ABSTRACT

The present invention provides methods and compositions to confer and/or augment immune responses mediated by cellular immunotherapy, such as by adoptively transferring genetically modified tumor specific CD8+ T cells in the presence of tumor-specific, subset specific genetically modified CD4+ T cells, wherein the CD4+ T cells confer and/or augment a CD8+ T cells ability to sustain anti-tumor reactivity and increase and/or maximize tumor-specific proliferation of the tumor-specific CD8+ T cells of interest. Pharmaceutical formulations produced by the method, and methods of using the same, are also described.