CLAIMS

1. A method for improving the immunostimulatory characteristics of antigen-presenting cells comprising the introduction of polynucleotide (mRNA or DNA) molecules encoding a decoy IL-10 receptor alfa-subunit in said antigen-presenting cells.

2. The method of claim 1, wherein polynucleotide (mRNA or DNA) molecules encoding at least one functional immunostimulatory protein selected from the group comprising: CD70, caTLR4, CD40L and IFN-gamma are further introduced.

3. The method of claim 1, wherein polynucleotide (mRNA or DNA) molecules encoding the caTLR4 and IFN-gamma immunostimulatory proteins are further introduced.

4. The method of claim 3, wherein polynucleotide (mRNA or DNA) molecules encoding CD40L and/or CD70 immunostimulatory proteins are further introduced.

5. The method of any one of the claims 1-4, wherein a contact of IL-10 with said antigen-presenting cells at least results in a stimulation of IL-12 secretion and/or a decrease of IL-10 secretion.

6. A method for preparing an immunotherapy agent comprising the steps of:
   a) obtaining antigen-presenting cells;
   b) *ex vivo* modifying said pool of antigen-presenting cells of step a) according to the method of any one of the claims 1-5;
   c) *ex vivo* modifying the pool of antigen-presenting cells from step b) such that they present target-specific antigen derived epitopes.

7. The method of claim 6, wherein the method of modification used in step c) is selected from the group of electroporation, viral transduction, lipofection or transfection of mRNA or DNA encoding the target-specific antigens.

8. The method of any of the claims 1-7, wherein the antigen-presenting cells are selected from the group consisting of Dendritic Cells (DCs) or B-cells isolated from or generated from the blood of a subject, or dendritic cell-lines or B-cell lines.

9. The method of any one of the claims 1-8, wherein the target-specific antigen is selected from the list comprising: tumor, bacterial, viral and fungal antigen.

10. A composition comprising a combination of polynucleotide (mRNA or DNA) molecules encoding a decoy IL-10 receptor alfa subunit and polynucleotide (mRNA or DNA) molecules encoding at

least one functional immunostimulatory protein selected from the group comprising: CD70, caTLR4, CD40L and IFN-gamma.

11. A composition comprising a combination of polynucleotide (mRNA or DNA) molecules encoding a decoy IL-10 receptor alfa subunit, caTLR4 and IFN-gamma immunostimulatory proteins.

12. The composition of claim 11, further comprising polynucleotide (mRNA or DNA) molecules encoding CD40L and/or CD70 immunostimulatory proteins; in particular further comprising mRNA or DNA molecules encoding CD40L.

13. The composition of any one of the claims 10-12, further comprising pharmaceutically acceptable adjuvant(s).

14. Use of a composition according to any one of the claims10-13 **in** the manufacture of a medicament for treating tumor presence, cancer, IL-10 related conditions, bacterial, viral or fungal infection, HIV infection or hepatitis infection.

15. A composition according to any one of the claims 10-13 for use as an immunostimulatory agent capable of at least potentiating an immune response in a patient in need thereof.