

CURRICULUM VITAE

PERSONAL DATA

Name CHUNG Yat Fai Jeff

EDUCATION

2006 – 2012 Kwun Tong Maryknoll College
2012 – 2016 Bachelor of Pharmacy (Hons) in Chinese Medicine
Hong Kong Baptist University
2018 – 2022 Doctor of Philosophy in Anatomical & Cellular Pathology
The Chinese University of Hong Kong
(Supervisor: Prof. Patrick Tang)

WORKING AND RESEARCH EXPERIENCE

10/2022-Present Postdoctoral fellow, Department of Anatomical and Cellular Pathology
The Chinese University of Hong Kong
(Supervisor: Prof. Patrick Ming-Kuen TANG)

08/2016-07/2018 Junior Research Assistant, Li Ka Sing Insitute of Health Sciences,
The Chinese University of Hong Kong
(Supervisor: Prof. Hui-Yao LAN)

09/2015-05/2016 Honors Project Student, Shum Yiu Foon Shum Bik Chuen Memorial Centre
for Cancer, and Inflammation Research School of Chinese Medicine,
Hong Kong Baptist University
(Supervisor: Dr. Joshua KO Ka Shun)

05/2014-09/2015 Internship, Guangdong Provincial Hospital of Traditional Chinese Medicine.
06/2013-06/2014 Student Laboratory helper, Mr. and Mrs. Ko Chi Ming Centre for Parkinson's
Disease Research, School of Chinese Medicine,
Hong Kong Baptist University
(Supervisor: Dr. DURAIRAJAN Siva Sundara Kumar)

Awards

- 1) First Prize, 17th “Challenge Cup” National College Students’ Extracurricular Academic
Science and Technology Contest (Challenge Cup)
Jeff Yat-Fai Chung, Max Kam-Kwan Chan, Patrick Ming-Kuen Tang
Development of a Novel Neutrophil-based Anticancer Immunotherapy: S3KO-TAN
- 2) First-class award, 7th HK University Student Innovation & Entrepreneurship Competition
Jeff Yat-Fai Chung, Max Kam-Kwan Chan, Patrick Ming-Kuen Tang
Development of a Novel Neutrophil-based Anticancer Immunotherapy S3KO-TAN
- 3) Bronze Medal, International Exhibition of Inventions of Geneva 2022

Jeff Yat-Fai Chung, Max Kam-Kwan Chan, Patrick Ming-Kuen Tang

Development of a Novel Neutrophil-based Anticancer Immunotherapy S3KO-TAN

4) ideation Programme, Science Park, Hong Kong.

Max Kam-Kwan Chan, **Jeff Yat-Fai Chung**, Jane Siu-fan Li, Patrick Ming-Kuen Tang

AANG: A Chinese Medicine Derived Natural Compound Formula for Overcoming Multidrug Resistance

5) Second-class award, 8th HK University Student Innovation & Entrepreneurship

Competition. Max Kam-Kwan Chan, **Jeff Yat-Fai Chung**, Jane Siu-fan Li, Patrick

Ming-Kuen Tang .AANG: A Chinese Medicine Derived Natural Compound Formula for Overcoming Multidrug Resistance.

6) Outstanding student award 2021, The Chinese University of Hong Kong

7) Poster Presentation Award, Hong Kong Society for Immunology 2021, Hong Kong

Abstract : Single-Cell RNA-Sequencing Uncovers Smad3 as a Master Regulator for N1/N2 Polarization of Tumor-Associated Neutrophils in Lung Carcinoma.

8) MERIT AWARD, ESMO Immuno-Oncology Virtual Congress 2020, European Society for Medical Oncology, Switzerland (October 2020)

Jeff Yat-Fai Chung, Tin-Lap Lee, Ka-Fai To, Hui-Yao Lan, Patrick Ming-Kuen Tang

Abstract #271: Neutrophil-Specific Single-Cell RNA-Sequencing Discovers a Novel Smad3-dependent Immunosuppressor Prdm2 for Promoting NSCLC.

9) One of the high scoring abstracts, The European Association for Cancer Research 2021

Jeff Yat-Fai Chung, Tin-Lap Lee, Ka-Fai To, Hui-Yao Lan, Patrick Ming-Kuen Tang

EACR21v-0231: Single-Cell RNA-Sequencing Uncovers Smad3 as a Master Regulator for N1/N2 Polarization of Tumor-Associated Neutrophils in Lung Carcinoma

10) Honorable mention award, CUHK Research Poster Exhibition 2021

Jeff Yat-Fai Chung, Tin-Lap Lee, Ka-Fai To, Hui-Yao Lan, Patrick Ming-Kuen Tang

Single-Cell RNA-Sequencing Uncovers Smad3 as a Master Regulator for N1/N2 Polarization of Tumor-Associated Neutrophils in Lung Carcinoma

Research Publications

- 1) **Jeff Yat Fai Chung**, Philip Chiu-Tsun Tang, Max Kam Kwan Chan, Xiao-Ru Huang, Dr. Vivian Weiwen Xue, Calvin S. Ng, Dongmei Zhang, Kam Tong Leung, Chun Kwok Wong, Tin-Lap Lee, Eric W. Lam, Nikolic-Paterson DJ, Ka-Fai To, Hui-Yao Lan, Patrick Ming-Kuen Tang(correspondence). Smad3 is essential for polarization of tumor-associated neutrophils in non-small cell lung carcinoma. Nature Communications. 2023 Mar 31;14(1):1794.
- 2) Max Kam Kwan Chan, **Jeff Yat Fai Chung(Co-first)**, Philip Chiu-Tsun Tang, Alex Siu-Wing Chan, Johnny Yuk Yeung Ho, Tony Pak Tik Lin, Jiaoyi Chen, Kam Tong Leung, Ka-Fai To, Hui-Yao Lan, Patrick Ming-Kuen Tang(correspondence). TGF- β signaling networks in the tumor microenvironment. Cancer Letters 2022 Dec 1;550:215925.
- 3) Vivian Weiwen Xue¹, **Jeff Yat-Fai Chung (Co-first)**, Philip Chiu-Tsun Tang, Alex Siu-Wing Chan, Travis Hoi-Wai To, Justin Shing-Yin Chung, Francis Mussal, Eric W-F Lam, Chunjie Li, Ka-Fai To, Kam-Tong Leung, Hui-Yao Lan, Patrick Ming-Kuen Tang(correspondence). USMB-shMincle: A Virus-free Gene Therapy for Blocking M1/M2 Polarization of Tumour-associated Macrophages. Molecular Therapy-Oncolytics 2021 Aug 25;23:26-37.
- 4) **Jeff Yat-Fai Chung**, Max Kam-Kwan Chan, Jane Siu-Fan Li, Alex Siu-Wing Chan, Philip Chiu-Tsun Tang, Kam-Tong Leung, Ka-Fai To, Hui-Yao Lan, Patrick Ming-Kuen Tang(correspondence). TGF- β Signaling: From Tissue Fibrosis to Tumor Microenvironment. International Journal of Molecular Sciences. 2021, 22(14), 7575.
- 5) Vivian Weiwen Xue, **Jeff Yat-Fai Chung (Co-first)**, Cristina Alexandra García Córdoba, Alvin Ho-Kwan Cheung, Wei Kang, Eric W-F Lam, Kam-Tong Leung, Ka-Fai To, Hui-Yao Lan, Patrick Ming-Kuen Tang(correspondence). Transforming Growth Factor- β : A Multifunctional Regulator of Cancer Immunity. Cancers (Basel). 2020 Oct 23;12(11): E3099.
- 6) Tang PC, **Chung JY**, Lian J, Chan MK, Chan AS, Xue VW, Cheng G, Li C, Huang XR, Ng CS, Lam EW, Zhang DM, Ho YP, To KF, Leung KT, Jiang X, Ho K, Lee TL, Lan HY, Tang PM (correspondence). Single-cell RNA-sequencing Uncovers a Neuron-like Macrophage Subset Associated with Cancer Pain. Science Advances 2022 Oct 7;8(40):eabn5535
- 7) Tang PC, **Chung JY**, Xue VW, Xiao J, Meng XM, Huang XR, Zhou S, Chan AS, Tsang AC, Cheng AS, Lee TL, Leung KT, Lam EW, To KF, Tang PM (co-correspondence). Smad3 Promotes Cancer-Associated Fibroblasts Generation via Macrophage-Myofibroblast

Transition., Lan HY. *Advanced Science*, 9: e2101235, 2022

8) Tang PM , Zhang YY, Xiao J, Tang PC, **Jeff Yat-Fai Chung**, Li J, Xue VW, Huang XR, Chong CC, Ng CF, Lee TL, To KF, Nikolic-Paterson DJ, Lan HY. Neural transcription factor Pou4f1 promotes renal fibrosis via macrophage-myofibroblast transition. *PNAS* August 25, 2020, 117 (34) 20741- 20752.

9) Patrick Ming-Kuen Tang), Ying-Ying Zhang, Jessica Shuk-Chun Hung, **Jeff Yat-Fai Chung**, Xiao-Ru Huang, Ka-Fai To, Hui-Yao Lan. DPP4/CD32b/NF- κ B Circuit: A Novel Druggable Target for Inhibiting CRP-Driven Diabetic Nephropathy. *Mol Ther.* 2020 Sep 5;S1525-0016(20)30427-5.

10) Tang PC, Zhang YY, Chan Max Kam-Kwan, Lam WW, **Jeff Yat-Fai Chung**, Kang W, To KF, Lan HY, Tang PM. The Emerging Role of Innate Immunity in Chronic Kidney Diseases. *Int J Mol Sci.* 2020 Jun 4;21(11):4018.

11) Tang, P.M., P.C. Tang, **Jeff Yat-Fai Chung**, J.S.C. Hung, Q.M. Wang, G.Y. Lian, J. Sheng, X.R. Huang, K.F. To, and H.Y. Lan. A Novel Feeder-free System for Mass Production of Murine Natural Killer Cells In Vitro. *J Vis Exp.* 2018 Jan 9;(131):56785.

Scientific Conferences Presentations

1) **Jeff Yat-Fai CHUNG**, Philip Chiu Tsun TANG, Tin-Lap LEE, Kam-Tong Leung, Ka-Fai TO, Patrick Ming-Kuen TANG. Single-Cell RNA-Sequencing Uncovers Smad3 as a Master Regulator for N1/N2 Polarization of Tumor-Associated Neutrophils in Lung Carcinoma. Hong Kong Immunology Forum 2021 & Annual Scientific Meeting of Hong Kong Society for Immunology (HKSI) 2021, 04 Dec 2021; Hong Kong.

2) **Jeff Yat-Fai Chung**, Tin-Lap Lee, Ka-Fai To, Hui-Yao Lan, Patrick Ming-Kuen Tang. Single-Cell RNA-Sequencing Uncovers Smad3 as a Master Regulator for N1/N2 Polarization of Tumor-Associated Neutrophils in Lung Carcinoma. The European Association for Cancer Research 2021 Virtual Congress.

3) **J. Chung**, T.L. Lee, K.F. To, H.Y. Lan, P.M.K. Tang. Neutrophil-specific single-cell RNA-sequencing discovers a novel smad3-dependent immunosuppressor PRDM2 for promoting NSCLC. ESMO Immuno-Oncology Virtual Congress 2020, European Society for Medical Oncology. *Annals of Oncology.* Volume 31, Supplement 7, S1455, December 01, 2020 (Impact factor 2020: 32.97)

4) **Jeff Yat-Fai Chung**, P.C.T. Tang, Y.Y. Zhang, T.H.W. To, W.W.Y. Lam, V.W. Xue, X.R.

Huang, K.F. To, H.Y. Lan, P. Tang. Macrophage-specific RNA-sequencing reveals a novel pathogenic mechanism for malignancy-associated acute kidney injury at single-cell resolution. ISN World Congress of Nephrology 2020. Kidney International Reports. Volume 5, Issue 3, Supplement, March 2020, Page S220. (Impact factor 2020: 4.164)

5) **Jeff Yat-Fai Chung**, Philip Chiu-Tsun Tang, Vivian Weiwen Xue, Xiao-Ru Huang, Ka-Fai To, Hui-Yao Lan, Patrick Ming-Kuen Tang. Smad3 Shortens the Lifespan of Neutrophil in the Tumor Microenvironment. Hong Kong Society of Flow Cytometry 24th Annual General Meeting and Scientific Meeting, 9 March 2019; Hong Kong.

6) Patrick Ming-Kuen Tang, Philip Chiu-Tsun Tang, **Jeff Yat-Fai Chung**, Xiao-Ru Huang, Ka-Fai To and Hui-Yao Lan. Smad3 silences neutrophil anticancer activity in the tumor microenvironment. Proceedings of the American Association for Cancer Research Annual Meeting 2019; 2019 Mar 29-Apr 3; Atlanta, GA. Philadelphia (PA): AACR; Cancer Res 2019;79(13 Suppl): Abstract nr 1081.

7) Philip Chiu-Tsun Tang, Patrick Ming-Kuen Tang, **Jeff Yat-Fai Chung**, Xiao-Ru Huang, Ka-Fai TO and Hui-Yao LAN. Macrophage is a novel and rich source of cancer-associated fibroblasts in the tumor microenvironment. Proceedings of the American Association for Cancer Research Annual Meeting 2019; 2019 Mar 29-Apr 3; Atlanta, GA. Philadelphia (PA): AACR; Cancer Res 2019;79(13 Suppl): Abstract nr 1095.

8) Patrick Ming-Kuen Tang, Philip Chiu-Tsun Tang, **Jeff Yat-Fai Chung**, Xiao-Ru Huang, Ka-Fai To, Hui-Yao Lan. Deletion of Smad3 Restores Anticancer Activity of Tumor-Associated Neutrophils by Enhancing N1 phenotypes. Hong Kong Immunology Forum 2018 & Annual Scientific Meeting of Hong Kong Society for Immunology (HKSI) 2018, 15 Sep 2018; Hong Kong.

RESEARCH PROJECT INVOLVED

- 1) Regulatory Role and Mechanism of Smad3 in Immunosuppression of Neutrophil Anticancer Activities (GRF 14106518; 2019-2021)
- 2) Treatment of Diabetic Nephropathy by Targeting TGF- β /Smad Signalling with the Combination of Asiatic Acid and Naringenin (HMRF14152321)
- 3) Genetic Engineering a TGF-beta Tolerant human NK Cell Line for Effective Anticancer Immunotherapy (ITS/227/15)
- 4) Chinese herbal medicinal compound Cory B promotes the clearance of pathogenic protein aggregations associated with Parkinson's disease via inducing autophagy
- 5) Berberine Ameliorates Beta-amyloid Pathology, Gliosis and Cognitive Impairment in an Alzheimer's Disease Transgenic Mouse Model.
- 6) The database comprises common bioactive phytochemicals with bioactivities, nature resources, sample preparation and related analytical methods.

TECHNIQUE

Cancer Research

Human and mice tumor specimens handling. Cell culture such as HCT 116, HT-29, Caco-2, HepG2, LLC and mTEC. Cell cycle analysis, cell growth and apoptosis assay, cytotoxicity assay such as MTT and Annexin V/PI. SDS-PAGE and Western blot analysis. Gene expression analyses by RT-PCR and Real time PCR. Preparation and analysis of DNA and RNA.

Traditional Chinese medicine Research

Use of UV-spectrophotometer, TLC, GC-MS, and HPLC relate to Chinese medicine herbs. The preparation of different Chinese herbs drug dosage Regimen such as tablet, capsules and injection.

Diabetes Research

Experiences in animal handling of mouse rat and rabbit. Drug administration of animals (oral gavage and intraperitoneal injection), blood, urine, tissue collection and DNA genotyping. Frozen section and Paraffin section as well as the ELISA and Immunochemistry.