

# Curriculum Vitae

(2021-11-27)

Name / Age: To Sing FUNG 馮濤聲 / 34  
Phone:  
E-mail:  
Online CV: <https://tosingfung.github.io/cv>  
Nationality: Hong Kong (China)  
Current salary:  
Expected salary:  
Earliest start date:

## Work Experience

2017.6 – 2021.5	Associate Professor	South China Agricultural University
2016.3 – 2017.3	Post-doctoral Fellow	University of Macau
2015.1 – 2015.12	Post-doctoral Fellow	Nanyang Technological University

## Educational Background

2011.1 – 2015.1	Ph.D. (Biology)	Nanyang Technological University
2005.9 – 2009.6	B.Sc. (1 <sup>st</sup> Hon, Biochemistry)	Chinese University of Hong Kong
2008.5 – 2008.9	Summer Exchange student	California Institute of Technology
2007.5 – 2007.9	Summer Exchange student	University of Western Ontario

## Language Proficiency

- Fluent English (TOEFL: 115/120, IELTS: 8/9)
- Native Cantonese and fluent Mandarin

## IT Proficiency

- Experienced user of Microsoft Office, Adobe Illustrator, Photoshop and Dreamweaver
- Advanced user of Graphpad Prism, ImageJ, Snapgene and other biological software
- Intermediate static webpage design (HTML5/CSS3)
- Basic Python and Biopython

## Teaching Experience

- Supervised and co-supervised more than 40 BSc, MSc and PhD students
- Lecturer for graduate course *Molecular Virology (English)* for 3 years
- More than 1000 hours as Teaching Assistant during PhD/postdoc

## Research Directions

- Coronavirus replication and pathogenesis
- Coronavirus-host interaction
- Cellular stress response pathways
- Coronavirus reverse genetics for vaccine development

## Research Grant

Total research grant acquired as Principal Investigator: ¥1,590,000

1. Natural Science Foundation of China, Functional study of lysosomal stress activated by coronavirus infection and how it regulates viral replication and pathogenesis, 32170152, 2022-2025, **Principal Investigator**, ¥580,000;
2. Natural Science Foundation of China, Functional characterization of infectious bronchitis coronavirus E protein ion channel activity in modulating viral replication and virus-host interaction, 31900135, 2020-2022, **Principal Investigator**, ¥240,000;
3. Natural Science Foundation of China, Molecular studies of strategies and mechanisms exploited by coronavirus to regulate cell cycle and optimize cellular microenvironment for efficient replication, 31972660, 2020-2023, participant, ¥590,000;
4. Natural Science Foundation of Guangdong Province, Characterization of coronavirus envelope protein ion channel activity in modulating viral pathogenesis and virus-host interaction, 2018A030313472, 2018-2021, **Principal Investigator**, ¥100,000;
5. Zhaoqing Institute of Biotechnology Co. Ltd, Construction of recombinant infectious bronchitis virus for vaccine development, 2018-2020, participant, ¥450,000;
6. Guangdong Province Key Laboratory of Microbial Signals and Disease Control, Activation of ER stress response and innate immunity during coronavirus infection, MSDC-2017-06, 2017-2020, **Principal Investigator**, ¥80,000;
7. Integrate Microbiology Research Center (Internal grant):  
2020-2021, Performance bonus grant, **Principal Investigator**, ¥200,000  
2019-2020, Performance bonus grant, **Principal Investigator**, ¥180,000  
2018-2019, Performance bonus grant, **Principal Investigator**, ¥10,000  
2017-2018, Start-up grant, **Principal Investigator**, ¥200,000

## Research Papers ([Google Scholar](#); [Pubmed](#))

As corresponding author:	<b>6</b>	Impact Factor > 15:	<b>2</b>
As first/co-first author:	<b>15</b>	Impact Factor > 5:	<b>15</b>
Total citation:	<b>2122</b> (as of 2021-11-27)		

1. Qing Chun Zhu, Shu Min Li, Li Xia Yuan, Rui Ai Chen, Ding Xiang Liu and **To Sing Fung**. Induction of the proinflammatory chemokine interleukin-8 is regulated by integrated stress response and AP-1 family proteins activated during coronavirus infection. *International Journal of Molecular Sciences*. 2021;22(11):5646. (IF: 5.923)
2. **To Sing Fung** and Ding Xiang Liu, Similarities and dissimilarities of COVID-19 and other coronavirus diseases. *Annual Review of Microbiology*. 2021;75:19-47. (IF:15.500)
3. Guo Dai, Mei Huang, **To Sing Fung\*** and Ding Xiang Liu\*, Research progress in the development of porcine reproductive and respiratory syndrome virus as a viral vector for gene expression and delivery. *Expert Review of Vaccines*. 2020;19(11):1041-51. (IF: 5.217) \*co-corresponding.
4. Li Xia Yuan, Jia Qi Liang, Qing Chun Zhu, Guo Dai, Shumin Li, **To Sing Fung\*** and Ding Xiang Liu\*, Gammacoronavirus avian infectious bronchitis virus and alphacoronavirus porcine epidemic diarrhea virus exploit a survival strategy via upregulation of cFOS to promote viral replication. *Journal of Virology*. 2020;95(4):e02107. (IF: 5.103) \*co-corresponding.

5. Nannan Wang, Mei Huang, **To Sing Fung**, Qiong Luo, Jun Xian Ye, Qian Ru Du, Liang Hai Wen, Ding Xiang Liu and Rui Ai Chen, rapid development of an effective newcastle disease virus vaccine candidate by attenuation of a genotype VII velogenic isolate using a simple infectious cloning system. *Frontiers in Veterinary Science*. 2020;7:648. (IF: 3.412)
6. Xiao Ying Liang, Qing Chun Zhu, Jia Qi Liang, Si Ying Liu, Ding Xiang Liu and **To Sing Fung**, Development of HiBiT-tagged recombinant infectious bronchitis coronavirus for efficient in vitro and in vivo viral quantification. *Frontiers in Microbiology*. 2020;11:2100. (IF: 5.640)
7. Shumin Li, Lixia Yuan, Guo Dai, Rui Ai Chen, Ding Xiang Liu and **To Sing Fung**, Regulation of the ER stress response by the ion channel activity of the infectious bronchitis coronavirus envelope protein modulates virion release, apoptosis, viral fitness and pathogenesis. *Frontiers in Microbiology*. 2020;10:3022. (IF: 5.640)
8. **To Sing Fung** and Ding Xiang Liu. Human coronavirus: host-pathogen interaction. *Annual Review of Microbiology*. 2019;73(23):1-29. (IF: 15.500)
9. **To Sing Fung** and Ding Xiang Liu. The ER stress sensor IRE1 and MAP kinase ERK modulate autophagy induction in cells infected with coronavirus infectious bronchitis virus. *Virology*. 2019;533:34-44. (IF: 3.616)
10. Jia Qi Liang, Shouguo Fang, Quan Yuan, Mei Huang, Rui Ai Chen, **To Sing Fung\***, and Ding Xiang Liu\*. N-linked glycosylation of the membrane protein ectodomain regulates infectious bronchitis virus-induced ER stress response, apoptosis and pathogenesis. *Virology*. 2019;531:48–56. (IF: 3.616) \*co-corresponding.
11. Sagar Regmi, **To Sing Fung**, Sierin Lim and Kathy Qian Luo. Fluidic shear stress increases the anti-cancer effects of ROS-generating drugs in circulating tumor cells. *Breast Cancer Research and Treatment*. 2018;172(2):297-312. (IF: 4.872)
12. **To Sing Fung** and Ding Xiang Liu. Post-translational modifications of coronavirus proteins: roles and function. *Future Virology*. 2018;13(6):405-430. (IF: 1.831)
13. Hui Hui Wong\*, **To Sing Fung\***, Shouguo Fang, Mei Huang, My Tra Le, and Ding Xiang Liu. Accessory proteins 8b and 8ab of severe acute respiratory syndrome coronavirus suppress the interferon signaling pathway by mediating ubiquitin-dependent rapid degradation of interferon regulatory factor 3. *Virology*. 2018;515:165-75. (IF: 3.616) \*co-first.
14. Yong Wah Tan\*, **To Sing Fung\***, Hongyuan Shen, Mei Huang, and Ding Xiang Liu. Coronavirus infectious bronchitis virus non-structural proteins 8 and 12 form stable complex independent of the non-translated regions of viral RNA and other viral proteins. *Virology*. 2018;513:75-84. (IF: 3.616) \*co-first.
15. Jie Zheng\*, Yoshiyuki Yamada\*, **To Sing Fung\***, Mei Huang, Raymond Chia, and Ding Xiang Liu. Identification of N-linked glycosylation sites in the spike protein and their functional impact on the replication and infectivity of coronavirus infectious bronchitis virus in cell culture. *Virology*. 2018;513:65-74. (IF: 3.616) \*co-first
16. **To Sing Fung** and Ding Xiang Liu. Activation of the c-Jun NH2-terminal kinase pathway by coronavirus infectious bronchitis virus promotes apoptosis independently of c-Jun. *Cell Death & Disease*. 2017;8(12):3215. (IF: 8.469)
17. Janet To\*, Wahyu Surya\*, **To Sing Fung\***, Yan Li, Carmina Verdià-Bàguena, Maria Martin, Vicente M. Aguilera, Ding Xiang Liu, and Jaume Torres. Channel-Inactivating mutations and their revertant mutants in the envelope protein of infectious bronchitis virus. *Journal of Virology*. 2017;91(5):e02158-16. (IF: 5.103) \*co-first
18. **To Sing Fung**, Ying Liao, and Ding Xiang Liu. Regulation of Stress Responses and Translational Control by Coronavirus. *Viruses-Basel*. 2016;8(7):E184. (IF: 5.048)
19. **To Sing Fung**, Jaume Torres, and Ding Xiang Liu. The emerging roles of viroporins in ER stress response and autophagy induction during virus infection. *Viruses-Basel*. 2015;7(6):2834-57. (IF: 5.048)
20. Da Ao, Hui-Chen Guo, Shi-Qi Sun, De-Hui Sun, **To Sing Fung**, Yan-Quan Wei, Shi-Chong Han, Xue-Ping Yao, Sui-Zhong Cao, Ding Xiang Liu, and Xiang-Tao Liu. Viroporin activity of

- the foot-and-mouth disease virus non-structural 2B protein. *PLoS ONE*. 2015;10(5): e0125828. (IF: 3.240)
21. **To Sing Fung**, Mei Huang, and Ding Xiang Liu. Coronavirus-induced ER stress response and its involvement in regulation of coronavirus–host interactions. *Virus Research*. 2014;194:110-23. (IF: 3.303)
  22. **To Sing Fung**, Ying Liao, and Ding Xiang Liu. The ER stress sensor IRE1 $\alpha$  protects cells from apoptosis induced by coronavirus infectious bronchitis virus. *Journal of Virology*. 2014; 88(21):12752-64. (IF: 5.103)
  23. Ding Xiang Liu, **To Sing Fung**, Kelvin Kian Long Chong, Aditi Shukla, and Rolf Hilgenfeld. Accessory proteins of SARS-CoV and other coronaviruses. *Antiviral Research*. 2014; 109:97-109. (IF: 5.970)
  24. **To Sing Fung** and Ding Xiang Liu. Coronavirus infection, ER stress, apoptosis and innate immunity. *Frontiers in Microbiology*. 2014;5(296):1-13. (IF: 5.640)
  25. Ying Liao\*, **To Sing Fung\***, Mei Huang, Shou Guo Fang, Yanxin Zhong, and Ding Xiang Liu. Upregulation of CHOP/GADD153 during coronavirus infectious bronchitis virus infection modulates apoptosis by restricting activation of the extracellular signal-regulated kinase pathway. *Journal of Virology*. 2013;87(14):8124-34. (IF: 5.103)

### Textbook

1. Ding Xiang Liu, Jia Qi Liang, and **To Sing Fung**, "HCoV-229E, -NL63, -OC43, and -HKU1" In *Encyclopedia of Virology 4th edition*. US: Elsevier Inc.
2. Ding Xiang Liu, Yan Ling Ng, and **To Sing Fung**. "Coronaviruses as Vaccine Vector for Veterinary Pathogens". In *Viral Vectors in Veterinary Vaccine Development – A Textbook* (pp. 149-168). Switzerland: Springer International Publishing AG.
3. Ding Xiang Liu, Yan Ling Ng, and **To Sing Fung**. (2019). "Infectious Bronchitis Virus". In *Avian Virology: Current Research and Future Trends* (pp. 129-174). UK: Caister Academic.

### Conference

1. **To Sing Fung** and Ding Xiang Liu. Oral presentation. Ion channel activity of coronavirus envelope protein regulates viral replication and pathogenesis. *Frontiers in Microbiology International Symposium*. 2018. Guangzhou China.
2. **To Sing Fung**. Oral presentation. Activation of JNK pathway by coronavirus infectious bronchitis virus promotes apoptosis. *1st National Conference of Signal Communication and Pathogenesis in Microbes*. 2017. Guangzhou China.
3. **To Sing Fung** and Kathy Qian Luo. Poster presentation. Studying important human disease using fluorescence-based biosensors. *12th "five-years" Science and Technology Innovation Exhibition*. 2016, Macau China.
4. **To Sing Fung**, Ying Liao, Mei Huang, and Ding Xiang Liu. Oral presentation. The ER stress sensor IRE1 protects cells from apoptosis induced by coronavirus infectious bronchitis virus. *XIIIth International Nidovirus Symposium*. 2014, Salamanca Spain.

### Patterns (Chinese)

202011145191.2 / 201911119406.0 / 201910910558.6 / 201811449640.5 / 201811389187.3