

Alvin, Chun-hang MA
(Assistant Professor)



QUALIFICATIONS:

2009	PhD (Medicine), University of Hong Kong, HK
2006	MPhil (Zoology), University of Hong Kong, HK
2003	BSc (Animal and Plant Biotechnology), University of Hong Kong, HK

BRIEF OUTLINE OF EXPERIENCE AND POSTS HELD:

2016-Present	Assistant Professor, Department of Health Technology and Informatics, The Hong Kong Polytechnic University, HK
2013-2016	Research Assistant Professor, Department of Medicine, University of Hong Kong, HK
2012-2013	Research Fellow, Department of Biochemistry and Molecular Biology, Mayo Clinic, US
2009-2012	Post-Doctoral Fellow, Department of Medicine, University of Hong Kong, HK

RESEARCH INTERESTS:

- **Hematopoiesis:** Gene regulation in normal vertebrate hematopoiesis and molecular basis of human hematological malignancies, in particular, functional evaluation of novel hematopoietic genes or disease-related gene mutations with zebrafish model.
- **Zebrafish Diseases Model:** Generation of zebrafish model of human genetic diseases including hematological malignancies and congenital disorders, aiming to establish a comprehensive zebrafish platform for high throughput disease modeling as well as large-scale screening of novel therapeutic agents to achieve translational medicine. Development of advance research technologies including in vivo genome editing, transgenesis and high-resolution imaging.
- **Autophagy and Cellular Aging:** using zebrafish model to study autophagy during embryonic development, particularly the complex role of autophagy in hematopoiesis and cellular aging.

SERVICE TO PROFESSIONAL & SCIENTIFIC BODIES, CONSULTANCY, MEMBERSHIP OF PROFESSIONAL & LEARNED SOCIETIES:

- Review Editor, Frontiers in Genetics
- Review Editor, Frontiers in Molecular Biosciences
- Editorial Board, Scientific Reports
- Committee Member, Environmental Sustainability Committee, International Zebrafish Society (IZFS)
- Member, International Society for Experimental Hematology (ISEH)
- Member, Zebrafish Disease Models Society (ZDM)

AWARDS & PATENTS:

- Publication Award - Publishing Paper in High Impact Journal (Department of HTI) 2019/20
- Inventor of United States Patent - Methods and materials for assembling nucleic acid constructs (US20180002707A1)

REPRESENTATIVE PUBLICATIONS: (JOURNAL ARTICLES, BOOK CHAPTERS, MONOGRAPHS AND CONFERENCE PAPERS; TOTAL>40):

Research Articles

1. Chen XK, Yi Z, Wong GT, Hasan K, Kwan JS*, **Ma AC*** and Chang RC*. Is Exercise a Senolytic Medicine? A Systematic Review. *Aging Cell*. 2021; 20(1): e13294. *Co-corresponding author [IF: 7.238; Ranking (Geriatrics and Gerontology): 3/51, **Q1**]
2. Chen XK, Kwan JS, Chiang RC* and **Ma AC***. 1-phenyl 2-thiourea (PTU) activates autophagy in zebrafish embryos. *Autophagy*. 2021; 17(5): 1222-1231. *Co-corresponding author [IF: 9.770; Ranking (Cell Biology): 22/195, **Q1**] - [Departmental Publication Award 2020](#)
3. **Ma AC**, Mak CC, Yeung KS, Pei SL, Ying D, Yu MH, Hasan KM, Chen X, Chow PC, Cheung YF and Chung BH. Mono-allelic mutations in CC2D1A suggest a novel role in human heterotaxy and ciliary dysfunction. *Circulation: Genomic and Precision Medicine*. 2020; 13(6): e003000. [IF: 4.063; Ranking (Cardiac and Cardiovascular system): 38/138, **Q1**]
4. **Ma AC**, McNulty MS, Poshusta TL, Campbell JM, Martínez-Gálvez G, Argue DP, Lee HB, Urban MD, Bullard CE, Blackburn PR, Man TK, Clark KJ and Ekker SC. FusX: A rapid one-step TALE assembly system for genome science *Human Gene Therapy*. 2016; 27(6):451-63. [IF: 4.273; Ranking (Biotechnology & Applied Microbiology): 30/156, **Q1**]
5. **Ma AC**, Lee HB, Clark KJ and Ekker SC. High efficiency in vivo genome engineering with a simplified 15-RVD GoldyTALEN design. *PLoS One*. 2013; 8(5):e65259. [IF: 2.740; Ranking (Multidisciplinary Sciences): 27/71, **Q2**]
6. Bedell VM, Wang Y, Campbell JM, Poshusta TL, Starker CG, Krug RG, Tan W, Penheiter SG, **Ma AC**, Leung AY, Fahrenkrug SC, Carlson DF, Voytas DF, Clark KJ, Essner JJ and Ekker SC. *In vivo* Genome Editing Using High Efficiency TALENs. *Nature*. 2012; 491(7422): 114-118. [IF: 42.778; Ranking (Multidisciplinary Sciences): 1/71, **Q1**]
7. **Ma AC**, Fung TK, Lin RH, Chung MIS, Yang D, Ekker SC and Leung AY. Methionine aminopeptidase 2 is required for hematopoietic stem cell initiation and proliferation. *Blood*. 2011; 118(20):5448-5457. [IF: 17.543; Ranking (Hematology): 1/76, **Q1**]
8. **Ma AC**, Chung MIS, Liang R and Leung AY. A DEAB-sensitive aldehyde dehydrogenase (aldh) regulates hematopoietic stem and progenitor cell development during primitive hematopoiesis in zebrafish embryos. *Leukemia*. 2010; 24(12): 2090-2099. [IF: 8.665; Ranking (Hematology): 5/76, **Q1**]
9. **Ma AC**, Chung MIS, Liang R and Leung AY. The role of survivin2 in primitive hematopoiesis during zebrafish development. *Leukemia*. 2009; 23(4): 712-720. [IF: 8.665; Ranking (Hematology): 5/76, **Q1**]
10. **Ma AC**, Ward AC, Liang R and Leung AY. The role of jak2a in zebrafish hematopoiesis. *Blood*. 2007; 110(6): 1824-1830. [IF: 17.543; Ranking (Hematology): 1/76, **Q1**]

Book Chapter

1. **Ma AC**, Shi X, He B, Guo Y and Leung AY. A zebrafish model for evaluating the function of human leukemic gene IDH1 and its mutation. *Methods in Molecular Biology*. Springer, 2016. Springer, 2017; 1633:193-218.
2. **Ma AC**, Chen Yi, Blackburn PR and Ekker SC. TALEN-Mediated Mutagenesis and Genome Editing. *Methods in Molecular Biology*. Springer, 2016; 1451:17-30.