

Claims:

1. A combination of (i) an oncolytic virus, (ii) a virus comprising nucleic acid encoding IL-12 and an antagonist anti-PD-L1 antibody, and (iii) at least one cell comprising a chimeric antigen receptor (CAR) wherein the CAR comprises an antigen binding domain capable of specific binding to HER2, for use in a method of treating a cancer.
2. The combination for use according to claim 1, wherein the virus comprising nucleic acid encoding IL-12 and an antagonist anti-PD-L1 antibody further comprises nucleic acid encoding a thymidine kinase.
3. The combination for use according to claim 1 or 2, wherein the oncolytic virus is an oncolytic adenovirus (OncAd).
4. The combination for use according to any one of claim 1 to 3, wherein the oncolytic virus is derived from adenovirus 5 (Ad5).
5. The combination for use according to any one of claims 1 to 4, wherein the oncolytic virus encodes an E1A protein which displays reduced binding to Rb protein as compared to E1A protein encoded by Ad5.
6. The combination for use according to any one of claims 1 to 5, wherein the oncolytic virus encodes an E1A protein lacking the amino acid sequence LTCHEACF (SEQ ID NO:52).
7. The combination for use according to any one of claims 1 to 6, wherein the oncolytic virus encodes an E1A protein comprising, or consisting of, the amino acid sequence SEQ ID NO:34.
8. The combination for use according to any one of claims 1 to 7, wherein the oncolytic virus comprises a nucleic acid sequence having at least 60% sequence identity to SEQ ID NO:55 or an equivalent sequence as a result of codon degeneracy.
9. The combination for use according to any one of claims 1 to 8, wherein the at least one cell comprising a CAR specific for a cancer cell antigen is a T cell.
10. The combination for use according to any one of claims 1 to 9, wherein the CAR comprises an antigen-binding domain comprising:
 - a VL domain comprising:
 - LC-CRD1: SEQ ID NO:10;
 - LC-CRD2: SEQ ID NO:11;
 - LC-CRD3: SEQ ID NO:12;
 - and a VH domain comprising:
 - HC-CRD1: SEQ ID NO:13;
 - HC-CRD2: SEQ ID NO:14;
 - HC-CRD3: SEQ ID NO:15;or
 - a VL domain comprising:
 - LC-CRD1: SEQ ID NO:18;
 - LC-CRD2: SEQ ID NO:19;
 - LC-CRD3: SEQ ID NO:20;

- and a VH domain comprising:
 - HC-CRD1: SEQ ID NO:21;
 - HC-CRD2: SEQ ID NO:22;
 - HC-CRD3: SEQ ID NO:23;
 - or
 - a VL domain comprising:
 - LC-CRD1: SEQ ID NO:26;
 - LC-CRD2: SEQ ID NO:27;
 - LC-CRD3: SEQ ID NO:28;
 - and a VH domain comprising:
 - HC-CRD1: SEQ ID NO:29;
 - HC-CRD2: SEQ ID NO:30;
 - HC-CRD3: SEQ ID NO:31;
 - or
 - a VL domain comprising:
 - LC-CRD1: SEQ ID NO:57;
 - LC-CRD2: SEQ ID NO:58;
 - LC-CRD3: SEQ ID NO:59;
 - and a VH domain comprising:
 - HC-CRD1: SEQ ID NO:60;
 - HC-CRD2: SEQ ID NO:61;
 - HC-CRD3: SEQ ID NO:62.
11. The combination according to any one of claims 1 to 10, wherein the CAR comprises an antigen binding domain comprising:
- a VL comprising, or consisting of, an amino acid sequence having at least 75% sequence identity to SEQ ID NO:16 and a VH comprising, or consisting of, an amino acid sequence having at least 75% sequence identity to SEQ ID NO:17;
 - or
 - a VL comprising, or consisting of, an amino acid sequence having at least 75% sequence identity to SEQ ID NO:24 and a VH comprising, or consisting of, an amino acid sequence having at least 75% sequence identity to SEQ ID NO:25;
 - or
 - a VL comprising, or consisting of, an amino acid sequence having at least 75% sequence identity to SEQ ID NO:32 and a VH comprising, or consisting of, an amino acid sequence having at least 75% sequence identity to SEQ ID NO:33;
 - or
 - a VL comprising, or consisting of, an amino acid sequence having at least 75% sequence identity to SEQ ID NO:63 and a VH comprising, or consisting of, an amino acid sequence having at least 75% sequence identity to SEQ ID NO:64.
12. The combination according to any one of claims 1 to 11, wherein the virus comprising nucleic acid encoding IL-12 and an antagonist anti-PD-L1 antibody is a helper-dependent adenovirus (HDAAd).
13. The combination according to any one of claims 2 to 12, wherein the thymidine kinase is HSV-1 thymidine kinase.
14. The combination according to any one of claims 1 to 13, wherein the method of treating a cancer comprises:
- (a) isolating at least one cell from a subject;

- (b) modifying the at least one cell to express or comprise a CAR specific for a cancer cell antigen, or a nucleic acid encoding a CAR specific for a cancer cell antigen,
- (c) optionally expanding the modified at least one cell, and;
- (d) administering the modified at least one cell to a subject.

15. The combination according to any one of claims 1 to 14, wherein the cancer is selected from head and neck cancer, nasopharyngeal carcinoma (NPC), cervical carcinoma (CC), oropharyngeal carcinoma (OPC), gastric carcinoma (GC), hepatocellular carcinoma (HCC) and lung cancer.