WHAT IS CLAIMED IS:

1. A recombinant adenovirus comprising:

(i) an E1A polypeptide comprising a modification in an Rb-binding site; and

(ii) an E4orf6/7 polypeptide comprising one or more modifications, or a deletion of all of the E4orf6/7 gene,

wherein the recombinant adenovirus selectively replicates in Rb-deficient cells.

2. The recombinant adenovirus of claim 1, wherein the E1A polypeptide comprises two Rb-binding sites and the E1A polypeptide comprises a modification in both Rb-binding sites.

3. The recombinant adenovirus of claim 1 or claim 2, wherein the E1A polypeptide comprises a deletion of an LXCXE motif.

4. The recombinant adenovirus of claim 3, wherein the E1A polypeptide comprises a deletion of amino acid residues 122-126, a deletion of amino acid residues 2-11, or both.

5. The recombinant adenovirus of any one of claims 1-4, wherein the E1A polypeptide comprises a substitution at residue Y47, a substitution at residue C124, or both.

6. The recombinant adenovirus of claim 5, wherein the substitution at residue Y47 is a Y47H substitution, or the substitution at residue C124 is a C124G substitution, or both.

7. The recombinant adenovirus of any one of claims 1-6, wherein the E4orf6/7 polypeptide comprises a deletion of one of the E4orf6/7 exons.

8. The recombinant adenovirus of any one of claims 1-7, further comprising:

an E4orf1 polypeptide comprising one or more modifications; or

a deletion of all of the E4orf1 gene.

9. The recombinant adenovirus of claim 8, wherein the E4orf1 polypeptide comprises a deletion in the C-terminal region.

10. The recombinant adenovirus of claim 9, wherein the E4orf1 polypeptide comprises a deletion of the last four amino acids in the C-terminal region.

11. The recombinant adenovirus of claim 9, wherein the E4orf1 polypeptide comprises a deletion of residues 125-128.

12. A recombinant adenovirus, comprising:

(i) an E1A polypeptide comprising a modification in an Rb-binding site; and

(ii) an E4orf1 polypeptide comprising one or more modifications, or a deletion of all of the E4orf1 gene,

wherein the recombinant adenovirus selectively replicates in Rb-deficient cells.

13. The recombinant adenovirus of claim 12, wherein the E1A polypeptide comprises two Rb-binding sites and the E1A polypeptide comprises a modification in both Rb-binding sites.

14. The recombinant adenovirus of claim 12 or claim 13, wherein the E1A polypeptide comprises a deletion of an LXCXE motif.

15. The recombinant adenovirus of claim 14, wherein the E1A polypeptide comprises a deletion of amino acid residues 122-126, a deletion of amino acid residues 2-11, or both.

16. The recombinant adenovirus of any one of claims 12-15, wherein the E1A polypeptide comprises a substitution at residue Y47, a substitution at residue C124, or both.

17. The recombinant adenovirus of claim 16, wherein the substitution at residue Y47 is a Y47H substitution, or the substitution at residue C124 is a C124G substitution, or both.

18. The recombinant adenovirus of any one of claims 12-17, wherein the E4orf1 polypeptide comprises a deletion in the C-terminal region.

19. The recombinant adenovirus of claim 18, wherein the E4orf1 polypeptide comprises a deletion of the last four amino acids in the C-terminal region.

20. The recombinant adenovirus of claim 18, wherein the E4orf1 polypeptide comprises a deletion of residues 125-128.

21. A pharmaceutical composition comprising the recombinant adenovirus of any one of claims 1-20 and a pharmaceutically acceptable carrier.

22. Use of the recombinant adenovirus of any one of claims 1-20 or the pharmaceutical composition of claim 21 in the manufacture of a medicament for treating a cancer in a subject.

23. The use of claim 22, wherein the recombinant adenovirus is to be administered intravenously, intravascularly, intrathecally, intramuscularly, subcutaneously, intraperitoneally, or orally.

24. The use of claim 22 or claim 23, wherein the cancer is lung cancer, prostate cancer, colorectal cancer, breast cancer, thyroid cancer, renal cancer, liver cancer or leukemia.

WHAT IS CLAIMED IS:

1. An adenovirus comprising an E1A polypeptide comprising one or more modifications and comprising an E4orf6/7 polypeptide comprising one or more modifications.

2. The adenovirus of claim 1, wherein the E1A polypeptide comprises a modification in an Rb binding site of E1A.

3. The adenovirus of claim 1, wherein the E1A polypeptide comprises two Rb binding sites and wherein the E1A polypeptide comprises a modification in both Rb binding sites.

4. The adenovirus of claim 1, wherein the E1A polypeptide comprises a modification in one or more of amino acid residues 120-130 of the E1A polypeptide.

5. The adenovirus of claim 1, wherein the E1A polypeptide comprises a modification in one or more of amino acid residues 122-126 of the E1A polypeptide.

6. The adenovirus of any one of claims 1-5, wherein the E1A polypeptide comprises a modification in one or more of amino acid residues 35-55 of the E1A polypeptide.

7. The adenovirus of any one of claims 1-6, wherein the E1A polypeptide comprises a modification in one or more of amino acid residues 37-49 of the E1A polypeptide.

8. The adenovirus of any one of claims 1-7, wherein the E1A polypeptide comprises a deletion.

9. The adenovirus of claim 8, wherein the deletion is a deletion of amino acid residues 122-126 of the E1A polypeptide.

10. The adenovirus of claim 8, wherein the deletion is a deletion of amino acid residues 2-11 of the E1A polypeptide.

11. The adenovirus of claim 1, wherein the E1A polypeptide comprises the deletion ΔLXCXE.

12. The adenovirus of any one of claims 1-11, wherein the E1A polypeptide comprises one or more substitutions.

13. The adenovirus of claim 12, wherein the E1A polypeptide comprises a substitution at residue Y47, residue C124 or at both residues Y47 and C124.

14. The adenovirus of claim 12, wherein the E1A polypeptide comprises the substitution Y47H.

15. The adenovirus of claim 12, wherein the E1A polypeptide comprises the substitution C124G.

16. The adenovirus of claim 12, wherein the E1A polypeptide comprises the substitution Y47H and C124G.

17. The adenovirus of any one of claims 12-16, wherein the E1A polypeptide further comprises a deletion of amino acid residues 2-11.

18. The adenovirus of claim 1, wherein the E1A polypeptide comprises a deletion of amino acid residues 122-126 of E1A and a substitution at residue Y47.

19. The adenovirus of any one of claims 1-18, wherein the E1A polypeptide comprises SEQ ID NO:1.

20. The adenovirus of any one of claims 1-18, wherein the E1A polypeptide comprises SEQ ID NO:2.

21. The adenovirus of any one of claims 1-20, wherein the E4orf6/7 polypeptide comprises a modification in one or both of the E4orf6/7 exons.

22. The adenovirus of any one of claims 1-20, wherein the E4orf6/7 polypeptide comprises a deletion of one or both of the E4orf6/7 exons.

23. The adenovirus of any one of claims 1-22, wherein the E4orf6/7 polypeptide comprises SEQ ID NO:3.

24. The adenovirus of any one of claims 1-22, wherein the E4orf6/7 polypeptide comprises SEQ ID NO:4.

25. The adenovirus of any one of claims 1-24, further comprising an E4orf1 polypeptide comprising one or more modifications.

26. The adenovirus of claim 25, wherein the E4orf1 polypeptide comprises one or more deletions.

27. The adenovirus of claim 25, wherein the E4orf1 polypeptide comprises a deletion in the C-terminal region of E4orf1.

28. The adenovirus of claim 25, wherein the E4orf1 polypeptide comprises a deletion of residues 125-128 of the E4orf1 polypeptide.

29. The adenovirus of any one of claims 25-28, wherein the E4orf1 polypeptide comprises SEQ ID NO:5.

30. An adenovirus comprising an E1A polypeptide comprising one or more modifications and comprising an E4orf1 polypeptide comprising one or more modifications.

31. The adenovirus of claim 30, wherein the E4orf1 polypeptide comprises one or more deletions.

32. The adenovirus of claim 31, wherein the E4orf1 polypeptide comprises a deletion in the C-terminal region of E4orf1.

33. The adenovirus of claim 31, wherein the E4orf1 polypeptide comprises a deletion of residues 125-128 of the E4orf1 polypeptide.

34. The adenovirus of any one of claims 30-33, wherein the E1A polypeptide comprises a modification in an Rb binding site of E1A.

35. The adenovirus of claim 34, wherein the E1A polypeptide comprises two Rb binding sites and wherein the E1A polypeptide comprises a modification in both Rb binding sites.

36. The adenovirus of any one of claims 30-33, wherein the E1A polypeptide comprises a modification in one or more of amino acid residues 120-130 of the E1A polypeptide.

37. The adenovirus of any one of claims 30-33, wherein the E1A polypeptide comprises a modification in one or more of amino acid residues 122-126 of the E1A polypeptide.

38. The adenovirus of any one of claims 30-33, wherein the E1A polypeptide comprises a modification in one or more of amino acid residues 35-55 of the E1A polypeptide.

39. The adenovirus of any one of claims 30-33, wherein the E1A polypeptide comprises a modification in one or more of amino acid residues 37-49 of the E1A polypeptide.

40. The adenovirus of any one of claims 30-33, wherein the E1A polypeptide comprises a deletion.

41. The adenovirus of claim 40, wherein the deletion is a deletion of amino acid residues 122-126 of the E1A polypeptide.

42. The adenovirus of claim 40, wherein the deletion is a deletion of amino acid residues 2-11 of the E1A polypeptide.

43. The adenovirus of any one of claims 30-33, wherein the E1A polypeptide comprises the deletion ΔLXCXE.

44. The adenovirus of any one of claims 30-33, wherein the E1A polypeptide comprises one or more substitutions.

45. The adenovirus of claim 44, wherein the E1A polypeptide comprises a substitution at residue Y47, residue C124 or both Y47 and C124.

46. The adenovirus of claim 44, wherein the E1A polypeptide comprises the substitution Y47H.

47. The adenovirus of claim 44, wherein the E1A polypeptide comprises the substitution C124G.

48. The adenovirus of claim 44, wherein the E1A polypeptide comprises the substitution Y47H and C124G.

49. The adenovirus of any one of claims 44-48, wherein the E1A polypeptide further comprises a deletion of amino acid residues 2-11.

50. The adenovirus of any one of claims 30-33, wherein the E1A polypeptide comprises a deletion of amino acid residues 122-126 of E1A and a substitution at residue Y47.

51. The adenovirus of any one of claims 30-50, wherein the E1A polypeptide comprises SEQ ID NO:1.

52. The adenovirus of any one of claims 30-50, wherein the E1A polypeptide comprises SEQ ID NO:2.

53. The adenovirus of any one of claims 1-52, wherein the adenovirus selectively replicates in Rb-deficient cells.

54. A pharmaceutical composition comprising the adenovirus of any one of claims 1-53 and a pharmaceutically acceptable carrier.

55. A kit comprising the pharmaceutical composition of claim 54 and instructions for use.

56. The kit of claim 55, further comprising one or more additional therapeutic agents.

57. The kit of claim 56, wherein the therapeutic agent is a chemotherapeutic agent.

58. Use of the adenovirus of any one of claims 1-53 or the pharmaceutical composition of claim 54 in the manufacture of a medicament for treating a proliferative disorder in a subject.

59. The use of claim 58, wherein the adenovirus or pharmaceutical composition is to be administered intravenously, intravascularly, intrathecally, intramuscularly, subcutaneously, intraperitoneally, or orally.

60. The use of claim 58 or 59, wherein the medicament further comprises one or more additional therapeutic agents.

61. The use of claim 60, wherein the therapeutic agent is a chemotherapeutic agent.

62. The use of any one of claims 58-61, wherein the proliferative disorder is selected from the group consisting of lung cancer, prostate cancer, colorectal cancer, breast cancer, thyroid cancer, renal cancer, liver cancer and leukemia.

63. The use of any one of claims 58-62, wherein approximately 10^3 to 10^{12} plaque forming units of the adenovirus is to be administered to the subject.

64. The use of any one of claims 58-63, wherein the proliferative disorder is metastatic.