ENGINEERED IMMUNE CELLS COMPRISING A RECOGNITION MOLECULE

CROSS-REFERENCE TO RELATED APPLICATIONS

[1] This application claims priority benefit of International Patent Application No. PCT/CN2019/087260 filed May 16, 2019, the contents of which are incorporated herein by reference in their entirety.

SUBMISSION OF SEQUENCE LISTING ON ASCII TEXT FILE

[2] The content of the following submission on ASCII text file is incorporated herein by reference in its entirety: a computer readable form (CRF) of the Sequence Listing (file name: 761422003140.txt, date recorded: May 11, 2020, size: 78 KB).

FIELD OF THE INVENTION

[3] The invention relates to engineered immune cells (such as engineered T cells) comprising on their surface recognition molecules useful for treating infectious diseases and cancer.

BACKGROUND OF THE INVENTION

[4] T-cell mediated immunity is an adaptive process of developing antigen (Ag) – specific T lymphocytes to eliminate viruses, bacterial, parasitic infections or malignant cells.

[5] CD4+ T cells play a most important coordinating role in the immune system, having a central role in both T cell mediated immunity and B cell mediated (or humoral) immunity. In T cell mediated immunity, CD4+ T cells play a role in the activation and maturation of CD8+ T cells. In B cell mediated immunity, CD4+ T cells are responsible for stimulating B cells to proliferate and to induce B cell antibody class switching.

[6] The central role CD4+ T cells play is perhaps best illustrated by the aftermath of an infection with human immunodeficiency virus (HIV). The virus is a retrovirus, meaning it carries its genetic information as RNA along with a reverse transcriptase enzyme that allows for the production of DNA from its RNA genome once it has entered a host cell. The DNA can then be incorporated into affected host cells, at which point the viral genes are transcribed and more viral particles are produced and released by the infected cell.

[7] HIV preferentially targets CD4+ T cells; as a result, an infected patient's immune system becomes increasingly compromised, as the population of the main coordinating cells of