

## **Curriculum Vitae - Wong, Chi-Ming**

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### **Personal Summary**

I received my B.Sc. in Biochemistry at the Hong Kong University of Science & Technology in 1997 and at the University of Hong Kong in 2003, respectively. With the support of Croucher Fellowship for Postdoctoral Research, I obtained my postdoctoral training in the laboratory of Dr. Alan G. Hinnebusch (Head of the Program in Cellular Regulation and Metabolism) at National Institutes of Health working on the mechanism of eukaryotic transcription termination (Wong et al, 2007). In 2008, I rejoined my PhD supervisor Prof Dong-Yan Jin's group to explore the role of peroxiredoxin in oxidative defense and genomic stability (Tang et al, 2009; Tang et al 2015). In 2010, with the funding supports from NIH and NSFC, I studied the mechanism of eukaryotic transcription termination and its link in RNA surveillance (Wong et al 2010; Kong et al 2014). I joined the Department of Medicine at HKU as Research Assistant Professor in 2011 and collaborated with Prof Aimin Xu (Director of State Key Lab of Pharmaceutical Biotechnology) to explore new metabolic hormones and factors (Wong et al 2014; Lee et al 2016; Huang et al 2017).

### **Academic Qualifications**

2003 Doctor of Philosophy, The University of Hong Kong, Hong Kong

1999 Master of Science in Biotechnology, The University of Science and Technology, Hong Kong

1997 Bachelor of Science in Biochemistry, The University of Science and Technology, Hong Kong

### **Working experience**

7/2019 – Present: Assistant Professor, Dept. of Health Technology and Informatics, The Hong Kong Polytechnic University

- Subject leader for the course “Cells in Health and Disease (HTI24001)” and year 2 undergraduate students and “Research Methods & Biostatistics (HTI5155/6155)” for FT/PT postgraduate students. Subject coordinator for the course “Pathophysiology (HTI34015)” for year 2 undergraduate students.

11/2017 – 6/2019: Research Assistant Professor, Dept. of Health Technology and Informatics, The Hong Kong Polytechnic University

- Subject leader for the course “Cells in Health and Disease (HTI2400)” for undergraduate students and “Research Methods & Biostatistics (HTI5155/6155)” for postgraduate students.

5/2016 – 10/2017: Senior Executive (Scientific Review), Research Office, Food and Health Bureau

- Review Health Medical Research Fund (HMRF) open call applications
- Monitor the progress of ongoing projects
- Issue the assignment of patent/ intellectual property rights

7/2013 – 4/2016: Co-investigator & Academic Secretary, State Key Laboratory of Pharmaceutical Biotechnology, HKU

- Helped the members to prepare major grant applications such as HK RGC grants (TBRS, AoE, PSKL, CRF), mainland grants (e.g. 973, NSFC and Shenzhen basic research fund) and international grants (e.g. Qatar research grant)
- Organized the scientific events including annual meeting, conferences and seminars

- Managed the research platforms including yeast two-hybrid, virus mediated expression systems and Seahorse metabolic analyzer
- 4/2011 – 4/2016: Research Assistant Professor & Honorary Assistant Professor, Dept. of Medicine, HKU
- Explored novel hormones/ factors and underlying molecular mechanism in the regulation of energy utilization with diet-induced obese mouse model
  - Studied the coordination of eukaryotic RNA polymerase II (RNAPII)-mediated gene expression processes including transcription termination, splicing and RNA surveillance from yeast to mammalian cells
  - Teach and coordinate for the post-graduate courses “Cell Metabolism (MEDI6500/MIPH6196)”, “Current Therapeutic Strategies for Metabolic Diseases (MMPH6205)” and “Metabolic Medicine (MEDI6600)”
- 4/2008 – 2/2011: Post-doctoral Fellow, Dept. of Biochemistry, HKU
- Investigated the role of antioxidant enzyme Peroxiredoxin in genome stability
  - Studied the molecular mechanism of eukaryotic RNAP II - mediated transcription termination
- 11/2003 – 4/2008: Post-doctoral Fellow, Laboratory of Gene Regulation and Development, NIH, USA
- Studied the molecular mechanism of eukaryotic transcription termination
  - Explored the role of translational initiation factor eIF3 in ribosome biogenesis

### Research highlight

Google Scholar: <https://scholar.google.com/citations?user=84sR3g0AAAAJ&hl=zh-TW>

HKU hub: <http://hub.hku.hk/cris/rp/rp01489>

ResearchGate: [https://www.researchgate.net/profile/Chi\\_Ming\\_Wong3](https://www.researchgate.net/profile/Chi_Ming_Wong3)

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**Publications** (H-index: 17; i10-index: 18; Citation: >1099 by Google Scholar

<https://scholar.google.com/citations?user=84sR3g0AAAAJ> )

1. Xu L, Yeung MHY, Yau MYC, Lui PPY\*, Wong CM\* (2019) Role of Histone Acetylation and Methylation in Obesity. *Current Pharmacology Reports*, 1-8. (invited review; new journal without impact factor yet)
2. Yau MY, Xu L, Huang CL, Wong CM\* (2018) Long Non-Coding RNAs in Obesity-Induced Cancer. *Noncoding RNA*. 4(3). (invited review; new journal without impact factor yet)
3. Huang Z, Zhong L, Lee JTH, Zhang J, Wu D, Geng L, Wang Y, Wong CM\* and Xu A\* (2017) The FGF21-CCL11 Axis Mediates Cold-Induced Beiging of White Adipose Tissues by Recruitment of Eosinophils. *Cell Metabolism* 26:493-508.e4. [\*co-corresponding author] (Impact factor = 20.565; rank = 6/190 (Q1) in cell biology; Top 3.16%)
4. Wong CM\*, Xu L, Yau MYC (2018) Alternative mRNA Splicing in the Pathogenesis of Obesity. *Int J Mol Sci*. 19 (2), 632 (invited review; Impact factor = 3.687; rank = 90/293 (Q2) in biochemistry & molecular biology; Top 30.72%)

5. Chen J, Li J, Yiu JHC, Lam JKW, Wong CM, Dorweiler B, Xu A, Woo CW (2017) TRIF-dependent Toll-like Receptor Signaling Suppresses SCD1 Transcription in Hepatocytes and Prevents Diet-induced Hepatic Steatosis. *Science Signaling* 10 (491). pii: eaal3336. (Impact factor = 6.378; rank = 37/293 (Q1) in biochemistry & molecular biology; Top 12.63%)
6. Cheng Y, Gao W, Tang HM, Deng J, Wong CM, Chan CP, Jin DY (2016)-TrCP-1 mediated ubiquitination and degradation of liver-enriched transcription factor CREB-H. *Scientific reports*. 6:23938. (Impact factor = 4.122; rank = 12/64 (Q1) in multidisciplinary sciences; Top 18.75%)
7. Ye D, Li H, Wang Y, Jia W, Zhou J, Fan J, Man K, Lo CM, Wong CM, Wang Y, Lam KSL, Xu A (2016) Circulating Fibroblast Growth Factor 21 Is A Sensitive Biomarker for Severe Ischemia/reperfusion Injury in Patients with Liver Transplantation. *Scientific reports*. 6:19445. (Impact factor = 4.122; rank = 12/64 (Q1) in multidisciplinary sciences; Top 18.75%)
8. Lee JTH, Huang Z, Pan K, Zhang HJ, Woo CW, Xu A, Wong CM\* (2016) Adipose-derived lipocalin 14 alleviates hyperglycemia by suppressing both adipocyte glycerol efflux and hepatic gluconeogenesis in mice. *Diabetologia* 59:604-13. [\*corresponding author] (Impact factor = 6.023; rank = 16/142 (Q1) in endocrinology & metabolism; Top 11.27%)
9. Pan K, Lee ZH, Huang Z and Wong CM\* (2015) Coupling and coordination in gene expression processes with pre-mRNA splicing. *Int J Mol Sci*. 16:5682-96. (invited review for special issue "Pre-mRNA Splicing 2015") (Impact factor = 3.687; rank = 90/293 (Q2) in biochemistry & molecular biology; Top 30.72%)
10. Pan K, Huang Z, Lee ZH and Wong CM\* (2015) Current perspectives on the role of TRAMP in nuclear RNA surveillance and quality control. *Research and Reports in Biochemistry*. 5:111-117 (invited review)
11. Tang HMV, Pan K, Kong KYE, Hu L, Chan LC, Siu KL, Sun H, Wong CM\* and Jin DY\* (2015) Loss of APD1 in Yeast Confers Hydroxyurea Sensitivity Suppressed by Yap1p Transcription Factor. *Scientific reports*. 5:7897. [\*co-corresponding author] (Impact factor = 4.122; rank = 12/64 (Q1) in multidisciplinary sciences; Top 18.75%)
12. Wong CM\*, Wang YD, Lee ZH, Huang Z, Wu D, Xu A\* and Lam SL. (2014) Adropin is a brain membrane-bound protein regulating physical activity via NB-3/Notch signaling pathway in mice. *J. Biol. Chem.* 289:25976-86. [\*co-corresponding author] (Impact factor = 4.011; Rank = 75/293 (Q2) in biochemistry & molecular biology; Top 25.60%)
13. Kong KYE, Tang HMV, Pan K, Huang Z, Lee THJ, Hinnebusch AG, Jin DY\* and Wong CM\* (2014) Cotranscriptional recruitment of yeast TRAMP complex to intronic sequences promotes optimal pre-mRNA splicing. *Nucleic Acids Res*. 42:643-660. [\*co-corresponding author] (Impact factor = 11.561; rank = 10/293 (Q1) in biochemistry & molecular biology; Top 3.41%)
14. Chan CP, Kok KH, Tang HMV, Wong CM\* and Jin DY\*. (2013) Internal ribosome entry site-mediated translational regulation of ATF4 splice variant in mammalian unfolded protein response. *Biochim Biophys Acta - MOLECULAR CELL RESEARCH*. 1833:2165-75. [\*co-corresponding author] (Impact factor = 4.651; rank = 55/293 (Q1) in biochemistry & molecular biology; Top 18.77%)
15. Tang HMV, Gao WW, Chan CP, Siu YT, Wong CM, Kok KH, Ching YP, Takemori H and Jin DY. (2013) LKB1 tumor suppressor and salt-inducible kinases negatively regulate human T-cell leukemia virus type 1 transcription. *Retrovirology*. 11; 10:40. (Impact factor = 3.417; rank = 12/35 (Q2) in virology; Top 34.29%)
16. Gaur NA, Hasek J, Brickner DG, Qiu H, Zhang F, Wong CM, Malcova I, Vasicova P, Brickner JH and Hinnebusch AG. (2013) Vps factors are required for efficient transcription elongation in budding yeast. *Genetics*. 193:829-51 (Impact factor = 4.075; rank = 38/171 (Q1) in genetics & heredity; Top 22.22%)
17. Wong CM\*, Tang, HMV, Kong KYE, Wong GWO, Qiu H, Jin DY and Hinnebusch AG (2010) Yeast arginine methyltransferase Hmt1p regulates transcription elongation and termination by methylating Npl3p. *Nucleic Acids Res*. 38:2217-2228. [\*corresponding author] (Feature article 2010) ] (Impact factor = 11.561; rank = 10/293 (Q1) in biochemistry & molecular biology; Top 3.41%)

18. Tang HMV, Siu, KL, Wong CM\* and Jin DY\* (2009) Loss of yeast peroxiredoxin Tsa1p induces genome instability through activation of DNA damage checkpoint and elevation of dNTP levels. *PLoS Genet.* 5:e1000697. [\*co-corresponding author] (Impact factor = 5.540; rank 22/171 (Q1) in genetics & heredity; Top 12.87%)
19. Dong J, Nanda J, Rahman H, Pruitt M, Shin BS, Wong CM, Lorsch JR and Hinnebusch AG (2008) Genetic identification of yeast 18S rRNA residues required for efficient recruitment of initiator tRNA<sup>Met</sup> and AUG selection. *Genes & Dev.* 22:2242-2255. (Impact factor = 9.462; rank = 2/42 (Q1) in developmental biology; Top 4.76%)
20. Wong CM, Qiu H, Hu C, Dong J and Hinnebusch AG (2007) Yeast cap binding complex impedes recruitment of cleavage factor IA to weak termination sites. *Mol. Cell. Biol.* 27: 6520-6531. (Impact factor = 3.813; rank = 85/293 (Q2) in biochemistry & molecular biology; Top 29.01%)
21. Qiu H, Hu C, Wong CM, and Hinnebusch AG (2006) The Spt4p Subunit of Yeast DSIF Stimulates Association of the Paf1 Complex with Elongating RNA Polymerase II. *Mol. Cell. Biol.* 26:3135-3148. (Impact factor = 3.813; rank = 85/293 (Q2) in biochemistry & molecular biology; Top 29.01%)
22. Wong CM, Siu KL and Jin DY (2004) Peroxiredoxin-null yeast cells are hypersensitive to oxidative stress and are genomically unstable. *J. Biol. Chem.* 279: 23207-23213. (cited over 100 times) (Impact factor = 4.011; Rank = 75/293 (Q2) in biochemistry & molecular biology; Top 25.60%)
23. Ching YP, Leong VY, Wong CM and Kung HF (2003) Identification of an autoinhibitory domain of p21-activated protein kinase 5. *J. Biol. Chem.* 278:33621-33624. (Impact factor = 4.011; Rank = 75/293 (Q2) in biochemistry & molecular biology; Top 25.60%)
24. Wong CM, Ching YP, Zhou Y, Kung HF and Jin DY (2003) Transcriptional regulation of yeast peroxiredoxin gene *TSA2* through Hap1p, Rox1p and Hap2/3/5p. *Free Rad. Biol. Med.* 34: 585-597. (Impact factor = 6.020; rank = 39/293 (Q1) in biochemistry & molecular biology; Top 13.31%)
25. Wong CM, Zhou Y, Ng RW, Kung HF and Jin DY (2002) Cooperation of yeast peroxiredoxins Tsa1p and Tsa2p in the cellular defense against oxidative and nitrosative stress. *J. Biol. Chem.* 277: 5385-5394. (cited over 140 times) (Impact factor = 4.011; Rank = 75/293 (Q2) in biochemistry & molecular biology; Top 25.60%; Top 25.60%)
26. Zhou HJ, Wong CM, Chen JH, Qiang BQ, Yuan JG and Jin DY (2001) Inhibition of LZIP-mediated transcription through direct interaction with a novel host cell factor-like protein. *J. Biol. Chem.* 276:28933-8. (Impact factor = 4.011; Rank = 75/293 (Q2) in biochemistry & molecular biology; Top 25.60%)
27. Wong CM, Chun AC, Kok KH, Zhou Y, Fung PC, Kung HF, Jeang KT and Jin DY. (2000) Characterization of human and mouse peroxiredoxin IV: evidence for inhibition by Prx-IV of epidermal growth factor- and p53-induced reactive oxygen species. *Antioxid. Redox Signal.* 2: 507-518. (Impact factor = 6.530; rank = 35/293 (Q1) in biochemistry & molecular biology; Top 11.95%)
28. Zhou Y, Kok KH, Chun AC, Wong CM, Wu HW, Lin MC, Fung PC, Kung H and Jin DY. (2000) Mouse peroxiredoxin V is a thioredoxin peroxidase that inhibits p53-induced apoptosis. *Biochem Biophys Res Commun.* 268:921-7. (cited over 170 times) (Impact factor = 2.559; rank = 170/293 (Q3) in biochemistry & molecular biology; Top 58.02%)

**External Grants:** (on-going grants are bolded)

As principal investigator,

1. **“Role of a novel protein CYSTM1 in the regulation of metabolism” General research fund; HKS 1,046,148; 1/1/2020-31/12/2023**
2. **“Deciphering the role of Placenta Specific 9 (PLAC9) in obesity” Health and Medical Research Fund**

06173266; HK\$1,190,444; 1/9/2019-31/8/2022.

3. “G-protein couple receptor GPR110 as new therapeutic target for obesity-related complications” *National Natural Science Foundation of China* 81870586; RMB\$570,000; 1/2019-12/2022.
4. “Deciphering the role of B lymphocytes in liver metabolic homeostasis” General research fund 15103418; HK\$ 972,000; 1/2019-9/2022.
5. “Deciphering the molecular mechanism of Protein Arginine Methyltransferase (PRMT) 1 in the regulation of hepatic glucose and lipid metabolism” Health and Medical Research Fund 03143966; HK\$919,296; 6/2016-5/2018 (Transferred to Prof Aimin Xu)
6. “Coupling of nuclear RNA surveillance with splicing” *National Natural Science Foundation of China* 31271361; RMB\$800,000; 1/2013-12/2016.
7. “Regulation of transcription termination and its link in mRNA surveillance” *National Institutes of Health* 1R01TW008298; US\$270,000; 12/2010-11/2015.

As Co-principal Investigator/ Co-investigator,

1. “Institute of Metabolic Medicine” Area of Excellence HK\$1,588,000; 5/2019-4/2027
2. “TLR5 controls adaptive thermogenesis by posttranscriptional regulation of UCP1” General research fund 17101118. HK\$ 570,000. 1/2019-12/2022.
3. “To Establish a Metabolic Study Centre in Hong Kong: Focusing on the Emerging Metabolic Hormones” Collaborative Research Fund (HKU2/CRF/12R) HK\$8,000,000; 5/2013-5/2016.

#### Awards

- 2003-2005 : Croucher Fellowships for Postdoctoral Research (Croucher foundation, Hong Kong)
- 2010-2015 : Global Research Initiative Program for New Foreign Investigators (NIH, USA)
- 2012 : 国家级科技项目奖先进个人 (深圳虚拟大学园) “Individual advancement award for national science & tech project: Shenzhen virtual university campus”
- 2017-2018 : Research Output Prize (The University of Hong Kong)
- 2018-2019 : HTI Teaching Award

#### Members

- Research Centre of Heart, Brain, Hormone & Healthy Aging (HBHA) center, HKU
- Partner State Key Laboratory of Pharmaceutical Biotechnology (PSKLPB), HKU

#### Editorships

- Cell stress (*Shared Science Publishers, Austria*)
- Current Trends in Metabolomics (*Gavin Publishers*)
- Frontiers in Genetics & Frontiers in Molecular Biosciences (*Specialty section: RNA*)
- International Journal of Diabetes Research (*ACT Publishing, Hong Kong*)
- Immunoendocrinology (*Smart Science & Technology LLC, USA*)
- United Journal of Biochemistry and Biotechnology (*United Prime Publication, USA*)

#### Ad-hoc reviewers for journals:

- Advances in Biochemistry (*Science Publishing Group*),
- Allied Academies for Biomedical Research (*Allied Academies*),
- Biomaterials (*Elsevier*)
- Current Biotechnology (*Bentham Science Publishers*),
- Frontiers in Genetics & Frontiers in Molecular Biosciences
- Journal of Physiology and Pharmacology (*Polish Physiological Society*),
- Journal of Biological Chemistry (*American Society for Biochemistry and Molecular Biology*),
- Medical Research Archives (*KEI Journals*),
- Metabolism (*Elsevier*),
- Molecular and Cellular Biology (*American Society for Microbiology*),
- PLoS One (*Public Library of Science*),
- Scientific Reports (*Nature Publishing Group*)

#### **Reviewers for grants:**

- Early Career Reviewer Program (National Institutes of Health, USA)
- The French National Research Agency (The French National Research Agency, France)
- The Science and Technology Development Fund (Macau, China)

#### **Teaching and mentoring experience**

- Course-based teaching for research postgraduate (RPG) students
  - MEDI6500/ MMPH6196 Cell Metabolism
  - MEDI6600 Metabolic Medicine
  - MMPH6205 Current Therapeutic Strategies for Metabolic Diseases
- PBL tutoring for Bachelor of Medicine and Bachelor of Surgery (MBBS) students
  - Endocrine System Block

#### **Teaching philosophy and interest**

Teaching is not just simply transmitting a body of knowledge to the next generation. As a researcher and teacher in biomedical science, it is my responsibility to teach the basic concepts, keep the students interested in science and develop make critical thinking. From theoretical concepts to the development of advance diagnostic tools or new therapeutic strategies, it required enormous time and effort for a succession of researches. Conflicting data and differences of interpretation are common. To provide an unbiased view and cohesive understanding of scientific methods, data interpretation with practical examples and real-life application is the critical to nurture the next generation of independent thinkers.

In addition, to foster an atmosphere that promotes life-long learning and apply their knowledge/logical thinking in their own research, are also very important. I expect my undergraduate students have the ability to discuss and develop ideas to address problems after leaving the lecture room, and postgraduate students develop the ability to collaborate with their peers and to manage their projects to completion perseveringly. The achievement of my goal is evidenced by the students I supervised have joint publications in prestigious journals and embark

on a range of science related careers. I would be interested in applying my teaching principles to wide range of undergraduate and graduate courses. As I only have three-year postgraduate courses teaching experiment, my teaching philosophy is a work in progress and will further develop as I gain more experience in teaching and feedback from students accordingly.

I look forward to teaching traditional courses (such as biochemistry, molecular and cellular biology, animal physiology), interdisciplinary cutting-edge courses including current explosions in the understanding of the mechanism of metabolic dysregulation and molecular mechanism of drug action, and workshops such as tandem affinity purification, ribosome profiling, yeast two-hybrid screening, recombinant adeno-associated viral packaging and purification for gene therapy, *in vitro* metabolic measurement by metabolic analyzer and mice phenotyping.

### **Supervision of Postgraduate students**

#### **Postgraduate students** (*with awards obtained*)

Mr. Martin Yeung (PhD)

Ms. Xu Lu (PhD) (Former primary supervisor\*)

- Hong Kong Postgraduate Fellowship 2016
  - Young Investigator Award (Poster Category) in 12th International Symposium on Healthy Aging
- \*Transferred to Prof. Aimin Xu as I left The University of Hong Kong and joined Research Office of Food and Health Bureau on April 2016.

Ms. Wu Yuan (PhD) (Co-supervisor \*)

- Jessie Ho Memorial Postgraduate Fellowship
- \* Former Primary Supervisor. Transferred the students to under Professor Quan HAO's supervision, as I left The University of Hong Kong and joined Research Office of Food and Health Bureau on April 2016

#### **Graduated students** (*Year of graduation, degree, thesis title and jobs after graduation*)

Dr. Lee Tsz Hang Jimmy (PhD) 2017 (Former primary supervisor\*)

- 'Best Abstract in Basic Science & Translational' in the 20th Medical Research Conference
  - Post-doctoral fellow at Wellcome Sanger Institute, UK
- \*Transferred to Prof. Aimin Xu as I left The University of Hong Kong and joined Research Office of Food and Health Bureau on April 2016.

Dr. Cheong Lai Yee (PhD) 2018 (Co-supervisor)

- Hong Kong Postgraduate Fellowship 2014
- Post-doctoral fellow at Department of Medicine, HKU

Dr. Geng Leiluo (PhD) 2018 (Co-supervisor)

- Post-doctoral fellow at Department of Medicine, HKU

Dr. Huang Zhe Joe (PhD) 2017 (Co-supervisor)

- 'Outstanding Abstract Prize' in the Tenth International Symposium on Healthy Aging
- 'Merit in Recognition of the Outstanding Poster Presentation' in the 18th Research Postgraduate Symposium
- Post-doctoral fellow at Department of Medicine, HKU

Dr. Wang Baile (PhD) 2017 (Former primary supervisor\*)

- Post-doctoral fellow at Department of Medicine, HKU

\* Transferred to Dr. Kenneth Cheng as I left The University of Hong Kong and joined Research Office of Food and Health Bureau on April 2016.

Dr. Li Jin (PhD) 2017 (Co-supervisor)

- Role of Gut Microbiota in the Development of Cardiovascular Diseases
- Post-doctoral fellow at Department of Medicine, HKU

Mr. Yiu Jensen Ho Cheung 2016 (MPhil) (Co-supervisor)

- The Commensal Role of Gut Microbiota in Pregnancy via Toll-Like Receptor
- PhD student in HKU

Mr. Chau Chi Keung (MMedSc with distinction) 2015 (Primary Supervisor)

- Development of recombinant adeno-associated virus-mediated delivery adiponectin in mice
- Research Assistant in Hospital

Mr. Kwong Tsz Yui (MMedSc with distinction) 2015 (Primary Supervisor)

- The role of liver-derived fibroblast growth factor 21 in regulating glucose metabolism in mice

Mr. Lee Tsz Hang Jimmy (MMedSc) 2013 (Primary Supervisor)

- Characterization of novel lipocalin LCN14 expressed in mouse.
- PhD student in HKU