ABSTRACT

DRUG REGULATED TRANSGENE EXPRESSION

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 under the control of an inducible promoter. In some alternatives the genetically modified host cell comprises a nucleic acid comprising a polynucleotide coding for a chimeric antigen receptor comprising a ligand binding domain, a polynucleotide comprising a spacer region, a polynucleotide comprising a transmembrane domain, and a polynucleotide comprising an intracellular signaling domain under the control of a drug inducible promoter. Controlling the expression of the chimeric receptor provides for the ability to turn expression on and off depending on the status of the patient. Pharmaceutical formulations produced by the method, and methods of using the same, are also described.

FIG. 6A