FIGURE 1: **The prior art process for generating EVB specific T cells**

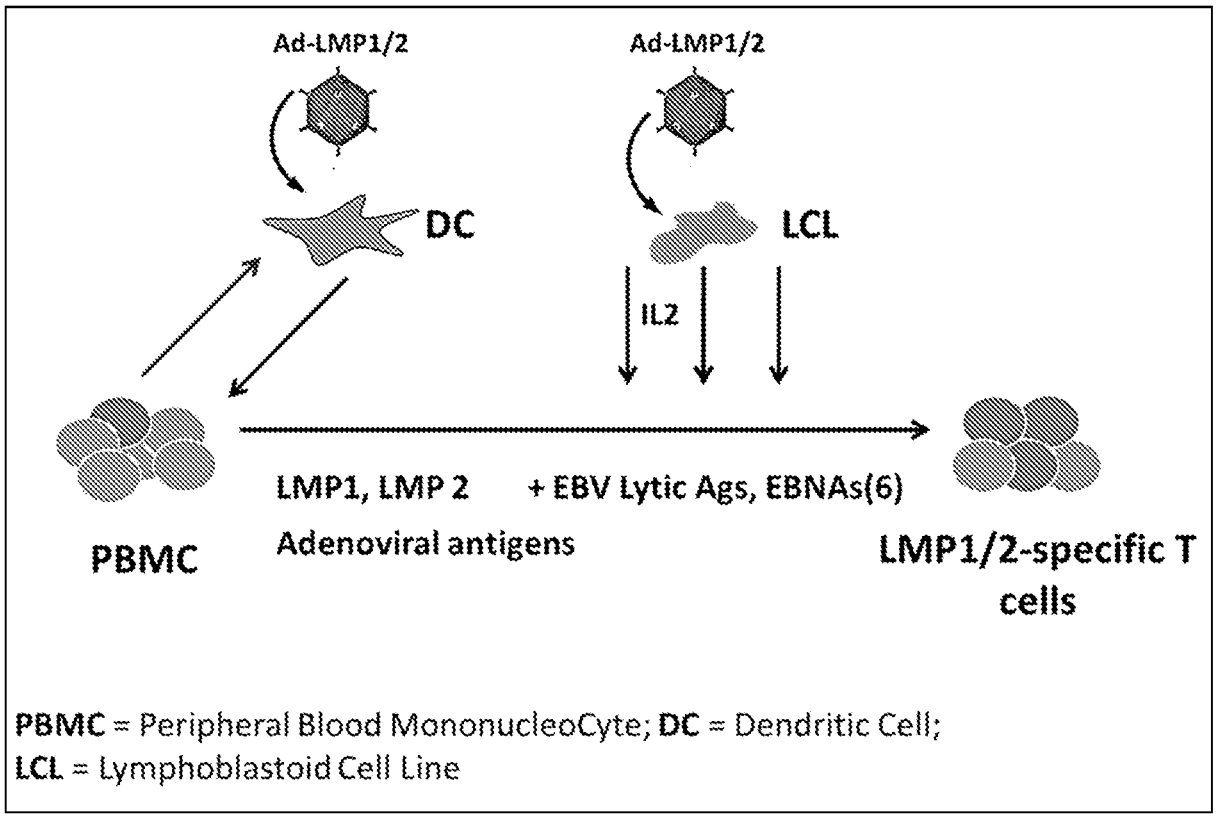


FIGURE 2: **Diagram of the alternative methods demonstrated in this application of novel superior protocols for the generation of EBV specific T cells.**

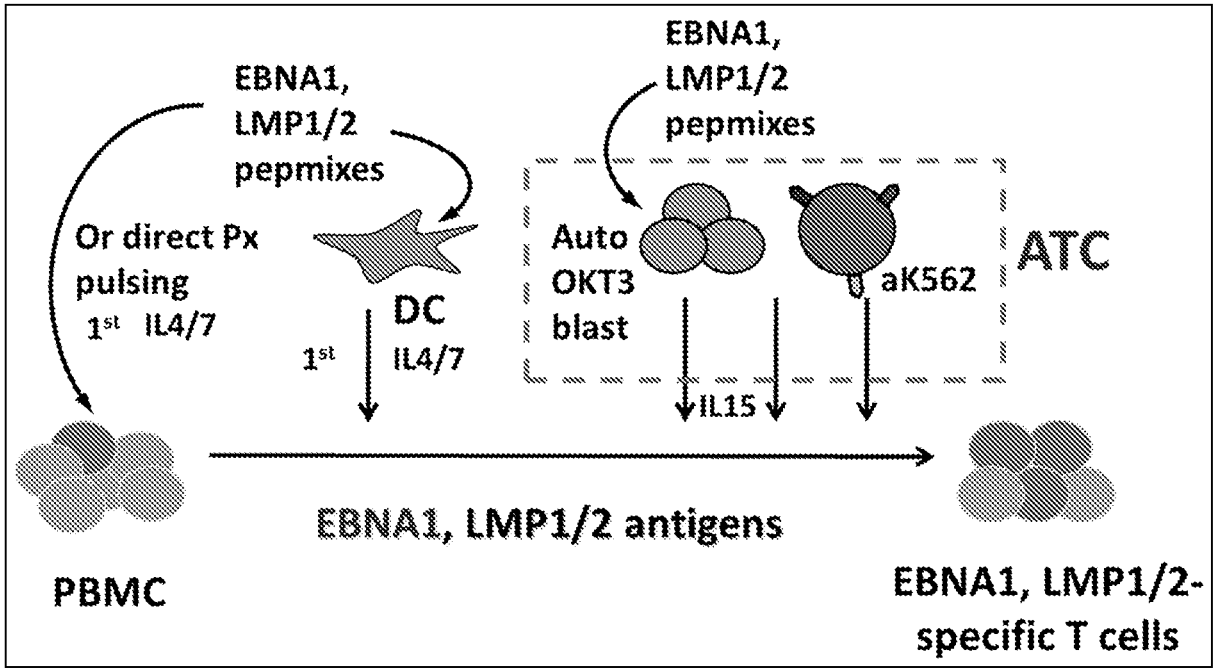


FIGURE 3: **Diagram showing the combination of T-APC (activated T cells) and aK562 that is employed as the second stimulation in the invention.**

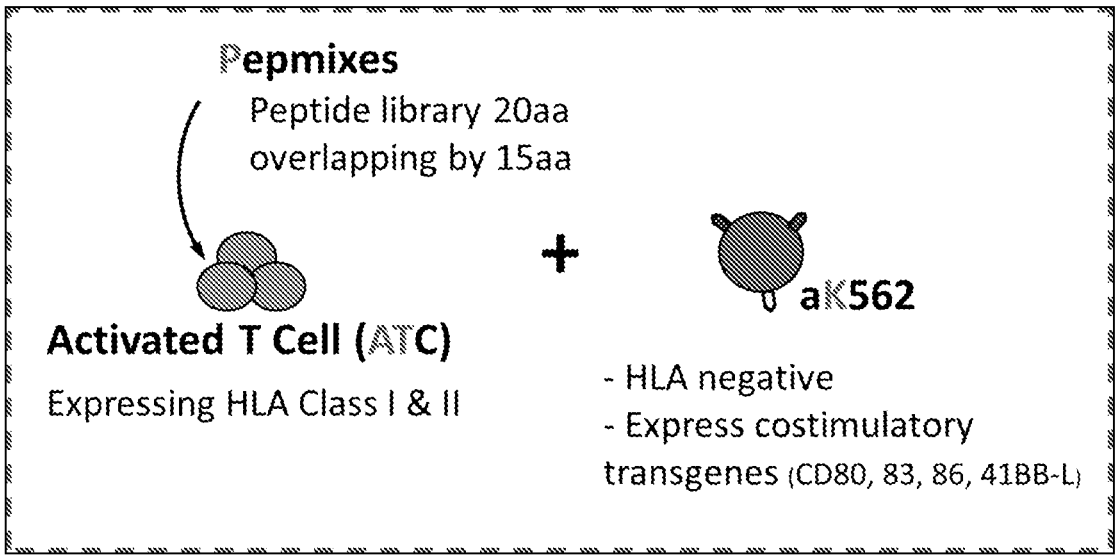


Figure 3A: **The expansion of specific T cells using aK562 and T-APC showing the different ratios used in step b) of the invention.**

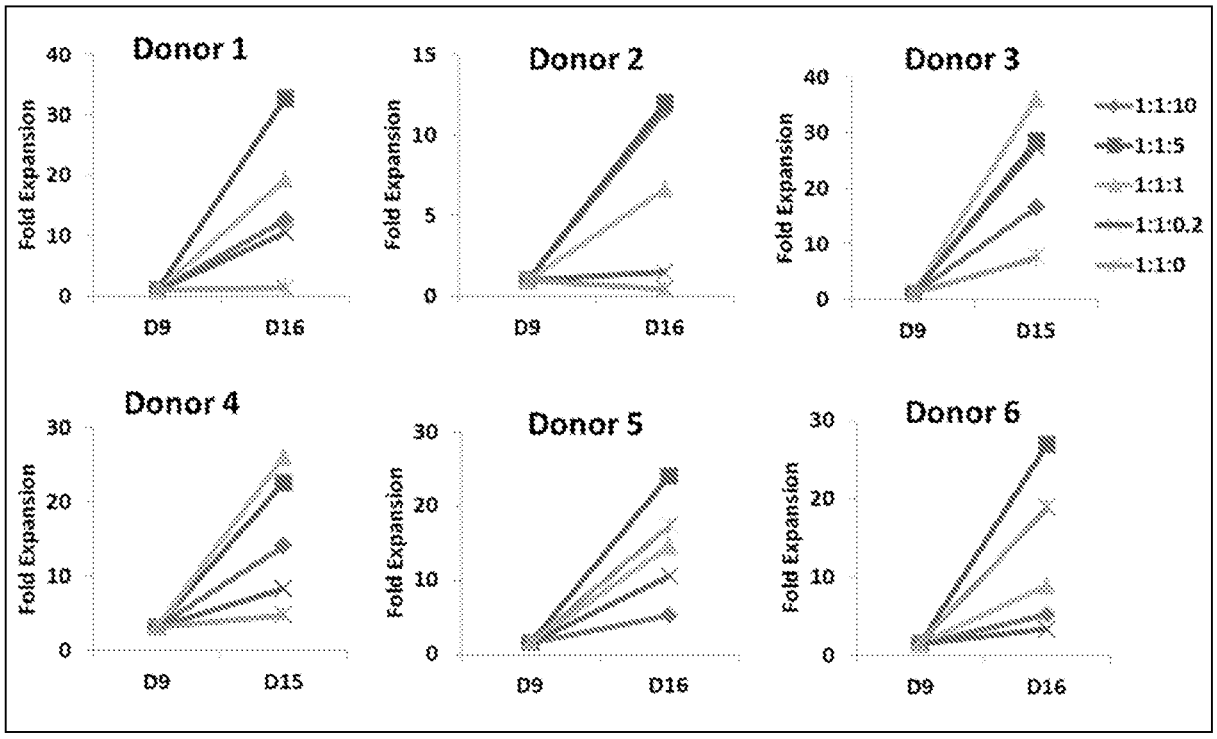


Figure 3B: The optimal CTL (T cell) to T-APC (OKT3 Blast) to aK562 ratio for T cell expansion in step b) of the invention.

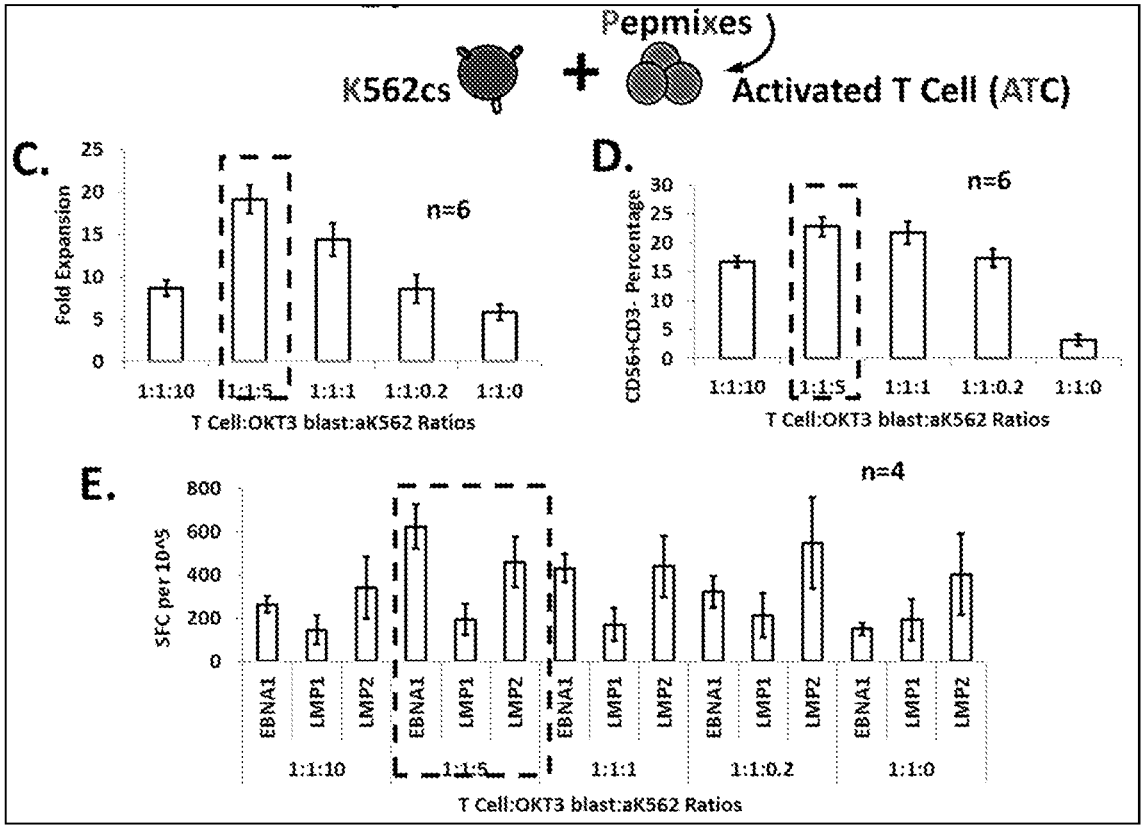


Figure 3C: A more detailed analysis of individual donors from figure 3B (E) showing specific IFNg production by expanded CTLs from 2 donors.

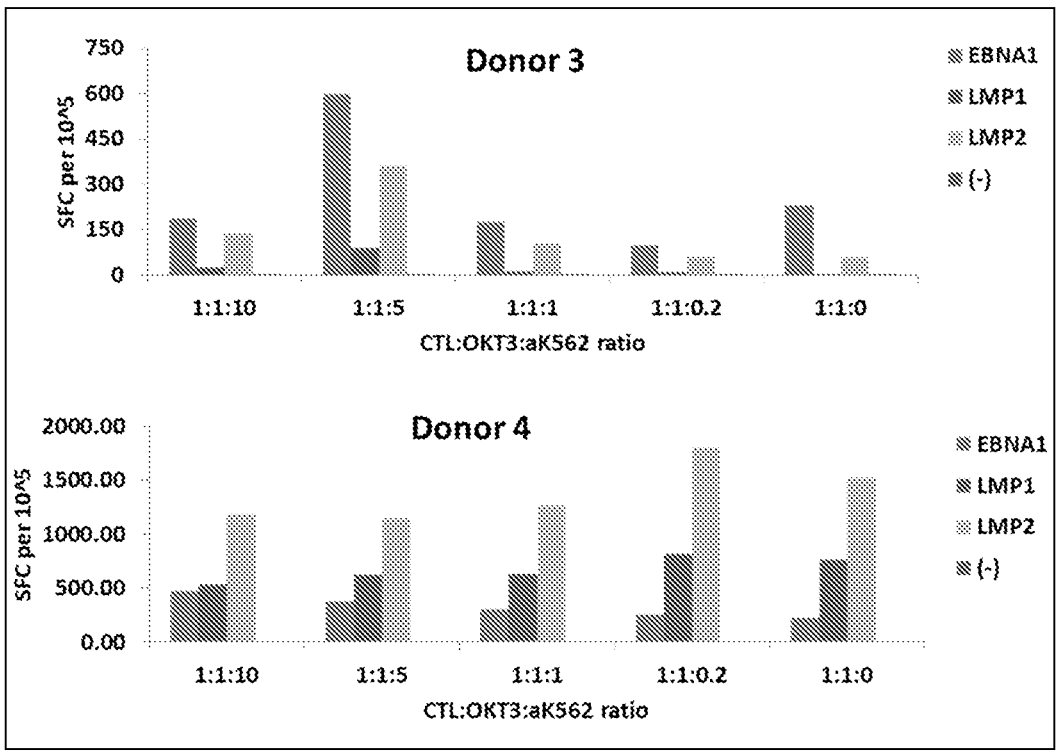


Figure 3D: **T-APC CAN Act As Antigen Presenting Cells for Class I and II**

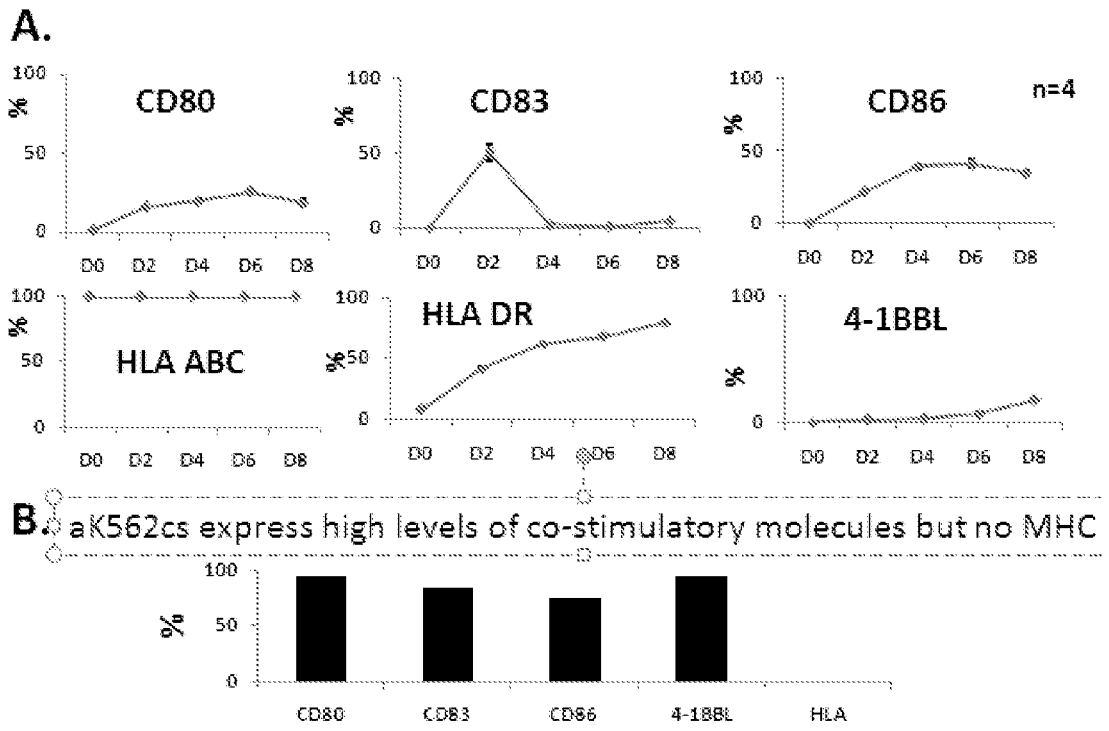


FIGURE 4A: **A Schematic representation of the main stimulation steps used in the prior art process and the various embodiments of the invention.**

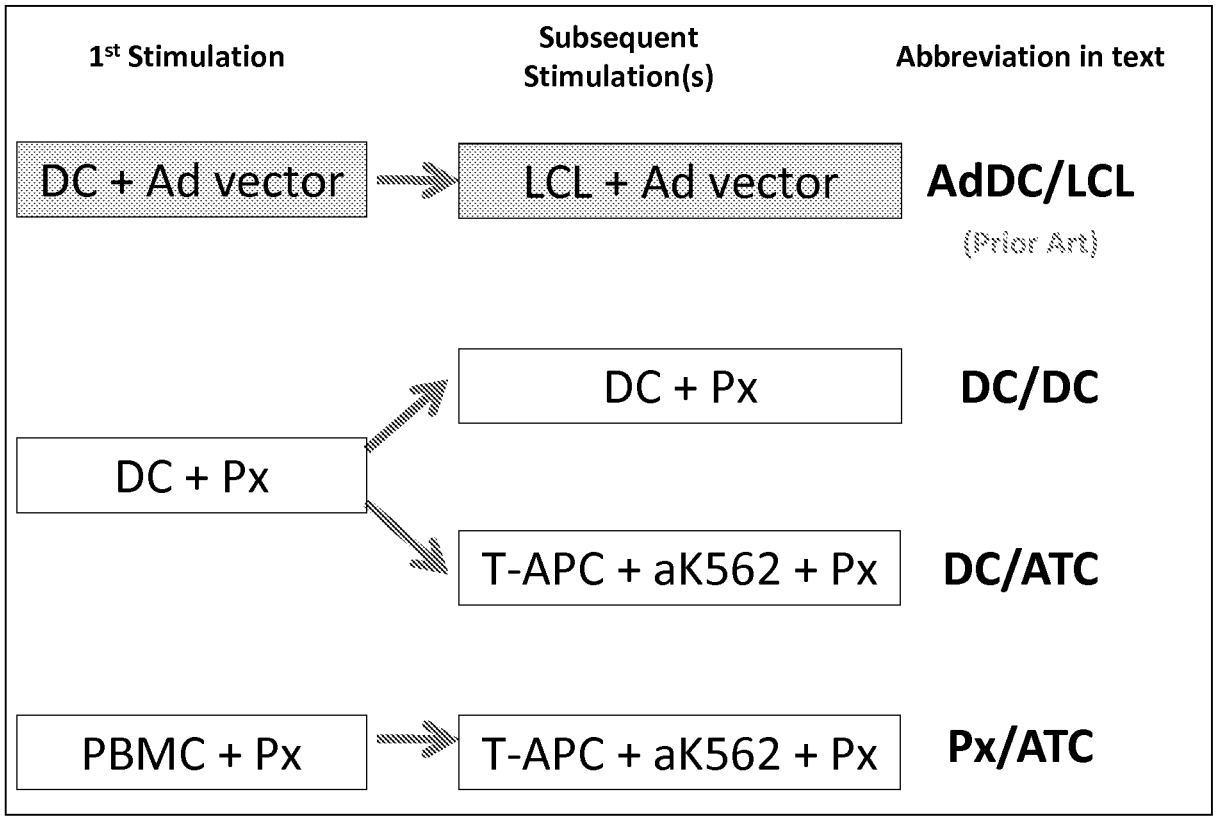


FIGURE 4B: Expansion of cells from a healthy donor in response to EBV antigens using the prior art and the new embodiments of the invention.

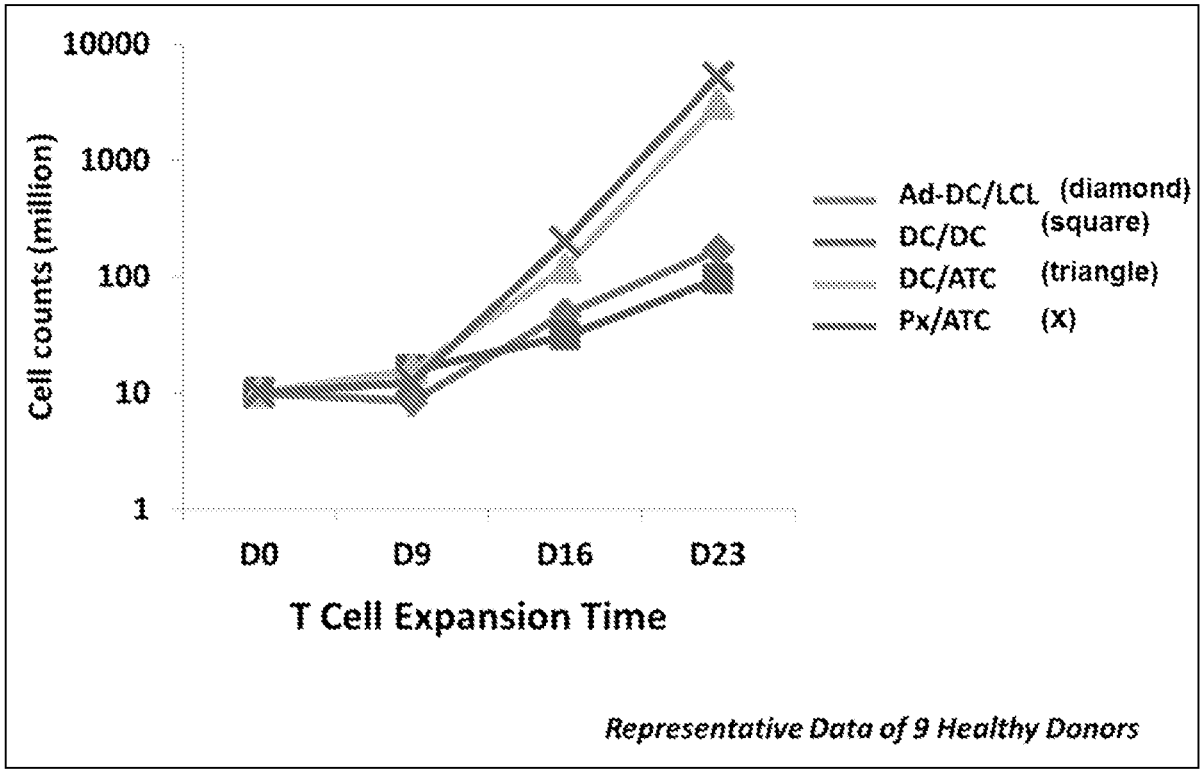
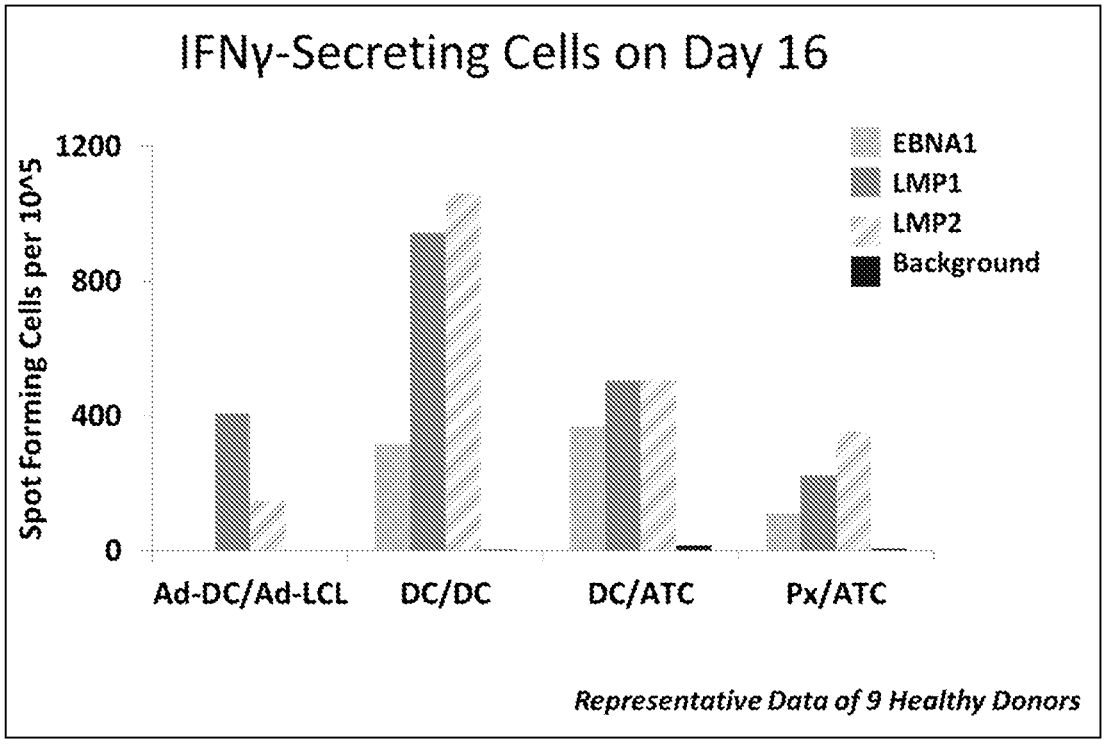


FIGURE 4C: The number of antigen specific, IFNg secreting T cells in the final cell population was increased in the embodiments of the invention compared to the prior art method



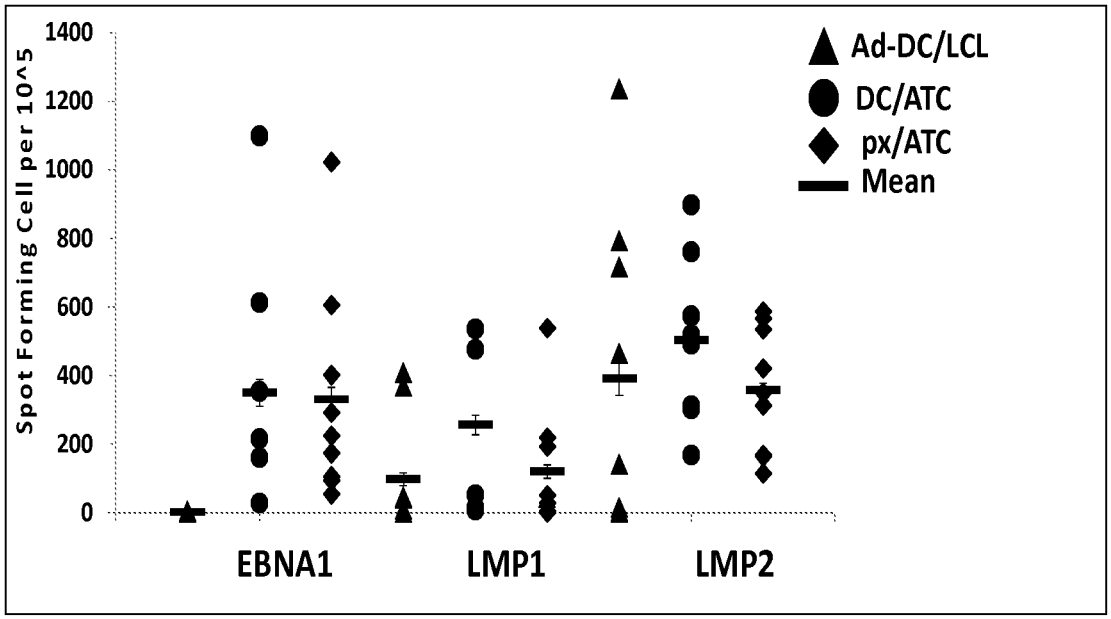


FIGURE 4D: The avidity of the T cell receptors for the different peptide antigens is not decreased by the use of the various embodiments when compared to the prior art process.

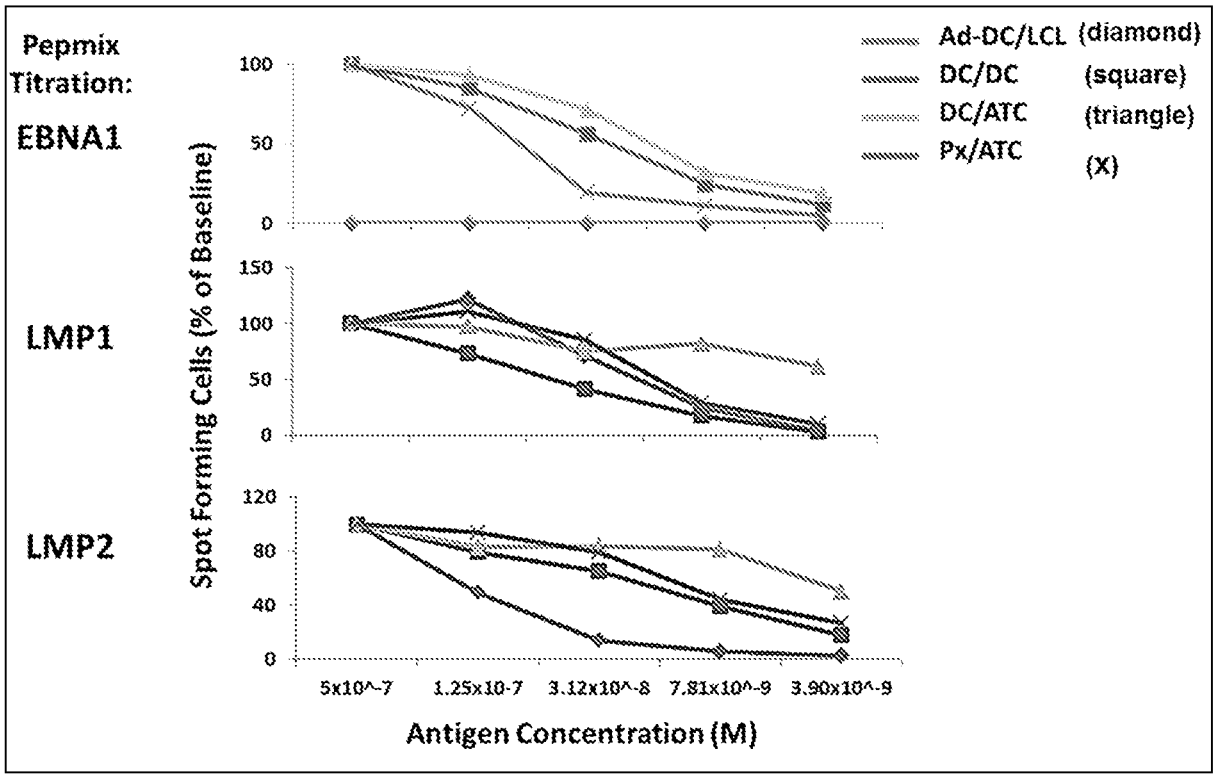


FIGURE 4E: T cell markers for the cellular composition and activation markers in the prior art method and the embodiments of the invention.

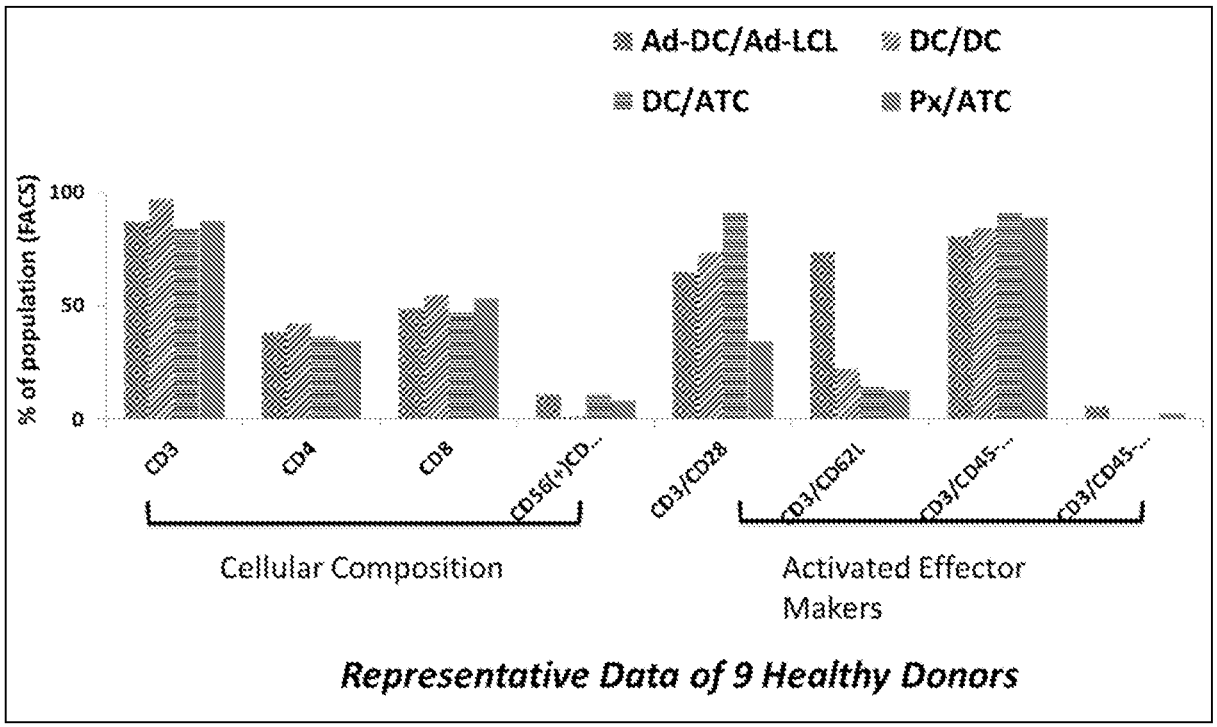


FIGURE 4F: Culture of cells using the prior art skews responses towards antigens expressed in LCL cells rather than on the latency type 2 antigens present in EBV+ cancer cells from lymphoma and NPC patients.. The new methods therefore focus the specificity of the expanded CTLs towards clinically relevant antigens.

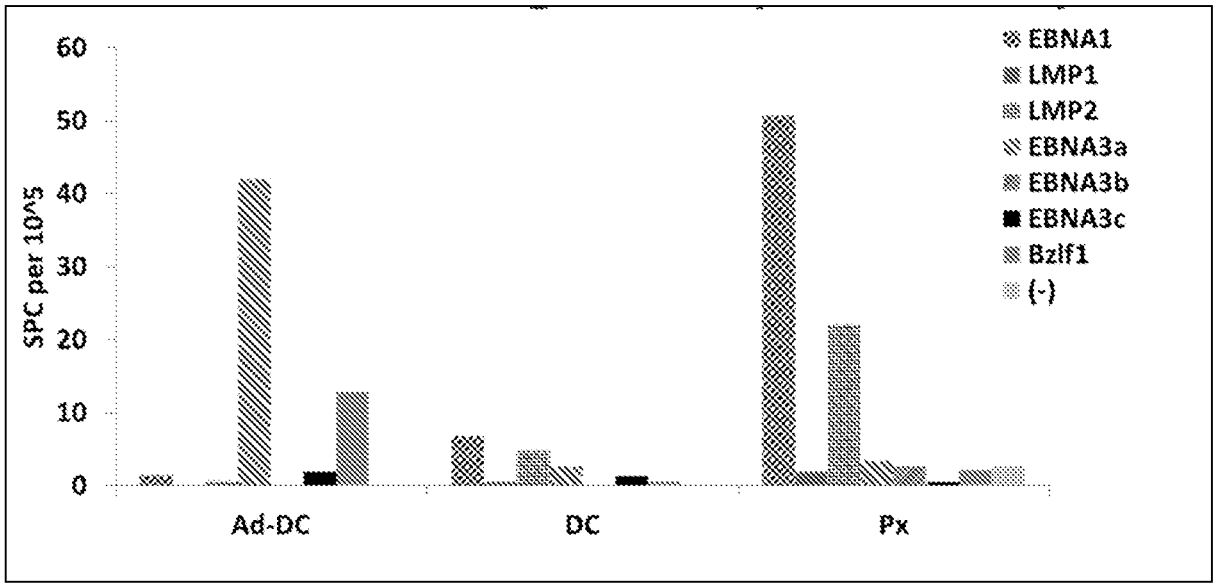


FIGURE 5A: A Schematic representation of the main stimulation steps used in the prior art process and the various embodiments of the invention.

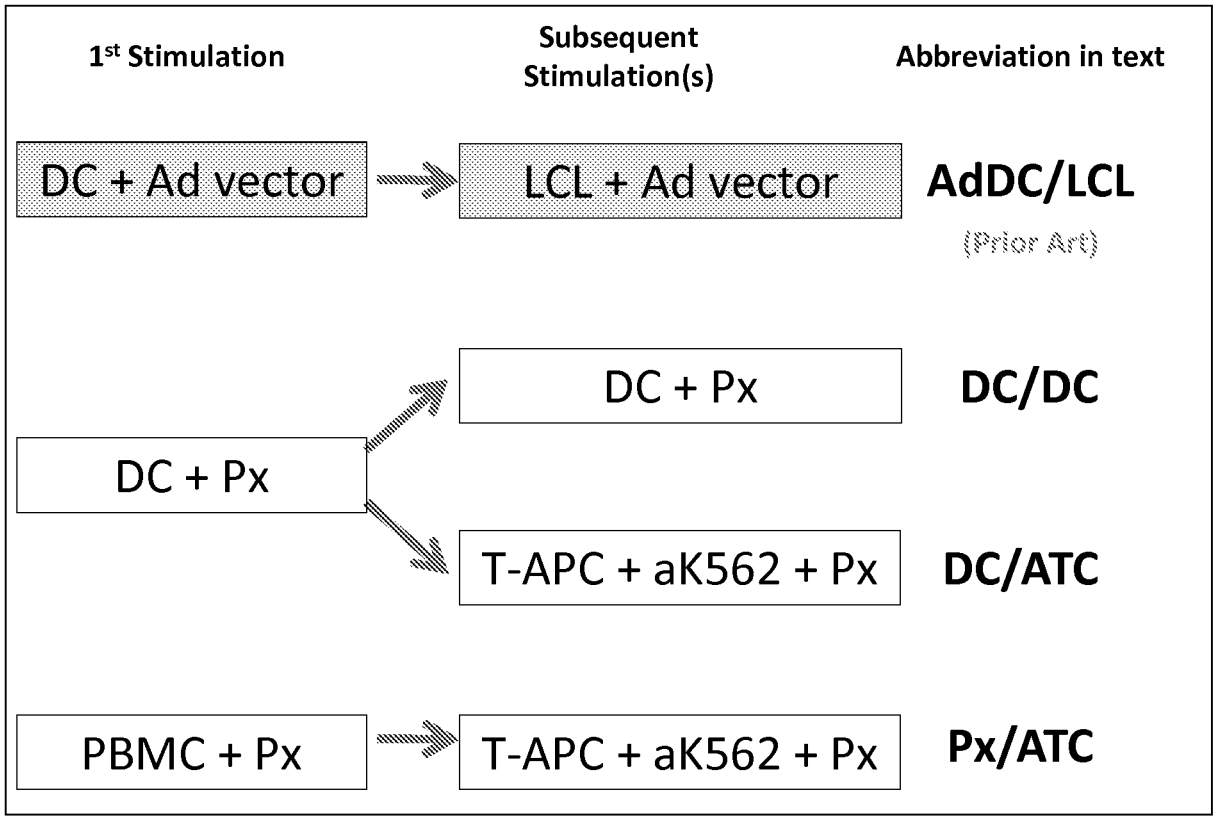
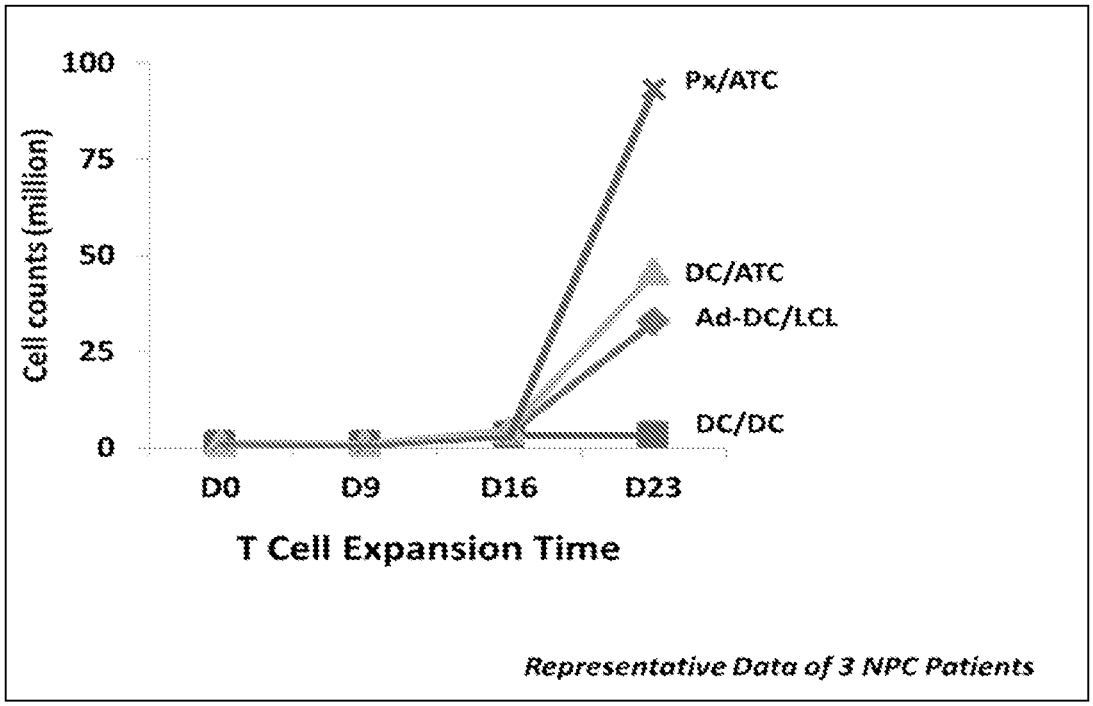


FIGURE 5B: **Expansion of EBV specific T cells is enhanced in 2 of the 3 embodiments when compared to the prior art in NPC patients.**



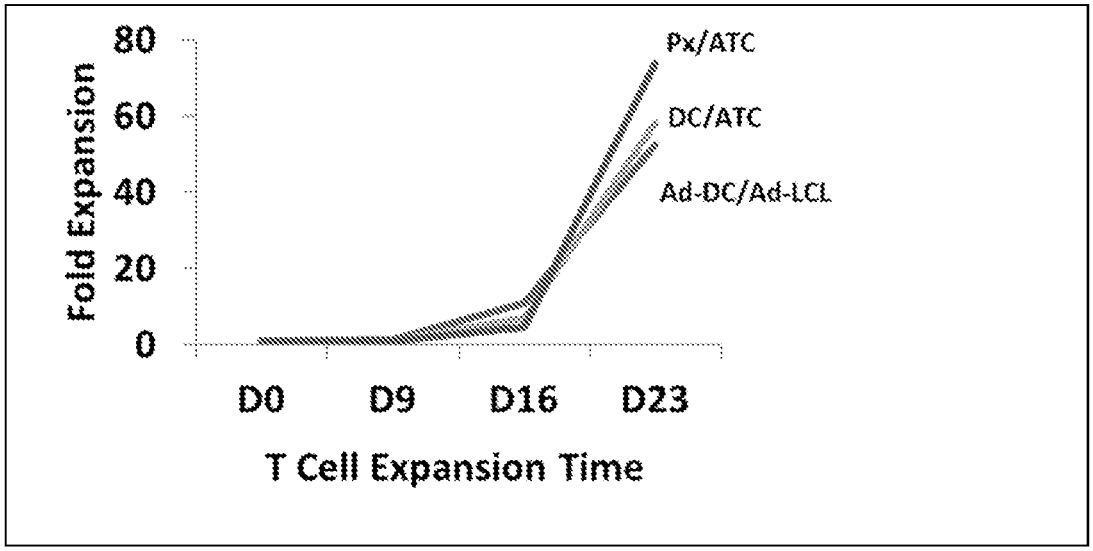


FIGURE 5C: EBV specific T cells expanded from NPC patients show enhanced specificity when using the embodiments of the invention compared to the prior art method.

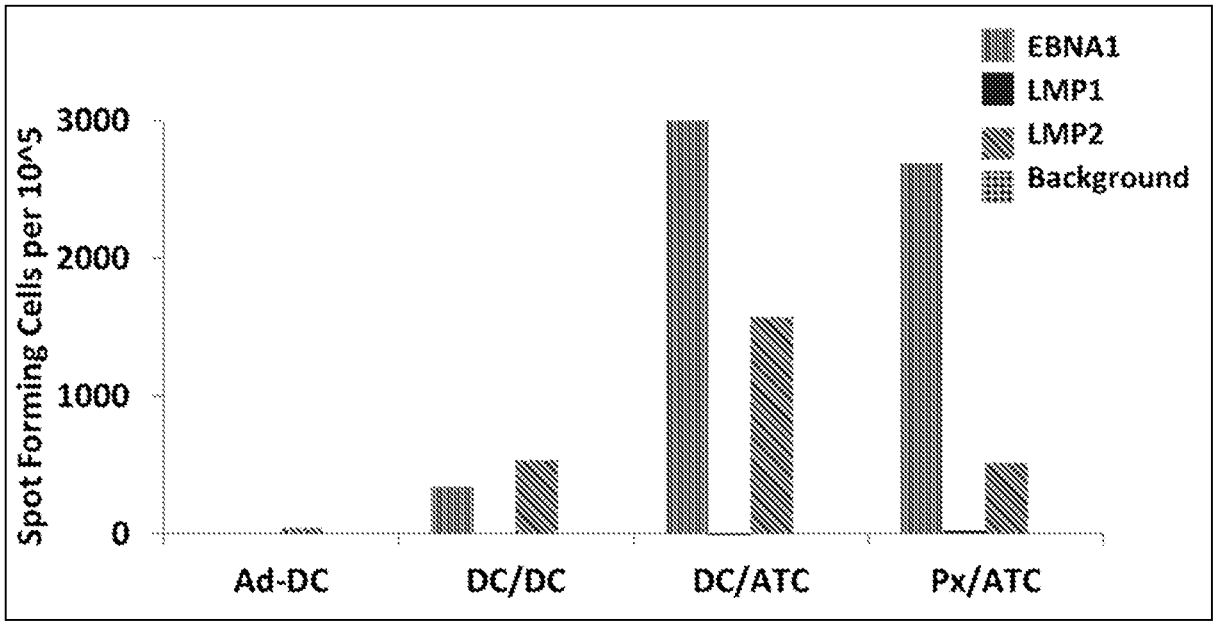


FIGURE 5D: The avidity of the T cell receptors for the different peptide antigens is not decreased by the use of the various embodiments when compared to the prior art process in NPC patients.

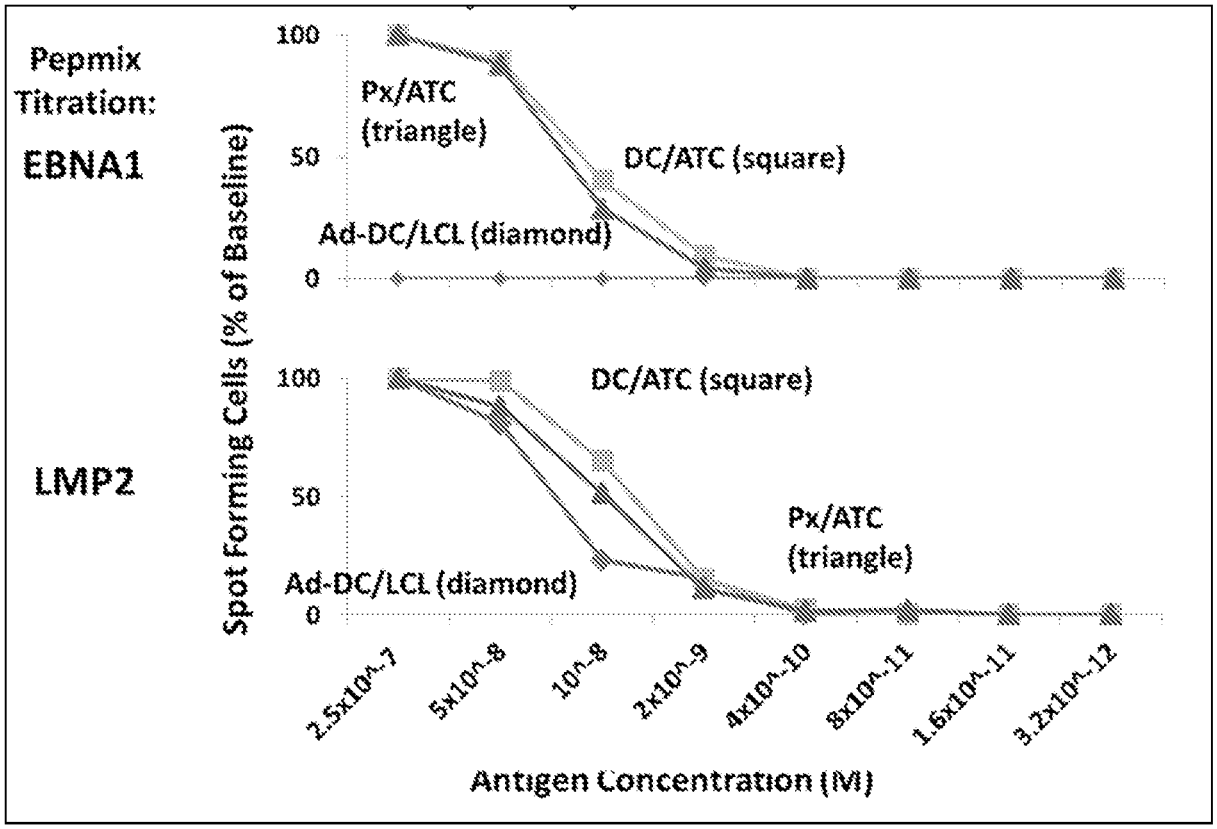


FIGURE 5E: **T cell markers for the cellular composition and activation markers in the prior art method and the embodiments of the invention in NPC patients.**

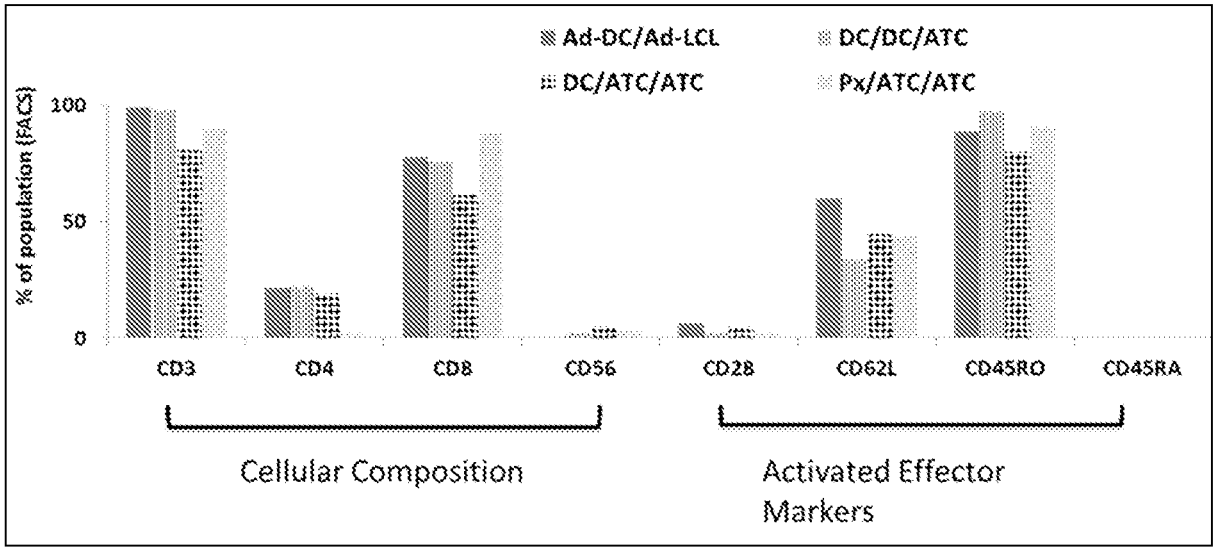


FIGURE 5F: **T Cells from NPC patients expanded employing the new embodiments of the invention(CD3+/CD19-) kill LCL (EBV+ cancer cell-line, CD3-/CD19+) better in co-culture for 4 and 10 days as T cells expanded by the prior art.**

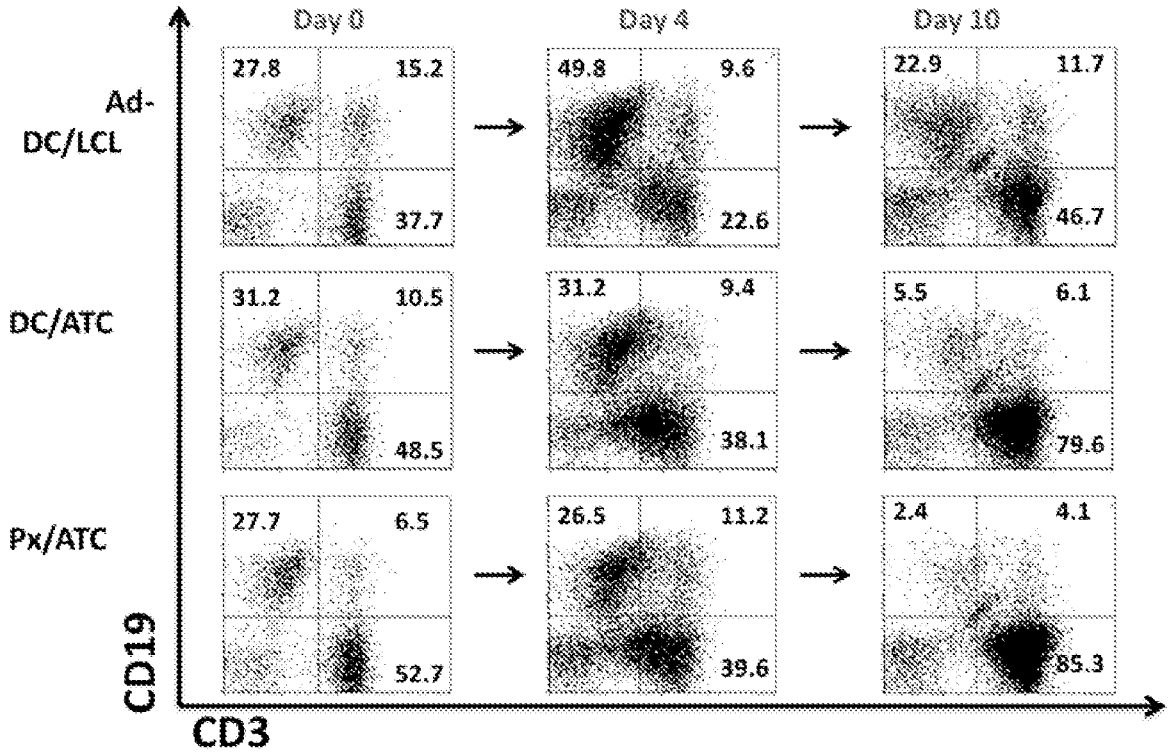


FIGURE 6A: A Schematic representation of the main stimulation steps used in the prior art process and the various embodiments of the invention.

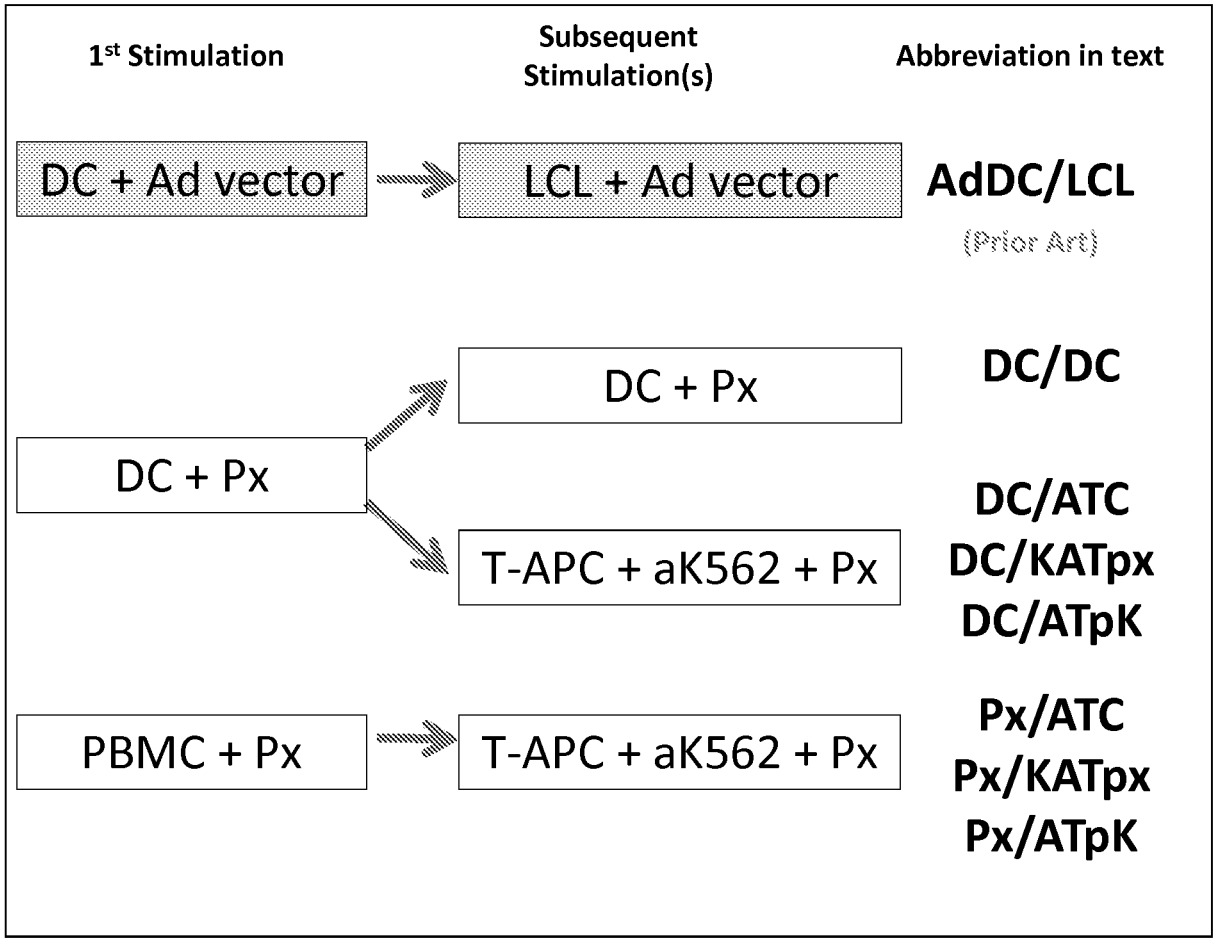
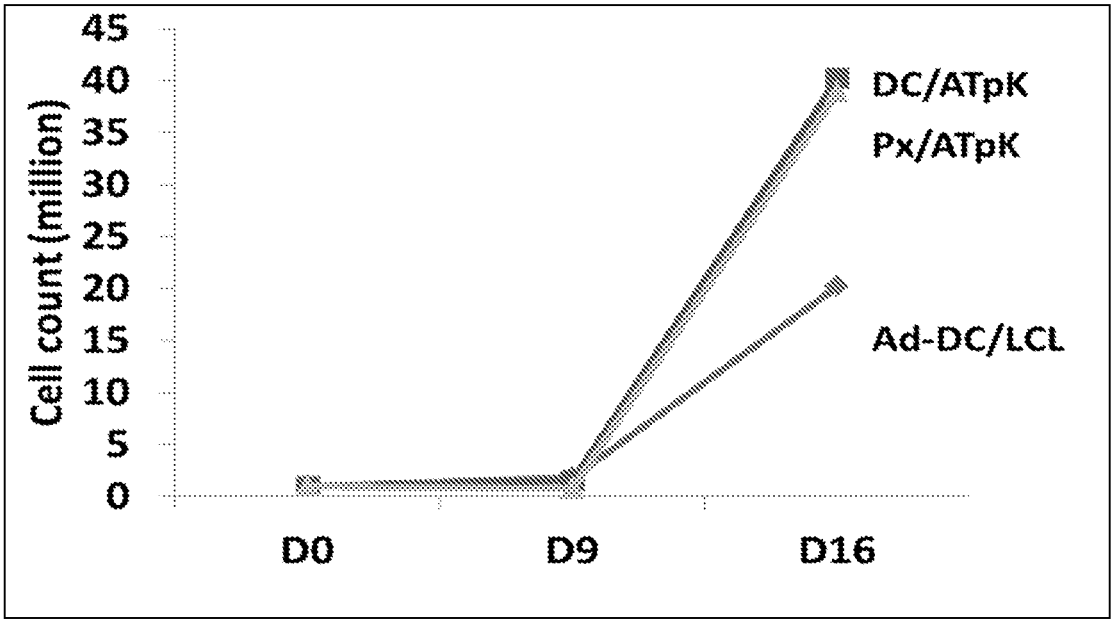


FIGURE 6B: Expansion of EBV specific T cells is enhanced in 2 of the 3 embodiments when compared to the prior art in lymphoma patients.



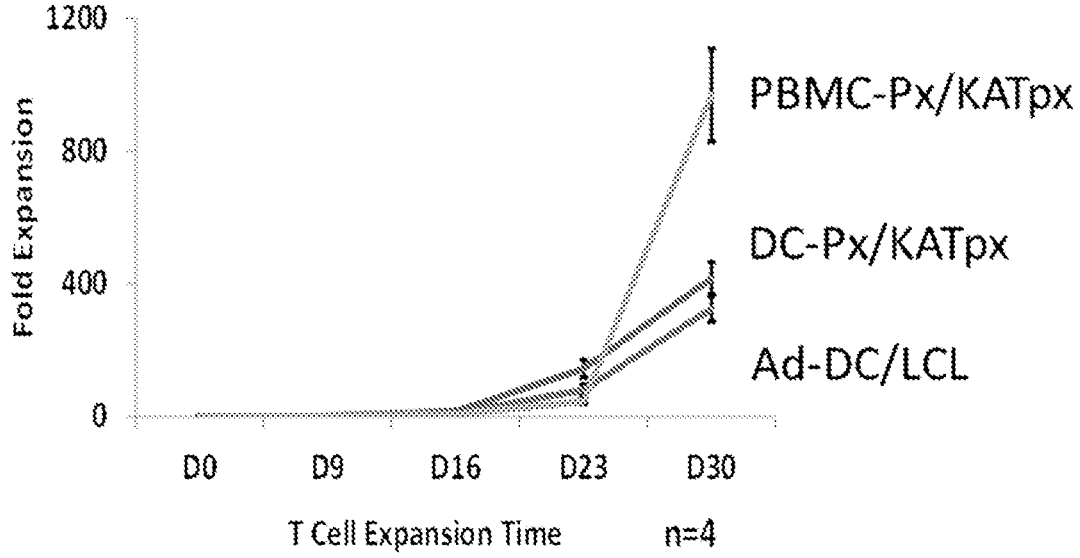


FIGURE 6C: EBV specific T cells expanded from lymphoma patients show enhanced specificity when using the embodiments of the invention compared to the prior art method.

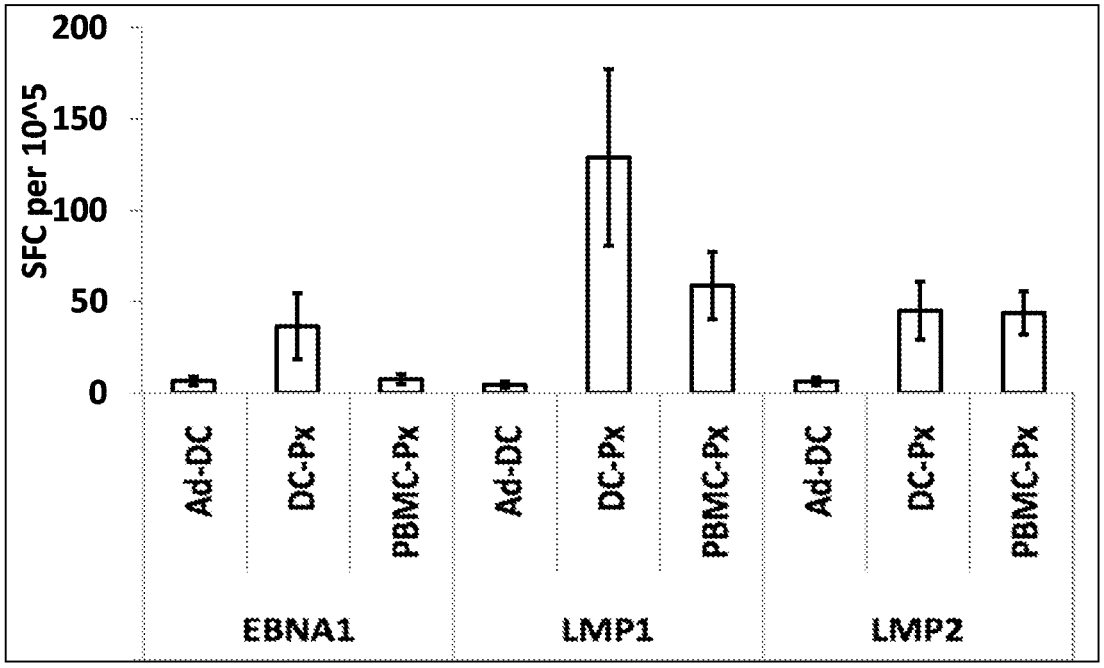


Figure 6D: T Cells from lymphoma patients expanded employing the new embodiments of the invention(CD3+/CD19-) kill LCL (EBV+ cancer cell-line, CD3-/CD19+) equally well or better in co-culture for 2 or 4 days as T cells expanded by the prior art.

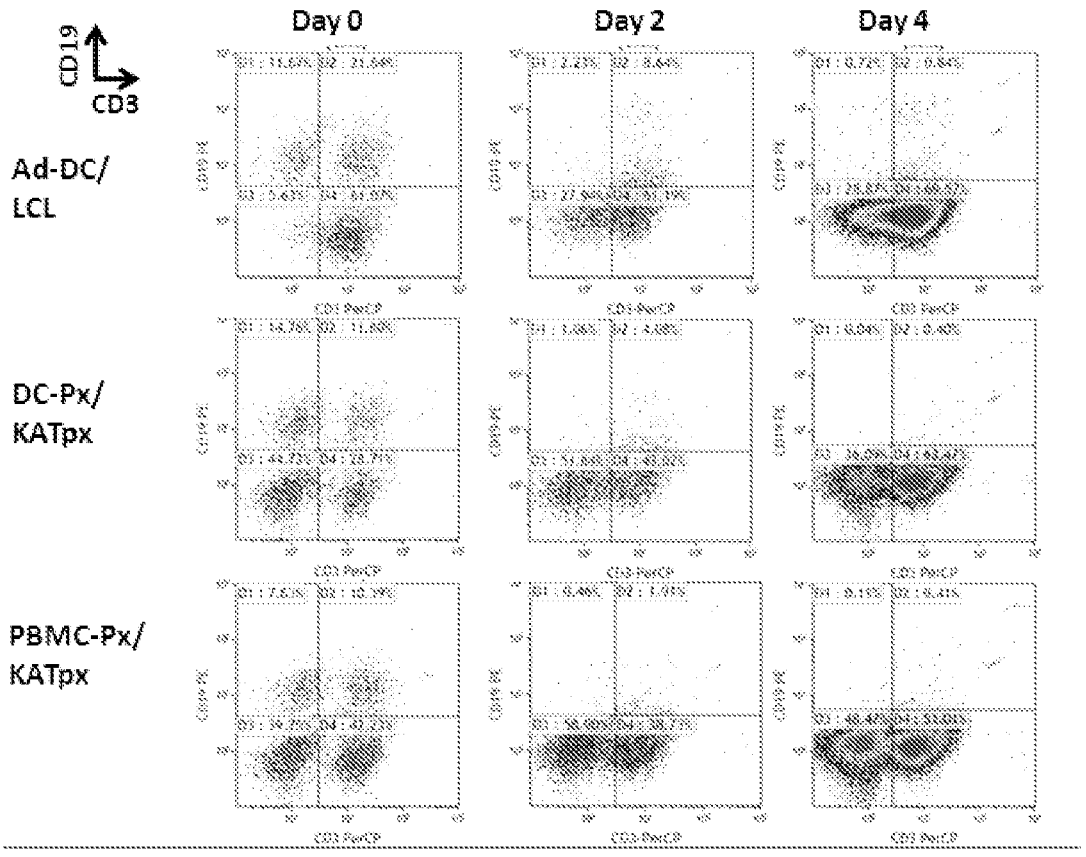
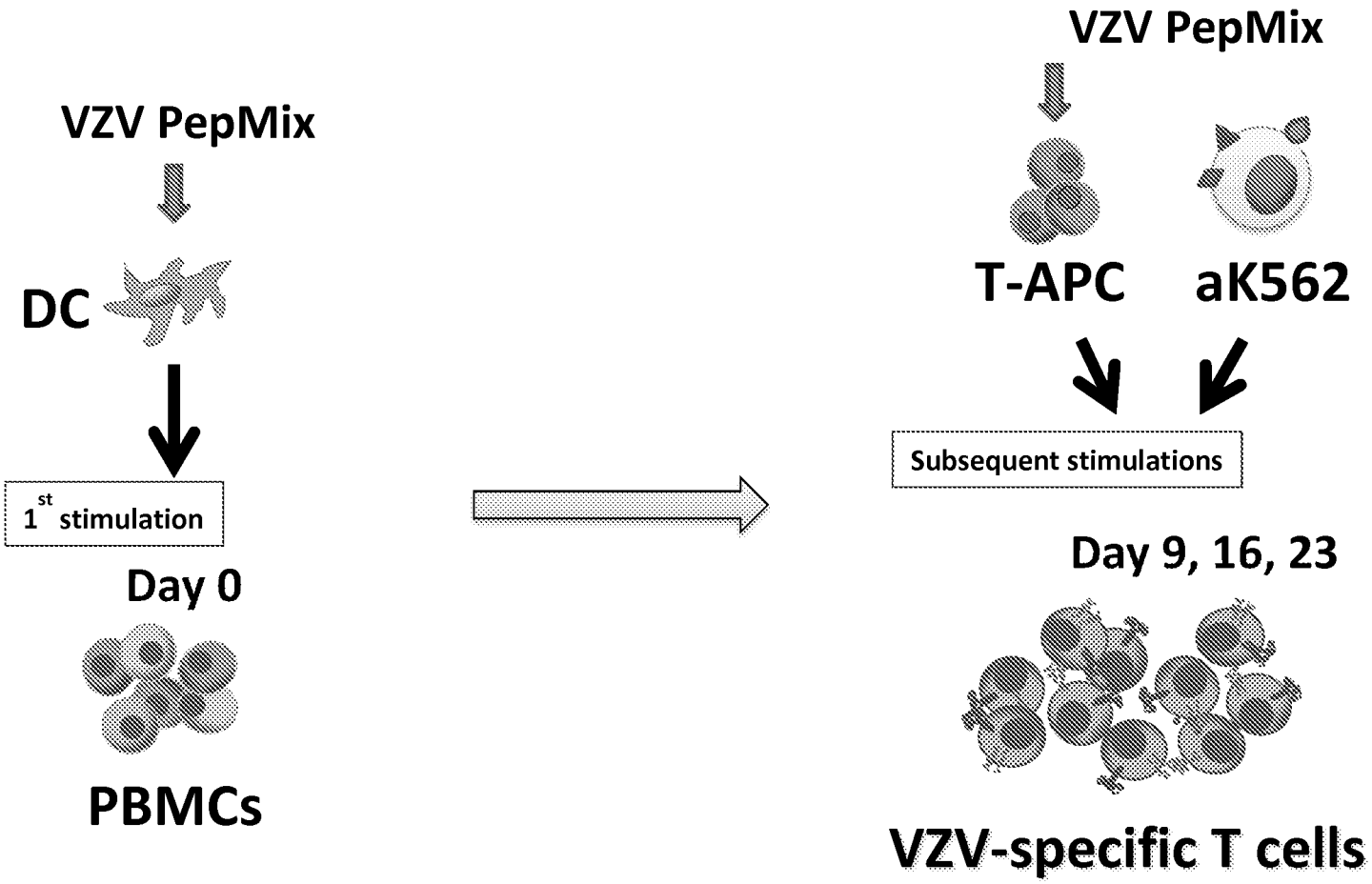


FIGURE 7A: is a schematic representation of the embodiment of the invention that was used to expand VZV specific T cells from the PBMC of a healthy donor



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FIGURE 7B: Expansion of VZV-specific T cells

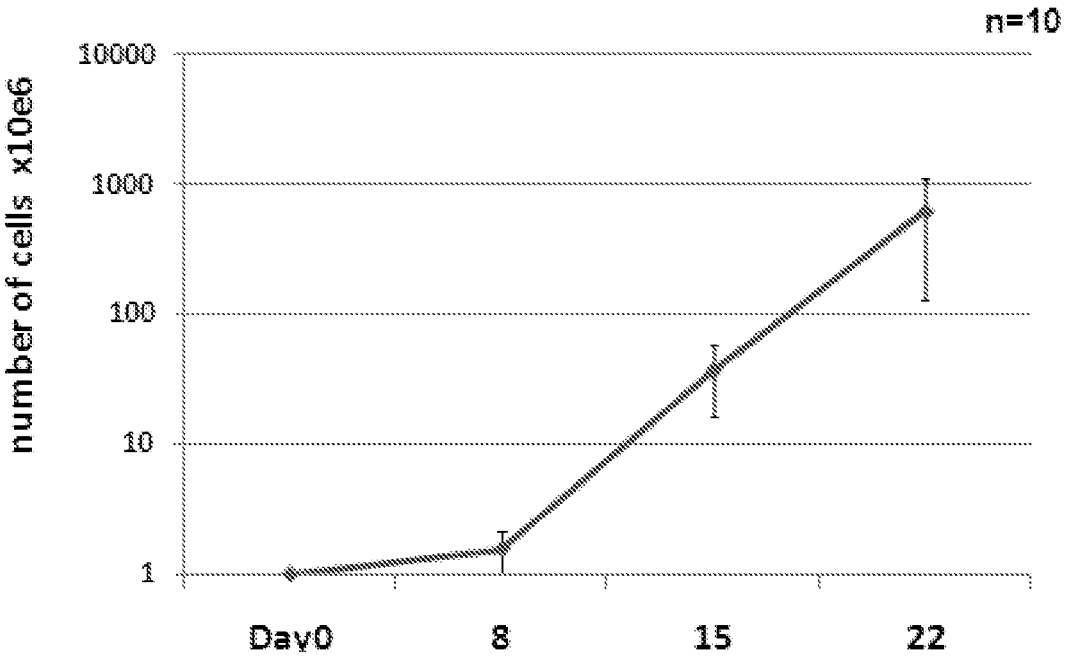


FIGURE 7C: IFNg secreting cells in cultures of VZV specific T cells

