryology, Department of Obstetrics and Gynaecology, CUHK;
3/2019- Present, **IVF Laboratory director**, CUHK-PWH-IVF unit, Department of Obstetrics and Gynaecology, CUHK;
08/2016-07/2021, Research Assistant Professor, The Chinese University of Hong Kong, Department of Obstetrics and Gynaecology, New Asia College;
02/2012-07/2016, Clinical Embryologist, The University of Hong Kong, Department of Obstetrics and Gynaecology, Queen Mary Hospital.

PROFESSIONAL SOCIETIES

High Complexity Laboratory Director (2022-), America Bio-analyst, (ABB-HCLD)

Clinical Consultant (2022-), (ABB-CC)

Certified Senior Embryologist (2019-), European Society of Human Reproduction & Embryology (ESHRE)

Accredited Embryologist (Level II, 2016-), HK Association of Clinical Embryology (HKACE)

Certified Medical Technologist (2014-), American Medical Technologists (AMT)

MAIN RESEARCH INTERESTS

Andrology: capacitation mechanism, sperm ultrastructure, semen microbiome, sperm chromosomes.

Embryology: molecular mechanism on human oocyte maturation, early human embryo transcriptome and methylome profiles, embryo imprinting and environmental effects on the early human embryo in vitro development.

Assisted Reproductive Technologies: Time Lapse Imaging on early embryo development, novel morphokinetics grading system, early embryonic development predictors, Ovarian Tissue preservation.

LIST OF RESEARCH OUTPUTS OR CREATIVE WORKS

Publications (Total: 37) (Citations: 260; Source: Google Scholar; Rank: ISI citation reports)

Refereed Publications

- Journal papers

***Corresponding Author, ^ First Author.**

1. Chung JPW, Li Y, Law TSM, Ng K, Chau OSY, Choy KW, Chan DYL. Ultrasound-guided Manual Vacuum Aspiration is an optimal method for obtaining products of conception from early pregnancy loss for cytogenetic testing. *The International Journal of Biochemistry & Cell Biology*. 2022;106226. doi: <https://doi.org/10.1016/j.biocel.2022.106226>.
2. Qin X, Zhao M, Deng W, Huang Y, Cheng Z, Chung JPW, Chen X, Yang K, Chan DYL, Wang H. Development and Validation of a Novel Prognostic Nomogram Combined With Desmoplastic Reaction for Synchronous Colorectal Peritoneal Metastasis. *Frontiers in Oncology*. 2022;12. doi: 10.3389/fonc.2022.826830.
3. Wang S, Fang L, Cong L, Chung JPW, Li TC, Chan DYL. Myostatin: a multifunctional role in human female reproduction and fertility – a short review. *Reproductive Biology and Endocrinology*. 2022;20(1):96. doi: 10.1186/s12958-022-00969-4.
4. Xu M, Zhao M, Li RHW, Lin Z, Chung JPW, Li TC, Lee T-L, Chan DYL. Effects of nonoxynol-9 (N-9) on sperm functions: systematic review and meta-analysis. *Reproduction and Fertility*. 2022;3(1):R19-R33. doi: 10.1530/RAF-21-0024.
5. Zhang F-L, Qian Y, Li W-D, Cao Q, Chu HT, Luk ACS, Tsang SW, Lee WK, Tang PM-K, Chan W-Y, Chow KL, Chan DYL, Li TC, Yip KY-L, Shen W, Lee TL. Parallel bimodal single-cell sequencing of transcriptome and methylome provides molecular and translational insights on oocyte maturation and maternal aging. *Genomics*. 2022;110379. doi: <https://doi.org/10.1016/j.ygeno.2022.110379>.
6. Lee AWT, Ng JKW, Liao J, Luk AC, Suen AHC, Chan TTH, Cheung MY, Chu HT, Tang NLS, Zhao MP, Lian Q, Chan WY, Chan DYL, Leung TY, Chow KL, Wang W, Wang LH, Chen NCH, Yang WJ, Huang JY, Li TC, Lee TL. Single-cell RNA sequencing identifies molecular targets associated with poor in vitro maturation performance of oocytes collected from ovarian stimulation. *Human Reproduction*. 2021. doi: 10.1093/humrep/deab100.
7. Liao J, Suen HC, Luk ACS, Lee AWT, Ng JKW, Chan THT, Cheung MY, Chan DYL, Qi H, Chan WY, Hobbs RM, Lee T-L. scATAC-Seq reveals epigenetic heterogeneity associated with an EMT-like process in male germline stem cells and its regulation by G9a. *bioRxiv*. 2021:2020.10.12.336834. doi: 10.1101/2020.10.12.336834.
8. Liu J, Zhao M, Zhang H, Zhao J, Kong H, Zhou M, Guan Y, Li TC, Wang X, Chan DYL. Associations between ambient air pollution and outcomes of in vitro fertilization in a heavily polluted city in China. *Reproductive BioMedicine Online*. 2021. doi: <https://doi.org/10.1016/j.rbmo.2021.09.026>.
9. Nie S, Wang M, Wan Q, Kong Y, Ou J, Jia N, Zhang X, Luo F, Liu X, Wang L, Cao Y, Chen R, Zhao M, Chan DYL, Wang G. Kidney Biopsy in Patients With Monoclonal Gammopathy: A Multicenter Retrospective Cohort Study. *Frontiers in Medicine*. 2021;8(690). doi: 10.3389/fmed.2021.687149.
10. Shi X, Chan CPS, Man GKY, Chan DYL, Wong MH, Li T-C. Associations Between Blood Metal/Metalloid Concentration and Human Semen Quality and Sperm Function: A Cross-Sectional Study in Hong Kong. *Journal of Trace Elements in Medicine and Biology*. 2021;126735. doi: <https://doi.org/10.1016/j.jtemb.2021.126735>.
11. Zhao M, Li H, Li R, Li Y, Luo X, Li TC, Lee TL, Wang WJ, Chan DYL. Automated and precise recognition of human zygote cytoplasm: A robust image-segmentation system based on a convolutional neural network. *Biomedical Signal Processing and Control*. 2021;67:102551. doi: <https://doi.org/10.1016/j.bspc.2021.102551>.
12. Zhao M, Xu M, Li H, Alqawasmeh O, Chung JPW, Li TC, Lee T-L, Tang PM-K, Chan DYL. Application of convolutional neural network on early human embryo segmentation during in vitro fertilization. *Journal of Cellular and Molecular Medicine*. 2021;n/a(n/a). doi: <https://doi.org/10.1111/jcmm.16288>.

13. Mingpeng Zhaoa, Hanhui Lic, Ruiqi Li, Ying Lia, Xiaonan Luo, Tin Chiu Li, Tin Lap Lee, Wen Jun Wang, **David Yiu Leung Chan***, Automated and precise recognition of human zygote cytoplasm: a robust image-segmentation system based on a convolutional neural network. *Journal of Biomedical Signal Processing and Control*. In Press. [Contribution: 50%; Citation: 0; IF: 3.673; Rank: 32/87 Biomedical Engineering]
14. Fang T, Chen M, Yu W, Ma T, Su Z, **Chan DYL**, Zhao M, Zheng Q, Wang W. The predictive value of endometrial thickness in 3117 fresh IVF/ICSI cycles for ectopic pregnancy. *Journal of Gynecology Obstetrics and Human Reproduction*. 2021:102072. doi: <https://doi.org/10.1016/j.jogoh.2021.102072>. [Contribution: 10%; Citation: 0; IF: 1.232; Rank: 73/82 O&G]
15. Jie H, Zhao M, Alqawasmeh OAM, Chan CPS, Lee TL, Li T, **Chan DYL***. In vitro rescue immature oocytes – a literature review. *Human Fertility*. 2021:1-20. doi: [10.1080/14647273.2021.1876932](https://doi.org/10.1080/14647273.2021.1876932). [Contribution: 50%; Citation: 0; IF: 2.161; Rank: 37/82 O&G]
16. Zhao M, Xu M, Li H, Alqawasmeh O, Chung JPW, Li TC, Lee T-L, Tang PM-K, **Chan DYL***. Application of convolutional neural network on early human embryo segmentation during in vitro fertilization. *Journal of Cellular and Molecular Medicine*. 2021; doi: <https://doi.org/10.1111/jcmm.16288>. [Contribution: 50%; Citation: 0; IF: 4.59; Rank: 36/139 Medicine, Research and Experiments]
17. Alqawasmeh OA, Zhao M, Chan CP, Leung MB, Chow KC, Agarwal N, Mak JS, Wang CC, Pang CP, Li TC, Chu WK, **Chan DY***. Green tea extract as a cryoprotectant additive to preserve the motility and DNA integrity of human spermatozoa. *Asian journal of andrology*. 2020. Epub 2020/11/07. doi: [10.4103/aja.aja_58_20](https://doi.org/10.4103/aja.aja_58_20). PubMed PMID: 33154201. [Contribution: 50%; Citation: 0; IF: 2.448; Rank 35/85 Urology and Nephrology]
18. Bhide P, Srikantharajah A, Lanz D, Dodds J, Collins B, Zamora J, **Chan D**, Thangaratinam S, Khan KS. TILT: Time-Lapse Imaging Trial-a pragmatic, multi-centre, three-arm randomised controlled trial to assess the clinical effectiveness and safety of time-lapse imaging in in vitro fertilisation treatment. *Trials*. 2020;21(1):600. Epub 2020/07/03. doi: [10.1186/s13063-020-04537-2](https://doi.org/10.1186/s13063-020-04537-2). PubMed PMID: 32611445; PubMed Central PMCID: PMC7329433. [Contribution 15%; Citation: 2; IF: 1.883; Rank: 102/139 Medicine, Research and Experiments]
19. **Chan D^**, Moralli D, Wheatley L, Jankowska JD, Monaco ZL. Multigene vector delivery with herpes simplex virus 1 amplicons. *Exp Cell Res*. 2020:111840. Epub 2020/01/14. doi: [10.1016/j.yexcr.2020.111840](https://doi.org/10.1016/j.yexcr.2020.111840). PubMed PMID: 31930965. [Contribution: 65%, Citation: 3; IF: 3.383; Rank: 109/195 Cell biology]
20. Waters T, Chan CPS, Li T, **Chan D**. Influence of the Period of Abstinence on Semen Quality in a Patient with Systemic Lupus Erythematosus: A Case Report and Review of the Literature. *Case Reports in Rheumatology*. 2020;2020:1-6. doi: [10.1155/2020/9296858](https://doi.org/10.1155/2020/9296858). [Contribution 70%, Citation: 0; IF: NA, Rank: NA]
21. Zhang T, Zhu W, Zhao Y, Cheung WC, Liu Y, Chen X, Du Y, Leung KT, **Chan YL**, Wang CC, Laird S, Li TC. Early transient suppression of immune checkpoint proteins T-cell immunoglobulin mucin-3 and programmed cell death-1 in peripheral blood lymphocytes after blastocyst transfer is associated with successful implantation. *Fertility and Sterility*. 2020. doi: <https://doi.org/10.1016/j.fertnstert.2019.12.022>. [Contribution 15%, Citation: 1; IF: 6.32; Rank: 3/82 O&G]
22. Zhao Y, Zhang T, Guo X, Wong CK, Chen X, **Chan YL**, Wang CC, Laird S, Li TC. Successful implantation is associated with a transient increase in serum pro-inflammatory cytokine profile followed by a switch to anti-inflammatory cytokine profile prior to confirmation of pregnancy. *Fertil Steril*. 2020. Epub 2020/12/05. doi: [10.1016/j.fertnstert.2020.10.031](https://doi.org/10.1016/j.fertnstert.2020.10.031). PubMed PMID: 33272613. [Contribution 15%, Citation: 0; IF: 6.32; Rank: 3/82 O&G]
23. Qian Y, Liao J, Suen AHC, Lee AWT, Chung HS, Tang NLS, Chow KL, Cao Q, Yip YL, Leung TY,

- Chan WY, **Chan DYL**, Li TC, Lee TL. Comparative analysis of single-cell parallel sequencing approaches in oocyte application. *Int J Biochem Cell Biol.* 2019;107:1-5. Epub 2018/12/12. doi: [10.1016/j.biocel.2018.12.003](https://doi.org/10.1016/j.biocel.2018.12.003). PubMed PMID: 30529019. [Contribution 10%, Citation: 2; IF: 3.673; Rank: 116/297 Biochemistry and Molecular biology]
24. Shi X, **Chan DYL**, Zhao MP, Chan CPS, Huang J, Li TC. Comparison of DNA fragmentation levels in spermatozoa with different sex chromosome complements. *Reprod Biomed Online.* 2019;38(1):56-65. Epub 2018/12/14. doi: [10.1016/j.rbmo.2018.10.005](https://doi.org/10.1016/j.rbmo.2018.10.005). PubMed PMID: 30545781. [Contribution 30%, Citation: 2; IF: 3.218; Rank: 17/82 O&G]
25. Zhao M, Chan CPS, Cheung CWC, Alqawasmeh O, Wang RCC, Wu JCY, Lin ZX, Li TC, Chung JPW, Mak JSM, Law TSM, **Chan DYL***. A double-blinded, randomized placebo-controlled trial on the effect of traditional Chinese medicine formula Wuzi Yanzong pill on improving semen qualities in men with suboptimal parameters. *Trials.* 2019;20(1):540. Epub 2019/08/30. doi: [10.1186/s13063-019-3647-2](https://doi.org/10.1186/s13063-019-3647-2). PubMed PMID: 31464617; PubMed Central PMCID: PMC6716803. [Contribution 50%; Citation: 3; IF: 1.883; Rank: 102/139 Medicine, Research and Experiments]
26. Zhao M, Zhang H, Waters THB, Chung JPW, Li TC, **Chan DYL***. The effects of daily meteorological perturbation on pregnancy outcome: follow-up of a cohort of young women undergoing IVF treatment. *Environ Health.* 2019;18(1):103. Epub 2019/11/30. doi: [10.1186/s12940-019-0538-7](https://doi.org/10.1186/s12940-019-0538-7). PubMed PMID: 31779611. [Contribution 50%; Citation: 2; IF: 4.69; Rank: 29/364 Public, Environmental & Occupational Health]
27. Zhu W, Yeung Q, **Chan D**, Chi L, Huang J, Wang Q, Chung J, Li T-C. Maternal β -HCG concentrations in early IVF pregnancy: association with the embryo development stage of blastocysts. *Reproductive BioMedicine Online.* 2019;38(5):683-90. doi: <https://doi.org/10.1016/j.rbmo.2018.11.035>. [Contribution 20%, Citation: 2; IF: 3.218; Rank: 17/82 O&G]
28. Shi X, Chan CPS, Waters T, Chi L, **Chan DYL**, Li TC. Lifestyle and demographic factors associated with human semen quality and sperm function. *Syst Biol Reprod Med.* 2018;64(5):358-67. Epub 2018/07/24. doi: [10.1080/19396368.2018.1491074](https://doi.org/10.1080/19396368.2018.1491074). PubMed PMID: 30033774. [Contribution 15%, Citation: 19; IF: 1.946; Rank: 17/82 O&G]
29. Zhao MP, Shi X, Kong GWS, Wang CC, Wu JCY, Lin ZX, Li TC, **Chan DYL***. Corrigendum to "The Therapeutic Effects of a Traditional Chinese Medicine Formula Wuzi Yanzong Pill for the Treatment of Oligoasthenozoospermia: A Meta-Analysis of Randomized Controlled Trials". *Evid Based Complement Alternat Med.* 2018;2018:6109104. Epub 2018/07/24. doi: [10.1155/2018/6109104](https://doi.org/10.1155/2018/6109104). PubMed PMID: 30034499; PubMed Central PMCID: PMC6033294. [Contribution 50%, Citation: 3; IF: 1.813; Rank: 16/28 Integrative and Complementary Medicine]
30. Zhao MP, Shi X, Kong GWS, Wang CC, Wu JCY, Lin ZX, Li TC, **Chan DYL***. The Therapeutic Effects of a Traditional Chinese Medicine Formula Wuzi Yanzong Pill for the Treatment of Oligoasthenozoospermia: A Meta-Analysis of Randomized Controlled Trials. *Evid Based Complement Alternat Med.* 2018;2018:2968025. Epub 2018/03/27. doi: [10.1155/2018/2968025](https://doi.org/10.1155/2018/2968025). PubMed PMID: 29576794; PubMed Central PMCID: PMC5822795. [Contribution 50%, Citation: 11; IF: 1.813; Rank: 16/28 Integrative and Complementary Medicine]
31. **Chan DYL^**, Lam KKW, Lau EYL, Yeung WSB, Ng EHY. Human varicella zoster virus is not present in the semen of a man affected by chickenpox during the in vitro fertilisation of his wife. *Andrologia.* 2017;49(10). Epub 2017/07/04. doi: [10.1111/and.12822](https://doi.org/10.1111/and.12822). PubMed PMID: 28670753. [Contribution 80%, Citation: 1; IF: 1.951; Rank: 6/8 Andrology]
32. **Chan DYL^**, Li TC. Comparison of the external physical damages between laser-assisted and mechanical immobilized human sperm using scanning electronic microscopy. *PLoS One.* 2017;12(11):e0188504. Epub 2017/11/28. doi: [10.1371/journal.pone.0188504](https://doi.org/10.1371/journal.pone.0188504). PubMed PMID: 29176855; PubMed Central PMCID: PMC5703581. [Contribution 80%, Citation: 1; IF: 2.74; Rank: 27/71 Multidisciplinary Sciences]

33. **Chan DYL**[^], Moralli D, Khoja S, Monaco ZL. Noncoding Centromeric RNA Expression Impairs Chromosome Stability in Human and Murine Stem Cells. *Dis Markers*. 2017;2017:7506976. Epub 2017/08/07. doi: [10.1155/2017/7506976](https://doi.org/10.1155/2017/7506976). PubMed PMID: 28781416; PubMed Central PMCID: PMC5525099. [Contribution 80%, Citation: 14; IF: 2.738; Rank: 26/78 Pathology]
34. Mandegar MA, Moralli D, Khoja S, Cowley S, **Chan DY**, Yusuf M, Mukherjee S, Blundell MP, Volpi EV, Thrasher AJ, James W, Monaco ZL. Functional human artificial chromosomes are generated and stably maintained in human embryonic stem cells. *Hum Mol Genet*. 2011;20(15):2905-13. Epub 2011/05/20. doi: [10.1093/hmg/ddr144](https://doi.org/10.1093/hmg/ddr144). PubMed PMID: 21593218; PubMed Central PMCID: PMC3131039. [Contribution 30%, Citation: 26; IF: 5.101; Rank: 27/178 Genetics and Heredity]
35. Moralli D, **Chan DY**, Jefferson A, Volpi EV, Monaco ZL. HAC stability in murine cells is influenced by nuclear localization and chromatin organization. *BMC Cell Biol*. 2009;10:18. Epub 2009/03/10. doi: [10.1186/1471-2121-10-18](https://doi.org/10.1186/1471-2121-10-18). PubMed PMID: 19267891; PubMed Central PMCID: PMC2674426. [Contribution 30%, Citation: 10; IF: 3.066; Rank: 121/195 Cell Biology]
36. **Chan DY**[^], Chen GG, Poon WS, Liu PC. Lovastatin sensitized human glioblastoma cells to TRAIL-induced apoptosis. *J Neurooncol*. 2008;86(3):273-83. Epub 2007/10/12. doi: [10.1007/s11060-007-9475-3](https://doi.org/10.1007/s11060-007-9475-3). PubMed PMID: 17928957; PubMed Central PMCID: PMC2174520. [Contribution 80%, Citation: 27; IF: 3.267; Rank: 69/204 Cell Biology]
37. Ho PW, **Chan DY**, Kwok KH, Chu AC, Ho JW, Kung MH, Ramsden DB, Ho SL. Methyl-4-phenylpyridinium ion modulates expression of mitochondrial uncoupling proteins 2, 4, and 5 in catecholaminergic (SK-N-SH) cells. *J Neurosci Res*. 2005;81(2):261-8. Epub 2005/06/11. doi: [10.1002/jnr.20569](https://doi.org/10.1002/jnr.20569). PubMed PMID: 15948157. [Contribution 25%, Citation: 31; IF: 5.674; Rank: 39/272 Neurosciences]

- Conference papers

1. Zhao, M.P., Li, T.C., Chan, D.Y.L., 2019. The time-course from germinal-vesicle break down (GVBD) to first polar body extrusion (PBE) in rescued in vitro maturation (R-IVM), a prospective study on time lapse imaging. ASRM 2019 Scientific Congress & Expo. Philadelphia, Pennsylvania.
2. Zhao, M.P., Li H.H., Li, T.C., Chan, D.Y.L., 2019. Zygotic cytoplasm size pattern (ZCP) as an early predictor of blastocyst formation. The 35th Annual Meeting of the European Society of Human Reproduction and Embryology (ESHRE) 2019.
3. Wing Tung LEE, Judy Kin Wing NG, Thomas Ting Hei CHAN, Mingpeng ZHAO, Yiu Leung CHAN, Tin Chiu LI, Qizhou LIAN, Tin Lap LEE. "Improving oocyte quality through mitochondrial transfer from mesenchymal stem cells".
4. Chan David YL, Li Tin Chiu. "A survey on the knowledge, attitudes and awareness towards male fertility preservation among general public in Hong Kong". <The 8th Congress of the Asia Pacific Initiative on Reproduction> 2018.<72050163>
5. TL. Lee, Y. Qian, DYL. Chan, MP. Zhao, KYL. Yip, Q. Chao, KL. Chow, TY. Leung, NLS. Tang, JY. Liao, ACS. Luk, WT. Lee, TC. Li. "Revealing Aging-related Transcriptome and Methylome Dynamics in Mouse Oocytes Development by Single-cell Parallel Sequencing". <American Society of Human Genetics Annual Meeting 2018> 2018.10.16.<84115337>
6. Tin-Lap LEE, Wai-Yee CHAN, Yan QIAN, Cao QIN, Kevin Yuk-Lap YIP, King Lau CHOW, Nelson L.S. TANG, Jinyue LIAO, Alfred Chun Shui LUK, Hoi Ching SUEN, Wing Tung LEE, Ming Peng ZHAO, Grace Wing Shan KONG, Hoi Sze CHUNG, David Yiu Leung CHAN, Tak Yeung LEUNG, Tin Chiu LI. "Predicting Mouse Oocyte Methylome from Polar Body by Single-cell Whole Genome Bisulfite Sequencing". <Experimental Biology 2018> Abstract No. 3020 pgs. 2018.04.21.<77142369>

7. X. Shi, M. Zhao, C. David, L. Tin-Chiu; Associated between blood metal concentrations and human semen quality: a cross-sectional study in Hong Kong; The 34th Annual Meeting of the European Society of Human Reproduction and Embryology (ESHRE) 2018.
8. Zhao, Mingpeng; Li, Hanhui; Shi, Xiao; Chan, Yiu Leung, Luo, Xian Nan; Li, Tin Chiu; Automated recognition of human zygote cytoplasmic area (ZCA) in time-lapse imaging (TLI) based on deep convolutional neural network (CNN); Engineering Medical Innovation Summit 2018.
9. Shi X, Li TC Chan CPS, Chi L, Huang J, Chan DY. "Differential sperm DNA fragmentation of X- and Y chromosome bearing human spermatozoa". <The 33rd Annual Meeting of the European Society of Human Reproduction and Embryology (ESHRE)> ESHRE vol.32 Supp 1 Oxford University Press, 2017.07.<61928934>
10. Zhao, Mingpeng; Li, Hanhui; Shi, Xiao; Chan, Yiu Leung; Luo, Xiaonan; Li, Tin Chiu; Automated recognition of zygote cytoplasmic area (ZCA) in time-lapse imaging (TLI) based on deep convolutional neural network (CNN); The ASRM Annual Meeting 2017.
11. W. Zhu, J. Huang, Q. S. Yeung, D. Y. Chan, C. Ling, T. C. Li; The impact of blastocyst development stage at the time of embryo transfer (ET) on serum human chorionic gonadotropin (HCG) level; The 33rd Annual Meeting of European Society of Human Reproduction and Embryology (ESHRE) 2017.
12. David Y. L. Chan, Tin Chiu Li; Differential external morphological changes between laser-assisted immobilized and mechanical immobilized human sperm: by SEM comparison; The 33rd Annual Meeting of the European Society of Human Reproduction and Embryology (ESHRE) 2017.
13. David YL Chan, Daniela Moralli, Suhail Khoja, Zoia L. Monaco; Expression of non-coding centromeric RNAs impair chromosome stability in human stem cells; UKNSCN ANNUAL SCIENTIFIC CONFERENCE 2010.
14. David Y. L. Chan, Daniela Moralli, Suhail Khoja, Zoia L. Monaco; Non coding centromeric RNAs expression impairs chromosome stability stem cells; EMBO Non-coding Genome Symposium 2010.
15. David Y. L. Chan, George G. Chen and W. S. Poon; Lovastatin sensitized human glioblastoma cells to TRAIL-induced apoptosis; The 97th Annual Meeting 2005, American Association for Cancer Research.
16. David Y. L. Chan, Wai Keung Leung, George Chen and Wai Sun Poon; Tumor necrosis factor related apoptosis-inducing ligand modulate mRNA expression profile in human glioma cell line A172; The 96th Annual Meeting 2005, American Association for Cancer Research.

KNOWLEDGE TRANSFER ACTIVITIES

Patents (Total 4)

1. Chan, D.Y.L., Zhao, M.P., Li H.H., Li, T.C., 2019. METHOD AND APPARATUS FOR SEGMENTING CELLULAR IMAGE. U.S. US2020/0125818 A1, filed 22 October 2019.
2. Chan, D.Y.L., Zhao, M.P., Li H.H., Li, T.C., 2019. METHOD AND APPARATUS FOR SEGMENTING CELLULAR IMAGE. **European** EP19204290.1, filed 21 October 2019.
3. 陈耀梁, 赵铭鹏, 黎汉汇, 李天照, 2019. 用于分割细胞图像的方法和装置. **中国** 19H13652CN, filed 22 October 2019.
4. A method to improve oocyte quality through autologous mitochondrial transfer from adult stem cells,

RESEARCH GRANTS Total 15 = PI x 9 [HKD 5.0 M], CoI x 6, Research Contract x 1 [3.1M]

Competitive Grants

1. PI, Knowledge Transfer Project Fund (**KPF-Teaching Grant**), Knowledge Transfer of the advanced morphokinetics analysis on embryos' development potential in In Vitro Fertilization (KPF22GWP10), **HKD\$ 400,000**, 1/4/2022-31/3/2024.
2. PI, The Hong Kong Research Matching Grant (HKRMG, Ref. 8601386), **HK\$ 507,969**, A Clinical Trial in Embryology; 01/09/2021-31/08/2024.
3. PI, Shenzhen Science and Tehnology Innovation Committee (**SZSTI**) 2020-Shenzhen-HongKong-Macau S&T Program, 深港澳科技計劃項目 (**Type C**), Multi-centre validation of an early zygotic morphokinetics prediction system based on a cloud service platform 基於雲服務平臺的受精卵形態動力學預測系統的多中心驗證(Project Reference SGD X2020110309500101) (Grant Ref. 6906177), RMB\$ 1,000,000 (**HKD\$ approx. 1,230,000**), 31/07/2021-30/07/2023.
4. **PI**, Health and Medical Research Fund (**HMRF** 2019, Ref 18190321), **HK\$ 929,940**, A pilot study on developing a one-step thawing method on human blastocysts with transcriptomic and methylomic comparison to conventional vitrified-thawing method, 01/09/2021-31/08/2023.
5. **PI**, Health and Medical Research Fund (**HMRF** 2018, Ref 07180566), **HK\$ 636,684**, A pragmatic, multi-centres, three-arm randomized controlled trial to assess the clinical effectiveness and safety of time lapse imaging in in-vitro fertilization treatment, 01/09/2020 – 31/08/2022.
6. **PI**, Health and Medical Research Fund (**HMRF** 2017, Ref 06170246), **HK\$ 1,114,156**, A double blinded, randomized placebo controlled trial on the effect of Traditional Chinese Medicine formula Wuzi Yanzong Pill on improving semen qualities in men with sub-optimal parameters, 01/06/2019 – 30/04/2022.
7. **PI**, The Hong Kong **Obstetrical & Gynaecological Trust Fund** (Sept 2018), **HK\$ 37,000**, A diagnostic trial for validating the prediction model for blastocyst formation based on zygote size change, 01/09/2018 – 31/08/2019.
8. **PI**, The Hong Kong **Obstetrical & Gynaecological Trust Fund** (Sept 2018), **HK\$ 50,000**, A pragmatic, three-arm randomized controlled trial to assess the clinical effectiveness and safety of time lapse imaging in in-vitro fertilization treatment, 01/09/2018 – 31/08/2022.
9. **PI**, The Hong Kong **Obstetrical & Gynaecological Trust Fund** (Sept 2017), **HK\$ 29,710**, A novel Convolutional Neural Network (CNN) application on zygote recognition and embryo development – a new embryo scoring system, 01/09/2017 – 31/08/2018.
10. **CoI**, General Research Fund (**GRF** 2019, Ref 14111320), **HK\$ 1,195,542**, Deciphering a novel human menstrual blood-derived cell population that confers quality improvement on aged human oocytes, 01/01/2021 – 31/12/2023.
11. **CoI**, Health and Medical Research Fund (**HMRF** 2018, Ref 17180701), **HK\$ 1,197,102**, A pilot study on semen metagenomics, and spent culture media of patients undergoing conventional IVF treatment, 01/09/2020 – 31/08/2022.
12. **CoI**, Innovative Technology Fund (**ITF**, Tier III; ITS/332/18, May 2019), **HK\$ 1,119,525**, Enhancing in vitro maturation of human oocytes through development of a non-invasive mitochondria transfer platform, 01/06/2020 – 31/05/2021.

Non-Competitive Grants

13. **PI**, CUHK **Direct Grant** for research 2019, Project Code #2018.051, **HK\$ 105,000**, A pragmatic, multi-centres, three-arm randomized controlled trial to assess the clinical effectiveness and safety of time lapse imaging in in-vitro fertilization treatment, 01/06/2019 – 31/05/2022.
14. **PI**, CUHK **Direct Grant** 2017, Project Code #2016.053, **HK\$ 149,300**, A Pilot Study on the Effect of a Modified Traditional Chinese Medicine Formula Wuzi Yanzong Pill on Improving Semen Quality in Men with Sub-optimal Parameters, 01/06/2017 – 31/05/2018.
15. **PI**, CUHK, Office of Research and Knowledge Transfer Services, Technology and Business Development Fund (**TBF**, Ref. TBF20MED011) **HK\$ 175,211**, Assisted Embryo Selection Service Platform for Assisted Reproductive Technology, 01/09/2020 – 31/08/2021.
16. **CoI**, CUHK, Office of Research and Knowledge Transfer Services, Technology Start-up Support Scheme for Universities (**TSSSU**, Ref: TSU20MED17) 2020/21, **HK\$ 500,000**, A method to improve oocyte quality through autologous mitochondrial transfer from menstrual blood derived cells, 01/06/2020 – 31/05/2021.
17. **CoI**, CUHK, office of Research and Knowledge Transfer Services, Pre-incubation centre (**Pi**) 2020, **HK\$ 30,000**, Zygote Morphokinetic Predictor (ZMP) development, 01/06/2020 – 31/05/2021.
18. **CoI**, CUHK, Office of Research and Knowledge Transfer Services grant on **Strategic Area Translational Biomedicine** 2019, **HK\$ 625,000** Deploying Next-generation Quality Assessment and Treatment for Assisted Reproductive Technology in the Guangdong-Hong Kong-Macao Greater Bay Area, 01/11/2019 – 31/10/2021.

RESEARCH CONTRACTS

19. **PI**, Research Agreement, **HK\$2,070,000**, Enhancing efficacy of Nonoxynol with anti-microbial peptide for barrier contraception: a pre-clinical validation, 01/06/2020 – 31/12/2022, with **HK-Government Matching Fund Scheme**, **HK\$ 1,035,000**, same period.

AWARDS AND HONORS

EMBO Non-coding RNA symposium fellowships (Germany) 2010
Oxford Vice Chancellor's Award (Oxford, UK) 2010
Nuffield Department of Clinical Medicine DPhil Prize Studentship (Oxford, UK) 2009
Clarendon Award (Oxford, UK) 2006
Hong Kong/China Oxford Scholarship (Hong Kong) 2006

VISITING AND GUEST PROFESSORSHIP

Visiting Scholar, University of Pennsylvania, New Bolton Center, The Center for Animal Transgenesis and Stem cell research (USA) 2006.

EDITORSHIP (TOTAL: 4)

1. Frontiers Physiology, Frontiers, Special Issue Guest editor, Immune Landscape in Kidney Pathology 2021;
2. International Journal of Biochemistry and Cell biology, Elsevier, Special Issue Guest editor, Reproductive Genomics 2021;
3. Frontiers in reproductive health – andrology, review editor, 06/2020 – Present;
4. International Journal of Obstetrics and Gynaecology Study, Scient International, review editor, since 02/2017 – present;

INVITED PRESENTATIONS/ LECTURES (Total: 2)

The 39th Congress of European Society of Human Reproduction and Embryology (ESHRE 2023), invited, embryology on “One step thawing method on human blastocyst”.

The 38th Congress of European Society of Human Reproduction and Embryology (ESHRE 2022), invited, male fertility on “SWOT analysis on the status of male infertility in China”.

The 9th Congress of the Asia Pacific Initiative on Reproduction (ASPIRE 2019) preconference course, on “Regulatory Effects of Spermatogenesis by TCM”.

The 27th International Congress of the Obstetrical and Gynaecological Society of Malaysia (OGSM 2019), “ICSI and update” on 18th July 2019.

KEYNOTE SPEECHES/ DISTINGUISHED LECTURES

NA

CONFERENCE ORGANIZATION

The 10th Congress of the Asia Pacific Initiative on Reproduction (ASPIRE 2020), Andrology section organization committee.

PROFESSIONAL SOCIETY ACTIVITIES

Broad Member of Asia Pacific Initiative on Reproduction (ASPIRE), Course accreditation broad, 2021-Present;

Broad member of the Hong Kong Association of Clinical Embryology (HKACE), 10/2020 – Present;

Abstract reviewer of the Asia Pacific Initiative on Reproduction (ASPIRE 2020), ART section;

Abstract reviewer of Royal College of Obstetrics and Gynaecology (RCOG), UK, 04/2019 – Present.

POSTGRADUATE STUDENTS (Please refer to the Teaching File for further details)

Graduated PhD students (Total: 1)

Graduated MPhil students (Total: 0)

Graduated MSc students (Total: 33), MSc in Reproductive Medicine and Clinical Embryology

Current PhD Students (Total: 5)

Current MPhil Students (Total: 0)

Current MSc students (Total: 19), MSc in Reproductive Medicine and Clinical Embryology

INTERNAL SERVICE

Department

Director of the IVF laboratories Unit, Assisted Reproductive Technologies Unit, Reproductive medicine team, 02/2020 – Present;

Deputy course director of the MSc in Reproductive Medicine and Clinical Embryology, 06/2020 – present.

Faculty

PhD thesis Examination committee (PhD student x 10);

Teaching Med5 MBChB students in Male Fertility Module;

Teaching UGEB1217 Bionic Human and Future being Human – Reproductive Technologies.

College

Member of New Asia College, 06/2018 – present;

University

CU-Medical Centre, Assisted Reproductive Technologies Unit, Lab Director and Person of Responsible, 2022-Present;

Warden, International House 3-5, Office of Student Affairs, 05/2020 – Present;

International House Management Committee (IHMC), Office of Student Affairs, 05/2020 – Present.

EXTERNAL SERVICE

Singapore Agency of Sciences, Technology and Research (A-Star) and National Research Foundation, Grant Reviewer 05/2020-Present;

Auxiliary Medical Office, Grade IV Officer, 03/2011- present.

Media Coverage

Hong Kong Wen Wei Po (文匯報);, 13th August 2018, “中大研養卵，老蚌易生珠” .

Hong Kong Lion Rock Daily (香港仔); 13th August 2018, Headline “中大研催熟卵子，助不育婦女成孕” .

Magazine

Auxiliary Medical Services (AMS), Periodic 隊訊, 輔助生育你要知; 2018 – Present.

Lecture in Public

Auxiliary Medical Services (AMS), 男士生殖健康, 18th August 2020

Hong Kong Science Museum, post-screen talk 科幻有理, 22nd April 2018.

Hong Kong Science Festival 2017 (Feb-April 2017), “Know more about what is IVF Baby/輔助生育技術知多 D” and “Human Reproductive Cells under the Microscope – workshop” on 2nd April 2017; Link: https://www.youtube.com/watch?v=W_g8vR0wgiY

TV programs

Reproductive medicine (最強生命線-生殖醫學), Channel 85, Feb 2018,

Fit Health-Oocytes Cryopreservation (至 fit 男女-雪卵存留愛), iCable; Oct 2017,

Sunday Files-Oocytes cryopreservation (星期日檔案-卵子冷凍), TVB; March 2017,

Fit Health-Male Fertility (至 fit 男女-男性不育問題), iCable; Nov 2015.



專題報道

遲婚成為大氣候，惟女性愈遲生育，可能出現不育。雖然不少夫婦會選擇人工受孕，惟年長女性的卵子質素下降，令失敗個案屢屢出現。中大生物醫學學院和婦產科研究團隊就此展開一項嶄新培育卵子技術研究，利用臍帶血幹細胞中的線粒體 (mitochondrion) 傳輸能量，在 24 小時內「催熟」不成熟的卵子，提高受孕機會。此研究已通過老鼠卵子測試，正招募卵子捐贈者進行人體臨床實驗。若研究成功，本港將領先全球首次成功運用線粒體培養卵子，並首次證實臍帶血對生殖科技的醫學價值，有關卵子技術項目已於本月初申請專利。

■圖/文：香港文匯報專題組

「很多時沖涼靜思帶來研究靈感，有一天思考『港女』深層意義時，想起香港女性遲婚會影響生育，甚至增加遺傳病風險，於是開始研究這個範疇。」自 2014 年起研究卵子老化與基因關係的中大生物醫學學院副教授李天立，因洗腦的「忽發奇想」，2016 年起與他的研究團隊運用「單細胞基因技術」，尋找導致卵母細胞老化的基因特徵。

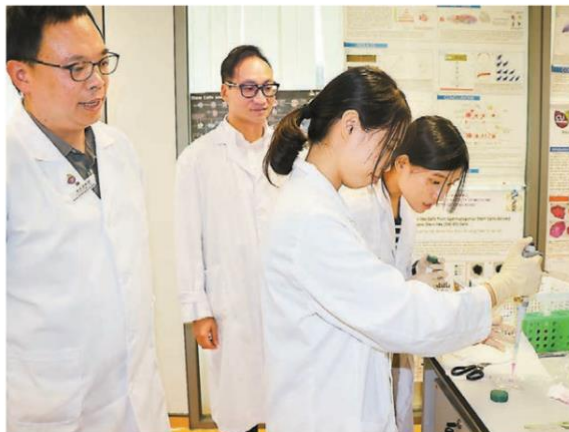
項目獲得研究資助局協作研究基金及中文大學資助，團隊於 2018 年成功研發線粒體轉移技術，他希望以科學方法解決不育問題。

設計養卵「棺材」全世界首創

李教授是次研究發現以幹細胞包裹不成熟卵子後，線粒體會自然發展為缺米管道傳輸能量，令卵子在 24 小時內成熟。他比喻過程如同「充電」，將卵子放到被稱為「棺材」的培育裝置中心點，以

中大研養卵 老蚌易生珠

卵子速「叉電」增大肚機會 招募捐卵者做臨床實驗



■李天立（左一）及團隊正進行一項培育卵子技術研究，利用線粒體「催熟」不成熟的卵子。



■卵子培育時需放於攝氏37度的恆溫櫃中。



■卵子變化需透過顯微鏡觀察，並反覆試驗。