

WHAT IS CLAIMED IS:

- Claim 1. A gp41-Binding Molecule comprising a Variable Light Chain (VL) Domain and a Variable Heavy Chain (VH) Domain, wherein the VL Domain comprises the amino acid sequence of **SEQ ID NO:57** and/or said VH Domain comprises the amino acid sequence of **SEQ ID NO:58**.
- Claim 2. The gp41-Binding Molecule of claim 1, wherein said gp41-Binding Molecule comprises:
- (a) said VL Domain that comprises the amino acid sequence of **SEQ ID NO:57** and
 - (b) said VH Domain that comprises the amino acid sequence of **SEQ ID NO:58**.
- Claim 3. The gp41-Binding Molecule of any of claims 1-2, wherein said molecule is an antibody or comprises a gp41 epitope-binding portion thereof.
- Claim 4. The gp41-Binding Molecule of any one of claims 1-3, wherein said molecule is:
- (a) a bispecific antibody; or
 - (b) a diabody, said diabody being a covalently bonded complex that comprises two, three, four or five polypeptide chains; or
 - (c) a trivalent binding molecule, said trivalent binding molecule being a covalently bonded complex that comprises three, four, five, or more than five polypeptide chains.
- Claim 5. The gp41-Binding Molecule of claim 4, wherein said molecule is said diabody and comprises an Albumin-Binding Domain (ABD).
- Claim 6. The gp41-Binding Molecule of any one of claims 1-4, wherein said molecule comprises an Fc Region.
- Claim 7. The gp41-Binding Molecule of claim 5, wherein said Fc Region is a variant Fc Region that comprises:
- (a) one or more amino acid modifications that reduces the affinity of the variant Fc Region for an FcγR; and/or

- (b) one or more amino acid modifications that enhances the serum half-life of the variant Fc Region.

- Claim 8. The gp41-Binding Molecule of claim 7, wherein said modifications that reduce the affinity of the variant Fc Region for an FcγR comprise the substitution of L234A; L235A; or L234A and L235A, wherein said numbering is that of the EU index as in Kabat.
- Claim 9. The gp41-Binding Molecule of any one of claims 7 or 8, wherein said modifications that enhance the serum half-life of the variant Fc Region comprise the substitution of M252Y; M252Y and S254T; M252Y and T256E; M252Y, S254T and T256E; or K288D and H435K, wherein said numbering is that of the EU index as in Kabat.
- Claim 10. The gp41-Binding Molecule of any one of claims 1-9, wherein said molecule is bispecific and comprises one epitope-binding site capable of immunospecific binding to an epitope of gp41 and one epitope-binding site capable of immunospecific binding to an epitope of a molecule present on the surface of an effector cell.
- Claim 11. The gp41-Binding Molecule of any one of claims 1-9, wherein said molecule is bispecific and comprises two epitope-binding sites capable of immunospecific binding to an epitope of gp41 and two epitope-binding sites capable of immunospecific binding to an epitope of a molecule present on the surface of an effector cell.
- Claim 12. The gp41-Binding Molecule of any one of claims 1-9, wherein said molecule is trispecific and comprises:
- (a) one epitope-binding site capable of immunospecific binding to an epitope of gp41;
 - (b) one epitope-binding site capable of immunospecific binding to an epitope of a first molecule present on the surface of an effector cell; and
 - (c) one epitope-binding site capable of immunospecific binding to an epitope of a second molecule present on the surface of an effector cell.

- Claim 13. The gp41-Binding Molecule of any one of claims 1-9, wherein said molecule is trispecific and comprises:
- (a) one epitope-binding site capable of immunospecific binding to a first epitope of gp41;
 - (b) one epitope-binding site capable of immunospecific binding to a second epitope of gp41 or an epitope of a different HIV-1 protein; and
 - (c) one epitope-binding site capable of immunospecific binding to an epitope a molecule present on the surface of an effector cell;
- wherein said first and second epitopes of gp41 are different.
- Claim 14. The gp41-Binding Molecule of any one of claims 10-13, wherein said molecule is capable of simultaneously binding to gp41 and said molecule present on the surface of an effector cell.
- Claim 15. The gp41-Binding Molecule of any one of claims 10-14, wherein said molecule present on the surface of an effector cell is CD2, CD3, CD8, CD16, TCR, NKp46, or NKG2D.
- Claim 16. The gp41-Binding Molecule of any one of claims 10-15, wherein said effector cell is a cytotoxic T-cell, or a Natural Killer (NK) cell.
- Claim 17. The gp41-Binding Molecule of claim 15, wherein said molecule present on the surface of an effector cell is CD3.
- Claim 18. The gp41-Binding Molecule of claim 12, wherein said first molecule present on the surface of an effector cell is CD3 and said second molecule present on the surface of an effector cell is CD8.
- Claim 19. The gp41-Binding Molecule of any one of claims 10-18, wherein said molecule mediates coordinated binding of a cell expressing gp41 and a cytotoxic T cell.

Claim 20. The gp41-Binding Molecule of any one of claims 1-4 and 6-9 wherein said molecule comprises a first polypeptide chain, a second polypeptide chain and a third polypeptide chain, and wherein:

- I) (a) said first polypeptide chain comprises **SEQ ID NO:113**;
(b) said second polypeptide chain comprises **SEQ ID NO:114**;
and
(c) said third polypeptide chain comprises **SEQ ID NO:112**;
or
- II) (a) said first polypeptide chain comprises **SEQ ID NO:115**;
(b) said second polypeptide chain comprises **SEQ ID NO:116**;
and
(c) said third polypeptide chain comprises **SEQ ID NO:112**.

Claim 21. The gp41-Binding Molecule of any one of claims 1-4 and 6-9, wherein said molecule comprises a first polypeptide chain, a second polypeptide chain, a third polypeptide chain, and a fourth polypeptide chain and wherein:

- (a) said first polypeptide chain comprises **SEQ ID NO:113**;
- (b) said second polypeptide chain comprises **SEQ ID NO:114**;
- (c) said third polypeptide chain comprises **SEQ ID NO:117**; and
- (d) said fourth polypeptide chain comprises **SEQ ID NO:118**.

Claim 22. The gp41-Binding Molecule of any one of claims 1-4 and 6-9, wherein said molecule comprises a first polypeptide chain, a second polypeptide chain, a third polypeptide chain, and a fourth polypeptide chain and wherein:

- I) (a) said first polypeptide chain comprises **SEQ ID NO:113**;
(b) said second polypeptide chain comprises **SEQ ID NO:114**;
(c) said third polypeptide chain comprises **SEQ ID NO:119**; and
(d) said fourth polypeptide chain comprises **SEQ ID NO:120**;
or
- II) (a) said first polypeptide chain comprises **SEQ ID NO:115**;
(b) said second polypeptide chain comprises **SEQ ID NO:116**;
(c) said third polypeptide chain comprises **SEQ ID NO:119**; and
(d) said fourth polypeptide chain comprises **SEQ ID NO:120**.

- Claim 23. A pharmaceutical composition that comprises an effective amount of the gp41-Binding Molecule of any of claims 1-22 and a pharmaceutically acceptable carrier.
- Claim 24. A method to treat or prevent HIV-1 infection in a subject in need thereof comprising administering to the subject a composition comprising any one of the gp41-Binding Molecules of claim 1-22 or the pharmaceutical composition of claim 23 in a therapeutically effective amount.
- Claim 25. The method of claim 24, wherein said method further comprises administering a latency-activating agent.
- Claim 26. The method of claim 25, wherein said latency-activating agent is vorinostat, romidepsin, panobinostat, disulfiram, JQ1, bryostatin, PMA, ionomycin, or any combination thereof.