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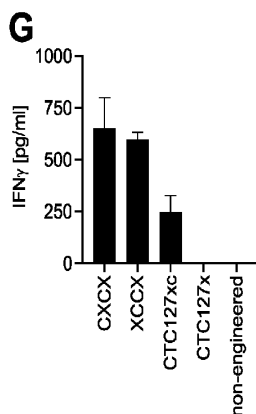
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(54) Title: A NUCLEIC ACID ENCODING A CD8 ALPHA BETA CO-RECEPTOR, CELLS AND PHARMACEUTICAL COMPOSITIONS COMPRISING THE SAME

Fig. 14



(57) Abstract: The present invention relates to the field of adoptive immune cell therapy, e.g., adoptive T cell therapy. It provides immune cells, such as gamma delta T cells, CD4 helper T cells, mucosa-associated invariant cells, innate lymphoid cells, NK cells, macrophages or other types of immune cells or a combination thereof, engineered to express a CD8 co-receptor, and it provides an advantageous shuffled configuration of a nucleic acid encoding a CD8 alpha beta co-receptor and alpha beta TCR construct, wherein the nucleic acid comprises a construct capable of mediating expression of the CD8 alpha and CD8 beta chain as well as TCR alpha and TCR beta chain constructs under the control of one promoter. This improves adoptive immune cell therapy, e.g., it may improve function and persistence of engineered immune cells. The immune cells may express an MHC I-restricted alpha beta TCR construct as well as a CD8 co-receptor. Pharmaceutical compositions comprising said cells or nucleic acids are also provided. These are useful for treatment of cancer or infectious diseases.

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