

CLAIMS

1. An isolated polynucleotide, wherein the polynucleotide encodes a polypeptide selected from the group consisting of:
 - 5 (a) a polypeptide having the amino acid sequence according to SEQ ID NO: 1,
 - (b) 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, and
 - 10 (c) a polypeptide having the amino acid sequence according to SEQ ID NO: 3.
2. A recombinant polynucleotide comprising a polynucleotide selected from the group consisting of:
 - 15 (a) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 1,
 - (b) 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, and
 - 20 (c) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 3.
- 25 3. A recombinant vector comprising a polynucleotide selected from the group consisting of:
 - (a) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 1,
 - 30 (b) 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, and
 - 35 (c) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 3.
4. A recombinant adenovirus comprising at least one polynucleotide or polypeptide selected from the group consisting of:
 - 40 (a) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 1,

- (b) 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,
- 5 (c) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 3,
- (d) a polypeptide having the amino acid sequence according to SEQ ID NO: 1,
- 10 (e) 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, and
- (f) a polypeptide having the amino acid sequence according to SEQ ID NO: 3.
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5. A composition comprising at least one of the following:
- (a) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 1,
- 20 (b) 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,
- (c) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 3,
- 25 (d) a polypeptide having the amino acid sequence according to SEQ ID NO: 1,
- (e) 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,
- 30 (f) a polypeptide having the amino acid sequence according to SEQ ID NO: 3,
- (g) a vector according to claim 3, and
- (h) a recombinant adenovirus according to claim 4,
- 35 and a pharmaceutically acceptable excipient.
6. A cell comprising at least one of the following:
- (a) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 1,
- 40 (b) 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,
 (c) a polynucleotide which encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 3,
 5 (d) a polypeptide having the amino acid sequence according to SEQ ID NO: 1,
 (e) 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
 10 amino acid sequence of SEQ ID NO: 1,
 (f) a polypeptide having the amino acid sequence according to SEQ ID NO: 3,
 (g) a vector according to claim 3, and
 (h) a recombinant adenovirus according to claim 4.
- 15 7. An isolated adenoviral polypeptide selected from the group consisting of:
 (a) a polypeptide having the amino acid sequence according to SEQ ID NO: 1,
 (b) a functional derivative of a polypeptide having the amino acid sequence
 20 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, and
 (c) a polypeptide having the amino acid sequence according to SEQ ID NO: 3.
- 25 8 The polynucleotide, vector, adenovirus, composition or cell according to any one of claims 1 to 6, wherein the polynucleotide encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 1.
- 30 9. The polynucleotide, vector, adenovirus, composition or cell according to claim 8, wherein the polynucleotide has a sequence according to SEQ ID NO: 2.
- 35 10. The polynucleotide, vector, adenovirus, composition or cell according to any one of claims 1 to 6, wherein the polynucleotide 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.
- 40 11. The polynucleotide, vector, adenovirus, composition or cell according to claim 10, wherein the functional derivative has an amino acid sequence which is at least

89.0% identical, such as at least 99.0% identical, such as at least 99.6% identical over its entire length to the amino acid sequence of SEQ ID NO: 1.

- 12 The polynucleotide, vector, adenovirus, composition or cell according to any one of
5 claims 1 to 11, further comprising a polynucleotide encoding:
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 3; or
(b) a functional derivative of a polypeptide having the amino acid sequence
according to SEQ ID NO: 3, wherein the functional derivative has an amino acid
sequence which is at least 50.0% identical over its entire length to the amino acid
10 sequence of SEQ ID NO: 3,
or
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 5; or
(b) a functional derivative of a polypeptide having the amino acid sequence
according to SEQ ID NO: 5, wherein the functional derivative has an amino acid
15 sequence which is at least 50% identical over its entire length to the amino acid
sequence of SEQ ID NO: 5.
13. The polynucleotide, vector, adenovirus, composition or cell according to any one of
claims 1 to 11, further comprising a polynucleotide encoding:
20 (a) a polypeptide having the amino acid sequence according to SEQ ID NO: 3; or
(b) a functional derivative of a polypeptide having the amino acid sequence
according to SEQ ID NO: 3, wherein the functional derivative has an amino acid
sequence which is at least 50.0% identical over its entire length to the amino acid
sequence of SEQ ID NO: 3,
25 and
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 5; or
(b) a functional derivative of a polypeptide having the amino acid sequence
according to SEQ ID NO: 5, wherein the functional derivative has an amino acid
sequence which is at least 50% identical over its entire length to the amino acid
30 sequence of SEQ ID NO: 5.
14. The polynucleotide, vector, adenovirus, composition or cell according to either
claim 12 or 13, wherein the functional derivative of a polypeptide having the amino
acid sequence according to SEQ ID NO: 3 has an amino acid sequence which is at
35 least 70.0%, such as at least 90.0%, such as at least 99% identical over its entire
length to the amino acid sequence of SEQ ID NO: 3.
15. The polynucleotide, vector, adenovirus, composition or cell according to any one of
claims 12 to 14, wherein the functional derivative of a polypeptide having the amino
acid sequence according to SEQ ID NO: 5 has an amino acid sequence which is at
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least 70.0%, such as at least 90.0%, such as at least 99% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.

- 5 16. The polynucleotide, vector, adenovirus, composition or cell according to any one of claims 1 to 6, wherein the polynucleotide encodes a polypeptide having the amino acid sequence according to SEQ ID NO: 3.
- 10 17. The polynucleotide, vector, recombinant adenovirus, composition or cell according to claim 16, wherein the polynucleotide has a polynucleotide sequence according to SEQ ID NO: 5.
- 15 18. The polynucleotide, vector, recombinant adenovirus, composition or cell according to either claim 16 or 17, further comprising a polynucleotide encoding:
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 1; or
(b) 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 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 1
or
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 5; or
(b) a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 5, wherein the functional derivative has an amino acid sequence which is at least 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.
- 25 19. The polynucleotide, vector, recombinant adenovirus, composition or cell according to either claim 16 or 17, further comprising a polynucleotide encoding:
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 1; or
(b) 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 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 1
and
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 5; or
(b) a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 5, wherein the functional derivative has an amino acid sequence which is at least 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.
- 35 20. The polynucleotide, vector, recombinant adenovirus, composition or cell according to either claim 18 or 19, wherein the functional derivative of a polypeptide having
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the amino acid sequence according to SEQ ID NO: 1 has an amino acid sequence which is at least 70.0% identical, such as at least 99.0% identical, such as at least 99.4% identical over its entire length to the amino acid sequence of SEQ ID NO: 1.

- 5 21. The polynucleotide, vector, recombinant adenovirus, composition or cell according to any one of claims 18 to 20, wherein the functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 5 has an amino acid sequence which is at least 70.0%, such as at least 90.0%, such as at least 99% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.
- 10 22. The polypeptide, recombinant adenovirus, composition or cell according to any one of claims 4 to 7, wherein the polypeptide has the amino acid sequence according to SEQ ID NO: 1.
- 15 23. The polypeptide, recombinant adenovirus, composition or cell according to any one of claims 4 to 7, wherein the polypeptide is 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.
- 20 24. The polypeptide, recombinant adenovirus, composition or cell according to claim 23, wherein the functional derivative has an amino acid sequence which is at least 89.0% identical, such as at least 99.0% identical, such as at least 99.6% identical over its entire length to the amino acid sequence of SEQ ID NO: 1.
- 25 25 The polypeptide, recombinant adenovirus, composition or cell according to any one of claims 22 to 24, further comprising:
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 3; or
(b) a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 3, wherein the functional derivative has an amino acid sequence which is at least 50.0% identical over its entire length to the amino acid sequence of SEQ ID NO: 3,
or
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 5; or
(b) a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 5, wherein the functional derivative has an amino acid sequence which is at least 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.
- 30 26. The polypeptide, recombinant adenovirus, composition or cell according to any one of claims 22 to 24, further comprising:
- 35 26. The polypeptide, recombinant adenovirus, composition or cell according to any one of claims 22 to 24, further comprising:
- 40 26. The polypeptide, recombinant adenovirus, composition or cell according to any one of claims 22 to 24, further comprising:

- 5 (a) a polypeptide having the amino acid sequence according to SEQ ID NO: 3; or
(b) a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 3, wherein the functional derivative has an amino acid sequence which is at least 50.0% identical over its entire length to the amino acid sequence of SEQ ID NO: 3,
and
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 5; or
(b) a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 5, wherein the functional derivative has an amino acid sequence which is at least 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.
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27. The polypeptide, recombinant adenovirus, composition or cell according to either claim 25 or 26, wherein the functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 3 has an amino acid sequence which is at least 70.0%, such as at least 90.0%, such as at least 99% identical over its entire length to the amino acid sequence of SEQ ID NO: 3.
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28. The polypeptide, adenovirus, composition or cell according to any one of claims 25 to 27, wherein the functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 5 has an amino acid sequence which is at least 70.0%, such as at least 90.0%, such as at least 99% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.
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29. The polypeptide, adenovirus, composition or cell according to any one of claims 4 to 7, wherein the polypeptide has the amino acid sequence according to SEQ ID NO: 3.
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30. The polypeptide, adenovirus, composition or cell according claim 29, further comprising:
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 1; or
(b) 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 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 1
or
(a) a polypeptide having the amino acid sequence according to SEQ ID NO: 5; or
(b) a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 5, wherein the functional derivative has an amino acid sequence which is at least 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.
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31. The polypeptide, adenovirus, composition or cell according claim 29, further comprising:
- 5 (a) a polypeptide having the amino acid sequence according to SEQ ID NO: 1; or
(b) 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 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 1
and
- 10 (a) a polypeptide having the amino acid sequence according to SEQ ID NO: 5; or
(b) a functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 5, wherein the functional derivative has an amino acid sequence which is at least 50% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.
- 15 32. The polypeptide, adenovirus, composition or cell according to either claim 30 or 31, wherein the functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 1 has an amino acid sequence which is at least 70.0% identical, such as at least 99.0% identical, such as at least 99.4% identical over its
- 20 entire length to the amino acid sequence of SEQ ID NO: 1.
33. The polypeptide, adenovirus, composition or cell according to any one of claims 30 to 32, wherein the functional derivative of a polypeptide having the amino acid sequence according to SEQ ID NO: 5 has an amino acid sequence which is at
- 25 least 70.0%, such as at least 90.0%, such as at least 99% identical over its entire length to the amino acid sequence of SEQ ID NO: 5.
34. The polynucleotide, vector, adenovirus, composition or cell according to any one of claims 1-21, wherein the polynucleotide comprises at least one of the following:
- 30 (a) an adenoviral 5'-end, preferably 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;
- 35 (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_Illa 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 3, 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 2 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;
- (m) an adenoviral 3'-end, preferably an adenoviral 3' inverted terminal repeat; and/or
- (n) an adenoviral VAI or VAII RNA region, preferably an adenoviral VAI or VAII RNA region from an adenovirus other than ChAd155, more preferably from Ad5.
35. The polynucleotide, vector, adenovirus, composition or cell according to claim 34, wherein the polynucleotide comprises at least one of the following:
- (a) an adenoviral 5'-end, preferably an adenoviral 5' inverted terminal repeat;
- (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 3, 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 hexon protein according to claim 2 and L3_protease;
- (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;
- (k) an adenoviral L5 region, or a fragment thereof said fragment encoding the L5_fiber fiber protein according to claim 1;

(m) an adenoviral 3'-end, preferably an adenoviral 3' inverted terminal repeat.

- 5 36. The polynucleotide, vector, adenovirus, composition or cell according to any one of claims 1-21, wherein the polynucleotide comprises an adenoviral VAI or VAII RNA region.
37. The polynucleotide, vector, adenovirus, composition or cell according to claim 36, wherein the VAI or VAII RNA region is from an adenovirus other than ChAd155.
- 10 38. The polynucleotide, vector, adenovirus, composition or cell according to claim 37, wherein the VAI or VAII RNA region is from Ad5.
- 15 39. The polynucleotide, vector, adenovirus, composition or cell according to any one of claims 1-21, wherein the polynucleotide comprises or consists of a polynucleotide which is at least 98.6% identical over its entire length to a reference sequence that consists essentially of SEQ ID NO: 6, 7 or 8.
- 20 40. The polynucleotide, vector, adenovirus, composition or cell according to claim 39, wherein the polynucleotide comprises or consists of a polynucleotide which is at least 99% identical over its entire length to the reference sequence.
- 25 41. The polynucleotide, vector, adenovirus, composition or cell according to claim 40, wherein the polynucleotide comprises or consists of a polynucleotide which is at least 99.5% identical over its entire length to the reference sequence.
42. The polynucleotide, vector, adenovirus, composition or cell according to any one of claims 39-41, wherein the polynucleotide comprises or consists of a polynucleotide which is identical over its entire length to the reference sequence.
- 30 43. The polynucleotide, vector, adenovirus, composition or cell according to claim 42, wherein the reference sequence is SEQ ID NO: 7.
44. The polynucleotide, vector, adenovirus, composition or cell according to claim 42, wherein the reference sequence is SEQ ID NO: 8.
- 35 45. The polynucleotide, vector, adenovirus, composition or cell according to claim 42, wherein reference sequence is SEQ ID NO: 8 or 9.
- 40 46. The polynucleotide, vector, adenovirus, composition or cell according to any one of claims 1 to 21, wherein the polynucleotide comprises a mutation or deletion which

renders non-functional at least one gene of a genomic region selected from the group consisting of E1A, E1B, E2A, E2B, E3 and E4.

- 5 47. The polynucleotide, vector, adenovirus, composition or cell according to claim 46, wherein the polynucleotide lacks at least one gene of a genomic region selected from the group consisting of E1A, E1B, E2A, E2B, E3 and/or E4.
- 10 48. The polynucleotide, vector, adenovirus, composition or cell according to either claim 46 or 47, wherein the genomic regions are E1A and/or E1B.
49. The adenovirus according to any one of claims 4 and 8 to 48, wherein the recombinant adenovirus is replication-competent.
- 15 50. The adenovirus according to any one of claims 4 and 8 to 48, wherein the recombinant adenovirus is replication-incompetent.
- 20 51. The adenovirus of any one of claims 4 and 8 to 50, wherein the recombinant adenovirus comprises a nucleic acid sequence encoding a protein, wherein the nucleic acid sequence is operatively linked to one or more sequences which direct expression of said protein in a host cell.
52. The adenovirus according to claim 51, wherein the protein is an antigenic protein or a fragment thereof.
- 25 53. The adenovirus according to claim 52 wherein the protein is a heterologous protein or fragment thereof.
54. The adenovirus of claim 53, wherein the protein is derived from a virus.
- 30 55. The adenovirus of any one of claims 49 to 54, wherein the one or more sequences which direct expression of said product in a host cell includes a sequence selected from one or more of the group consisting of: transcription initiation, transcription termination, promoter and enhancer sequences.
- 35 56. The adenovirus of claim 55, wherein the one or more sequences which direct expression of said product in a host cell includes a promoter sequence.
- 40 57. The adenovirus of claim 56, wherein the promoter sequence is selected from the group consisting of an internal promoter, a native promoter, RSV LTR promoter, CMV promoter, SV40 promoter, dihydrofolate reductase promoter, β -actin promoter, PGK promoter, EF1a promoter and CASI promoter.

58. The adenovirus according to any one of claims 4 and 8 to 57, wherein the adenovirus has a seroprevalence of less than 10% in human subjects and preferably no seroprevalence in human subjects.
59. The adenovirus according to any one of claims 4 and 8 to 58, wherein the adenovirus is capable of infecting a mammalian cell.
60. The composition according to any one of claims 5 and 8 to 48, wherein the adjuvant is selected from the list consisting of: inorganic adjuvants (e.g. inorganic metal salts such as aluminium phosphate or aluminium hydroxide), organic adjuvants (e.g. saponins, such as QS21, or squalene), oil-based adjuvants (e.g. Freund's complete adjuvant and Freund's incomplete adjuvant), cytokines (e.g. IL-1 β , IL-2, IL-7, IL-12, IL-18, GM-CSF, and INF- γ) particulate adjuvants (e.g. immuno-stimulatory complexes (ISCOMS), liposomes, or biodegradable microspheres), virosomes, bacterial adjuvants (e.g. monophosphoryl lipid A, such as 3-de-O-acylated monophosphoryl lipid A (3D-MPL), or muramyl peptides), synthetic adjuvants (e.g. non-ionic block copolymers, muramyl peptide analogues, or synthetic lipid A), synthetic polynucleotides adjuvants (e.g. polyarginine or polylysine) and immunostimulatory oligonucleotides containing unmethylated CpG dinucleotides ("CpG").
61. The composition according to claim 60, wherein the adjuvant is a 3D-MPL and/or QS21.
62. The cell according to any one of claims 6 and 8 to 48, 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.
63. The cell according to claim 62 wherein the host cell is grown in suspension.
64. A polynucleotide, polypeptide, vector, adenovirus, composition or cell according to any one of claims 1 to 63, for use as a medicament.
65. A polynucleotide, polypeptide, vector, adenovirus, composition or cell according to claim 64, for use as a vaccine.
66. Use of the polynucleotide, polypeptide, vector, adenovirus, composition or cell according to any one of claims 1 to 63 for the therapy or prophylaxis of a disease.

- 67. A method of inducing an immune response in a subject comprising administering the polynucleotide, polypeptide, vector, adenovirus, composition or cell to the subject.
- 5 68. An isolated polynucleotide comprising or consisting of the sequence according to SEQ ID NO: 6.