School of Life Sciences

Seminar Series

No. 2019-22

Thu., **17 October**, 4:00pm

Jukhyun Bio Auditorium(RM.121)

Korean

Towards next-generation CAR-T cell therapy for Cancer

Speaker | Chan Hyuk Kim

Affiliation | KAIST

Host | Prof. Chang-Duk Jun

광주과학기술원 생명과학부

Gwangju Institute of Science and Technology School of Life Sciences

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Speaker

Prof. Chan Hyuk Kim

Education/Experience

1997.03.-2003.02.	B.S., Dept. of Chemistry, Seoul National University, Korea
2004.03.-2008.08.	Ph.D., Dept. of Chemistry, Seoul National University, Korea (Eun Lee Lab)
2009.01.-2012.09.	Postdoctoral Associate, Dept. of Chemistry, Peter G. Schultz Lab, The Scripps Research Institute, US
2012.10.-2016.03.	Principal Investigator, Dept. of Biology, California institute for Biomedical Research, US
2016.04.-present	Assistant Professor, Dept. of Biological Sciences, KAIST, Korea
2017.12.-present	Co-founder and CTO, Curocell Inc.

Abstract

Due to its ability to recognize antigens in an MHC-independent manner, T cells that are engineered to express chimeric antigen receptor (CAR) can be a viable option for the tumors with low mutational burden. Indeed, the second-generation CD19-targeting CAR-T cells with an engineered signaling domain demonstrated unprecedented anti-leukemic responses in patients with refractory B-cell cancer, and became the first approved gene therapy for cancer. In light of clinical success, there has been an explosion of interest in CAR-T cells for cancer immunotherapy. However, the inability to control the activity of this potent live drug has resulted in severe treatment related toxicities and the constraint in targeting more than one antigen have limited its general application. Furthermore, various immune-suppressive mechanisms present in the tumor microenvironment often severely limits the anti-tumor activity of CAR-T cells against solid tumors, posing a major obstacle for more widespread application of this innovative therapy. In this talk, I will discuss our recent research efforts focusing on addressing these limitations of current CAR-T therapy.