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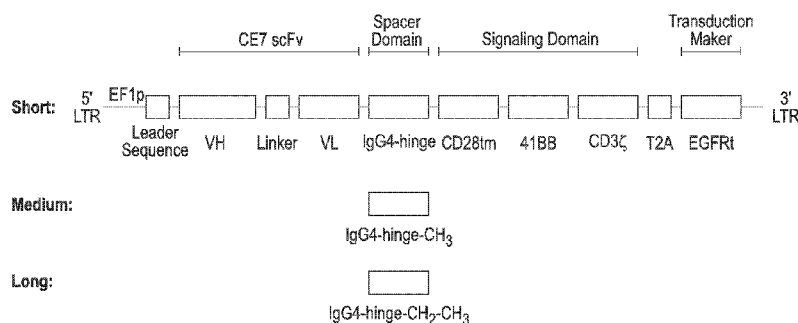


FIG. 13A

(57) Abstract: The present invention provides nucleic acids, vectors, host cells, methods and compositions to confer and/or augment immune responses mediated by cellular immunotherapy, such as by adoptively transferring CD8⁺ central memory T cells or combinations of central memory T cells with CD4⁺ T cells that are genetically modified to express a chimeric receptor. In some alternatives the genetically modified host cell comprises a nucleic acid comprising a polynucleotide coding for a ligand binding domain, a polynucleotide comprising a customized spacer region, a polynucleotide comprising a transmembrane domain, and a polynucleotide comprising an intracellular signaling domain. In some alternatives, the ligand binding domains binds to CD171.