Yoon Park, Ph.D.

ypark@kist.re.kr

Center for Theragnosis
Biomedical Research Institute
Korea Institute of Science and Technology (KIST)

5, Hwarang-ro 14-gil, Seongbuk-gu,
Seoul, South Korea 02792
+82-2-958-5945

CURRENT POSITION

Korea Institute of Science and Technology (KIST)
Senior member (Principal Investigator) 2018.3 - present

EDUCATION

Yonsei University Seoul, South Korea
Ph.D. in Biochemistry 2008
M.S. in Biochemistry 2004
B.S. in Biochemistry 2002

PROFESSIONAL RESEARCH EXPERIENCE

Korea Institute of Science and Technology (KIST) Seoul, South Korea
Senior member (Principal Investigator) 2018.3- present

Bristol-Myers Squibb Redwood city, CA
Senior Researh Investigator – T cell Immunotherapy 2016 – 2018

Pfizer Inc. South San Francisco, CA
Senior Scientist - CAR T cell engineering (Adoptive T cell therapy) 2015 - 2016

La Jolla Institute for Immunology La Jolla, CA
Instructor (Advisor : Yun-cai Liu, Ph.D) 2015.1 - 2015.6

- Led six projects exploring the regulatory mechanism of lymphocyte function by ubiquitinproteasome system (UPS) and its implication in abnormal immune responses such as cancer and inflammatory/ autoimmune diseases
- Identified a novel role of E3 ligase enzyme in TCR signaling and Treg cell regulation. Showed a novel mechanism of TCRζ regulation by ubiquitin. This project was published in *Nat Immunol. (2016)*
- Generated 20 different deubiquitinating enzymes (DUBs) shRNA expressing T cell lines and bone marrow chimeric mice by retroviral transduction to discover a novel regulator of T cell responses
- Contributed to several RO1 grant proposals for the laboratory by writing and providing preliminary Data.

La Jolla Institute for Immunology La Jolla, CA
Postdoctoral Fellow (Advisor : Yun-cai Liu, Ph.D) 2009.5 - 2014.12

- Established models of colitis (T cell-induced and DSS-induced) to demonstrate the role of mTOR signaling pathway in Treg cell and immune homeostasis. This work led to a publication in *J Clin Invest. (2013)* and NIH-NIAID program project grant (PO1) funding.
- Demonstrated a novel function of deubiquitinating enzyme USP9X in Th cell differentiation, which is a positive regulator of oncogene Mcl-1. This work led to a publication in *Proc Natl Acad Sci USA (2013)* and the award of National Research Foundation of Korea fellowship.

Yonsei University Seoul, Korea
Postdoctoral Fellow (Advisor : Jong-bok Yoon, Ph.D) 2008.9 – 2009.3

Yonsei University Seoul, Korea
Ph.D. student (Advisor : Jong-bok Yoon, Ph.D) 2004.9 – 2008.8

PEER-REVIEWED PUBLICATIONS

Jin HS, Ko M, Choi DS, Kim JH, Lee DH, Kang SH, Kim IK, Lee HJ, Choi EK, Kim KP, Yoo CH, **Park Y** (2020) $CD226^{hi}CD8^{+}$ T cells are a prerequisite for anti-TIGIT immunotherapy. *Cancer Immunol Res.* Jul;8(7): 912-925

Jin HS, **Park Y** (2020) Hitting the complexity of the TIGIT-CD96-CD112R-CD226 axis for next-generation cancer immunotherapy. *BMB Rep.* Dec 11;5207 (Review)

Yeo J, Ko M, Lee DH, **Park Y**. Jin HS (2021) TIGIT/CD226 Axis Regulates Anti-Tumor Immunity. *Pharmaceuticals (Basel)*. Feb 28;14(3):200 (Review)

Jin HS, Choi DS, Ko M, Kim D, Lee DH, Lee S, Lee AY, Kang SG, Kim SH, Jung Y, Jeong Y, Chung JJ, **Park Y**. (2019) Extracellular pH modulating injectable gel for enhancing immune checkpoint inhibitor therapy. *J Control Release*. Dec 10;315:65-75.

Park Y*, Jin HS*, Lopez J, Lee JH, Elly C, Liu YC. (2016) SHARPIN controls regulatory T cells by negatively modulating the T cell antigen receptor complex. *Nature Immunol.* Feb 2; 17(3):286-96.
(* co-First author)
** Commentary in the same issue of Nature Immunol. 2016 Feb 16; 17(3):221-2. Bowman M, et al.*

Park Y, Jin HS, Lopez J, Elly C, Kim G, Murai M, Kronenberg M, Liu YC (2013) TSC1 regulates the balance between effector and regulatory T cells. *J Clin Invest.* Dec 2;123(12):5165-78.
** Commentary in the same issue of J.Clin Invest 2013 Dec 2;123(12):5001-4. Yang K, et al.*

Park Y, Jin HS, Liu YC (2013) Regulation of T cell function by the ubiquitin-specific protease USP9X via modulating Carma1-Bcl10-Malt1 complex. *Proc Natl Acad Sci USA.* 2013 Jun 4;110(23):9433-8.

Park Y, Jin HS, Aki D, Lee JH, Liu YC (2014) The Ubiquitin System in Immune Regulation. *Adv Immunol*. 124:17-66 (Review)

Jin HS, **Park Y**, Elly C, Liu YC (2013) Itch expression by regulatory T cells controls T helper type 2 responses. *J Clin Invest.* Nov 1;123(11):4923-34.
** Commentary in the same issue of J.Clin Invest 2013 Nov 1;123(11):4576-8. Chen W.*
** Comment on Cell Mol Immunol. 2014 Mar;11(2):126-8. Singer BD, D'Alessio FR.*

Lee JH, Elly C, **Park Y**, Liu YC. (2015) E3 Ubiquitin Ligase VHL Regulates Hypoxia-Inducible Factor-1α to Maintain Regulatory T Cell Stability and Suppressive Capacity. *Immunity*, 16;42(6):1062-74.

Lee JH, Zou L, Yang R, Han J, Wan Q, Zhang X, El Baghdady S, Roman A, Elly C, Jin HS, **Park Y**, Croft M, Liu YC. (2020) The deubiquitinase CYLD controls protective immunity against helminth infection by regulation of Treg cell plasticity. *J Allergy Clin Immunol.* 2020 Dec 10:S0091-6749(20)31706-1.

Lee J, Park H, Lim J, Jin HS, **Park Y**, Jung YJ, Ko HJ, Yoon SI, Lee GS, Kim PH, Choi SS, Xiao C, Kang SG. (2021) GSK3 Restrains Germinal Center B Cells to Form Plasma Cells. *J Immunol*. 2021 Feb 1;206(3):481-493

Krause P, Morris V, Greenbaum JA, **Park Y**, Bjoerheden U, Muffley T, Shui JW, Kim G, Cheroutre H, Liu YC, Peters B, Kronenberg M and Murai M (2015) IL-10 producing intestinal macrophages prevent excessive anti-bacterial innate immunity by limiting IL-23 synthesis. *Nat. Commun. 6:7055*.

Jin HS, Liao L, **Park Y**, Liu YC (2013) Neddylation pathway regulates T-cell function by targeting an adaptor protein Shc and a protein kinase Erk signaling. *Proc Natl Acad Sci USA.* 110(2):624-9.

Lee SH, **Park Y**, Yoon SK, Yoon JB (2010) Osmotic stress inhibits proteasome by p38 MAPK-dependent phosphorylation. *J Biol Chem.* 285(53):41280-9.

Baranes-Bachar K, Levy-Barda A, Oehler J, Reid DA, Soria-Bretones I, Voss TC, Chung D, **Park Y**, Liu C, Yoon JB, Li W, Dellaire G, Misteli T, Huertas P, Rothenberg E, Ramadan K, Ziv Y, Shiloh Y (2018) The Ubiquitin E3/E4 Ligase UBE4A Adjusts Protein Ubiquitylation and Accumulation at Sites of DNA Damage, Facilitating Double-Strand Break Repair. *Mol Cell.* 69(5):866-878.

Kim SE, Yoon JY, Jeong WJ, Jeon SH, **Park Y**, Yoon JB, Park YN, Kim H, Choi KY (2009) H-Ras is degraded by Wnt/beta-catenin signaling via beta-TrCP-mediated polyubiquitylation. *J Cell Sci.* 122(Pt 6):842-8.

Park Y, Yoon SK, Yoon JB (2009) The HECT domain of TRIP12 ubiquitinates substrates of the ubiquitin fusion degradation pathway. *J Biol Chem.* 284(3):1540-9.

Park Y, Yoon SK, Yoon JB (2008) TRIP12 functions as an E3 ubiquitin ligase of APP-BP1. *Biochem Biophys Res Commun.* 374(2):294-8.

Park Y*, Hwang YP*, Lee JS, Seo SH, Yoon SK, Yoon JB (2005) Proteasomal ATPase-associated factor 1 negatively regulates proteasome activity by interacting with proteasomal ATPases. *Mol Cell Biol.* 25(9):3842-53. (* co-First author)

Min KW, Kwon MJ, Park HS, **Park Y**, Yoon SK, Yoon JB (2005) CAND1 enhances deneddylation of CUL1 by COP9 signalosome. *Biochem Biophys Res Commun.* 334(3):867-74.

Min KW, Hwang JW, Lee JS, **Park Y**, Tamura TA, Yoon JB (2003) TIP120A associates with cullins and modulates ubiquitin ligase activity. *J Biol Chem.* 278(18):15905-10.