


Name	Jake Whang	
Country	Republic of Korea	
Organization	The Korean Institute of Tuberculosis, KIT / Korean National Tuberculosis Association, KNTA	
Current Position	Team Leader	

Educational Background

2011 - 2016, PhD, Medical Science, College of Medicine, Chungnam National University

Roles of cell wall lipids in pathogenic mechanism of *Mycobacterium abscessus*

2006 - 2008, MS, Pharmacy, Chungnam National University

1998 - 2006, BS, Biochemistry, Chungnam National University

Professional Experiences

Mar 2018 – Present, Research Center, The Korean Institute of Tuberculosis (KIT)

Leader of R&D Team 2 and Korea Mycobacteria Resource Center (KMRC)

* Development the bacterial factors from TB, NTM clinical isolates

Aug 2017 – Feb 2018, International Tuberculosis Research Center (ITRC) / Institute of Immunology and Immunological Diseases, Yonsei University College of Medicine, Korea

* Surrogate markers development for the protective efficacy of TB vaccines

May 2010 – Jul 2017, Department of Microbiology and Research Institute for Medical Sciences, Chungnam National University College of Medicine, Korea

* Research of *M. abscessus* infectious immunology & pathogenic mechanism

Aug 2012 – Mar 2013, Department of Bacteriology, Graduate School of Medicine, Osaka City University, Japan

* Research of mycobacterial membrane cell wall lipids

Professional Organizations

Mar 2018 – Present, East Asia Tuberculosis Molecular Research Forum, Bord member

* Establishment and Operation of a Whole Genomic Database for Clinical Isolates of Mycobacteria in the East Asian Region, focusing on Korea and Japan

Aug 2018 – Present, Nationwide Observational Study among Patients with Nontuberculous Mycobacterium Pulmonary Disease in South Korea (NTM-KOREA study), Co-Principal Investigator for Subproject 4

* Development of bacterial factors for predicting treatment outcome of nontuberculous mycobacteria pulmonary disease

Main Scientific Publications

1. Kim YJ, Park EJ, Lee SH, Silwal P, Kim JK, Yang JS, **Whang J**, Jang J, Kim JM, Jo EK. Dimethyl itaconate is effective in host-directed antimicrobial responses against mycobacterial infections through multifaceted innate immune pathways. *Cell Biosci* 2023; 13: 49.
 2. Lee YJ, Kim JK, Jung CH, Kim YJ, Jung EJ, Lee SH, Choi HR, Son YS, Shim SM, Jeon SM, Choe JH, Lee SH, **Whang J**, Sohn KC, Hur GM, Kim HT, Yeom J, Jo EK, Kwon YT. Chemical modulation of SQSTM1/p62-mediated xenophagy that targets a broad range of pathogenic bacteria. *Autophagy* 2022; 18: 2926-2945.
 3. Kim YJ, Lee JY, Lee JJ, Jeon SM, Silwal P, Kim IS, Kim HJ, Park CR, Chung C, Han JE, Choi JW, Tak EJ, Yoo JH, Jeong SW, Kim DY, Ketphan W, Kim SY, Jhun BW, **Whang J**, Kim JM, Eoh H, Bae JW, Jo EK. Arginine-mediated gut microbiome remodeling promotes host pulmonary immune defense against nontuberculous mycobacterial infection. *Gut Microbes* 2022; 14: 2073132.
 4. Kim LH, Kang SM, **Whang J**, Kwon KW, Shin SJ. Novel Antibacterial Activity of Febuxostat, an FDA-Approved Antigout Drug against Mycobacterium tuberculosis Infection. *Antimicrob Agents Chemother* 2022; 66: e0076222.
 5. Kim HW, Yu AR, Lee JW, Yoon HS, Lee BS, Park HW, Lee SK, Lee YI, **Whang J**, Kim JS. Aconitate Decarboxylase 1 Deficiency Exacerbates Mouse Colitis Induced by Dextran Sodium Sulfate. *Int J Mol Sci* 2022; 23.
 6. Kang M, Kim HW, Yu AR, Yang JS, Lee SH, Lee JW, Yoon HS, Lee BS, Park HW, Lee SK, Lee S, **Whang J**, Kim JS. Comparison of Macrophage Immune Responses and Metabolic Reprogramming in Smooth and Rough Variant Infections of Mycobacterium mucogenicum. *Int J Mol Sci* 2022; 23.
 7. Silwal P, Kim JK, Jeon SM, Lee JY, Kim YJ, Kim YS, Seo Y, Kim J, Kim SY, Lee MJ, Heo JY, Jung MJ, Kim HS, Hyun DW, Han JE, **Whang J**, Huh YH, Lee SH, Heo WD, Kim JM, Bae JW, Jo EK. Mitofusin-2 boosts innate immunity through the maintenance of aerobic glycolysis and activation of xenophagy in mice. *Commun Biol* 2021; 4: 548.
 8. Seki M, Choi H, Kim K, **Whang J**, Sung J, Mitarai S. Tuberculosis: A persistent unpleasant neighbour of humans. *J Infect Public Health* 2021; 14: 508-513.
 9. Park CR, Paik S, Kim YJ, Kim JK, Jeon SM, Lee SH, **Whang J**, Cheng J, Suh JW, Cao J, Shetye G, Chen SN, McAlpine J, Pauli GF, Franzblau S, Cho S, Jo EK. Rufomycin Exhibits Dual Effects Against Mycobacterium abscessus Infection by Inducing Host Defense and Antimicrobial Activities. *Front Microbiol* 2021; 12: 695024.
 10. Kwak N, **Whang J**, Yim JJ. Response. *Chest* 2021; 160: e91.
 11. Kwak N, **Whang J**, Yang JS, Kim TS, Kim SA, Yim JJ. Minimal Inhibitory Concentration of
-

Clofazimine Among Clinical Isolates of Nontuberculous Mycobacteria and Its Impact on Treatment Outcome. *Chest* 2021; 159: 517-523.

12. Kwak N, Choi H, Jeon D, Jhun BW, Jo KW, Kang YA, Kwon YS, Lee M, Mok J, Shim TS, Shin HJ, **Whang J**, Yim JJ. Protocol of a Nationwide Observational Study among Patients with Nontuberculous Mycobacterium Pulmonary Disease in South Korea (NTM-KOREA). *Tuberc Respir Dis (Seoul)* 2020; 83: 141-146.
 13. Kim YJ, Lee SH, Jeon SM, Silwal P, Seo JY, Hanh BTB, Park JW, **Whang J**, Lee MJ, Heo JY, Kim SH, Kim JM, Song GY, Jang J, Jo EK. Sirtuin 3 is essential for host defense against Mycobacterium abscessus infection through regulation of mitochondrial homeostasis. *Virulence* 2020; 11: 1225-1239.
 14. **Whang J**, Back YW, Lee KI, Fujiwara N, Paik S, Choi CH, Park JK, Kim HJ. Mycobacterium abscessus glycopeptidolipids inhibit macrophage apoptosis and bacterial spreading by targeting mitochondrial cyclophilin D. *Cell Death Dis* 2017; 8: e3012.
-