Claims:

Claim 1. A cell culture method, the method comprising adherent culture of cells in a culture vessel, wherein the cells are cultured in culture media that is a fetal bovine serum (FBS)-free media and the culture vessel contains a polypeptide comprising an amino acid sequence having at least 70% sequence identity to one of SEQ ID NO:3, SEQ ID NO:2, or SEQ ID NO:1, or a polypeptide comprising an amino acid sequence having at least 70% sequence identity to a fragment of SEQ ID NO:3, SEQ ID NO:2, or SEQ ID NO:1.

Claim 2. The method of claim 1, wherein the polypeptide comprising an amino acid sequence having at least 70% sequence identity to a fragment of SEQ ID NO:3, SEQ ID NO:2, or SEQ ID NO:1 comprises at least 70% sequence identity to one or more of SEQ ID NOs:6-23.

Claim 3. The method of claim 1 or claim 2, wherein one or more of the cells expresses a viral vector, optionally wherein the viral vector is a lentiviral vector, retroviral vector, adeno-associated viral (AAV) vector, or adenoviral vector.

Claim 4. The method of any previous claim, wherein the cell is a mammalian or insect cell, optionally wherein the mammalian cell is a human cell, further optionally wherein the human cell is a human embryonic kidney cell, HeLa cell, or HT-1080 cell, further optionally wherein the human embryonic kidney cell is a HEK293 cell, HEK293T cell, or HEK293FT cell.

Claim 5. The method of any previous claim, wherein the polypeptide:

(a) is present in the culture media, optionally wherein the culture media does not contain animal serum;

(b) is provided in the form of a liquid solution;

(c) is coated on a surface of the culture vessel, optionally wherein the culture vessel is a culture plate, a culture dish, a culture flask, or a bioreactor; and/or

(d) is provided as an additive to FBS-free media.

Claim 6. The method of any previous claim, wherein the cells have been transfected with:

(a) a packaging helper plasmid; and/or

(b) a plasmid encoding a gene of interest, optionally wherein the gene of interest is a chimeric antigen receptor (CAR) gene.

Claim 7. A method of producing a viral vector, the method comprising culturing cells according to the method of any previous claim, the method further comprising the step of collecting a virus, a viral vector, and/or a viral particle from the culture.

Claim 8. A method of producing a cell for use in adoptive cell therapy comprising the following steps:

(i) producing a viral vector according to the method of claim 7, and

(ii) transducing an immune cell with the viral vector to generate a cell for use in adoptive cell therapy; optionally wherein the immune cell is a mammalian immune cell, further optionally a human immune cell.

Claim 9. The method of claim 8, wherein:
(a) steps (i) and (ii) are performed without changing media, and/or
(b) FBS-free media is used in steps (i) and (ii).

Claim 10. The method of claim 8 or claim 9, wherein step (ii) is performed in the presence of a polypeptide having at least 70% sequence identity to one of SEQ ID NO:3, SEQ ID NO:2 or SEQ ID NO:1, or a polypeptide comprising an amino acid sequence having at least 70% sequence identity to a fragment of SEQ ID NO:3, SEQ ID NO:2, or SEQ ID NO:1.

Claim 11. A method of producing a cell for adoptive cell therapy, the method comprising contacting a cell with a polypeptide comprising an amino acid sequence having at least 70% sequence identity to one of SEQ ID NO:3, SEQ ID NO:2 or SEQ ID NO:1, or a polypeptide comprising an amino acid sequence having at least 70% sequence identity to a fragment of SEQ ID NO:3, SEQ ID NO:2, or SEQ ID NO:1, and a viral vector encoding a gene of interest.

Claim 12. A method of transducing an immune cell with a viral vector encoding a gene of interest, the method comprising contacting immune cells with a viral vector encoding the gene of interest, and a polypeptide having at least 70% sequence identity to one of SEQ ID NO:3, SEQ ID NO:2 or SEQ ID NO:1, under conditions suitable for transduction of the cells with said viral vector to generate a transduced cell for adoptive cell therapy.

Claim 13. The method of any previous claim, wherein the polypeptide has at least 75% sequence identity to one of SEQ ID NO:3, SEQ ID NO:2, SEQ ID NO:1, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, and/or SEQ ID NO:23, preferably wherein the polypeptide has one of at least 80%, 85%, 90%, 95%, or 99% sequence identity to one of SEQ ID NO:3, SEQ ID NO:2, SEQ ID NO:1, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, and/or SEQ ID NO:23; optionally wherein the polypeptide is vitronectin or a fragment of vitronectin.

Claim 14. The method of any one of claims 11 to 13, wherein the cell for adoptive cell therapy is a CAR expressing cell; optionally wherein the CAR expressing immune cell is a CAR T-cell or CAR-Natural Killer (CAR-NK) cell.

Claim 15. The method of any one of claims 12 to 14, further comprising the step of
(a) harvesting one or more transduced cells;

(b) expanding the transduced cells; and/or

(c) formulating transduced mammalian cells with a pharmaceutically acceptable excipient to generate a medicament.