

CURRICULUM VITAE

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POSITIONS AND EMPLOYMENT

Jan 2017 –present	Associate Professor, Department of Microbiology and Immunology, Yong Loo Lin School of Medicine at the National University of Singapore, Singapore
June 2009 – Dec 2016	Assistant Professor, Department of Microbiology and Immunology, Yong Loo Lin School of Medicine at the National University of Singapore, Singapore
June 2008 – June 2009	Instructor, Department of Immunology, The University of Texas M. D. Anderson Cancer center
Feb 2005 – May 2008	Odyssey Scholar in Dr. Chen Dong's lab, Department of Immunology, University of Texas M.D. Anderson Cancer center
July 2002 – Jan 2005	Postdoctoral fellow in Dr. Chen Dong's lab, Department of Immunology, University of Washington
July 1995 – June 1997	Research Assistant, Institute of Hydrobiology, Chinese Academy of Sciences

EDUCATION

August 1997 – July 2002	Ph.D., Department of Biological Sciences, National University of Singapore
Sept 1992 – July 1995	M.Sc., Department of Microbiology and Immunology, Wuhan University
Sept 1988 – July 1992	B.Sc., Department of Biology, Zhejiang Normal University

RESEARCH INTERESTS

Signal transduction in immunity, metabolism and cancer.

PUBLICATIONS

1. Zhen, B., Shi, L., Guo, Y., Lv, Z., Tang, C., Niu, S., Tremblay, A., Venkataramani, M., Culpepper, C., Li, L., Zhou, Z., Mansour, A., **Zhang, Y.**, Gewirtz, A., Kidder, K., Zen, K., and Liu, Y. 2016. Cd47-Sirp α interaction and IL-10 constrain inflammation-induced macrophage phagocytosis of healthy self-cells. *PNAS*. **113** (37): E5434-E5443. PMID: 27578867.
2. Chua, Y.L., Liong, K.H., Huang, C., Wong, H.S., Zhou, Q., Ler, S.S., Tang, Y., Low, C.P., Kuo, I., **Zhang, Y.**, Wong, W., Lim, H.Y., Angeli, V., MacAry, P.A., Chua, K.Y., and Kemeny, D.M. 2016. Respiratory allergen-specific T cell-receptor transgenic Th2-cells induce iBALT and severe asthma in mice. *J. Immunol.* **197**: 3771-3781. PMID: 27733553.
3. Ajjampur, S., Png, C.W., Chia, W.N., **Zhang, Y.**, and Tan, K.S.W. 2016. Ex vivo and In vivo mice models to study Blastocystis spp. adhesion, colonization and pathology: Closer to proving Koch's Postulates. *PLOS One*. **11**(8): e0160458. PMID: 27508942.
4. Low, H., Png, C.W., Li, C., Wang, D., Wong, J.S.B., and **Zhang, Y.** 2016. Monocyte-derived factors including PLA2G7 induced by macrophage-nasopharyngeal carcinoma cell interaction promote tumor cell invasiveness. *Oncotarget*. **7**:55473-55490. PMID: 27487154.
5. Low, H. and **Zhang, Y.** 2016. Regulatory roles of MAPK phosphatases in cancer. *Immune Network*. **16**:85-98. PMID: 27162525.
6. Moorthy, A.N., Rai, P., Jiao, H., Wang, S., Tan, K.B., Qin, L., Watanabe, H., **Zhang, Y.**, Narasaraaju, T., and Chow, V.T. 2016. Capsules of virulent pneumococcal serotypes enhance formation of neutrophil extracellular traps during *in vivo* pathogenesis of pneumonia. *Oncotarget*. **7**:19372-19340. PMID: 27034012.

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7. Png, C.W., Weerasooriya, M., Guo, J., James, S.J., Poh, H.M., Osato, M., Flavell, R.A., Dong, C., Yang, H., and **Zhang, Y.** 2016. DUSP10 regulates intestinal epithelial cell growth and colorectal tumorigenesis. *Oncogene* 35:206-17. PMID: 25772234.
8. Sheng, W., Png, C.W., Reynolds, J.M., and **Zhang, Y.** 2015. T cell-derived GM-CSF, regulation of expression and function. *Immunome Research*. 11:098 (1-6).
9. Png, C.W. and **Zhang, Y.** 2015. MAPK phosphatase 5 inhibits IRF3. *Oncotarget*. 6:19348-49. PMID: 26305722.
10. James, S.J., Jiao, H., The, H., Takahashi, H., Png, C.W., Phoon, M.C., Suzuki, Y., Sawasaki, T., Xiao, H., Chow, V.T.K., Yamamoto, N., Reynolds, J.M., Flavell, R.A., Dong, C., and **Zhang, Y.** 2015. MAPK phosphatase 5 expression induced by influenza and other RNA virus infection negatively regulates IRF3 activation and type I interferon response. *Cell Reports*. 10: 1722-1734. PMID: 25772359.
11. **Zhang, Y.**, Nguyen, T., Tang, P., Kennedy, N.J., Jiao, H., Zhang, M., Reynolds, J.M., Jaeschke, A., Martin-Orozco, N., Chung, Y., He, W., Wang, C., Jia, W., Ge, B., Davis, R.J., Flavell, R.A., and Dong, C. 2015. Regulation of adipose tissue inflammation and insulin resistance by MAPK phosphatase 5. *J. Biol. Chem.* 290: 14875-14883. PMID: 25922079.
12. Jiao, H., Tang, T., and **Zhang, Y.** 2015. MAP kinase phosphatase 2 regulates macrophage-adipocyte interaction. *PLOS One*. 10: e0120755. PMID: 25816341.
13. **Zhang, Y.***, Nallaparaju, K.C., Liu, X., Jiao, H., Reynolds, J.M., Wang, Z., and Dong, C.* 2015. MAPK phosphatase 7 regulates T cell differentiation via inhibiting ERK-mediated IL-2 expression. *J. Immunol.* 194: 3088-3095. (*Co-corresponding authors). PMID: 25716993.
14. Du, M., Liu, J.H., Chen, X., Xie, Y.D., Yuan, C.P., Xiang, Y., Sun, B., Lan, K., Chen, M.Z., James, S. J., **Zhang, Y.**, Zhong, J., and Xiao, H. 2015. Casein Kinase II Controls TBK1/IRF3 Activation in Interferon Response against Viral Infection. *J. Immunol.* 194: 4477-4488. PMID: 25810395.
15. Sheng, W., Yang, F., Zhou, Y., Yang, H., Low, P.Y., Kemeny, D.M., Tan, P., Moh, A., Kaplan, M.H., **Zhang, Y.***, and Fu, X.* 2014. STAT5 programs a distinct subset of GM-CSF-producing T helper cells that is essential for autoimmune neuroinflammation. *Cell Research*. 24: 1387-1402. (*Co-corresponding authors). PMID: 25412660.
16. Lim, M.X., Png, C.W., Tay, Y.B.C., Teo, D.W.J., Jiao, H., Tan, K.S.W., and **Zhang, Y.** 2014. Differential regulation of pro-inflammatory cytokine expression by mitogen-activated protein kinases in macrophages in response to intestinal parasite infection. *Infect Immun.* 82: 4789-4801. PMID: 25156742.
17. Negishi, H., Matsuki, K., Endo, N., Sarashina, H., Miki, S., Matsuda, A., Fukazawa, K., Taguchi-Atarashi, N., Ikushima, H., Yanai, H., Nishio, J., Honda, K., Fujioka, Y., Ohba, Y., Noda, T., Taniguchi, S., Nishida, E., **Zhang, Y.**, Chi, H., Flavell, R.A., and Taniguchi, T. 2013. Beneficial innate signaling interference for antibacterial responses by a Toll-like receptor-mediated enhancement of the MKP-IRF3 axis. *PNAS*. 111: 19884-19889. PMID: 24248350.
18. Chung, Y., Yamazaki, T., Kim, B., **Zhang, Y.**, Reynolds, J.M., Martinez, G.J., Chang, S.H., Lim, H., Birkenbach, M., and Dong, C. 2013. Epstein Barr virus-induced 3 (EBI3) together with IL-12 negatively regulates T helper 17-mediated immunity to *Listeria monocytogenes* infection. *PLoS Pathog.* 9: e1003628. PMID: 24068935.
19. Chung, Y., Lee, Y., **Zhang, Y.**, Yamazaki, T., Zhou, D., Kang, C., and Dong, C. 2012. T cells and T cell tumors efficiently generate antigen-specific cytotoxic T cell immunity when modified with an NKT ligand. *Oncolimmunol.* 1: 141-151. PMID: 22720235.
20. Wang, X., Zhang, F., Chen, F., Liu, D., Zheng, Y., **Zhang, Y.**, Dong, C., and Su, B. 2011. MEKK3 regulates IFN-gamma production in T cells through the Rac1/2-dependent MAPK cascades. *J. Immunol.* 186: 5791-5800.
21. Nurieva, R.I., Zheng, S., Jin, W., Chung, Y., **Zhang, Y.**, Martinez, G.J., Reynolds, J., Wang, S., Lin, X., Sun, S., Lozano, G., and Dong, C. 2010. The E3 ubiquitin ligase GRAIL regulates T cell tolerance and regulatory T cell function by mediating T cell receptor-CD3 degradation. *Immunity*. 32: 670-680.

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22. Reynolds, J., Pappu, B.P., Peng, J., Martinez, G.J., **Zhang, Y.**, Chung, Y., Ma, L., Yang, X.O., Nurieva, R.I., Tian, Q., and Dong, C. 2010. Toll-like receptor 2 signaling in CD4⁺ T lymphocytes promotes T helper 17 responses and regulates the pathogenesis of autoimmune disease. *Immunity*. **32**: 692-702.
23. **Zhang, Y.**, Reynolds, J., Chang, S.H., Martin-Orozco, N., Chung, Y., Nurieva, R. and Dong, C. 2009. MKP-1 is necessary for T cell activation and function. *J. Biol. Chem.* **284**: 30815-30824. PMID: 19748894.
24. Qian, F., Deng, J., Cheng, N., Welch, E.J., **Zhang, Y.**, Malik, A.B., Flavell, R.A., Dong, C., and Ye, R.D. 2009. A non-redundant role for MKP5 in limiting ROS production and preventing LPS-induced vascular injury. *EMBO J.* **28**: 2896-2907. PMID: 19696743.
25. **Zhang, Y.**, and Dong, C. 2007. Regulatory mechanisms of mitogen-activated kinase signaling. (Review, correspondent author). *Cellular and Molecular Life Sciences (CMLS)* **64**: 2771-2789.
26. Nurieva, R.I., Yang, X., Martinez, G., **Zhang, Y.**, Panopoulos, A.D., Ma, L., Schluns, K., Tian, Q., Watowich, S., Jetten, A.M., and Dong, C. 2007. Essential autocrine regulation by IL-21 in the generation of inflammatory T cells. *Nature*. **448**: 480-483.
27. Hsu, M.Y., **Zhang, Y.**, You, Y., Wang, D., Li, H., Duramad, O., Qin, X., Dong, C., and Lin, X. 2007. The adaptor protein CARD9 is required for innate immune responses to intracellular pathogens. *Nature Immunol.* **8**: 198-205.
28. **Zhang, Y.**, Chung, Y., Bishop, C., Daugerty, B., Chute, H., Olst, P., Kurahara, C., Lott, F., Sun, N., Welcher, A., and Dong, C. 2006. Regulation of T cell activation and tolerance by PDL2. *PNAS*. **103**: 11695-11700.
29. Nguyen, T., Liu, X.K., **Zhang, Y.**, and Dong, C. 2006. BTNL2, a butyrophilin-like molecule that functions to inhibit T cell activation. *J. Immunol.* **176**: 7354-7360.
30. **Zhang, Y.**, and Dong, C. 2005. MAP kinases in immune responses. *Cell. Mol. Immunol.* **2**:20-29.
31. **Zhang, Y.**, Blattman, J.N., Kennedy, N.J., Duong, J., Nguyen, T., Wang, Y., Davis, R.J., Greenberg, P.D., Flavell, R.A., and Dong, C. 2004. Regulation of innate and adaptive immune responses by MAP kinase phosphatase 5. *Nature*. **430**:793-797. PMID: 15306813.
32. Yu, H.B., **Zhang, Y.L.**, Lau, Y.L., Yao, F., Vilches, S., Merino, S., Tomas, J. M., Howard, S.P., and Leung, K.Y. 2005. Identification and characterization of putative virulence genes and gene clusters in *Aeromonas hydrophila* PPD134/91. *Appl. Environ. Microbiol.* **71**: 4469-4477.
33. **Zhang, Y.L.**, Lau, Y.L., Arakawa, E., and Leung, K.Y. 2003. Detection and genetic analysis of group II capsules in *Aeromonas hydrophila*. *Microbiol.* **149**:1051-1060.
34. **Zhang, Y.L.**, Arakawa, E., and Leung, K.Y. 2002. Novel *Aeromonas hydrophila* PPD134/91 genes involved in O-antigen and capsule biosynthesis. *Infect. Immun.* **70**:2326-2335.
35. **Zhang, Y.L.**, Ong, C.T., and Leung, K.Y. 2000. Molecular analysis of genetic differences between virulent and avirulent strains of *Aeromonas hydrophila* isolated from diseased fish. *Microbiol.* **146**:999-1009.
36. Li, G.Q., **Zhang, Y.L.**, and Xu, B.H. 1998. The ability of *Bdellovibrio* in the lysis of *Vibrio fluvialis* under various conditions. *Acta Hydrobiologica Sinica.* **22**:265-270.
37. **Zhang, Y.L.**, Wei, Y.B., and Yang, Q.X. 1997. Isolation of an aerobic magnetotactic bacterium HM-1 and studies on its biological characteristics. *J. Wuhan Uni.* **43**:775-780.
38. **Zhang, Y.L.**, Li, G. Q., and Xu, B.H. 1996. Identification of plaques formed by microbes in lakes and variation of *Bdellovibrio bacteriovorus* amount. *Viol. Sinica.* **11**:99-102.

BOOK CHAPTERS

1. Tan, Y.P., Rao, S.P.S., **Zhang, Y.L.**, Hew, C.L., and Leung, K.Y. 2001. Identification of virulence genes in bacterial fish pathogens: a genomic and proteomic approach. In *Aquatic Genomics*. 340-351. Springer-Verlag.
2. **Zhang, Y.**, and Dong, C. 2008. MAP kinase phosphatases in innate immunity. In *New Research on Innate Immunity*. 47-62. Nova Science Publishers, Inc.

ACTIVE GANTS

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1. Molecular Mechanisms Underlying Inflammatory Diseases Phase 2 (MMID2) /Understanding the link between inflammation and cancer. NRF-CREATE-HUJ MMID2 grant. 2017-2021. Co-PI. S\$500,000.00.
2. Development of Virus-Controlling Biotechnologies for Cost-Efficient & Sustainable Aquaculture. NRF2010NRF-CPR002-019. 2012-2017. Total S\$10,000,000. Co-PI. S\$600,000.00. (Lead PI: A/P Hong Yunhan, DBS, NUS: dbshyh@nus.edu.sg; Tel: +6565162915).
3. MAP kinase phosphatase 5 in intestinal homeostasis. MOE Tier 1: S\$179,000.00. March, 2015-March 2018. PI.
4. Tumour suppressive mechanisms of DUSP10 in colorectal cancer. MOE Tier 1: S\$150,000.00. March, 2016-Feb. 2019. PI.

GRANTS COMPLETED

1. Start-up grant from NUS: S\$550,000.00. June 2009 – May 2014
2. Regulation of innate and adaptive immune responses by MAP kinase phosphatase 7. MOE-2010-T2-1-079: S\$729,903.00. Dec. 2010 – Feb. 2014. PI.
3. Unraveling immune responses to H7N9 influenza infection and investigating immune suppressive mechanisms in H7N9 high-risk populations. NUSH/2013/140/H7N9/02: S\$200,000.00. June 2013 – May 2015. PI.
4. Regulation of innate and adaptive immune responses to H1N1 and H3N2 influenza viral infection by MAPK phosphatases. NMRC, IRG10nov091: S\$900,480.00. June 2011 – Dec. 2015. PI.
5. Regulatory mechanisms of MAPK phosphatase 5 in metabolic disorders. NMRC, CBRG11nov101: S\$953,949.66. July, 2012-Jan., 2017. Principal Investigator (PI.).
6. Regulatory function of MAPK phosphatase 5 in human adipogenesis and adipose tissue inflammation. NUHS Centre Grant Seed Fund: S\$50,000.00. July, 2015-June, 2017. PI.