Therapeutics & Vaccines

Nonviral Generation Of Genome Chimeric Antigen Receptor T Cells

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The Invention

Described herein are non-viral, ex vivo methods of site-specifically inserting a transgenecontaining a chimeric antigen receptor (CAR) gene into a T cell genome by introducing into apopulation of unmodified T cells a Cas9 ribonucleoprotein (RNP) and a non-viral double-stranded homology-directed repair (HDR) template, to provide genome-edited T cells. TheCas9 ribonucleoprotein includes a Cas9 protein and a guide RNA that directs double strandedDNA cleavage of a cleavage site in a T cell expressed gene. The non-viral double-strandedHDR template comprises the synthetic DNA sequence flanked by homology arms that arecomplementary to sequences on both sides of the cleavage site in the T cell expressed gene.The transgene is specifically integrated into the cleavage site of the T cell expressed genecreated by the Cas9 RNP in the genome-edited T cells, and the cells are then cultured.

Additional Information

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Tech Fields

- Therapeutics & Vaccines : Oncology

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