

• **Name:** Duck Cho

• **Current Position:** Professor, Samsung Medical Center, Sungkyunkwan University

• **Country:** Korea

• **Educational Background:**

1987-1993 Chonnam National University, School of Medicine, Gwangju, Korea

1994-1996 Master degree from Chonnam National University, Graduate School, Gwangju, Korea

1998-2003 Ph.D. degree from Chonnam National University, Graduate School, Gwangju, Korea

• **Professional Experience:**

1993-1998	Internship and Residency in Chonnam National University Hospital
2003-2007	Assistant Professor of Laboratory Medicine, Chonnam National University Hospital
2007-2009	Post- Doc Research Associate, Dr. Campana's lab. Department of Oncology, St. Jude Children's Research Hospital, Memphis, TN, USA
2010.5-2015.2	Associate Professor of Laboratory Medicine, Chonnam National University Medical School
2015.3-2016.2	Professor of Laboratory Medicine & Genetics, Samsung Medical Center
2015.3-Present	Professor of Laboratory Medicine & Genetics, Samsung Medical Center, Sungkyunkwan University

• **Membership:**

The Korean Society of Blood Transfusion

The International Society Blood Transfusion (ISBT)

The Society for Natural Immunity

The Korean Society of Laboratory Medicine

• **Honors and Awards:**

2003 Mirr Award of The Korean Society of Blood Transfusion (AABB2003 Travel Award)

- *The frequency of cis-AB blood type of blood donors in Honam Area*

2005 SYSMEX Award of The Korean Society of Laboratory Medicine

- *The serological and genetic basis of the cis-AB blood group in Korea.*

2006 The best paper award of KOFST (The Korean Federation of Science and Technology Societies).

The genetic and phenotypic basis of blood group A subtypes in Koreans.

2016 대한적십자사총재상

2017 질병관리본부장상

2018 보건복지부장관상

2020 Best researcher Award of The Korean Society of Laboratory Medicine

- *Expansion of Human NK Cells Using K562 Cells Expressing OX40 Ligand and Short Exposure to IL-21.*

• **Clinical Trial Experience: None**

• **Publications (selected); * Corresponding author**

1. Jaya Lakshmi Thangaraj^{1,2,3†}, Minh-Trang Thi Phan^{4†}, SoonHo Kweon^{4,5†}, Jinho Kim^{4,6}, Jong-Min Lee⁷, Ilwoong Hwang⁸, Jeehun Park⁹, Junsang Doh¹⁰, Seung-Hwan Lee¹¹, Manh-Cuong Vo^{1,2}, Tan-Huy Chu^{1,3}, Ga-Young Song^{1,2}, Seo-Yeon Ahn^{1,2}, Sung-Hoon Jung^{1,2}, Hyeoung-Joon Kim², **Duck Cho^{4,6,12,*}**, and **Je-Jung Lee^{1,2,3,*}**. Expansion of cytotoxic **natural killer cells** in multiple myeloma patients using K562 cells expressing OX40 ligand and membrane-bound IL-18 and IL-21. **Under revision, 2021**
2. Jaya Lakshmi Thangaraj^{1,2,3*}, Seo-Yeon Ahn^{1,2*}, Sung-Hoon Jung^{1,2}, Manh-Cuong Vo^{1,2}, Tan-Huy Chu^{1,3}, Minh-Trang Thi Phan⁴, Minsuk Kwon⁵, Kyung-Hwa Lee⁶, Mihee Kim², Ga-Young Song², Deok-Hwan Yang², Jae-Sook Ahn², Hyeoung-Joon Kim², **Duck Cho^{4,7,8,*}** and **Je-Jung Lee^{1,2,3,*}** Expanded **natural killer cells** augment anti-myeloma effect of daratumumab, bortezomib, and dexamethasone in a mouse model. Cellular & Molecular Immunology. **In Press, 2021**
3. Park J, Shin Y, Kim JM, Kweon S, Song AY, Baek Y, Kim J, **Cho D***, **Kim HS***, **Doh J***. Multifunctional Microparticles with Stimulation and Sensing Capabilities for Facile **NK Cell** Activity Assay. ACS Sens. 2021 Mar 26;6(3):693-697
5. Kim J, Phan MT, Kweon S, Yu H, Park J, Kim KH, Hwang I, Han S, **Kwon MJ***, **Cho D***. A Flow Cytometry-Based Whole Blood **Natural Killer Cell** Cytotoxicity Assay Using Overnight Cytokine Activation. Front Immunol. 2020 Aug 14;11:1851.
6. Chun S, Phan MT, Hong S, Yang J, Yoon Y, Han S, Kang J, Yazer MH, **Kim J***, **Cho D***. Double-filtered leukoreduction as a method for risk reduction of transfusion-associated graft-versus-host disease. PLoS One. 2020 Mar 26;15(3):e0229724
7. Choi CH, Choi HJ, Lee JW, Kang ES, **Cho D**, Park BK, Kim YM, Kim DY, Seo H, Park M, Kim W, Choi KY, Oh T, Kang CY, Kim BG. Phase I Study of a B Cell-Based and Monocyte-Based Immunotherapeutic Vaccine, BVAC-C in Human Papillomavirus Type 16- or 18-Positive Recurrent Cervical Cancer. J Clin Med. 2020 Jan 5;9(1):147
8. Kim KW, Jeong JU, Lee KH, Uong TNT, Rhee JH, Ahn SJ, Kim SK, **Cho D**, Quang Nguyen HP, Pham CT, Yoon MS.

- Combined **NK Cell** Therapy and Radiation Therapy Exhibit Long-Term Therapeutic and Antimetastatic Effects in a Human Triple Negative Breast Cancer Model. *Int J Radiat Oncol Biol Phys.* 2019 Oct 10;S0360-3016(19)33868-4
9. Kweon S, Phan MT, Chun S, Yu H, Kim J, Kim S, Lee J, Ali AK, Lee SH, Kim SK, **Doh J***, **Cho D***. Expansion of Human **NK Cells** Using K562 Cells Expressing OX40 Ligand and Short Exposure to IL-21. *Front Immunol.* 2019 Apr 24;10:879
10. Lee J, Kang TH, Yoo W, Choi H, Jo S, Kong K, Lee SR, Kim SU, Kim JS, **Cho D**, Kim J, Kim JY, Kwon ES, Kim S. An Antibody Designed to Improve Adoptive **NK-Cell** Therapy Inhibits Pancreatic Cancer Progression in a Murine Model. *Cancer Immunol Res.* 2019;7(2):219-229.
11. Vo MC, Lakshmi TJ, Jung SH, **Cho D**, Park HS, Chu TH, Lee HJ, Kim HJ, Kim SK, Lee JJ. Cellular immunotherapy in multiple myeloma. *Korean J Intern Med.* 2019 Feb 15.
12. Kim BR, Chun S, **Cho D***, **Kim KH***. Association of neutrophil-to-lymphocyte ratio and **natural killer cell** activity revealed by measurement of interferon-gamma levels in a healthy population. *J Clin Lab Anal.* 2019 Jan;33(1):e22640
13. Kim GH, Dang HN, Phan MT, Kweon SH, Chun S, **Cho D***. X-ray as Irradiation Alternative for K562 Feeder Cell Inactivation in Human **Natural Killer** Cell Expansion. *Anticancer Res.* 2018;38(10):5767-5772.
14. Lee SH, Shin DJ, Kim Y, Kim CJ, Lee JJ, Yoon MS, Uong TNT, Yu D, Jung JY, **Cho D**, Jung BG, Kim SK, Suh GH. Comparison of Phenotypic and Functional Characteristics Between Canine Non-B, Non-T **Natural Killer** Lymphocytes and CD3+CD5dimCD21- Cytotoxic Large Granular Lymphocytes. *Front Immunol.* 2018; 9:841. doi: 10.3389/fimmu.2018.00841
15. Jeong JU, Uong TNT, Chung WK, Nam TK, Ahn SJ, Song JY, Kim SK, Shin DJ, Cho E, Kim KW, **Cho D**, Yoon MS. Effect of irradiation-induced intercellular adhesion molecule-1 expression on **natural killer cell**-mediated cytotoxicity toward human cancer cells. *Cytotherapy.* 2018;20(5):715-727.
16. Pham DH, Kim JS, Kim SK, Shin DJ, Uong NT, Hyun H, Yoon MS, Kang SJ, Ryu YJ, Cho JS, Yoon JH, Lee JS, Cho D, Lee SH, Park MH. Effects of ADAM10 and ADAM17 Inhibitors on **Natural Killer Cell** Expansion and Antibody-dependent Cellular Cytotoxicity Against Breast Cancer Cells In Vitro. *Anticancer Res.* 2017 Oct;37(10):5507-5513.
17. Oh SJ, Yang JI, Kim O, Ahn EJ, Kang WD, Lee JH, Moon KS*, Lee KH*, **Cho D***. Human U87 glioblastoma cells with stemness features display enhanced sensitivity to **natural killer cell** cytotoxicity through altered expression of NKG2D ligand. *Cancer Cell Int.* 2017 Feb 10;17:22
18. Phan MT, Chun S, Kim SH, Ali AK, Lee SH, Kim S, Kim SH*, **Cho D***. **Natural killer cell** subsets and receptor expression in peripheral blood mononuclear cells of a healthy Korean population: Reference range, influence of age and sex, and correlation between NK cell receptors and cytotoxicity. *Hum Immunol. Hum Immunol.* 2017;78(2):103-112
19. Yoon MS*, Pham CT, Phan MT, Shin DJ, Jang YY, Park MH, Kim SK, Kim S, **Cho D***. Irradiation of breast cancer cells enhances CXCL16 ligand expression and induces the migration of **natural killer cells** expressing the CXCR6 receptor. *Cytotherapy.* 2016;18(12):1532-1542
20. Phan MT, Lee SH, Kim SK, Cho D. Expansion of **NK Cells** Using Genetically Engineered K562 Feeder Cells. *Methods Mol Biol.* 2016;1441:167-74.