

CURRICULUM VITAE

YIN CAI (蔡寅)

BS MS PhD; Email: david-yin.cai@polyu.edu.hk

1. CURRENT POSITION

Research Assistant Professor

Department of Health Technology and Informatics, The Hong Kong Polytechnic University (PolyU)

2. EDUCATION

- 2014 PhD in Cardiovascular and Metabolic diseases, Department of Pharmacology and Pharmacy, The University of Hong Kong (HKU)
- 2010 MS in Microbiology and Biochemical Pharmacy, China Pharmaceutical University
- 2007 BS in the national base of life science and biotechnology education, China Pharmaceutical University

3. PERSONAL EXPERIENCE

- 09/2020-Present Research Assistant Professor, Department of Health Technology and Informatics, PolyU
- 09/2015-08/2020 Post-doctoral Fellowship, Department of Anaesthesiology, HKU
- 04/2017-07/2017 Visiting Scholar in Heritage Medical Research Centre, University of Alberta
- 09/2014-08/2015 Research assistant, Department of Pharmacology and Pharmacy, HKU

4. PROFESSIONAL MEMBERSHIP

- 2014- American Heart Association
- 2011- American Society for Pharmacology & Experimental Therapeutics
- 2010- Hong Kong Pharmacology Society
- 2010- Institute of Cardiovascular Science & Medicine

5. AWARDS

- 2021 Publication Award (Publishing Paper in High Impact Journal) in Department of Health Technology and Informatics, PolyU

- 2020 Young Investigator Award for Oral Presentation (2nd place) in American Society of Pharmacology & Experimental Therapeutics (ASPET) Cardiovascular Pharmacology Trainee Showcase
- 2020 Travel Award at the 84th Annual Scientific Meeting of the Japanese Circulation Society (JCS2020) and Asian Pacific Society of Cardiology Congress 2020 (APSC2020) [Declined]
- 2020 Young Scientist Award for American Society of Pharmacology & Experimental Therapeutics (ASPET) Annual Meeting at Experimental Biology 2020, San Diego, USA
- 2018 Young Investigator Award for Poster presentation (1st place) at The 8th Scientific Meeting of Asian Society for Vascular Biology (ASVB), Shanghai, China
- 2018 Young Scientist Award for ASPET at 18th World Congress of Basic and Clinical Pharmacology, Kyoto, Japan
- 2018 Congress Bursary Award at 18th World Congress of Basic and Clinical Pharmacology, Kyoto, Japan [Declined]
- 2018 Best Postdoctoral Poster Award (2nd place) in the Division of Cardiovascular Pharmacology of ASPET at Experimental Biology 2018, San Diego, USA
- 2018 Young Scientist Award for ASPET Annual Meeting at Experimental Biology 2018, San Diego, USA
- 2017 The University of Hong Kong/China Medical Board award, Hong Kong, China
- 2016 Young Scientist Award for ASPET Annual Meeting at Experimental Biology 2016, San Diego, USA
- 2014 Young Investigator Award for Oral Presentation (2nd place) in 18th Annual Scientific Meeting of Institute of Cardiovascular Science and Medicine, Hong Kong, China
- 2013 Young Investigator Award for Oral Presentation (3rd place) in 17th Annual Scientific Meeting of Institute of Cardiovascular Science and Medicine, Hong Kong, China
- 2013 Hong Kong Pharmacology Society Travel Award, Hong Kong, China
- 2013 Young Investigator Award for Oral Presentation (2nd place) in 12th Meeting of the Asia Pacific Federation of Pharmacologists & Joint Meeting of Pharmacology of Chinese Pharmacological Society and Hong Kong Pharmacology Society, Shanghai, China

6. TEACHING EXPERIENCE

- 2020/2021 Pathophysiology, HTI34015, Subject leader, PolyU
- 2018/2019 Workshop Facilitator in Research Ethics Course of Li Ka Shing Faculty of Medicine, HKU
- 2017/2018 of Medicine, HKU
- 2016/2017
- 2017 Invited Guest Lecturer in the section of Healthy Aging at the Domestic Worker Empowerment Project

7. RESEARCH GRANTS

- 2021/2022 **Telomere-associated repressor activator protein 1 exacerbates myocardial ischemia reperfusion injury in diabetes**
Funded by “百城百園”專項啟動基金(RMB ¥ 150,000)
Principal Investigator
- 2021/2022 **Telomere-associated Rap1: a novel gatekeeper against oxidative stress in the aging heart**
Funded by PolyU Start-up Fund for RAPs under the Strategic Hiring Scheme (HK\$250,000)
Principal Investigator
- 2020/2021 **Deletion of telomere-associated Rap1 exacerbates cardiac aging by enhancing oxidative stress via Trx1/NADPH oxidase signalling**
Funded by HKU Seed Fund for Basic Research (HK\$55,460)
Co-Investigator
- 2018/2019 **Repressor activator protein 1 exacerbates ischemia/reperfusion injury through activation of NFkB signaling pathway and NLRP3 inflammasome**
Funded by National Natural Science Foundation of China, Science Fund for Young Scholars (RMB ¥ 210,000)
Principal Investigator
- 2017/2018 **Repressor activator protein 1 protects against mitochondrial function and ischemia/reperfusion injury in aging heart via PGC1 α signalling activation**
Funded by HKU Seed Fund for Basic Research (HK\$79,200)
Co-Investigator
- 2017/2018 **Nrf2/HO-1/GCH1 signalling activation in the prevention of diabetic cardiomyopathy**
Funded by National Natural Science Foundation of China, General Program (RMB ¥ 540,000)
Co-Investigator
- 2016/2017 **Rap1 exacerbates myocardial ischemia/reperfusion injury through enhancing cell apoptosis and inflammatory response**
Funded by Health and Medical Research Fund (HK\$1,185,856)
Principal Investigator
- 2012/2013 **Telomere-independent Rap1 contributes to inflammation during atherosclerosis**
Funded by National Natural Science Foundation of China, General Program (RMB ¥ 750,000)
Co-Investigator

8. PUBLICATIONS

2021

1. **Yin Cai**, Hao Liu, Erfei Song, Lin Wang, Jindong Xu, Yi He, Dengwen Zhang, Liyan Zhang, Kenneth King-yip Cheng, Leigang Jin, Min Wu, Shiming Liu, Dake Qi, Liangqing Zhang, Gary D. Lopaschuk, Sheng Wang, Aimin Xu, Zhengyuan

- Xia. Deficiency of telomere-associated repressor activator protein 1 precipitates cardiac aging in mice via p53/PPAR α signalling. *Theranostics*. 2021 Mar 4;11(10):4710-4727. [IF=11.556 in 2020]
2. **Yin Cai**, Yu Zhang, Hui Chen, Xing-hui Sun, Peng Zhang, Lu Zhang, Mengyang Liao, Fang Zhang, Zheng-yuan Xia, Ricky Ying-keung Man, Mark W Feinberg, Susan Wai-Sum Leung. MicroRNA-17-3p suppresses NF κ B-mediated endothelial inflammation by targeting NIK and IKK β binding protein. *Acta Pharmacologica Sinica*. 2021 Feb 23. [IF=6.15 in 2020]
 3. Lin Wang*, **Yin Cai*(CO-First author)**, Liangqing Zhang, Chi Wai Cheung, Zhengyuan Xia. Impact of peroxisome proliferator-activated receptor- α on diabetic cardiomyopathy. *Cardiovascular Diabetology*. 2021 Jan 4;20(1):2. [IF=9.951 in 2020]
 4. Yanjing He, **Yin Cai**, Pearl Mingchu Pai, Xinling Ren, Zhengyuan Xia. The causes and consequences of miR-503 dysregulation and its impact on cardiovascular disease and cancer. *Frontiers in Pharmacology-Experimental Pharmacology and Drug Discovery*. 2021 Mar 8;12:629611. [IF=5.81 in 2020]
 5. Lealem Gedefaw, Sami Ullah, Polly H M Leung, **Yin Cai**, Shea-Ping Yip, Chien-Ling Huang. Inflammasome Activation-Induced Hypercoagulopathy: Impact on Cardiovascular Dysfunction Triggered in COVID-19 Patients. *Cells*. 2021 Apr 16;10(4):916. [IF=6.600 in 2020]
 6. Yuhui Yang, Siman Shen, **Yin Cai**, Kejun Zeng, Keyu Liu, Simeng Li, Lanfen Zeng, Linming Chen, Jing Tang, Zhe Hu, Zhengyuan Xia, Liangqing Zhang. Dynamic patterns of N6-methyladenosine profiles of messenger RNA correlated with the cardiomyocyte regenerability during the early heart development in mice. *Oxidative Medicine and Cellular Longevity*, 2021 (Accept). [IF=6.543 in 2020]
 7. Fei Zeng, Jierong Luo, Hong Han, Wenjie Xie, Lingzhi Wang, Ronghui Han, Hao Chen, **Yin Cai**, Huansen Huang, Zhengyuan Xia. Allopurinol ameliorates liver injury in type 1 diabetic rats through activating Nrf2. *International Journal of Immunopathology and Pharmacology*. 2021;35:20587384211031417. [IF=3.219 in 2020]

2020

1. **Yin Cai**, Fan Ying, Hao Liu, Liang Ge, Erfei Song, Lin Wang, Dengwen Zhang, Eva Hoi Ching Tang, Zhengyuan Xia, Michael G. Irwin. Deletion of Rap1 protects against myocardial ischemia/reperfusion injury through suppressing cell apoptosis via activation of STAT3 signaling. *The FASEB Journal*, 2020;34(3):4482-4496. [IF=4.966 in 2019]
2. Sheng Wang, Liang Ge, Dengwen Zhang, Lin Wang, Hao Liu, Xiaodong Ye, Wanling Liang, Jun Li, Haichun Ma, **Yin Cai* (Co-Corresponding author)**, Zhengyuan Xia*. MiR-181c-5p Promotes Inflammatory Response during Hypoxia/Reoxygenation Injury by Downregulating Protein Tyrosine Phosphatase Nonreceptor Type 4 in H9C2 Cardiomyocytes. *Oxidative Medicine and Cellular Longevity*, 2020;2020:7913418. [IF=5.076 in 2019]
3. Shan Gao, Fang Jiang, Wei Jin, Yuan Shi, Leilei Yang, Yanqiong Xia, Linyan Jia, Bo Wang, **Yin Cai# (Co-Senior author)**, Zhengyuan Xia[#]; Jian Peng[#]. Risk

- Factors Influencing the Prognosis of Elderly Patients Infected with COVID-19: a clinical retrospective study in Wuhan, China. *Aging*, 2020;12:12504-12516. [IF=4.831 in 2019]
4. Dan Yan*, **Yin Cai*(CO-First author)**, Jierong Luo, Jingjin Liu, Fan Ying, Xiang Xie, Aimin Xu, Xiaosong Ma, Zhengyuan Xia. Pharmacological Inhibition of FOXO1 Improves Cardiac Function by Restoring Imbalanced Oxidative Metabolism and Alleviating Mitochondrial Dysfunction in Type1 Diabetic Rats. *Journal of Cellular and Molecular Medicine*, 2020;24:7850-7861. [IF=4.486 in 2019]
 5. Yongshun Wang, Junjun Zhao, **Yin Cai**, Heather J Ballard. Cystic Fibrosis Transmembrane Conductance Regulator-dependent bicarbonate entry controls rat cardiomyocyte ATP release via pannexin1 through mitochondrial signalling and caspase activation. *Acta Physiologica*, 2020;230:e13495. [IF=5.542 in 2018] **This paper was published with an editorial mention, highlighting** “Enigmatic variations: The many facets of CFTR function in the heart” (*Acta Physiologica*. 2020;00:e13525.)
 6. Fang Jiang, Liehua Deng, Liangqing Zhang, **Yin Cai**, Chi Wai Cheung, Zhengyuan Xia. An update review of clinical characteristics of coronavirus disease 2019 (COVID-19). *Journal of General Internal Medicine*, 2020;35:1545-1549. [IF=4.597 in 2019]
 7. Dengwen Zhang, Yi He, Xiaodong Ye, **Yin Cai**, Jingdong Xu, Liangqing Zhang, Mingyi Li, Hao Liu, Sheng Wang, Zhengyuan Xia. Activation of autophagy inhibits NLRP3 inflammasome activation and attenuates myocardial ischemia-reperfusion injury in diabetic rats. *Journal of Diabetes Investigation*, 2020;11:1126-1136. [IF=3.761 in 2019]
 8. Lei Pang, Xin Lian, Huanqiu Liu, Yuan Zhang, Qian Li, **Yin Cai**, Haichun Ma, Xin Yu. Understanding diabetic neuropathy: focus on oxidative stress. *Oxidative Medicine and Cellular Longevity*, 2020;2020:9524635. [IF=5.076 in 2019]
 9. Jingjin Liu, Xiang Xie, Dan Yan, Yongshun Wang, Hongbin Yuan, **Yin Cai**, Jierong Luo, Aimin Xu, Yu Huang, Chi Wai Cheung, Michael G Irwin, Zhengyuan Xia. Up-regulation of FoxO1 contributes to adverse vascular remodelling in type 1 diabetic rats. *Journal of Cellular and Molecular Medicine*, 2020; 24:13727-13738. [IF=4.486 in 2019]

2019

1. Liang Ge*, **Yin Cai*(CO-First author)**, Fan Ying, Hao Liu, Dengwen Zhang, Yanjing He, Lei Pang, Dan Yan, Aimin Xu, Haichun Ma, Zhengyuan Xia. miR-181c-5p Exacerbates Hypoxia/Reoxygenation-Induced Cardiomyocyte Apoptosis via Targeting PTPN4. *Oxidative Medicine and Cellular Longevity*, 2019;2019:1597920. [IF= 4.868 in 2018]

2018

1. Ramoji Kosuru*, **Yin Cai*(CO-First author)**, Vidya Kandula, Dan Yan, Hong Zheng, Yalan Li, Michael G Irwin, Sanjay Singh, Zhengyuan Xia. AMPK Contributes to Cardioprotective Effects of Pterostilbene Against Myocardial

- Ischemia-Reperfusion Injury in Diabetic Rats by Suppressing Cardiac Oxidative Stress and Apoptosis. *Cellular Physiology and Biochemistry*, 2018;46:1381-97. [IF= 5.500 in 2017]
2. Fan Ying, **Yin Cai**, Hoi Kin Wong, Xin Yi Chen, Ianto Bosheng Huang, Paul M Vanhoutte, Zhengyuan Xia, Aimin Xu, Eva Hoi Ching Tang. EP4 emerges as a novel regulator of bile acid synthesis and its activation protects against hypercholesterolemia. *BBA - Molecular and Cell Biology of Lipids*. 2018;1863:1029-40. [IF= 4.966 in 2017]

2017

1. K.H.K. Wong, **Yin Cai**, Fan Ying, Xinyi Chen, Paul M. Vanhoutte, Eva H.C. Tang. Deletion of Rap1 disrupts redox balance and impairs endothelium-dependent relaxations. *Journal of Molecular and Cellular Cardiology*, 2017;115:1-9. [IF= 5.680 in 2016]
2. **Yin Cai**, Vidya Kandula, Ramoji Kosuru, Xiaodong Ye, Michael Irwin, Zhengyuan Xia. Decoding Telomere Protein Rap1: Its Telomeric and Nontelomeric Functions and Potential Implications in Diabetic Cardiomyopathy. *Cell Cycle*, 2017;16(19):1765-73. [IF= 3.530 in 2016]
3. Fan Ying, **Yin Cai**, Yu Cai, Yu Wang, Eva H.C. Tang. Prostaglandin E receptor subtype 4 regulates lipid droplet size and mitochondrial activity in murine subcutaneous white adipose tissue. *The FASEB Journal*, 2017;31(9):4023-36. [IF= 5.498 in 2016]

2016

1. Lei Pang, **Yin Cai**, Eva H.C. Tang, Dan Yan, Ramoji Kosuru, Haobo Li, Michael G. Irwin, Haichun Ma, Zhengyuan Xia. Cox-2 Inhibition Protects against Hypoxia/Reoxygenation-Induced Cardiomyocyte Apoptosis via Akt-Dependent Enhancement of iNOS Expression. *Oxidative Medicine and Cellular Longevity*. 2016;2016:3453059. [IF= 4.492 in 2015]
2. Lei Pang*, **Yin Cai*(CO-First author)**, Eva H.C. Tang, Michael G. Irwin, Haichun Ma, Zhengyuan Xia. Prostaglandin E receptor subtype 4 signaling in the heart: role in ischemia/reperfusion injury and cardiac hypertrophy. *Journal of Diabetes Research*. 2016;2016:1324347. [IF= 2.431 in 2015]

2015 OR BEFORE

1. **Yin Cai**, Galina K. Sukhova, Aimin Xu, Vinay Tergaonkar, Paul M. Vanhoutte, Eva H.C. Tang. Rap1 induces cytokine production in pro-inflammatory macrophages through NFκB signaling, *Cell Cycle*. 2015;14(22):3580-92. [IF= 4.565 in 2014]
2. **Yin Cai**, Fan Ying, Erfei Song, Yu Wang, Aimin Xu, Paul M. Vanhoutte, Eva H.C. Tang. Mice lacking EP4 manifest disrupted lipid metabolism attributable to impaired triglyceride clearance, *The FASEB Journal*, 2015;29(12):4924-36. [IF= 5.043 in 2014]

3. **Yin Cai**, Michael M. Manio, George P.H. Leung, Aimin Xu, Eva H.C. Tang and Paul M. Vanhoutte. Thyroid hormone affects both endothelial and vascular smooth muscle cells in rat arteries, *European Journal of Pharmacology*, 2015;15;747:18-28. [IF= 2.532 in 2014]
4. Joseph D. Robles, Yingping Liu, Jiamin Cao, Zheng Xiang, **Yin Cai**, Michael M. Manio, Eva H.C. Tang and Godfrey C.F. Chan. Immunosuppressive mechanisms of human bone marrow derived mesenchymal stromal cells in BALB/c host graft versus host disease murine models, *Experimental Hematology & Oncology*, 2015;doi: 10.1186/s40164-015-0007-0.
5. Eva H.C. Tang, **Yin Cai**, Chi Kin Wong, Viviane Z Rocha, Galina K. Sukhova, Koichi Shimizu, Ge Xuan, Paul M. Vanhoutte, Peter Libby, Aimin Xu. Activation of prostaglandin E2-EP4 signaling reduces chemokine production in adipose tissue, *The Journal of Lipid Research*, 2015; 56(2):358-68. [IF= 4.421 in 2014]
6. Xungui Wu, Zegen Wang, **Yin Cai**, Ye Yang, Min Wang, Extraction, isolation, purification and composition of *Momordica charantia* polysaccharide, *Chinese Journal of Bioprocess Engineering*, 2011;9(1):19-23.
7. **Yin Cai**, Min Liu, Xungui Wu, Zegen Wang, Cai Liang, Ye Yang, Min Wang. Study on the antitumor and immune-stimulating activity of polysaccharide from *Momordica charantia*, *Pharmaceutical and Clinical Research*, 2010;18(2): 131-34.
8. **Yin Cai**, Fang Zhang, Juefen Gu. Recent advance on macroporous resin and its application in isolation and purification of microbial pharmacy, *Ion Exchange and Adsorption*, 2008;24(5):473-80.
9. Ye Yang, Min Wang, Tingting Zhang, **Yin Cai**, Ran Bi, Chen Luo. Identification of *Bacillus* sp. CPU5 and characteristics of its secondary metabolite, *Journal of China Pharmaceutical University*, 2008;39(4): 368-72.

9. PROFESSIONAL SERVICES

MEMBERS OF EDITORIAL BOARDS FOR ACADEMIC JOURNAL

2021-	Frontiers in Physiology
2021-	Frontiers in Medicine
2021-	Frontiers in Pharmacology
2020-	Military Medical Research
2020-	Mediators of Inflammation (Special issue)
2020-	Frontiers in Medical Technology

AD-HOC JOURNAL REVIEWER

1. Biochemical Journal
2. Bioscience Reports
3. Cardiovascular Diabetology
4. Clinical Science
5. IUBMB Life
6. Frontiers in Pharmacology

7. Journal of Biochemical and Molecular Toxicology
8. Frontiers in Medicine
9. Journal of Diabetes Research
10. Scandinavian Cardiovascular
11. The Faseb Journal
12. Pathology - Research and Practice
13. Frontiers in Medical Technology