

## Research interests

1. Characterization of leukemia stem cells in acute myeloid leukemia (AML).
2. Development of drugs targeting AML.

## Qualifications

Doctor of Philosophy, The characterization of the regulation and degradation of cyclin A and cyclin F during mitosis, the Hong Kong University of Science and Technology  
Award Date: 1 Jan 2006

Bachelor of Science, the Hong Kong University of Science and Technology  
Award Date: 1 Jan 2002

## Research output

### **Transposable elements as novel therapeutic targets for PARPi-induced synthetic lethality in PcG-mutated blood cancer**

Zeisig, B., Tsai, C.-T., Virely, C., Fung, T. K. K., Akin, A. T., Troadec, E., Jiao, B., Thompson, R., Lau, P. N. I., Li, N., Charalambous, A., Bomfim, L., Lynch, J., Georgiou, A., Hoogeboom, R., Lynn, C., Zhang, S. Y., Patten, P. E., Fisher, C. & Schuh, A. & 4 others, Ogawa, S., Mufti, G. J., Karimi, M. M. & So, C. W. E., 11 Sept 2025, In: *Blood*. 146, 11, p. 1314-1330 17 p.

### **Hematopoietic stem cell quiescence and DNA replication dynamics maintained by the resilient $\beta$ -catenin/Hoxa9/Prmt1 axis**

Lynch, J., Troadec, E., Fung, T. K., Gladysz, K., Virely, C., Lau, P., Cheung, N., Zeisig, B., Wong, J. W. H., Lopes, M., Huang, S. & So, C. W. E., 18 Apr 2024, In: *Blood*. 143, 16, p. 1586-1598 13 p.

### **A novel network pharmacology approach for leukaemia differentiation therapy using Mogrify<sup>®</sup>**

Lee, L. M., Christodoulou, E. G., Shyamsunder, P., Chen, B. J., Lee, K. L., Fung, T. K., So, C. W. E., Wong, G. C., Petretto, E., Rackham, O. J. L. & Tiong Ong, S., 25 Nov 2022, In: *Oncogene*. 41, 48, p. 5160-5175 16 p.

### **HOTTIP-dependent R-loop formation regulates CTCF boundary activity and TAD integrity in leukemia**

Luo, H., Zhu, G., Eshelman, M. A., Fung, T. K., Lai, Q., Wang, F., Zeisig, B. B., Lesperance, J., Ma, X., Chen, S., Cesari, N., Cogle, C., Chen, B., Xu, B., Yang, F. C., So, C. W. E., Qiu, Y., Xu, M. & Huang, S., 17 Feb 2022, In: *MOLECULAR CELL*. 82, 4, p. 833-851.e11

### **Reconstruction of Human AML Using Functionally and Immunophenotypically Defined Human Haematopoietic Stem and Progenitor Cells as Targeted Populations**

Zeisig, B. B., Fung, T. K., Troadec, E. & So, C. W. E., 20 Dec 2021, In: *Bio-protocol*. 11, 24, e4262.

### **Functional reconstruction of human AML reveals stem cell origin and vulnerability of treatment resistant MLL-rearranged leukemia**

So, C. W. E., Zeisig, B., Fung, T. K., Zarowiecki, M., Stanojevic, B., Lynn, C. & Mufti, G., 8 Jan 2021, (Accepted/In press) In: *Science Translational Medicine*.

### **HOTTIP lncRNA Promotes Hematopoietic Stem Cell Self-Renewal Leading to AML-like Disease in Mice**

Luo, H., Zhu, G., Xu, J., Lai, Q., Yan, B., Guo, Y., Fung, T. K., Zeisig, B. B., Cui, Y., Zha, J., Cogle, C., Wang, F., Xu, B., Yang, F. C., Li, W., So, C. W. E., Qiu, Y., Xu, M. & Huang, S., 9 Dec 2019, In: *CANCER CELL*. 36, 6, p. 645-659.E8

### **Transcriptional memory of cells of origin overrides $\beta$ -catenin requirement of MLL cancer stem cells**

Siriboopiputtana, T., Zeisig, B. B., Zarowiecki, M., Fung, T. K., Mallardo, M., Tsai, C.-T., Lau, P. N. I., Hoang, Q. C., Veiga, P., Barnes, J., Lynn, C., Wilson, A., Lenhard, B. & So, C. W. E., 2 Nov 2017, In: *The EMBO journal*. 36, 21, p. 3139-3155

### **Gaq signaling is required for the maintenance of MLL-AF9 induced AML**

Lynch, J. R., Yi, H., Casolari, D. A., Voli, F., Gonzales-Aloy, E., Fung, T. K., Liu, B., Brown, A., Liu, T., Haber, M., Norris, M. D., Lewis, I. D., So, C. W., D'Andrea, R. J. & Wang, J. Y., 9 Feb 2016, (E-pub ahead of print) In: *Leukemia*.

**Targeting Aberrant Epigenetic Networks Mediated by PRMT1 and KDM4C in Acute Myeloid Leukemia**

Cheung, N., Fung, T. K., Zeisig, B. B., Holmes, K., Rane, J. K., Mowen, K. A., Finn, M. G., Lenhard, B., Chan, L. C. & So, C. W. E., 11 Jan 2016, In: *CANCER CELL*. 29, 1, p. 32-48

**Synthetic lethal targeting of oncogenic transcription factors in acute leukemia by PARP inhibitors**

Esposito, M. T., Zhao, L., Fung, T. K., Rane, J. K., Wilson, A., Martin, N., Gil, J., Leung, A. Y., Ashworth, A. & So, C. W., 1 Dec 2015, In: *Nature Medicine*. 21, 12, p. 1481–1490

**Suppression of SOX7 by DNA methylation and its tumor suppressor function in acute myeloid leukemia**

Man, C. H., Fung, T. K., Wan, H., Cher, C. Y., Fan, A., Ng, N., Ho, C., Wan, T. S. K., Tanaka, T., So, C. W. E., Kwong, Y. L. & Leung, A. Y. H., 18 Jun 2015, In: *Blood*. 125, 25, p. 3928-36 9 p.

**Epigenetics in acute promyelocytic leukaemia pathogenesis and treatment response: a TRAnSition to targeted therapies**

Arteaga, M. F., Mikesch, J.-H., Fung, T.-K. & So, C. W. E., 3 Feb 2015, In: *British Journal of Cancer*. 112, 3, p. 413-8 6 p.

**Sox4you: A New Player in C/EBP $\alpha$  Leukemia**

Fung, T. K., Leung, A. Y. & So, C. W., Nov 2013, In: *CANCER CELL*. 24, 5, p. 557-559 3 p., N/A.

**Overcoming treatment resistance in acute promyelocytic leukemia and beyond**

Fung, T. K. & So, C. W. E., Aug 2013, In: *Oncotarget*. 4, 8, p. 1128-1129 2 p., N/A.

**The Wnt/  $\beta$ -Catenin Pathway as a Potential Target for Drug Resistant Leukemic Stem Cell**

Fung, T. K., Leung, A. Y. & So, C. W., 2013, *Stem Cells and Cancer Stem Cells: Therapeutic Applications in Disease and Injury*. Hayat, M. A. (ed.). Springer, Vol. 10. 298 p. (Stem cells and cancer stem cells; vol. volume 10).

**Selective treatment of mixed-lineage leukemia leukemic stem cells through targeting glycogen synthase kinase 3 and the canonical Wnt/ $\beta$ -catenin pathway**

Fung, T. K., Gandillet, A. & So, C. W. E., Jul 2012, In: *Current Opinion in Hematology*. 19, 4, p. 280-286 7 p., N/A.

**Sorafenib treatment of FLT3-ITD(+) acute myeloid leukemia: favorable initial outcome and mechanisms of subsequent nonresponsiveness associated with the emergence of a D835 mutation**

Man, C. H., Fung, T. K., Ho, C., Han, H. H. C., Chow, H. C. H., Ma, A. C. H., Choi, W. W. L., Lok, S., Cheung, A. M. S., Eaves, C., Kwong, Y. L. & Leung, A. Y. H., 31 May 2012, In: *Blood*. 119, 22, p. 5133-43 11 p.

**Methionine aminopeptidase 2 is required for HSC initiation and proliferation**

Ma, A. C. H., Fung, T. K., Lin, R. H. C., Chung, M. I. S., Yang, D., Ekker, S. C. & Leung, A. Y. H., 17 Nov 2011, In: *Blood*. 118, 20, p. 5448-57 10 p.

**Characterization of Sry-related HMG box group F genes in zebrafish hematopoiesis**

Chung, M. I. S., Ma, A. C. H., Fung, T.-K. & Leung, A. Y. H., Oct 2011, In: *Experimental Hematology*. 39, 10, p. 986-998.e5

**Biophysical characterization of hematopoietic cells from normal and leukemic sources with distinct primitiveness**

Tan, Y., Fung, T. K., Wan, H., Wang, K., Leung, A. Y. H. & Sun, D., 2011, In: *APPLIED PHYSICS LETTERS*. 99, 8, p. 3-6 4 p.

**Role of a novel zebrafish nup98 during embryonic development**

Fung, T.-K., Chung, M. I. S., Liang, R. & Leung, A. Y. H., Nov 2010, In: *Experimental Hematology*. 38, 11, p. 1014-1021.e1-2

**Differential NOD/SCID mouse engraftment of peripheral blood CD34+ cells and JAK2V617F clones from patients with myeloproliferative neoplasms**

Fung, T.-K., Cheung, A. M. S., Kwong, Y.-L., Liang, R. & Leung, A. Y. H., Oct 2010, In: *Leukemia Research*. 34, 10, p. 1390-4 5 p.

**Successful engraftment by leukemia initiating cells in adult acute lymphoblastic leukemia after direct intrahepatic injection into unconditioned newborn NOD/SCID mice**

Cheung, A. M. S., Fung, T.-K., Fan, A. K. P., Wan, T. S. K., Chow, H. C. H., Leung, J. C. K., Chan, L. Y. Y., Kwong, Y.-L., Liang, R. & Leung, A. Y. H., Jan 2010, In: *Experimental Hematology*. 38, 1, p. 3-10 8 p.

**Specialized roles of the two mitotic cyclins in somatic cells: cyclin A as an activator of M phase-promoting factor**

Fung, T. K., Ma, H. T. & Poon, R. Y. C., May 2007, In: *Mol Biol Cell*. 18, 5, p. 1861-1873 13 p.

**Cyclin A2**

Fung, T. K. & Poon, R. Y. C., 2 Mar 2007, In: *UCSD Nature Molecule Pages*. doi:10.1038/mp.a000717.01.

**Cyclin A1**

Fung, T. K. & Poon, R. Y. C., 16 Nov 2006, In: *UCSD Nature Molecule Pages*. doi:10.1038/mp.a000716.01.

**Ubiquitination of p53 at multiple sites in the DNA-binding domain**

Chan, W. M., Mak, M. C., Fung, T. K., Lau, A., Siu, W. Y. & Poon, R. Y. C., Jan 2006, In: *MOLECULAR CANCER RESEARCH*. 4, 1, p. 15-25 11 p.

**The N-terminal regulatory domain of cyclin A contains redundant ubiquitination targeting sequences and acceptor sites**

Fung, T. K., Yam, C. H. & Poon, R. Y. C., Oct 2005, In: *Cell Cycle (Georgetown, Tex.)*. 4, 10, p. 1411-20 10 p.

**A roller coaster ride with the mitotic cyclins**

Fung, T. K. & Poon, R. Y. C., Jun 2005, In: *Seminars in Cell and Developmental Biology*. 16, 3, p. 335-42 8 p.

**DNA damage during the spindle-assembly checkpoint degrades CDC25A, inhibits cyclin-CDC2 complexes, and reverses cells to interphase**

Chow, J. P. H., Siu, W. Y., Fung, T. K., Chan, W. M., Lau, A., Arooz, T., Ng, C.-P., Yamashita, K. & Poon, R. Y. C., Oct 2003, In: *Mol Biol Cell*. 14, 10, p. 3989-4002 14 p.

**Cyclin F is degraded during G2-M by mechanisms fundamentally different from other cyclins**

Fung, T. K., Siu, W. Y., Yam, C. H., Lau, A. & Poon, R. Y. C., 20 Sept 2002, In: *Journal of Biological Chemistry*. 277, 38, p. 35140-35149 10 p.

**Cyclin A in cell cycle control and cancer**

Yam, C. H., Fung, T. K. & Poon, R. Y. C., Aug 2002, In: *Cellular and molecular life sciences : CMLS*. 59, 8, p. 1317-26 10 p.

## Activities

**Lady Tata Memorial Trust Fellowship**

Fung, T. K. (Recipient)  
2011 → 2012

**52nd Annual Meeting of the American-Society-of-Hematology (ASH)**

Fung, T. K. (Participant)  
2010