chain variable regions was amplified by PCR, isolated, and purified. The PCR products were digested with MfeI and BlpI and cloned into a similarly digested sc21M18 construct, thereby replacing the heavy chain variable region of SEQ ID NO:33, with a plurality of murine heavy chain variable regions from hVEGF immunized mice. For this library, the 21M18 light chain was held constant.

[00210] A second VEGF library was constructed similar to the library described above with the exception that the 21M18 light chain was replaced with a plurality of human kappa chain variable regions. Human kappa chain variable regions were PCR amplified from pooled human cDNA using human kappa chain specific primers. The PCR products were isolated, purified, and digested with EcoRV and BsiWI and cloned into similarly digested plasmid DNA from the first VEGF library, thereby replacing the 21M18 light chain variable region.

[00211] 293-hMT cells were transfected with the two anti-VEGF antibody libraries.

[00212] It is understood that the examples and embodiments described herein are for illustrative purposes only and that various modifications or changes in light thereof will be suggested to persons skilled in the art and are to be included with the spirit and purview of this application.

~~[00213] All publications, patents and patent applications cited herein are hereby incorporated by reference in their entirety for all purposes to the same extent as if each individual publication, patent or patent application were specifically and individually indicated to be so incorporated by reference.~~

CLAIMS

1. A method of identifying a cell that produces a heterodimeric molecule of interest comprising:

(a) transfecting a cell that expresses a first polypeptide with a polynucleotide that encodes at least one second polypeptide,

wherein the first polypeptide comprises (i) an extracellular portion ~~comprising~~ that comprises an immunoglobulin heavy chain constant region comprising CH2 and CH3 domains and does not comprise an immunoglobulin heavy chain variable region; and (ii) a non-immunoglobulin transmembrane portion; and wherein the second polypeptide comprises an immunoglobulin heavy chain; and

wherein a heterodimeric molecule comprising the first polypeptide and the second polypeptide is expressed on the surface of the cell;

(b) contacting the cell with a detection molecule, wherein the detection molecule binds the heterodimeric molecule; and

(c) identifying the cell bound by the detection molecule.

2. The method of claim 1, comprising transfecting the cell with a polynucleotide that encodes the first polypeptide.

3. The method of claim 1, wherein the polynucleotide encoding the first polypeptide is transiently transfected or stably transfected into the cell.

4. The method of claim 1, wherein the polynucleotide that encodes at least one second polypeptide comprises a DNA library.

5. The method of claim 4, wherein the DNA library is generated from cells of a naïve animal or from cells of an immunized animal.

6. The method of claim 1, wherein the second polypeptide comprises a single chain immunoglobulin with an immunoglobulin heavy chain and an immunoglobulin light chain.

7. A method of identifying a cell that produces a heterodimeric molecule of interest comprising:

(a) fusing a first cell with an antibody-producing cell, wherein the first cell expresses a first polypeptide comprising (i) an extracellular portion ~~comprising~~ that comprises an immunoglobulin heavy chain constant region comprising CH2 and CH3 domains and does note comprise an immunoglobulin heavy chain variable region; and (ii) a non-immunoglobulin

transmembrane portion, and wherein a heterodimeric molecule comprising the first polypeptide and a second polypeptide from the antibody-producing cell is expressed on the surface of the cell;

(b) contacting the fused cell with a detection molecule, wherein the detection molecule binds the heterodimeric molecule; and

(c) identifying the cell bound by the detection molecule.

8. The method of claim 7, wherein the antibody-producing cell is selected from the group consisting of a B-cell, a plasma cell, a hybridoma, a myeloma and a recombinant cell.

9. The method of claim 7, wherein the antibody-producing cell is from a naïve animal or from an immunized animal.

10. The method of claim 7, wherein the second polypeptide comprises an immunoglobulin heavy chain.

11. The method of any one of claims 1-~~10~~7 or 10, wherein the immunoglobulin heavy chain of the second polypeptide is associated with an immunoglobulin light chain and ~~forms an~~comprises a single antigen-binding site.

12. The method of any one of claims 1-10, wherein the non-immunoglobulin transmembrane portion of the first polypeptide comprises at least a portion of the transmembrane domain selected from the group consisting of CD4, CD8, Class I MHC, Class II MHC, CD19, T-cell receptor α and β chains, CD3, zeta chain, ICAM1 (CD54), ICAM2, ICAM3, ICAM4, ICAM5, CD28, CD79a, CD79b, and CD2.

13. The method of any one of claims 1-10, wherein the first polypeptide comprises a sequence at least 80% identical to SEQ ID NO:12, SEQ ID NO:32, SEQ ID NO:23, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:26, SEQ ID NO:10, SEQ ID NO:22, or SEQ ID NO:31.

14. The method of any one of claims 1-10, wherein the first polypeptide forms at least one disulfide bond with the second polypeptide to form the heterodimeric molecule.

~~15. The method of any one of claims 1-10, wherein the heterodimeric molecule comprises one antigen-binding site.~~

~~16.~~15. The method of any one of claims 1-10, wherein the cell is a mammalian cell.

~~17.~~16. The method of any one of claims 1-10, wherein the detection molecule is labeled.

~~18.~~17. The method of any one of claims 1-10, wherein identifying the cell bound by the detection molecule comprises using flow cytometry or fluorescence-activated cell sorting (FACS).

~~19.~~18. The method of any one of claims 1-10, further comprising:

(e) isolating the cell bound by the detection molecule.

~~20.~~19. A cell identified by the method of any one of claims 1-~~19~~18.

~~21.~~20. An antibody produced by the cell identified by the method of any one of claims 1-~~19~~18.

~~22.~~21. A method of producing a host cell, comprising:

transfecting a cell with a polynucleotide that encodes a polypeptide, wherein the polypeptide comprises:

(a) an extracellular portion ~~comprising~~ that comprises an immunoglobulin heavy chain constant region comprising CH2 and CH3 domains and does not comprise an immunoglobulin heavy chain variable region; and

(b) a non-immunoglobulin transmembrane portion, and

wherein the polypeptide is membrane-bound and expressed on the surface of the cell.

~~23.~~22. A method of producing a cell library expressing heterodimeric molecules on the cell surface, comprising:

transfecting a population of cells that express a first polypeptide with a plurality of polynucleotides that encode for a plurality of second polypeptides;

wherein the first polypeptide comprises (i) an extracellular portion ~~comprising~~ that comprises an immunoglobulin heavy chain constant region comprising CH2 and CH3 domains and does not comprise an immunoglobulin heavy chain variable region; and (ii) a non-immunoglobulin transmembrane portion, and the second polypeptide comprises an immunoglobulin heavy chain; and

wherein heterodimeric molecules comprising the first polypeptide and one of the second polypeptides are expressed on the surface of the cells.

~~24.~~23. The method of claim ~~23~~22, wherein the immunoglobulin heavy chain of the second polypeptide is associated with an immunoglobulin light chain and forms an antigen-binding site.

~~25.~~24. The method of claim ~~23~~22, wherein the non-immunoglobulin transmembrane portion of the first polypeptide comprises at least a portion of the transmembrane domain selected from the group consisting of CD4, CD8, Class I MHC, Class II MHC, CD19, T-cell receptor α and β chains, CD3, zeta chain, ICAM1 (CD54), ICAM2, ICAM3, ICAM4, ICAM5, CD28, CD79a, CD79b, and CD2.

~~26.~~25. The method of claim ~~23~~22, wherein the first polypeptide comprises a sequence at least 80% identical to SEQ ID NO:12, SEQ ID NO:32, SEQ ID NO:23, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:26, SEQ ID NO:10, SEQ ID NO:22, or SEQ ID NO:31.

~~27.~~26. A polypeptide comprising (i) an extracellular portion comprising an immunoglobulin heavy chain constant region comprising CH2 and CH3 domains; and (ii) a non-immunoglobulin transmembrane portion, wherein the polypeptide comprises a sequence at least 80% identical to SEQ ID NO: 12, SEQ ID NO: 32, SEQ ID NO: 23, SEQ ID NO: 28, SEQ ID NO: 30, SEQ ID NO: 26, SEQ ID NO: 10, SEQ ID NO: 22, SEQ ID NO: 31.

~~28.~~27. A cell comprising a polypeptide of claim ~~27~~26.

~~29.~~28. A cell library, each cell comprising:

(a) a first polypeptide comprising:

(i) an extracellular portion ~~comprising~~ that comprises an immunoglobulin heavy chain constant region comprising CH2 and CH3 domains and does not comprise an immunoglobulin heavy chain variable region; and

(ii) a non-immunoglobulin transmembrane portion; and

(b) a second polypeptide comprising an immunoglobulin heavy chain,

wherein the first and second polypeptides form a heterodimeric molecule.