



## SEUNG-HYUN LEE

PROFESSOR

DEPT. OF MICROBIOLOGY,  
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### Educations

- 1992 B.S., College of Medicine, Konkuk University, Seoul, Korea
- 1994 M.S., College of Medicine, Konkuk University, Seoul, Korea
- 1999 Ph.D., College of Medicine, Seoul National University, Seoul, Korea

### Professional Background

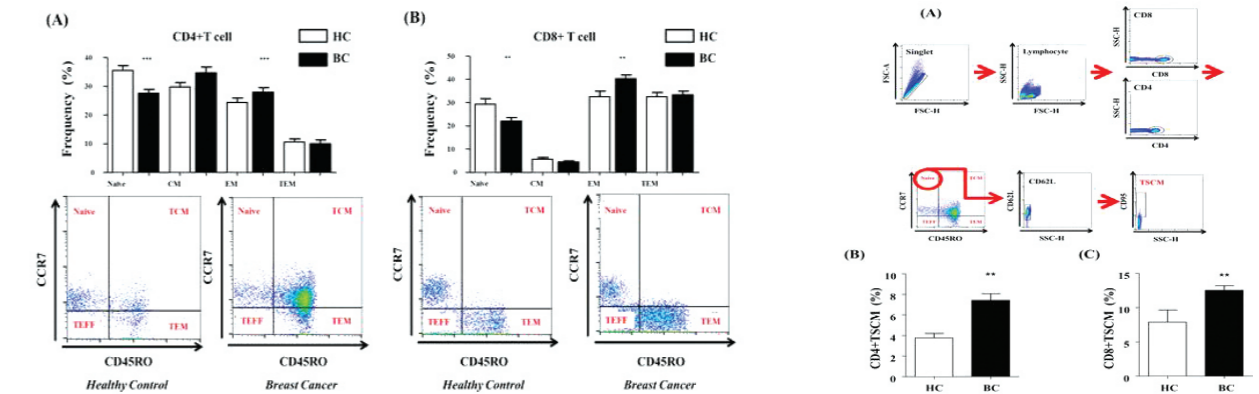
- 2015-Present Chairman of General Affairs: The Korean Association of Immunologists
- 2015-Present Vice-President: Institute of Biomedical Science & Technology, Konkuk University
- 2013-Present Vice-Captain: Brain Korea 21 plus of Konkuk University
- 2011-Present Executive Director: Council of Medical and Dental Education Eligibility Test
- 2003-Present Professor: School of Medicine, Konkuk University

### Top 5 Publications

- Kang TH, Kim YS, Kim S, Yang B, Lee JJ, Lee HJ, Lee J, Jung ID, Han HD, **Lee SH**, Koh SS, Wu TC, Park YM. Pancreatic adenocarcinoma upregulated factor serves as adjuvant by activating dendritic cells through stimulation of TLR4. *Oncotarget.* 6(29):27751-27762. 2015 Sep (Co-author)
- Jung SH, Won KJ, Lee KP, Kim HJ, Seo EH, Lee HM, Park ES, **Lee SH**, Kim B. The serum protein fetuin-B is involved in the development of acute myocardial infarction. *Clin Sci (Lond).* 129(1):27-38. 2015 Jul (Corresponding author)
- Kim JD, **Lee SH**, Seo EH, Woo SY, Kim SH, Chung SM, Kim HJ. Role of Th1 and Th17 cells in the development and complexity of coronary artery disease: comparison analysis by the methods of flow cytometry and SYNTAX score. *Coronary artery disease.* 26(7):604-611. 2015 June (First author)
- **Lee SH**, Kim JD, Park SA, Oh CS, Kim SH. Effects of  $\mu$ -Opioid Receptor Gene Polymorphism on Postoperative Nausea and Vomiting in Patients Undergoing General Anesthesia with Remifentanyl: Double Blinded Randomized Trial. *J Korean Med Sci.* 30(5):651-7. 2015 May (First author)
- Jung SH, Won KJ, Lee KP, Lee DH, Yu S, Lee DY, Seo EH, Kang H, Park ES, Kim HJ, **Lee SH**, Kim B. DJ-1 protein regulates CD3+ T cell migration via overexpression of CXCR4 receptor. *Atherosclerosis.* 235(2):503-9. 2014 Aug (Corresponding author)

## RESEARCH INTERESTS

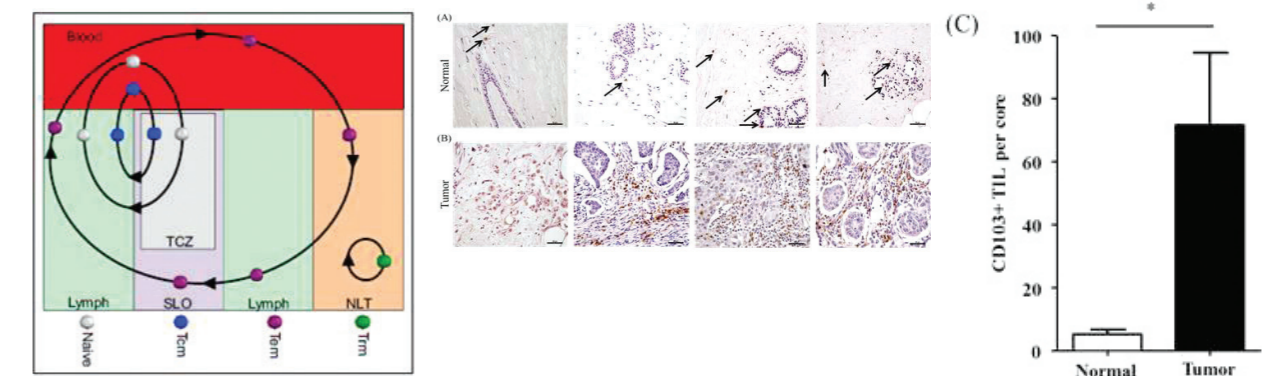
### 1. Memory T Cell Analysis by Flow Cytometry in PBMC



Memory T cells are generated after the cells encounter an antigen during a prior infection, or after exposure to cancer. Recent reports suggest that memory T cells play a critical role in the immune response during infectious disease and cancer. Memory T cells can be divided into subsets, according to the expression of various surface markers. These are defined as naïve T cells, T memory stem cells (TSCM), central memory T cells (TCM), effector memory T cells (TEM), and effector cells (TEFF). The

TSCM phenotype resembles that of naïve T cells. However, TSCM are different from other memory T cells in that they are highly proliferative, self-renewing, and multipotent, and therefore resemble stem cells. The clinical relevance of TSCM in breast cancer is unknown, and the mechanisms for TSCM maintenance in human cancer remain unclear. Therefore, we conducted phenotypic screening to determine the frequencies of TSCM in breast cancer patients.

### 2. Tissue-resident Memory T Cells



Tissue-resident memory (TRM) T cells constitute a recently-identified lymphocyte lineage that occupies tissues, and do not recirculate through the body. CD4+ TRM cells (CCR7-CD69+) and CD8+ TRM cells expressing CD103 are the predominant T cell subsets in the lungs, intestines, skin and bone

marrow. However, the presence of CD103+ T cells in human breast cancer patients and their role in the anti-cancer immune response has not been systematically addressed. Therefore, we seek to determine the significance of CD103+ TILs in breast tumor tissue.