CLAIMS

1. An isolated recombinant adenoviral polynucleotide, wherein the polynucleotide encodes a polypeptide comprising:
    (a) a polypeptide having the amino acid sequence according to SEQ ID NO: 3;
    (b) a polypeptide having the amino acid sequence according to SEQ ID NO: 5; and
    (c) a polypeptide selected from the group consisting of
        (i) a polypeptide having the amino acid sequence according to SEQ ID NO: 1; and
        (ii) a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 1, wherein the functional derivative has an amino acid sequence which is at least 80% identical over its entire length to the amino acid sequence of SEQ ID NO: 1;

    wherein the polynucleotide comprises or comprised at least one gene of an adenoviral genomic region selected from the group consisting of E1A, E1B, E2A, E2B, E3 and E4 and a mutation or deletion which renders the at least one gene non-functional or absent.

2. A recombinant adenovirus comprising:
    (a) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 3;
    (b) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 5; and
    (c) a polynucleotide selected from the group consisting of
        (i) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 1 and
        (ii) a polynucleotide which encodes a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 1, wherein the functional derivative has an amino acid sequence which is at least 80% identical over its entire length to the amino acid sequence of SEQ ID NO: 1;

    wherein the polynucleotide comprises or comprised at least one gene of an adenoviral genomic region selected from the group consisting of E1A, E1B, E2A, E2B, E3 and E4 and a mutation or deletion which renders the at least one gene non-functional or absent.

3. A composition comprising:
    (a) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 3;
    (b) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 5; and
    (c) a polynucleotide selected from the group consisting of

(i) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 1; and
(ii) a polynucleotide which encodes a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 1;

and a pharmaceutically acceptable excipient,

wherein the functional derivative has an amino acid sequence which is at least 80% identical over its entire length to the amino acid sequence of SEQ ID NO: 1; wherein the polynucleotide in (a), (b) and (c) comprises a recombinant polynucleotide; and wherein the polynucleotide comprises or comprised at least one gene of an adenoviral genomic region selected from the group consisting of E1A, E1B, E2A, E2B, E3 and E4 and a mutation or deletion which renders the at least one gene non-functional or absent.

4. A cell comprising:
   (a) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 3;
   (b) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 5; and
   (c) a polynucleotide selected from the group consisting of
      (i) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 1; and
      (ii) a polynucleotide which encodes a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 1, wherein the functional derivative has an amino acid sequence which is at least 80% identical over its entire length to the amino acid sequence of SEQ ID NO: 1;

   wherein the cell is a host cell that expresses at least one adenoviral gene selected from the group consisting of E1A, E1B, E2A, E2B, E3, E4, L1, L2, L3, L4 and L5, and wherein the polynucleotide in (a), (b) and (c) comprises a recombinant polynucleotide.

5. The host cell according to claim 4 wherein the host cell is able to grow in suspension.

6. The polynucleotide according to claim 1, wherein the polynucleotide comprises at least one of the following:
   (a) an adenoviral 5’ inverted terminal repeat;
   (b) an adenoviral E1A region, or a fragment thereof selected from among the E1A_280R and E1A_243R regions;
   (c) an adenoviral E1B or IX region, or a fragment thereof selected from among the group consisting of the E1B_19K, E1B_55K or IX regions;
   (d) an adenoviral E2b region; or a fragment thereof selected from among the group consisting of the E2B_pTP, E2B_Polymerase and E2B_IVa2 regions;

(e) an adenoviral L1 region, or a fragment thereof, said fragment encoding an adenoviral protein selected from the group consisting of the L1_13.6k protein, L1_52k and L1_IIIa protein;
(f) an adenoviral L2 region, or a fragment thereof, said fragment encoding an adenoviral protein selected from the group consisting of the L2_penton protein according to claim 1, L2_pVII, L2_V, and L2_pX protein;
(g) an adenoviral L3 region, or a fragment thereof, said fragment encoding an adenoviral protein selected from the group consisting of the L3_pVI protein, L3_hexon protein according to claim 1 and L3_protease;
(h) an adenoviral E2A region;
(i) an adenoviral L4 region, or a fragment thereof said fragment encoding an adenoviral protein selected from the group consisting of the L4_100k protein, the L4_33k protein and protein L4_VIII;
(j) an adenoviral E3 region, or a fragment thereof selected from the group consisting of E3 ORF1, E3 ORF2, E3 ORF3, E3 ORF4, E3 ORF5, E3 ORF6, E3 ORF7, E3 ORF8, and E3 ORF9;
(k) an adenoviral L5 region, or a fragment thereof said fragment encoding the L5_fiber fiber protein according to claim 1;
(l) an adenoviral E4 region, or a fragment thereof selected from the group consisting of E4 ORF7, E4 ORF6, E4 ORF4, E4 ORF3, E4 ORF2, and E4 ORF1; and/or
(m) an adenoviral 3'-end, preferably an adenoviral 3' inverted terminal repeat.

7. The polynucleotide according to claim 6, further comprising an adenoviral VAI or VAII RNA region.

8. The polynucleotide according to claim 7, wherein the VAI or VAII RNA region is from Ad5.

9. The polynucleotide according to claim 1, wherein the genomic regions are E1A and/or E1B.

10. The recombinant adenovirus according to claim 2, wherein the recombinant adenovirus is replication-incompetent.

11. The replication-incompetent recombinant adenovirus of claim 10, wherein the adenovirus comprises a heterologous nucleic acid sequence encoding a protein and wherein the heterologous nucleic acid sequence is operatively linked to one or more sequences which direct expression of the protein in a host cell.

12. The replication-incompetent recombinant adenovirus according to claim 11, wherein the protein is an antigenic protein or a fragment thereof.

13. The recombinant adenovirus according to claim 2, wherein the adenovirus has a seroprevalence of less than 10% in human subjects.

14. The recombinant adenovirus according to claim 13, wherein the adenovirus has a seroprevalence of less than 5% in human subjects.

15. The composition of claim 3, further comprising a heterologous nucleic acid sequence encoding an antigenic protein or a fragment thereof, and wherein the heterologous nucleic acid sequence is operatively linked to one or more sequences that direct expression of the antigenic protein or a fragment thereof in a host cell.

16. The composition of claim 3, wherein the antigenic protein comprises a respiratory syncytial virus (RSV) antigenic protein.

17. The composition of claim 15 or claim 16 for use in inducing an immune response in a subject.

18. Use of the composition of claim 16 in the manufacture of a medicament for inducing an immune response against respiratory syncytial virus (RSV) in a subject.

19. An isolated recombinant adenoviral polynucleotide, wherein the polynucleotide encodes a polypeptide comprising:
    (a) a polypeptide having the amino acid sequence according to SEQ ID NO: 1;
    (b) a polypeptide having the amino acid sequence according to SEQ ID NO: 3; and
    (c) a polypeptide having the amino acid sequence according to SEQ ID NO: 5;
    wherein the polynucleotide comprises or comprised at least one gene of an adenoviral genomic region selected from the group consisting of E1A, E1B, E2A, E2B, E3 and E4 and a mutation or deletion which renders the at least one gene non-functional or absent.

20. The isolated recombinant adenoviral polynucleotide of claim 19 further comprising a heterologous nucleic acid sequence encoding a protein and wherein the heterologous nucleic acid sequence is operatively linked to one or more sequences that direct expression of the protein in a host cell.