Therapeutics & Vaccines

Senolytic CRISPR CAR T Cells Produced By CRISPR-Cas9 Genome Editing

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The Invention

UW Madison researchers have developed a virus-free, CRISPR-Cas mediated method of generating T cells that target senescent cells. These modified T cells could be used to treat Alzheimer's Disease and other neurodegenerative diseases, address aging, or treat other disorders associated with cell senescence. Current methods of CAR T cell production involve the use of viral vectors, which can ultimately give rise to complications such as insertional mutagenesis, leading to gene silencing or oncogene activation. This method avoids those potential issues. This T cell therapy targets the cell surface protein urokinase Plasminogen Activator Receptor (uPAR) to eliminate senescent cells. The inventors are exploring an opportunity to use modified T cells to treat Alzheimer's Disease in collaboration with a former UW faculty member who is now in California. Presently, the only efficacy experiment the inventors completed involve culturing fibroblasts, inducing senescence, and co-culturing with the uPAR T cells. They showed that the uPAR T cells grew and proliferated the best when co-cultured with the senescent fibroblasts, and the lowest number of surviving fibroblasts occurred when co-cultured with the uPAR T cells.

Additional Information

For More Information About the Inventors

- Krishanu Saha

Tech Fields

- Therapeutics & Vaccines : Other therapeutic technologies

For current licensing status, please contact Andy DeTienne at adetienne@warf.org or 608-960-9857