[0024] In one aspect, there is provided a polynucleotide sequence encoding the amino acid sequence as described herein.

[0025]

In another aspect, there is provided a vector comprising a polynucleotide sequence as described herein. In a further aspect, there is provided a method of determining a signal peptide for enhancing secretion of an antibody of interest, wherein the method comprises:

(i) fusing

(a) a polynucleotide encoding the heavy chain of the antibody of interest to a polynucleotide encoding the amino acid sequence selected from the group consisting of MELGLSWIFLLAILKGVQC (H1, SEQ ID NO: 5), MELGLRWVFLVAILEGVQC (H2, SEQ ID NO: 6), MDWTWRFLFVVAAATGVQS (H5, SEQ ID NO: 1), MEFGLSWLFLVAILKGVQC (H6, SEQ ID NO: 9), MEFGLSWVFLVALFRGVQC (H7, SEQ ID NO:3) and MDLLHKNMKHLWFFLLLVAAPRWVLS (H8, SEQ ID NO: 11), and

(b) a polynucleotide encoding the light chain of the antibody of interest to a polynucleotide encoding the amino acid sequence MDMRVPAQLLGLLLLWLSGARC (L1, SEQ ID NO: 2) or MKYLLPTAAAGLLLLAAQPAMA (L2, SEQ ID NO: 4),

(ii) creating (a) at least one vector comprising a polynucleotide resulted from (i)(a) and (b) at least one vector comprising a polynucleotide resulted from (i)(b); and

(iii) quantifying and comparing secretion of the antibody after transfection of the at least one vector from (ii)(a) and the at least one vector from (ii)(b) into an expression system to determine the combination of heavy and light chain signal peptides that enhance expression and secretion of the antibody of interest the most.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] The invention will be better understood with reference to the detailed description when considered in conjunction with the non-limiting examples and the accompanying drawings, in which:

[0027] **Fig. 1** is a hierarchical clustering dendogram of signal peptides using agglomerative nesting to search for sequence similarity in (A) heavy chain signal peptides from a database of 173 human Ig heavy chains and (B) kappa (κ) light chain signal peptides from a database of 62

b) a heavy chain signal peptide of SEQ ID NO: 3 fused to the heavy chain amino acid sequence of adalimumab; and

c) a light chain signal peptide of SEQ ID NO: 2 fused to the light chain amino acid sequence of adalimumab.

11. A polynucleotide sequence encoding the amino acid sequence of any one of claims 6 to 10.

12. A vector comprising a polynucleotide sequence according to claim 11.

13. The host cell of claim 5, wherein the host cell is a mammalian or bacterial cell.

14. A method of determining a signal peptide for enhancing secretion of an antibody of interest, wherein the method comprises:

(i) fusing

(a) a polynucleotide encoding the heavy chain of the antibody of interest to a polynucleotide encoding the amino acid sequence selected from the group consisting of MELGLSWIFLLAILKGVQC (H1, SEQ ID NO: 5), MELGLRWVFLVAILEGVQC (H2, SEQ ID NO: 6), MDWTWRFLFVVAAATGVQS (H5, SEQ ID NO: 1), MEFGLSWLFLVAILKGVQC (H6, SEQ ID NO: 9), MEFGLSWVFLVALFRGVQC (H7, SEQ ID NO:3) and MDLLHKNMKHLWFFLLLVAAPRWVLS (H8, SEQ ID NO: 11), and

(b) a polynucleotide encoding the light chain of the antibody of interest to a polynucleotide encoding the amino acid sequence MDMRVPAQLLGLLLLWLSGARC (L1, SEQ ID NO: 2) or MKYLLPTAAAGLLLLAAQPAMA (L2, SEQ ID NO: 4),

(ii) creating (a) at least one vector comprising a polynucleotide resulted from (i)(a) and (b) at least one vector comprising a polynucleotide resulted from (i)(b); and

(iii) quantifying and comparing secretion of the antibody after transfection of the at least one vector from (ii)(a) and the at least one vector from (ii)(b) into an expression system to determine the combination of heavy and light chain signal peptides that enhance expression and secretion of the antibody of interest the most.