Figure 1. Schematic of mechanisms used to activate iCaspase suicide gene system. Cells are genetically modified to express an caspase 9 that has been separated into two halves, and require dimerization to be functional. Dimerization occurs as a result of coupling with a domain that is brought together by an inert dimerizer drug. Upon iCaspase dimerization, the protein becomes activated and initiates the apoptotic cascade.

Figure 2. Schematic of manufacture of multileukemia antigen specific T cells. Peripheral blood mononuclear cells (PBMC) from blood serve as source of effector cells and antigen presenting cells (APC), including the most potent – dendritic cells. To expand the rare cell with the appropriate specificity against leukemia antigens, an overlapping peptide library spanning the antigens of choice, in this case, is presented by dendritic cells in the presence of cytokines to prime the naïve response ex vivo. After this initial stimulation, cells are then expanded either by dendritic cells or alternative APC (e.g. PHA blasts with artificial antigen presenting cells) to expand the selected leukemia specific T cell. Subsequent expansion steps in the presence of cytokines will generate multi-leukemia antigen T cells.