



(12) **DEMANDE DE BREVET CANADIEN
CANADIAN PATENT APPLICATION**

(13) **A1**

(86) **Date de dépôt PCT/PCT Filing Date:** 2022/09/28

(87) **Date publication PCT/PCT Publication Date:** 2023/04/06

(85) **Entrée phase nationale/National Entry:** 2024/03/19

(86) **N° demande PCT/PCT Application No.:** US 2022/077202

(87) **N° publication PCT/PCT Publication No.:** 2023/056314

(30) **Priorités/Priorities:** 2021/09/29 (US63/249,722);
2021/09/29 (US63/249,794); 2021/09/29 (US63/249,833);
2021/09/29 (US63/249,919); 2021/12/17 (US63/291,305);
2021/12/21 (US63/292,382)

(51) **Cl.Int./Int.Cl. A61K 39/395** (2006.01),
C07K 16/18 (2006.01), **C07K 16/46** (2006.01),
C12N 15/13 (2006.01)

(71) **Demandeur/Applicant:**
MODEX THERAPEUTICS, INC., US

(72) **Inventeurs/Inventors:**
WEI, RONNIE RONG, US;
XU, LING, US;
YANG, ZHI-YONG, US;
SEUNG, EDWARD, US;
NABEL, GARY J., US

(74) **Agent:** GOWLING WLG (CANADA) LLP

(54) **Titre : POLYPEPTIDES DE LIAISON A L'ANTIGENE, COMPLEXES POLYPEPTIDIQUES SE LIANT A L'ANTIGENE ET LEURS METHODES D'UTILISATION**

(54) **Title: ANTIGEN BINDING POLYPEPTIDES, ANTIGEN BINDING POLYPEPTIDE COMPLEXES AND METHODS OF USE THEREOF**

(57) **Abrégé/Abstract:**

Disclosed are antigen binding polypeptides and antigen binding polypeptide complexes (e.g., antibodies and antigen binding fragments thereof) having certain structural features. Also disclosed are polynucleotides and vectors encoding such polypeptides and polypeptide complexes; host cells; chimeric antigen receptors (CARs); immune cells; pharmaceutical compositions and kits containing such polypeptides and polypeptide complexes; and methods of using such polypeptides and polypeptide complexes.



Date Submitted: 2024/03/19

CA App. No.: 3232364

Abstract:

Disclosed are antigen binding polypeptides and antigen binding polypeptide complexes (e.g., antibodies and antigen binding fragments thereof) having certain structural features. Also disclosed are polynucleotides and vectors encoding such polypeptides and polypeptide complexes; host cells; chimeric antigen receptors (CARs); immune cells; pharmaceutical compositions and kits containing such polypeptides and polypeptide complexes; and methods of using such polypeptides and polypeptide complexes.

DEMANDE OU BREVET VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVET COMPREND PLUS D'UN TOME.

CECI EST LE TOME 1 DE 4
CONTENANT LES PAGES 1 À 168

NOTE : Pour les tomes additionels, veuillez contacter le Bureau canadien des brevets

JUMBO APPLICATIONS/PATENTS

THIS SECTION OF THE APPLICATION/PATENT CONTAINS MORE THAN ONE VOLUME

THIS IS VOLUME 1 OF 4
CONTAINING PAGES 1 TO 168

NOTE: For additional volumes, please contact the Canadian Patent Office

NOM DU FICHIER / FILE NAME :

NOTE POUR LE TOME / VOLUME NOTE:

ANTIGEN BINDING POLYPEPTIDES, ANTIGEN BINDING POLYPEPTIDE COMPLEXES AND METHODS OF USE THEREOF

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the priority benefit of U.S. Provisional Application No. 63/249,722, filed September 29, 2021; U.S. Provisional Application No. 63/249,794, filed September 29, 2021; U.S. Provisional Application No. 63/249,833, filed September 29, 2021; U.S. Provisional Application No. 63/249,919, filed September 29, 2021; U.S. Provisional Application No. 63/291,305, filed December 17, 2021; and U.S. Provisional Application No. 63/292,382, filed December 21, 2021; which are all incorporated herein by reference in their entireties.

REFERENCE TO SEQUENCE LISTING SUBMITTED ELECTRONICALLY

[0002] The content of the electronically submitted sequence listing (Name: 4850_005PC01_Seqlisting_ST26; Size: 1,215,029 bytes; and Date of Creation: September 26, 2022) is herein incorporated by reference in its entirety.

FIELD

[0003] The present disclosure relates to antigen binding polypeptides and antigen binding polypeptide complexes (e.g., antibodies and antigen binding fragments thereof) having certain structural features. The present disclosure also relates to polynucleotides and vectors encoding such polypeptides and polypeptide complexes; host cells, chimeric antigen receptors (CARs), immune cells, pharmaceutical compositions and kits containing such polypeptides and polypeptide complexes; and methods of using such polypeptides and polypeptide complexes.

BACKGROUND

[0004] Immunotherapy is the treatment of disease by activating or suppressing the immune system. In recent years, immunotherapy has become of great interest to researchers and clinicians, particularly in its promise to treat cancer and infectious disease. Therapeutic antibodies are an important type of immunotherapy. Therapeutic antibodies can be monospecific, meaning that they have specificity to one antigen or epitope. Therapeutic antibodies have also been engineered to

have specificity for two different antigens or epitopes (i.e., bispecific antibodies) or for multiple different antigens or epitopes (trispecific antibodies, tetraspecific antibodies, etc.). In addition, monospecific, bispecific and multispecific antibodies have been combined to form multi-targeting strategies to treat complex human diseases, such as cancer and infectious disease.

[0005] However, the development of therapeutic antibodies can be challenging, especially manufacturing and late stage development. For example, the production of bispecific or multispecific antibodies often requires multiple genes or plasmids for cell line development. These multiple genes or plasmids must be delivered into the same cell to make the correct molecules. Furthermore, bispecific and multispecific antibodies can have mispairing between the heavy and light chains, which can reduce product yield, increase cell line colony screen workload, and create product heterogeneity.

[0006] There is a need for multispecific and multifunctional antigen binding polypeptides and antigen binding polypeptide complexes that can bind to specific combinations of target molecules for selectivity or breadth/neutralization, bring together two or more cell types, bring together targets and deliver activation signals, modify the disease microenvironment, and enhance avidity of binding for improved potency. The present invention meets this unmet need.

[0007] In addition, human immunodeficiency virus (HIV) poses a major infectious disease burden with immense medical and economic impact around the world. Globally, ~38 million people have been infected with HIV, and more than 30 million individuals have succumbed to acquired immunodeficiency syndrome (AIDS), a chronic condition of weakened immune system caused by HIV infection. "Global Health Sector Strategy On HIV - 2016-2021 - Towards Ending AIDS," World Health Organization, June 2016. There are two major forms of HIV: HIV-1 and HIV-2. HIV-1 is the more prevalent form worldwide, while HIV-2 is less pathogenic and mostly confined to West Africa.

[0008] The major structural proteins of HIV are Gag, Pol and Env. Gag (group specific antigen) is the structural protein for the viral core. Pol is a polyprotein containing the enzymes critical for viral replication: protease (PR), reverse transcriptase (RT), and integrase (IN). Env (envelope) encodes glycoproteins that form the virus's exterior envelope. Env is synthesized as a precursor glycoprotein, gp160, and is then processed into gp120 and gp41. Env interacts with the primary receptor CD4 and a coreceptor (such as chemokine receptor CCR5) to fuse viral and target-cell membranes.

[0009] The genetic heterogeneity and glycan shielding of Env have resisted the development of natural immunity to HIV and posed challenges to traditional vaccine development. It has also

prompted a search for alternative approaches to HIV prevention, one of the highest priorities in global health.

[0010] Despite a significant collection of anti-HIV/AIDS drugs available, HIV patients still face daily challenges in taking multiple medicines with strict regimens. Inevitably, most patients will bear the consequences of emergence of drug-resistant viral variants, and develop other health issues from the toxicities of taking anti-HIV medicines long term, such as cardiovascular disease, kidney disease, diabetes, bone disease, liver disease, cognitive disorders, etc. Alternative treatment options are urgently needed for HIV/AIDS patients.

[0011] Broadly neutralizing HIV-1 antibodies (bnAbs) are antibodies that neutralize multiple HIV-1 viral strains. bnAbs target conserved epitopes of the virus, meaning that the targeted epitopes may be more likely to remain even if the virus mutates. As such, bnAbs have been investigated recently for HIV/AIDS treatment and prevention. Human clinical studies have revealed two factors critical for efficacy of bnAbs. First, there is the need to exceed a minimally effective dose, or trough level of circulating bnAbs to prevent infection. Second, there is a need to prevent the emergence of viral escape through resistance mutations.

[0012] Early human clinical studies using bnAbs demonstrated the feasibility and safety of this approach with transient reductions of viral load and acceptable tolerability and immunogenicity. Burton et al., *Annu. Rev. Immunol.* 34:635-659 (2016); Mascola et al., *Immunol. Rev.* 254:225-244 (2013); Wu et al., *Science*. 329:856-861 (2010). However, resistant HIV strains emerged rapidly following treatment with individual bnAbs in vitro and in vivo. More recently, a phase II clinical trial with the VRC01 bnAb highlighted the importance of maintaining adequate circulating antibody levels to reduce acquisition rates, suggesting that combination antibody therapy which enhances potency and minimizes escape mutations will be required for effective prevention. Corey et al., *N. Engl. J. Med.* 384:1003-1014 (2021).

[0013] Multispecific antibodies address the limitations of bnAbs by providing a single antibody type that recognizes multiple independent binding sites on HIV-1 envelope protein. Xu et al., *Science*. 358(6359):85-90 (2017). Treatment with multispecific antibodies also ensures that independent binding specificities are maintained with the same pharmacokinetics, while treatment with multiple single-target antibodies results in different antibody half-lives that wane at different rates. Furthermore, multispecific antibodies simplify manufacturing and regulatory processes by using one product for clinical development instead of a combination of multiple products.

[0014] Accordingly, multispecific anti-HIV antibodies provide an important technological platform for developing neutralizing antibody-based therapeutics for treating HIV/AIDS, offering

a class of medicines with low long-term toxicities and significantly less frequent treatment regimen. Multispecific antibodies also use completely different targets on HIV from the current standard of care HIV/AIDS medicine, complementing to the existing medicines by providing patients alternatives for their disease control and health management. Multispecific antibodies may also offer a meaningful way for HIV prevention in the current absence of an effective HIV vaccine.

[0015] In addition, the development of therapeutic antibodies can be challenging, especially manufacturing and late stage development. For example, the production of multispecific antibodies often requires multiple genes or plasmids for cell line development. These multiple genes or plasmids must be delivered into the same cell to make the correct molecules. Furthermore, multispecific antibodies can have mispairing between the heavy and light chains, which can reduce product yield, increase cell line colony screen workload, and create product heterogeneity.

[0016] As such, there is a need for multispecific and multifunctional antibodies, antigen binding polypeptides and antigen binding polypeptide complexes that can bind to HIV proteins for selectivity or breadth/neutralization, bring together two or more cell types, bring together targets and deliver activation signals, modify the HIV microenvironment, and enhance avidity of binding for improved potency. The present invention meets this unmet need.

BRIEF SUMMARY

[0017] Provided herein is an antigen binding polypeptide having a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; and L1, L2, L3, L4 and L5 are amino acid linkers.

[0018] Provided herein is an antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VH1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; wherein the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; and L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 are amino acid linkers.

[0019] Provided herein is an antigen binding polypeptide having a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-

VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and L1, L2, L3, L4, L5 and L6 are amino acid linkers.

[0020] Provided herein is an antigen binding polypeptide having a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc-Fc; VH1-VL2-VL3-VH3-VH2-VL1-Fc-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc-L7-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc-L7-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc-L7-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc-L7-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc-L7-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc-L7-Fc; L1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc-L7-Fc; VH1-

L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc-Fc; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc-Fc; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc-L7-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

[0021] Provided herein is an antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc; wherein the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VH4-L7-VL4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-L8-Fc; VL4-CL-VH4-CH1-Fc; VH4-CL-VL4-CH1-Fc; VL4-CH1-VH4-CL-Fc; VH4-CH1-VL4-CL-Fc; VL4-L7-CL-L8-VH4-L9-CH1-Fc; VL4-L7-CL-L8-VH4-L9-CH1-L10-Fc; VH4-L7-CL-L8-VL4-L9-CH1-Fc; VH4-L7-CL-L8-VL4-L9-CH1-L10-Fc; VL4-L7-CH1-L8-VH4-L9-CL-Fc; VL4-L7-CH1-L8-VH4-L9-CL-L10-Fc; VH4-L7-CH1-L8-VL4-L9-CL-Fc; VH4-L7-CH1-L8-VL4-L9-CL-L10-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-

Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; CH1 is a heavy chain constant region 1; CL is a light chain constant region; and L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11 and L12 are amino acid linkers.

[0022] Provided herein is an antigen binding polypeptide having a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL; VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1; VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL; VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1; VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL; VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1; VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1; VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL; VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1; VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL; VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1; VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL; VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1; VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL; VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL; VL1-L1-VL2-L2-

VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-L7-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-CL; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-CL; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-CH1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-L7-CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-CH1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-CH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-CL; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-CL; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-CH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-L7-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-L7-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-L7-CH1; ; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-CL; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-CL; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-CH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-CH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-L7-CH1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-L7-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-CH1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-L7-CH1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-L7-CH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-L7-CH1; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable

region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; CH1 is a heavy chain constant region 1; CL is a light chain constant region; and L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

[0023] Provided herein is an antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-CH1; VL1-VL2-VL3-VH3-VH2-VH1-CL; VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL; VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1; VH1-VH2-VH3-VL3-VL2-VL1-CH1; VH1-VH2-VH3-VL3-VL2-VL1-CL; VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL; VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1; VL1-VH2-VL3-VH3-VL2-VH1-CH1; VL1-VH2-VL3-VH3-VL2-VH1-CL; VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL; VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1; VH1-VL2-VH3-VL3-VH2-VL1-CH1; VH1-VL2-VH3-VL3-VH2-VL1-CL; VH1-VL2-VH3-VL3-VH2-VL1-CH1-CL; VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1; VL1-VL2-VH3-VL3-VH2-VH1-CL; VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL; VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1; VH1-VH2-VL3-VH3-VL2-VL1-CH1; VH1-VH2-VL3-VH3-VL2-VL1-CL; VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1; VL1-VH2-VH3-VL3-VL2-VH1-CH1; VL1-VH2-VH3-VL3-VL2-VH1-CL; VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL; VH1-VL2-VL3-VH3-VH2-VL1-CH1; VH1-VL2-VL3-VH3-VH2-VL1-CL; VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL; VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-L7-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-L7-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-L7-CH1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1; VL1-L1-VH2-L2-

VL3-L3-VH3-L4-VL2-L5-VH1-CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL; VL1-L1-VH2-L2-VL3-L3-VH3-
L4-VL2-L5-VH1-L6-CH1-CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-L7-
CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-CH1; VL1-L1-VH2-L2-VL3-L3-
VH3-L4-VL2-L5-VH1-L6-CL-CH1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-
L7-CH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1; VH1-L1-VL2-L2-VH3-L3-
VL3-L4-VH2-L5-VL1-L6-CH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL; VH1-
L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-
L5-VL1-CH1-CL; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-CL; VH1-L1-
VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VL2-L2-VH3-L3-VL3-L4-
VH2-L5-VL1-CL-CH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-CH1; VH1-
L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-L7-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-
L4-VH2-L5-VH1-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1; VL1-L1-
VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-
VH1-L6-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL; VL1-L1-VL2-L2-
VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-
VH1-L6-CH1-L7-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1; VL1-L1-
VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-
VH2-L5-VH1-L6-CL-L7-CH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1; VH1-
L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-
L5-VL1-CL; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL; VH1-L1-VH2-L2-VL3-
L3-VH3-L4-VL2-L5-VL1-CH1-CL; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-
CH1-CL; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VH2-L2-
VL3-L3-VH3-L4-VL2-L5-VL1-CL-CH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-
CL-CH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-L7-CH1; VL1-L1-VH2-L2-
VH3-L3-VL3-L4-VL2-L5-VH1-CH1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-
CH1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL; VL1-L1-VH2-L2-VH3-L3-VL3-
L4-VL2-L5-VH1-L6-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL; VL1-L1-
VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-
VL2-L5-VH1-L6-CH1-L7-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-CH1; VL1-L1-VH2-L2-VH3-L3-
VL3-L4-VL2-L5-VH1-L6-CL-L7-CH1; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1; VH1-L1-VL2-L2-VL3-L3-VH3-L4-

VH2-L5-VL1-CL; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-CL; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-CL; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-CH1; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-CH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-L7-CH1; wherein the second polypeptide has a structure represented by VL4-VH4-CH1; VL4-VH4-CL; VL4-VH4-CH1-CL; VL4-VH4-CL-CH1; VH4-VL4-CH1; VH4-VL4-CL; VH4-VL4-CH1-CL; VH4-VL4-CL-CH1; VL4-L8-VH4-CH1; VL4-L8-VH4-CL; VL4-L8-VH4-CH1-CL; VL4-L8-VH4-CL-CH1; VH4-L8-VL4-CH1; VH4-L8-VL4-CL; VH4-L8-VH4-CH1-CL; VH4-L8-VH4-CL-CH1; VL4-VL5-VH5-VH4-CH1; VL4-VL5-VH5-VH4-CL; VL4-VL5-VH5-VH4-CH1-CL; VL4-VL5-VH5-VH4-CL-CH1; VH4-VH5-VL5-VL4-CH1; VH4-VH5-VL5-VL4-CL; VH4-VH5-VL5-VL4-CH1-CL; VH4-VH5-VL5-VL4-CL-CH1; VL4-L8-VL5-L9-VH5-L10-VH4-CH1; VL4-L8-VL5-L9-VH5-L10-VH4-CL; VL4-L8-VL5-L9-VH5-L10-VH4-CH1-CL; VL4-L8-VL5-L9-VH5-L10-VH4-CL-CH1; VH4-L8-VH5-L9-VL5-L10-VL4-CH1; VH4-L8-VH5-L9-VL5-L10-VL4-CL; VH4-L8-VH5-L9-VL5-L10-VL4-CH1-CL; VH4-L8-VH5-L9-VL5-L10-VL4-CL-CH1; VL4-VL5-VL6-VH6-VH5-VH4-CH1; VL4-VL5-VL6-VH6-VH5-VH4-CL; VL4-VL5-VL6-VH6-VH5-VH4-CH1-CL; VL4-VL5-VL6-VH6-VH5-VH4-CL-CH1; VH4-VH5-VH6-VL6-VL5-VL4-CH1; VH4-VH5-VH6-VL6-VL5-VL4-CL; VH4-VH5-VH6-VL6-VL5-VL4-CH1-CL; VH4-VH5-VH6-VL6-VL5-VL4-CL-CH1; VL4-VH5-VL6-VH6-VL5-VH4-CH1; VL4-VH5-VL6-VH6-VL5-VH4-CL; VL4-VH5-VL6-VH6-VL5-VH4-CH1-CL; VL4-VH5-VL6-VH6-VL5-VH4-CL-CH1; VH4-VL5-VH6-VL6-VH5-VL4-CH1; VH4-VL5-VH6-VL6-VH5-VL4-CL; VH4-VL5-VH6-VL6-VH5-VL4-CH1-CL; VL4-VL5-VH6-VL6-VH5-VH4-CH1; VL4-VL5-VH6-VL6-VH5-VH4-CL; VL4-VL5-VH6-VL6-VH5-VH4-CH1-CL; VL4-VL5-VH6-VL6-VH5-VH4-CL-CH1; VH4-VH5-VL6-VH6-VL5-VL4-CH1; VH4-VH5-VL6-VH6-VL5-VL4-CL; VH4-VH5-VL6-VH6-VL5-VL4-CH1-CL; VH4-VH5-VL6-VH6-VL5-VL4-CL-CH1; VL4-VH5-VH6-VL6-VL5-VH4-CH1; VL4-VH5-VH6-VL6-VL5-VH4-CL; VL4-VH5-VH6-VL6-VL5-VH4-CH1-CL; VL4-VH5-VH6-VL6-VL5-VH4-CL-CH1; VH4-VL5-VL6-VH6-VH5-VL4-CH1; VH4-VL5-VL6-VH6-VH5-VL4-CL; VH4-VL5-VL6-VH6-VH5-VL4-CH1-CL; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CH1; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CL; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CH1-CL; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CL-CH1; VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CH1; VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CL; VH4-L8-VH5-L9-

[illegible]

VL5-L12-VL4-L13-CH1-CL; VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CL-CH1; VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CH1; VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CL; VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CH1-CL; VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CH1; VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CH1; VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CL; VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CH1-CL; or VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CL-CH1; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; CH1 is a heavy chain constant region 1; CL is a light chain constant region; and L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and L13 are amino acid linkers.

[0024] Provided herein is an antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-CH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-CH1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-CH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-CH1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-CH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-CH1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-CH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-CH1-Fc; VL1-VL2-VL3-VH3-VH2-VH1-CL-Fc; VH1-VH2-VH3-VL3-VL2-VL1-CL-Fc; VL1-VH2-VH3-VL3-VL2-VH1-CL-Fc; VH1-VL2-VL3-VH3-VH2-VL1-CL-Fc; VL1-VL2-VL3-VH3-VH2-VH1-CL-Fc; VL1-VH2-VH3-VL3-VL2-VH1-CL-Fc; VH1-VL2-VH3-VL3-VL2-VH1-CL-Fc; VL1-VH2-VH3-VL3-VL2-VH1-CL-Fc; VL1-VL2-VH3-VL3-VH2-VH1-CL-Fc; VL1-VL2-VL3-VH3-VH2-VH1-CL-Fc; VL1-VH2-VH3-VL3-VL2-VL1-CH1-CL-Fc; VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL-Fc; VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL-Fc; VH1-VL2-VH3-VL3-VH2-VL1-CH1-CL-Fc; VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL-Fc; VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL-Fc; VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL-Fc; VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL-Fc; VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1-Fc; VL1-VH2-VH3-VL3-VH2-VH1-CL-CH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1-Fc; VL1-VH2-

[illegible]

[illegible]

Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CL-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CH1-CL-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CL-CH1-Fc; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CH1-Fc; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CL-Fc; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CH1-CL-Fc; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CL-CH1-Fc; VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CH1-Fc; VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CL-Fc; VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CH1-CL-Fc; VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CL-CH1-Fc; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CH1-Fc; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CL-Fc; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CH1-CL-Fc; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CH1-CL-Fc; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CL-CH1-Fc; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CH1-Fc; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CL-Fc; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CH1-CL-Fc; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CH1-CL-Fc; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CH1-Fc; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CL-Fc; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CH1-CL-Fc; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CL-CH1-Fc; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CL-CH1-Fc; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CL-CH1-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CH1-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CL-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CH1-CL-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CH1-CL-Fc; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CH1-CL-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain

variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; CH1 is a heavy chain constant region 1; CL is a light chain constant region; and L1, L2, L3, L4, L5, L6, L7, L8, L9, L10 and L11 are amino acid linkers.

[0025] Provided herein is an antigen binding polypeptide having a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-CH3-CH3; VH1-VH2-VH3-VL3-VL2-VL1-CH3-CH3; VL1-VH2-VL3-VH3-VL2-VH1-CH3-CH3; VH1-VL2-VH3-VL3-VH2-VL1-CH3-CH3; VL1-VL2-VH3-VL3-VH2-VH1-CH3-CH3; VH1-VH2-VL3-VH3-VL2-VL1-CH3-CH3; VL1-VH2-VH3-VL3-VL2-VH1-CH3-CH3; VH1-VL2-VL3-VH3-VH2-VL1-CH3-CH3; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH3-CH3; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH3-CH3; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH3-CH3; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH3-CH3; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH3-CH3; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH3-CH3; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH3-CH3; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH3-CH3; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH3-CH3; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH3-CH3; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH3-CH3; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH3-CH3; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH3-CH3; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH3-CH3; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH3-CH3; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH3-CH3; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH3-CH3; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH3-CH3; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH3-CH3; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH3-CH3; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH3-CH3; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH3-L7-CH3; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable

region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; CH3 is an immunoglobulin heavy chain constant region 3; and L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

[0026] Provided herein is an antigen binding polypeptide complex comprising a first polypeptide, a second polypeptide, and a third polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; wherein the second polypeptide has a structure represented by VL4-VL5; VL4-L6-VL5; VL4-VL5-VL6; or VL4-L6-VL5-L7-VL6; wherein the third polypeptide has a structure represented by VH4-VH5; VH4-L6-VH5; VH4-VH5-VH6; or VH4-L6-VH5-L7-VH6; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; and L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

[0027] Provided herein is an antigen binding polypeptide complex comprising a first polypeptide, a second polypeptide, and a third polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc; VH1-L1-

VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc; wherein the second polypeptide has a structure represented by VL4-VL5; VL4-L7-VL5; VL4-CL; VL4-L7-CL; VL4-CH1; VL4-L7-CH1; VH4-VH5; VH4-L7-VH5; VH4-CL; VH4-L7-CL; VH4-CH1; VH4-L7-CH1; VL4-VL5-VL6; VL4-L7-VL5-L8-VL6; VL4-VL5-VL6-CL; VL4-L7-VL5-L8-VL6-CL; VL4-L7-VL5-L8-VL6-L9-CL; VL4-VL5-VL6-CH1; VL4-L7-VL5-L8-VL6-CH1; VL4-L7-VL5-L8-VL6-L9-CH1; VH4-VH5-VH6; VH4-L7-VH5-L8-VH6; VH4-VH5-VH6-CL; VH4-L7-VH5-L8-VH6-CL; VH4-L7-VH5-L8-VH6-L9-CL; VH4-VH5-VH6-CH1; VH4-L7-VH5-L8-VH6-CH1; or VH4-L7-VH5-L8-VH6-L9-CH1; wherein the third polypeptide has a structure represented by VH4-VH5-Fc; VH4-L10-VH5-Fc; VH4-L10-VH5-L11-Fc; VH4-CH1-Fc; VH4-L10-CH1-Fc; VH4-L10-CH1-L11-Fc; VH4-CL-Fc; VH4-L10-CL-Fc; VH4-L10-CL-L11-Fc; VH4-VH5-Fc; VH4-L10-VH5-Fc; VH4-L10-VH5-L11-Fc; VH4-VH5-VH6-Fc; VH4-L10-VH5-L11-VH6-Fc; VH4-L10-VH5-L11-VH6-L12-Fc; VH4-VH5-VH6-CH1-Fc; VH4-L10-VH5-L11-VH6-CH1-Fc; VH4-L10-VH5-L11-VH6-L12-CH1-Fc; VH4-L10-VH5-L11-VH6-L12-CH1-L13-Fc; VH4-VH5-VH6-CL-Fc; VH4-L10-VH5-L11-VH6-CL-Fc; VH4-L10-VH5-L11-VH6-L12-CL-Fc; VH4-L10-VH5-L11-VH6-L12-CL-L13-Fc; VL4-VL5-VL6-Fc; VL4-L10-VL5-L11-VL6-Fc; VL4-L10-VL5-L11-VL6-L12-Fc; VL4-VL5-VL6-CH1-Fc; VL4-L10-VL5-L11-VL6-CH1-Fc; VL4-L10-VL5-L11-VL6-L12-CH1-Fc; VL4-L10-VL5-L11-VL6-L12-CH1-L13-Fc; VL4-VL5-VL6-CL-Fc; VL4-L10-VL5-L11-VL6-CL-Fc; VL4-L10-VL5-L11-VL6-L12-CL-Fc; or VL4-L10-VL5-L11-VL6-L12-CL-L13-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge;

CH1 is a heavy chain constant region 1; CL is a light chain constant region; and L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and L13 are amino acid linkers.

[0028] Also provided herein is an antigen binding polypeptide or antigen binding polypeptide complex that specifically binds to a viral peptide or an HIV protein.

[0029] Also provided herein is an antibody or antigen binding fragment thereof comprising an antigen binding polypeptide or antigen binding polypeptide described herein.

[0030] Also provided herein is a polypeptide having at least 90% identity, at least 95% identity, or 100% identity to any one of SEQ ID NOs:30-46, 94 and 96. Provided herein is a polypeptide encoded by a polynucleotide having at least 90% identity, at least 95% identity, or 100% identity to any one of SEQ ID NOs:47-63, 95 and 97.

[0031] Also provided herein is a polynucleotide encoding an antigen binding polypeptide or antigen binding polypeptide complex described herein. Provided herein is a polynucleotide having at least 90% identity, at least 95% identity, or 100% identity to any one of SEQ ID NOs:47-63, 95 and 97. Also provided herein is a polynucleotide encoding a polypeptide having at least 90% identity, at least 95% identity, or 100% identity to any one of SEQ ID NOs:30-46, 94 and 96.

[0032] Also provided herein is a vector comprising a polynucleotide described herein.

[0033] Also provided herein is a host cell comprising a polynucleotide or vector described herein.

[0034] Also provided herein is a chimeric antigen receptor (CAR) comprising an antigen binding polypeptide or antigen binding polypeptide complex described herein.

[0035] Also provided herein is an immune cell comprising a CAR described herein.

[0036] Also provided herein is a pharmaceutical composition comprising (i) an antigen binding polypeptide or antigen binding polypeptide complex, antibody or antigen binding fragment thereof, polypeptide, polynucleotide, vector, host cell, CAR, immune cell, or a combination thereof, and (ii) a pharmaceutically acceptable carrier.

[0037] Also provided herein is a kit comprising an antigen binding polypeptide or antigen binding polypeptide complex, antibody or antigen binding fragment thereof, polypeptide, polynucleotide, vector, host cell, CAR, immune cell, or a combination thereof.

[0038] Also provided herein are certain methods of use of an antigen binding polypeptide, antigen binding polypeptide complex, antibody or antigen binding fragment thereof, polypeptide, polynucleotide, vector, host cell, CAR or immune cell described herein, or a combination thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

[0039] Some aspects of the invention are herein described, by way of example only, with reference to the accompanying drawings. With specific reference now to the drawings in detail, it is stressed that the particulars shown are by way of example and for purposes of illustrative discussion of aspects of the invention.

[0040] FIGs. 1A-1E show non-limiting examples of different configurations of single chain trispecific antibody molecules. FIG. 1A: trispecific configurations without Fc. FIG. 1B: trispecific configuration with single chain Fc. FIG. 1C: trispecific configuration with single chain CH3. FIG. 1D: trispecific hexavalent configurations. FIG. 1E: trispecific configuration on one arm heterodimerizing with Fc. As used in FIGs. 1A-1E, vL1 is a first immunoglobulin light chain variable region. vL2 is a second immunoglobulin light chain variable region. vL3 is a third immunoglobulin light chain variable region. vH1 is a first immunoglobulin heavy chain variable region. vH2 is a second immunoglobulin heavy chain variable region. vH3 is a third immunoglobulin heavy chain variable region. CH2 is an immunoglobulin heavy chain constant region 2. CH3 is an immunoglobulin heavy chain constant region 3. In FIG. 1E, the circle symbol in the CH3 region is a knob-into-hole modification.

[0041] FIGs. 2A-2C show ELISA results of trispecific aCD28aCD3LHaCD38 LALAPAFc and respective positive controls, aCD28aCD3/aCD38Fab, or isotype control (Control IgG) binding to CD3 (FIG. 2A), CD28 (FIG. 2B), and CD38 (FIG. 2C). Molecule structures are depicted in FIG. 1A.

[0042] FIGs. 3A-3C show ELISA results of trispecific aCD28aCD3LHaCD38 LALAPAFc, aCD3LHaCD28aCD38 LALAPAFc, aCD3LHaCD38aCD28 LALAPAFc, aCD28aCD3HLaCD38 LALAPAFc, or isotype control (Control IgG) binding to CD3 (FIG. 3A), CD28 (FIG. 3B), and CD38 (FIG. 3C). Molecule structures are depicted in FIG. 1E.

[0043] FIGs. 4A-4B show NFκB (FIG. 4A) and nuclear factor of activated T-cells (NFAT) (FIG. 4B) pathway activation by trispecific aCD28aCD3LHaCD38 LALAPAFc, aCD3LHaCD28aCD38 LALAPAFc, aCD3LHaCD38aCD28 LALAPAFc, aCD28aCD3HLaCD38 LALAPAFc, isotype control (Control IgG), or anti-CD3 and anti-CD28 mAbs using NFκB or NFAT promoter-luciferase expressing human Jurkat T cells. Molecule structures are depicted in FIG. 1E.

[0044] FIG. 5 shows non-limiting examples of different configurations of tetraspecific antibody molecules. As used in FIG. 5, vL1 is a first immunoglobulin light chain variable region. vL2 is a second immunoglobulin light chain variable region. vL3 is a third immunoglobulin light chain

variable region. vL4 is a fourth immunoglobulin light chain variable region. vH1 is a first immunoglobulin heavy chain variable region. vH2 is a second immunoglobulin heavy chain variable region. vH3 is a third immunoglobulin heavy chain variable region. vH4 is a fourth immunoglobulin heavy chain variable region. CH2 is an immunoglobulin heavy chain constant region 2. CH3 is an immunoglobulin heavy chain constant region 3. The circle symbol in the CH3 region indicates a knob-into-hole modification.

[0045] FIGs. 6A-6D show ELISA results of tetraspecific aCD28aCD3LHaCD38/aCD19scFv, aCD28aCD3HLaCD38/aCD19scFv, or isotype control (Control IgG) binding to CD3 (FIG. 6A), CD28 (FIG. 6B), CD38 (FIG. 6C), and CD19 (FIG. 6D). Molecule structures are depicted in FIG. 5.

[0046] FIG. 7 shows non-limiting examples of different configurations of pentaspecific antibody molecules. As used in FIG. 7, vL1 is a first immunoglobulin light chain variable region. vL2 is a second immunoglobulin light chain variable region. vL3 is a third immunoglobulin light chain variable region. vL4 is a fourth immunoglobulin light chain variable region. vL5 is a fifth immunoglobulin light chain variable region. vH1 is a first immunoglobulin heavy chain variable region. vH2 is a second immunoglobulin heavy chain variable region. vH3 is a third immunoglobulin heavy chain variable region. vH4 is a fourth immunoglobulin heavy chain variable region. vH5 is a fifth immunoglobulin heavy chain variable region. CH2 is an immunoglobulin heavy chain constant region 2. CH3 is an immunoglobulin heavy chain constant region 3. The circle symbol in the CH3 region indicates a knob-into-hole modification.

[0047] FIGs. 8A-8D show ELISA results of tetraspecific aCD28aCD3LHaCD38/aCD19aCD20, aCD28aCD3LHaCD38/aCD20aCD19, aCD28aCD3HLaCD38/aCD19aCD20, aCD28aCD3HLaCD38/aCD20aCD19, or isotype control (Control IgG) binding to CD3 (FIG. 8A), CD28 (FIG. 8B), CD38 (FIG. 8C), and CD19 (FIG. 8D). Molecule structures are depicted in FIG. 7.

[0048] FIG. 9 shows non-limiting examples of different configurations of hexaspecific antibody molecules. As used in FIG. 9, vL1 is a first immunoglobulin light chain variable region. vL2 is a second immunoglobulin light chain variable region. vL3 is a third immunoglobulin light chain variable region. vL4 is a fourth immunoglobulin light chain variable region. vL5 is a fifth immunoglobulin light chain variable region. vL6 is a sixth immunoglobulin light chain variable region. vH1 is a first immunoglobulin heavy chain variable region. vH2 is a second immunoglobulin heavy chain variable region. vH3 is a third immunoglobulin heavy chain variable region. vH4 is a fourth immunoglobulin heavy chain variable region. vH5 is a fifth

immunoglobulin heavy chain variable region. vH6 is a sixth immunoglobulin heavy chain variable region. CH2 is an immunoglobulin heavy chain constant region 2. CH3 is an immunoglobulin heavy chain constant region 3. The circle symbol in the CH3 region indicates a knob-into-hole modification.

[0049] FIGs. 10A-10F show biolayer interferometry (BLI) binding of hexaspecific aCD3aCD28LHaCD38/aCD33aCD123LHaBCMA antibody at 80 nM to CD3 (FIG. 10A), CD28 (FIG. 10B), CD38 (FIG. 10C), CD33 (FIG. 10D), CD123 (FIG. 10E), and BCMA (FIG. 10F). Molecule structure is depicted in FIG. 9

[0050] FIGs. 11A-11F show biolayer interferometry (BLI) binding of hexaspecific aCD3aCD28LHaCD38/aCD123aBCMALHaCD33 antibody at 40 nM to CD3 (FIG. 11A), CD28 (FIG. 11B), CD38 (FIG. 11C), CD33 (FIG. 11D), CD123 (FIG. 11E), and BCMA (FIG. 11F). Molecule structure is depicted in FIG. 9.

[0051] FIGs. 12A-12F show configurations of exemplary bispecific molecules from the N-terminus to the C-terminus of the single chain antigen binding polypeptide(s). FIGs. 12A, 12D and 12F: bispecific molecules without Fc region. FIGs. 12B and 12E: bispecific, tetravalent molecule with Fc region. FIGs. 12C, 12E and 12F: bispecific molecules with Fc region. As used in FIGs. 12A-12F, VL1 refers to a first immunoglobulin light chain variable region, VL2 refers to a second immunoglobulin light chain variable region, VH1 refers to a first immunoglobulin heavy chain variable region, and VH2 refers to a second immunoglobulin heavy chain variable region. In FIGs. 12B, 12C and 12E, CH2 refers to an immunoglobulin heavy chain constant region 2, and CH3 refers to an immunoglobulin heavy chain constant region 3. In FIGs. 12A and 12F, 11, 12 and 13 refer to amino acid linkers. In FIG. 12D, L1, L2 and L3 refer to amino acid linkers. In FIGs. 12C and 12E, the circle symbol refers to a knob-into-hole modification.

[0052] FIG. 13 shows SDS-PAGE results of Nickel-NTA (Ni-NTA)-purified bispecific molecules with histidine tags, as depicted in FIG. 12A.

[0053] FIGs. 14A-14B show ELISA results of bispecific molecule aCD19aCD38-His or isotype control (Control IgG) binding to CD19 (FIG. 14A) and CD38 (FIG. 14B).

[0054] FIG. 15 shows SDS-PAGE results of protein A-purified bispecific, tetravalent molecules with LALAPA Fc, as depicted in FIG. 12B.

[0055] FIGs. 16A-16B show ELISA results of bispecific, tetravalent aCD28aCD3LALAPAFc, aCD3aCD28LALAPAFc, or isotype control (Control IgG) binding to CD3 (FIG. 16A) and CD28 (FIG. 16B). Molecule structures are depicted in FIG. 12C.

[0056] FIG. 17 shows nuclear factor of activated T-cells (NFAT) pathway activation by bispecific, tetravalent aCD28aCD3L1LALAPAFc or aCD3aCD28L1LALAPAFc, or anti-CD3 and anti-CD28 mAbs using NFAT promoter-luciferase expressing human Jurkat T cells.

[0057] FIGs. 18A-18B show ELISA results of bispecific aCD28aCD3L1LALAPAFc or aCD3aCD28L1LALAPAFc, or isotype control (Control IgG) binding to CD3 (FIG. 18A) and CD28 (FIG. 18B). Molecule structures are depicted in FIG. 12C.

[0058] FIGs. 19A-19C show configurations of exemplary tetraspecific molecules. VL1 refers to a first immunoglobulin light chain variable region. VL2 refers to a second immunoglobulin light chain variable region. VL3 refers to a third immunoglobulin light chain variable region. VL4 refers to a fourth immunoglobulin light chain variable region. VH1 refers to a first immunoglobulin heavy chain variable region. VH2 refers to a second immunoglobulin heavy chain variable region. VH3 refers to a third immunoglobulin heavy chain variable region. VH4 refers to a fourth immunoglobulin heavy chain variable region. CH1 refers to an immunoglobulin heavy chain constant region 1. CH2 refers to an immunoglobulin heavy chain constant region 2. CH3 refers to an immunoglobulin heavy chain constant region 3. CL refers to an immunoglobulin light chain constant region. The circle symbol in FIGs. 19A-19C refers to a knob-into-hole modification.

[0059] FIGs. 20A-20D show ELISA results of tetraspecific aCD28aCD3CD19CD38LALAPAFc, aCD3aCD28CD19CD38LALAPAFc, aCD28aCD3CD19CD38LALAPAFc, or aCD28aCD3CD38CD19LALAPAFc, or isotype control (Control IgG) binding to CD3 (FIG. 20A), CD28 (FIG. 20B), CD19 (FIG. 20C), and CD38 (FIG. 20D). Molecule structures are depicted in FIG. 19A.

[0060] FIG. 21 shows NFκB pathway activation by tetraspecific aCD28aCD3/aCD19CD38L1LALAPAFc or aCD3aCD28/CD19CD38L1LALAPAFc, or anti-CD3 mAbs using NFκB promoter-luciferase expressing human Jurkat T cells.

[0061] FIGs. 22A-22B show activation (CD69+) by tetraspecific molecules aCD28aCD3/aCD19CD38L1LALAPAFc or aCD3aCD28/CD19CD38L1LALAPAFc, or anti-CD3 mAb, of CD4+ (FIG. 22A) or CD8+ (FIG. 22B) T cells from three different donors.

[0062] FIG. 23 shows both orientation and linker can affect expression of tetraspecific molecules.

[0063] FIGs. 24A-24D show ELISA results of tetraspecific aCD28aCD3CD19CD38LALAPAFc with different linker lengths as depicted in FIG. 23, or

isotype control (Control IgG) binding to CD3 (FIG. 24A), CD28 (FIG. 24B), CD19 (FIG. 24C), and CD38 (FIG. 24D).

[0064] FIGs. 25A-25D show ELISA results of tetraspecific aCD28aCD3CH1/CD19CD38CL LALAPAFc with different linkers as depicted in FIG. 19B, or isotype control (Control IgG) binding to CD3 (FIG. 25A), CD28 (FIG. 25B), CD38 (FIG. 25C), and CD19 (FIG. 25D).

[0065] FIGs. 26A-26D show ELISA results of tetraspecific aCD28aCD3CD38CD19LALAPAFc, aCD28aCD3CD38CD19LALAPAFc, aCD28aCD3CD38CD19LALAPAFc, or aCD3aCD28CD19CD38LALAPAFc, or isotype control (Control IgG) binding to CD3 (FIG. 26A), CD28 (FIG. 26B), CD38 (FIG. 26C), and CD19 (FIG. 26D). Molecule structures are depicted in FIG. 19C.

[0066] FIGs. 26E-26H show ELISA results of tetraspecific aCD28aCD3L1/aCD38aCD19L1_HHLL, aCD28aCD3L1/aCD19aCD38L1_HHLL, aCD3aCD28L1/aCD38aCD19L1_HHLL, aCD3aCD28L1/aCD19aCD38L1_HHLL, or isotype control (Control HuIgG) binding to CD3 (FIG. 26E), CD28 (FIG. 26F), CD38 (FIG. 26G), and CD19 (FIG. 26H).

[0067] FIGs. 27A-27D show configurations of exemplary bispecific molecules of the invention. VL1 refers to a first immunoglobulin light chain variable region. VL2 refers to a second immunoglobulin light chain variable region. VL3 refers to a third immunoglobulin light chain variable region. VL4 refers to a fourth immunoglobulin light chain variable region. VH1 refers to a first immunoglobulin heavy chain variable region. VH2 refers to a second immunoglobulin heavy chain variable region. VH3 refers to a third immunoglobulin heavy chain variable region. VH4 refers to a fourth immunoglobulin heavy chain variable region. CH3 refers to an immunoglobulin heavy chain constant region 3.

[0068] FIGs. 28A-28E show exemplary configurations of trispecific antibody molecules. FIG. 28A: bispecific arm paired with scFv-Fc. FIG. 28B: bispecific arm paired with Fab-Fc. FIG. 28C: bispecific arm paired with single-chain Fab (scFab). FIG. 28D: bispecific arm paired with scFv-single chain CL-CH1-Fc. FIG. 28E: bispecific arm fused to CH1 and paired with scFv-CL-Fc.

[0069] FIGs. 29A-29C show ELISA results of trispecific aCD28aCD3/aCD38scFv, aCD28aCD3/aCD38Fab, aCD28aCD3/aCD38scFab, aCD28aCD3/aCD38CLCH1, or isotype control (Control IgG) binding to CD3 (FIG. 29A), CD28 (FIG. 29B), and CD38 (FIG. 29C). Molecule structures are depicted in FIGs. 28A-28D.

[0070] FIG. 30 shows the activation (CD69+) by trispecific antibodies aCD28aCD3L1/aCD38scFv, aCD3aCD28/aCD38scFv, aCD28aCD3/aCD38scFab,

aCD3aCD28/aCD38scFab, PMA/IO positive or negative isotype (Control IgG) control, of CD2+ T cells from three different donors.

[0071] FIGs. 31A-31C show *in vitro* cytolysis of lymphoma tumor cells Z-138 by T cells mediated by trispecific antibodies aCD28aCD3L1/aCD38scFv, aCD3aCD28/aCD38scFv, aCD28aCD3/aCD38scFab, aCD3aCD28/aCD38scFab, PMA/IO or isotype (Control IgG) control from three different donors (FIGs. 31A-31C, respectively).

[0072] FIGs. 32A-32D show ELISA results of trispecific aCD28aCD3CL1CH1/aCD38scFvCL, aCD28aCD3CL1CH1/aCD19scFvCL, or isotype control (Control IgG) binding to CD3 (FIG. 32A), CD28 (FIG. 32B), CD19 (FIG. 32C), and CD38 (FIG. 32D). Molecule structures are depicted in FIG. 28E.

[0073] FIG. 33 shows additional non-limiting examples of different configurations of tetraspecific antibody molecules.

[0074] FIG. 34 depicts an exemplary configuration of a masked tetraspecific antibody. Variable domains (Fv) of the antibody are shown as heavy chain/light chain pairs, with Fv1-Fv3 targeting tumor associated antigens (TAAs) or immune costimulatory receptors, and a fourth Fv targeting CD3 (α CD3 or aCD3). In some aspects, linkers between Fv3 and α CD3 contain one or more protease recognition sites.

[0075] FIG. 35 shows SDS-PAGE results of *in vitro* cleavage of exemplary masked tetraspecific molecules as depicted. Molecules were treated with either MTP or MMP9 protease as specified.

[0076] FIGs. 36A-36D show ELISA binding results of exemplary masked tetraspecific molecules as depicted in FIG. 35, or negative isotype (Control IgG1), with or without protease treatment. Molecules cleaved or not cleaved by MTP or MMP9 as specified were tested for binding affinity to Trop2 and cMet.

[0077] FIGs. 37A-37B show ELISA binding results of exemplary masked tetraspecific molecules as depicted in FIG. 35, or negative isotype (Control IgG1), with or without protease treatment. Molecules cleaved or not cleaved by MTP or MMP9 as specified were tested for binding affinity to CD28.

[0078] FIGs. 38A-38F show ELISA binding results of exemplary masked tetraspecific molecules as depicted in FIG. 35, or negative isotype (Control IgG1), with or without protease treatment. Molecules cleaved or not cleaved by MTP or MMP9 as specified were tested for binding affinity to CD3.

[0079] FIGs. 39A-39B show cytolysis of HCC1954 tumor cells by PBMCs (E:T:10:1) mediated by exemplary masked tetraspecific molecules as depicted in FIG. 13, or negative isotype (Control IgG1), from PBMCs of two donors (KP63250 and KP63251).

[0080] FIG. 40 shows ELISA binding results of exemplary non-masked tetraspecific molecules as depicted, or negative isotype (hIgG1LALPA) control, to their respective targets of hTrop2, hcMet, hCD28, and hCD3.

[0081] FIGs. 41A-41B show CD69+ activation by exemplary non-masked tetraspecific molecules, or negative isotype (IgG1LALPA) control, of CD2+ T cells from PBMCs of two different donors.

[0082] FIG. 42 shows an additional non-limiting example of a tetraspecific antibody molecule.

[0083] FIG. 43A shows a further non-limiting example of a tetravalent, bispecific antibody configuration, called MX846. MX846 was analyzed for binding to CD3 by biolayer interferometry (BLI) (FIG. 43B), and to CD20 by flow cytometry (FIG. 43C).

[0084] FIG. 44A shows a further non-limiting example of a tetravalent, trispecific antibody configuration, called MX855. MX855 was analyzed for binding to CD3 and CD28 by biolayer interferometry (BLI) (FIG. 44B), and to CD20 by flow cytometry (FIG. 44C).

[0085] FIG. 45A shows a further non-limiting example of a tetraspecific antibody configuration, called MX851. MX851 was analyzed for binding to CD3, CD28 and BCMA by biolayer interferometry (BLI) (FIG. 45B), and to CD20 by flow cytometry (FIG. 45C).

[0086] FIG. 46A shows a further non-limiting example of a tetraspecific antibody configuration, called MX853. MX853 was analyzed for binding to CD3, CD28 and BCMA by biolayer interferometry (BLI) (FIG. 46B), and to CD20 by flow cytometry (FIG. 46C).

[0087] FIGs. 47A-47B show killing of Mantle Cell lymphoma cell line Z-138 by T-cells mediated by tetravalent, tetraspecific MX851 (FIG. 47A) and tetravalent, trispecific MX855 (FIG. 47B).

[0088] FIG. 48A shows a further non-limiting example of a trispecific antibody configuration, called MX894 (VRC01scFv/PGT121x10e8v4L1IgG1LS). MX894 was analyzed for binding to 10e8 fusion peptide (FIG. 48B), and CD4 site-dependent (FIG. 48C) and CD4 site-independent (FIG. 48D) HIV spike protein by biolayer interferometry (BLI).

[0089] FIG. 49A shows a further non-limiting example of a tetraspecific antibody configuration, called MX873 (VRC26.25 x 10-1074L9/VRC01 x PGT121L1 IgG1LS). MX873 was analyzed for binding to CD4 site-dependent (FIG. 49B) and CD4 site-independent (FIG. 49C) HIV spike protein by biolayer interferometry (BLI).

[0090] FIG. 50A shows a further non-limiting example of a tetraspecific antibody configuration, called MX875 (10-1074 x VRC26.25L9/VRC01 x PGT121L1 IgG1LS). MX875 was analyzed for binding to CD4 site-dependent (FIG. 50B) and CD4 site-independent (FIG. 50C) HIV spike protein by biolayer interferometry (BLI).

[0091] FIG. 51A shows a further non-limiting example of a tetraspecific antibody configuration, called MX877 (STAR_VRC26.25 x PGT128L9/STAR_VRC01 x PGT121L1 IgG1LS). MX877 was analyzed for binding to CD4 site-dependent (FIG. 51B) and CD4 site-independent (FIG. 51C) HIV spike protein by biolayer interferometry (BLI).

DETAILED DESCRIPTION OF THE INVENTION

[0092] The invention is directed to antigen binding polypeptides and antigen binding polypeptide complexes (e.g., antibodies or antigen binding fragments thereof) having improved features. In some aspects, the invention enables the generation of multispecific and multifunctional antigen binding polypeptides and antigen binding polypeptide complexes through the expression of complementary self-assembling heavy and light chains expressed with a single polypeptide per arm and, optionally, with the addition of specific amino acid linkers. Because of this multifunctionality, antigen binding polypeptides and antigen binding polypeptide complexes of the invention can bind to specific combinations of target molecules for selectivity or breadth/neutralization, bring together two or more cell types, bring together targets and deliver activation signals, modify the disease microenvironment, and enhance avidity of binding for improved potency.

[0093] Various terms relating to aspects of disclosure are used throughout the specification and claims. Such terms are to be given their ordinary meaning in the art, unless otherwise indicated. Other specifically defined terms are to be construed in a manner consistent with the definition provided herein.

Definitions

[0094] As used herein, the term "antigen binding polypeptide" refers to a polypeptide having the ability to specifically bind to one or more substances that induce an immune response (i.e., one or more antigens or epitopes).

[0095] As used herein, the term "antigen binding polypeptide complex" refers to a group of two, three, four, or more associated polypeptides, wherein at least one polypeptide has the ability to

specifically bind to one or more antigens. An antigen binding polypeptide complex, includes, but is not limited to, an antibody or antigen binding fragment thereof.

[0096] The term "antibody" includes, without limitation, a glycoprotein immunoglobulin which binds specifically to an antigen and comprises at least two heavy (H) chains and two light (L) chains interconnected by disulfide bonds. Each H chain comprises a heavy chain variable region (abbreviated herein as VH) and a heavy chain constant region. The heavy chain constant region comprises three constant domains, CH1, CH2 and CH3. Each light chain comprises a light chain variable region (abbreviated herein as VL) and a light chain constant region. The light chain constant region comprises one constant domain, CL. The VH and VL regions can be further subdivided into regions of hypervariability, termed complementarity determining regions (CDRs), interspersed with regions that are more conserved, termed framework regions (FR). Each VH and VL comprises three CDRs and four FRs, arranged from amino-terminus to carboxy-terminus in the following order: FR1, CDR1, FR2, CDR2, FR3, CDR3, FR4. The variable regions of the heavy and light chains contain a binding domain that interacts with an antigen. The constant regions of the antibodies may mediate the binding of the immunoglobulin to host tissues or factors, including various cells of the immune system (e.g., effector cells) and the first component (C1q) of the classical complement system. A heavy chain may have the C-terminal lysine or not. Unless specified otherwise herein, the amino acids in the variable regions are numbered using the Kabat numbering system and those in the constant regions are numbered using the EU system.

[0097] The term "monoclonal antibody," as used herein, refers to an antibody that is produced by a single clone of B-cells and binds to the same epitope. In contrast, the term "polyclonal antibody" refers to a population of antibodies that are produced by different B-cells and bind to different epitopes of the same antigen. The term "antibody" includes, by way of example, monoclonal and polyclonal antibodies; chimeric and humanized antibodies; human or non-human antibodies; wholly synthetic antibodies; and single chain antibodies. A non-human antibody can be humanized by recombinant methods to reduce its immunogenicity in man.

[0098] The antibody can be an antibody that has been altered (e.g., by mutation, deletion, substitution, conjugation to a non-antibody moiety). For example, an antibody can include one or more variant amino acids (compared to a naturally occurring antibody) which change a property (e.g., a functional property) of the antibody. For example, several such alterations are known in the art which affect, e.g., half-life, effector function, and/or immune responses to the antibody in a patient. The term antibody also includes artificial polypeptide constructs which comprise at least one antibody-derived antigen binding site.

[0099] An "antigen binding fragment" of an antibody refers to one or more fragments or portions of an antibody that retain the ability to bind specifically to the antigen bound by the whole antibody. It has been shown that the antigen-binding function of an antibody can be performed by fragments or portions of a full-length antibody. An antigen binding fragment can contain the antigenic determining regions of an intact antibody (e.g., the complementarity determining regions (CDRs)). Examples of antigen binding fragments of antibodies include, but are not limited to, Fab, Fab', F(ab')₂, and Fv fragments, linear antibodies, and single chain antibodies. An antigen binding fragment of an antibody can be derived from any animal species, such as rodents (e.g., mouse, rat, or hamster) and humans or can be artificially produced.

[0100] Furthermore, although the two domains of the Fv fragment, VL and VH, are coded for by separate genes, they can be joined, using recombinant methods, by a synthetic linker that enables them to be made as a single protein chain in which the VL and VH regions pair to form monovalent molecules (known as single chain Fv (scFv); see, e.g., Bird et al. (1988) Science 242:423-426; and Huston et al. (1988) Proc. Natl. Acad. Sci. USA 85:5879-5883). Such single chain antibodies are also intended to be encompassed within the term "antigen-binding fragment" of an antibody.

[0101] Antigen binding fragments are obtained using conventional techniques known to those with skill in the art, and the fragments are screened for utility in the same manner as are intact antibodies. Antigen binding fragments can be produced by recombinant DNA techniques, or by enzymatic or chemical cleavage of intact immunoglobulins.

[0102] As used herein, the term "variable region" typically refers to a portion of an antibody, generally, a portion of a light or heavy chain, typically about the amino-terminal 110 to 120 amino acids, or 110 to 125 amino acids in the mature heavy chain and about 90 to 115 amino acids in the mature light chain, which differ extensively in sequence among antibodies and are used in the binding and specificity of a particular antibody for its particular antigen. The variability in sequence is concentrated in those regions called complementarity determining regions (CDRs) while the more highly conserved regions in the variable domain are called framework regions (FR). Without wishing to be bound by any particular mechanism or theory, it is believed that the CDRs of the light and heavy chains are primarily responsible for the interaction and specificity of an antibody with antigen. In some aspects, the variable region is a mammalian variable region, e.g., a human, mouse or rabbit variable region. In some aspects, the variable region comprises rodent or murine CDRs and human framework regions (FRs). In some aspects, the variable region is a primate (e.g., non-human primate) variable region. In some aspects, the variable region comprises rodent or murine CDRs and primate (e.g., non-human primate) framework regions (FRs).

[0103] The terms "complementarity determining region" or "CDR", as used herein, refer to each of the regions of an antibody variable domain which are hypervariable in sequence and/or form structurally defined loops (hypervariable loops) and/or contain the antigen-contacting residues. Antibodies can comprise six CDRs, e.g., three in the VH and three in the VL.

[0104] The terms "VL", "VL region," and "VL domain" are used herein interchangeably to refer to the light chain variable region of an antigen binding polypeptide, antigen binding polypeptide complex, antibody or antigen binding fragment thereof. In some aspects, a VL region is referred to herein as VL1 to denote a first light chain variable region, VL2 to denote a second light chain variable region, VL3 to denote a third light chain variable region, and so on. An enumerated VL region (e.g., VL1) can have the same or different antigen binding properties and/or the same or different sequence as another enumerated VL region (e.g., VL2).

[0105] The terms "VH", "VH region," and "VH domain" are used herein interchangeably to refer to the heavy chain variable region of an antigen binding polypeptide, antigen binding polypeptide complex, antibody or antigen binding fragment thereof. In some aspects, a VH region is referred to herein as VH1 to denote a first heavy chain variable region, VH2 to denote a second heavy chain variable region, VH3 to denote a third heavy chain variable region, and so on. An enumerated VH region (e.g., VH1) can have the same or different antigen binding properties and/or the same or different sequence as another enumerated VH region (e.g., VH2).

[0106] As used herein, "Kabat numbering" and like terms are recognized in the art and refer to a system of numbering amino acid residues in the heavy and light chain variable regions of an antibody or antigen binding fragment thereof. In some aspects, CDRs can be determined according to the Kabat numbering system (see, e.g., Kabat EA & Wu TT (1971) *Ann. NY Acad. Sci.* 190: 382-391 and Kabat EA et al., (1991) *Sequences of Proteins of Immunological Interest*, Fifth Edition, U.S. Department of Health and Human Services, NIH Publication No. 91-3242). Using the Kabat numbering system, CDRs within an antibody heavy chain molecule are typically present at amino acid positions 31 to 35, which optionally can include one or two additional amino acids, following 35 (referred to in the Kabat numbering scheme as 35A and 35B) (CDR1), amino acid positions 50 to 65 (CDR2), and amino acid positions 95 to 102 (CDR3). Using the Kabat numbering system, CDRs within an antibody light chain molecule are typically present at amino acid positions 24 to 34 (CDR1), amino acid positions 50 to 56 (CDR2), and amino acid positions 89 to 97 (CDR3).

[0107] As used herein, the terms "constant region" or "constant domain" are used interchangeably to refer to a portion of an antigen binding polypeptide, antigen binding polypeptide

complex, antibody or antigen binding fragment thereof, e.g., a carboxyl terminal portion of a light and/or heavy chain which is not directly involved in binding of an antibody to antigen but which can exhibit various effector functions, such as interaction with the Fc region. The constant region generally has a more conserved amino acid sequence relative to a variable region. In some aspects, an antigen binding polypeptide, antigen binding polypeptide complex, antibody or antigen binding fragment thereof comprises a constant region or portion thereof that is sufficient for antibody-dependent cell-mediated cytotoxicity (ADCC), antibody-dependent cellular phagocytosis (ADCP), and complement-dependent cytotoxicity (CDC).

[0108] As used herein, the terms "fragment crystallizable region," "Fc region," or "Fc domain" are used interchangeably herein to refer to the tail region of an antibody that interacts with cell surface receptors called Fc receptors and some proteins of the complement system. Fc regions typically comprise CH2 and CH3 regions, and, optionally, an immunoglobulin hinge. Examples of an Fc region include, but are not limited to, an amino acid sequence of any one of SEQ ID NOs:389-402, or an amino acid sequence having at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identity to any one of SEQ ID NOs:389-402. Examples of a CH2 region include, but are not limited to, an amino acid sequence of any one of SEQ ID NOs:408-413, or an amino acid sequence having at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identity to any one of SEQ ID NOs:408-413. Examples of a CH3 region include, but are not limited to, an amino acid sequence of any one of SEQ ID NOs:414-417, or an amino acid sequence having at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identity to any one of SEQ ID NOs:414-417.

[0109] As used herein, the terms "immunoglobulin hinge," "hinge," "hinge domain" or "hinge region" are used interchangeably to refer to a stretch of heavy chains between the Fab and Fc portions of an antigen binding polypeptide, antigen binding polypeptide complex, antibody or antigen binding fragment thereof. A hinge provides structure, position and flexibility, which assist with normal functioning of antibodies (e.g., for crosslinking two antigens or binding two antigenic determinants on the same antigen molecule). An immunoglobulin hinge is divided into upper, middle and lower hinge regions that can be separated based on structural and/or genetic components. An immunoglobulin hinge of the invention can contain one, two or all three of these regions. Structurally, the upper hinge region stretches from the C terminal end of CH1 to the first hinge disulfide bond. The middle hinge region stretches from the first cysteine to the last cysteine in the hinge. The lower hinge region extends from the last cysteine to the glycine of CH2. The

cysteines present in the hinge form interchain disulfide bonds that link the immunoglobulin monomers.

[0110] As used herein, the term "Fab" refers to a region of an antibody that binds to an antigen. It is typically composed of one constant and one variable domain of each of the heavy and the light chain.

[0111] As used herein, the term "heavy chain" refers to a portion of an antigen binding polypeptide, antigen binding polypeptide complex, antibody or antigen binding fragment thereof typically composed of a heavy chain variable region (VH), a heavy chain constant region 1 (CH1), a heavy chain constant region 2 (CH2), and a heavy chain constant region 3 (CH3). A typical antibody is composed of two heavy chains and two light chains. When used in reference to an antibody, a heavy chain can refer to any distinct type, e.g., alpha (α), delta (δ), epsilon (ϵ), gamma (γ), and mu (μ), based on the amino acid sequence of the constant region, which gives rise to IgA, IgD, IgE, IgG, and IgM classes of antibodies, respectively, including subclasses of IgG, e.g., IgG1, IgG2, IgG3, and IgG4. Heavy chain amino acid sequences are known in the art. In some aspects, the heavy chain is a human heavy chain.

[0112] As used herein, the term "light chain" refers to a portion of an antigen binding polypeptide, antigen binding polypeptide complex, antibody or antigen binding fragment thereof typically composed of a light chain variable region (VL) and a light chain constant region (CL). A typical antibody is composed of two light chains and two heavy chains. When used in reference to an antibody, a light chain can refer to any distinct type, e.g., kappa (κ) or lambda (λ), based on the amino acid sequence of the constant region. Light chain amino acid sequences are known in the art. In some aspects, the light chain is a human light chain.

[0113] The term "chimeric" antibody or antigen binding fragment thereof refers to an antibody or antigen binding fragments thereof wherein the amino acid sequence is derived from two or more species. Typically, the variable region of both light and heavy chains corresponds to the variable region of antibodies or antigen binding fragments thereof derived from one species of mammals (e.g., mouse, rat, rabbit, etc.) with the desired specificity, affinity and capability, while the constant regions are homologous to the sequences in antibodies or antigen binding fragments thereof derived from another (usually human) to avoid eliciting an immune response in that species.

[0114] The term "humanized" antibody or antigen binding fragment thereof refers to forms of non-human (e.g., murine) antibodies or antigen binding fragments that are specific immunoglobulin chains, chimeric immunoglobulins, or fragments thereof that contain minimal non-human (e.g., murine) sequences. Typically, humanized antibodies or antigen binding

fragments thereof are human immunoglobulins in which residues from a complementary determining region (CDR) are replaced by residues from a CDR of a non-human species (e.g., mouse, rat, rabbit, hamster) that have the desired specificity, affinity, and capability (Jones et al., *Nature* 321:522-525 (1986); Riechmann et al., *Nature* 332:323-327 (1988); Verhoeyen et al., *Science* 239:1534-1536 (1988)). In some aspects, the Fv framework region (FR) residues of a human immunoglobulin are replaced with the corresponding residues in an antibody or fragment from a non-human species that has the desired specificity, affinity, and capability. The humanized antibody or antigen binding fragment thereof can be further modified by the substitution of additional residues either in the Fv framework region and/or within the replaced non-human residues to refine and optimize antibody or antigen-binding fragment thereof specificity, affinity, and/or capability. In general, a humanized antibody or antigen binding fragment thereof will comprise substantially all of at least one, and typically two or three, variable domains containing all or substantially all of the CDR regions that correspond to the non-human immunoglobulin whereas all or substantially all of the FR regions are those of a human immunoglobulin consensus sequence. A humanized antibody or antigen binding fragment thereof can also comprise at least a portion of a constant region, typically that of a human immunoglobulin. Examples of methods used to generate humanized antibodies are known and described, for example, in U.S. Pat. No. 5,225,539; Roguska et al., *Proc. Natl. Acad. Sci., USA*, 91(3):969-973 (1994), and Roguska et al., *Protein Eng.* 9(10):895-904 (1996).

[0115] The term "human" antibody or antigen binding fragment thereof, as used herein, means an antibody or antigen binding fragment thereof having an amino acid sequence derived from a human immunoglobulin gene locus, where such antibody or antigen binding fragment is made using recombinant techniques known in the art. This definition of a human antibody or antigen binding fragment thereof includes intact or full-length antibodies and fragments thereof.

[0116] A polypeptide, polypeptide complex, antibody, antigen binding fragment thereof, polynucleotide, vector or host cell which is "isolated" is a polypeptide, polypeptide complex, antibody, antigen binding fragment thereof, polynucleotide, vector or host cell which is in a form not found in nature. Isolated polypeptides, polypeptide complexes, antibodies, antigen binding fragments thereof, polynucleotides, vectors or host cells include those which have been purified to a degree that they are no longer in a form in which they are found in nature. In some aspects, a polypeptide, polypeptide complex, antibody, antigen binding fragment thereof, polynucleotide, vector or host cell which is isolated is substantially pure. As used herein, "substantially pure"

refers to material which is at least 50% pure (i.e., free from contaminants), at least 90% pure, at least 95% pure, at least 98% pure, or at least 99% pure.

[0117] The terms "polypeptide," "peptide," and "protein" are used interchangeably herein to refer to polymers of amino acids of any length. The polymer can be linear or branched, it can comprise modified amino acids, and it can be interrupted by non-amino acids. The terms also encompass an amino acid polymer that has been modified naturally or by intervention; for example, disulfide bond formation, glycosylation, lipidation, acetylation, phosphorylation, or any other manipulation or modification, such as conjugation with a labeling component. Also included within the definition are, for example, polypeptides containing one or more analogs of an amino acid (including, for example, unnatural amino acids, etc.), as well as other modifications known in the art. It is understood that, because the polypeptides of this invention are based upon antibodies, in some aspects, the polypeptides can occur as single chains or associated chains.

[0118] The use of the alternative (e.g., "or") should be understood to mean either one, both, or any combination thereof of the alternatives. As used herein, the indefinite articles "a" or "an" should be understood to refer to "one or more" of any recited or enumerated component.

[0119] As used herein, the term "and/or" is to be taken as specific disclosure of each of the two specified features or components with or without the other. Thus, the term "and/or" as used in a phrase such as "A and/or B" herein is intended to include "A and B," "A or B," "A" (alone), and "B" (alone). Likewise, the term "and/or" as used in a phrase such as "A, B, and/or C" is intended to encompass each of the following aspects: A, B, and C; A, B, or C; A or C; A or B; B or C; A and C; A and B; B and C; A (alone); B (alone); and C (alone).

[0120] It is understood that wherever aspects are described herein with the language "comprising," "having," or the like, otherwise analogous aspects described in terms of "consisting of" and/or "consisting essentially of" are also provided.

[0121] As used herein, the term "about" refers to a value or composition that is within an acceptable error range for the particular value or composition as determined by one of ordinary skill in the art, which will depend in part on how the value or composition is measured or determined, i.e., the limitations of the measurement system. For example, "about" can mean within 1 or more than 1 standard deviation per the practice in the art. Alternatively, "about" can mean a range of up to 10% or 20% (i.e., $\pm 10\%$ or $\pm 20\%$). For example, about 3 mg can include any number between 2.7 mg and 3.3 mg (for 10%) or between 2.4 mg and 3.6 mg (for 20%). Furthermore, particularly with respect to biological systems or processes, the terms can mean up to an order of magnitude or up to 5-fold of a value. When particular values or compositions are provided in the

application and claims, unless otherwise stated, the meaning of "about" should be assumed to be within an acceptable error range for that particular value or composition.

[0122] As described herein, any numerical range, concentration range, percentage range, ratio range or integer range is to be understood to include the value of any integer within the recited range and, when appropriate, fractions thereof (such as one-tenth and one-hundredth of an integer), unless otherwise indicated.

[0123] Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this disclosure is related. For example, the Concise Dictionary of Biomedicine and Molecular Biology, Juo, Pei-Show, 2nd ed., 2002, CRC Press; The Dictionary of Cell and Molecular Biology, 5th ed., 2013, Academic Press; and the Oxford Dictionary Of Biochemistry And Molecular Biology, 2006, Oxford University Press, provide one of skill with a general dictionary of many of the terms used in this disclosure.

[0124] Units, prefixes, and symbols are denoted in their Système International de Unites (SI) accepted form. Numeric ranges are inclusive of the numbers defining the range. The headings provided herein are not limitations of the various aspects of the disclosure, which can be had by reference to the specification as a whole. Accordingly, the terms defined herein are more fully defined by reference to the specification in its entirety.

[0125] Various aspects are described in further detail in the following sections.

Antigen Binding Polypeptides and Antigen Binding Polypeptide Complexes

[0126] In some aspects, the invention is directed to antigen binding polypeptides and antigen binding polypeptide complexes having certain structural features.

[0127] In some aspects, the invention is directed to antigen binding polypeptides and antigen binding polypeptide complexes comprising a polypeptide having a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; or VH1-VL2-VL3-VH3-VH2-VL1. In some aspects, the antigen binding polypeptide or antigen binding polypeptide complex contains an amino acid linker between any two regions denoted in a structure described herein. In some aspects, the antigen binding polypeptide or antigen binding polypeptide complex can contain an Fc region, CH1 region, CL region, CH3 region or any combination thereof. In some aspects, the Fc region, CH1 region, CL region and/or CH3 is located at the carboxy terminus of the antigen binding polypeptide, and

is optionally linked to the polypeptide by at least one amino acid linker. In some aspects, the Fc region comprises an amino acid sequence of any one of SEQ ID NOs:389-402 or an amino acid sequence having at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identity to any one of SEQ ID NOs:389-402. In some aspects, the CH1 region comprises an amino acid sequence of any one of SEQ ID NOs:403-407 or an amino acid sequence having at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identity to any one of SEQ ID NOs:403-407. In some aspects, the CL region comprises an amino acid sequence of SEQ ID NO:418 or 419 or an amino acid sequence having at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98% or at least 99% identity to SEQ ID NO:418 or 419. In some aspects, the antigen binding polypeptide complex is an antibody or antigen binding fragment thereof.

[0128] In some aspects, an antigen binding polypeptide of antigen binding polypeptide complex of the invention comprises a polypeptide having a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; and L1, L2, L3, L4 and L5 are amino acid linkers.

[0129] In some aspects, the antigen binding polypeptide complex comprises a first polypeptide and a second polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; wherein the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; and L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 are amino acid linkers. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VH3-VL3-VL2-VL1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-

L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VL3-VH3-VL2-VH1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VH3-VL3-VH2-VL1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VH3-VL3-VH2-VH1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-

L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VL3-VH3-VL2-VL1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VH3-VL3-VL2-VH1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VL3-VH3-VH2-VL1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-

L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; and the second polypeptide has

a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VL4-VL5-VH6-VL6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VH1-L1-VH2-

L2-VL3-L3-VH3-L4-VL2-L5-VL1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4. In some aspects, the first polypeptide has a structure represented by VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; and the second polypeptide has a structure represented by VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-L6-VH4-L7; VH4-L6-VL4-L7; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VH4-VL5-VL6-VH6-VH5-VL4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4.

[0130] In some aspects, the antigen binding polypeptide further comprises at least one Fc region which is optionally positioned at its carboxy terminus; or the antigen binding polypeptide complex comprises a polypeptide further comprising at least one Fc region which is optionally positioned at its carboxy terminus. The Fc region can be linked to the polypeptide via at least one amino acid linker. For example, the antigen binding polypeptide or polypeptide comprised within the antigen binding complex may have a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and L1, L2, L3, L4, L5 and L6 are amino acid linkers.

[0131] In some aspects, the antigen binding polypeptide comprises at least two Fc regions at the carboxy terminus or the antigen binding polypeptide complex comprises a polypeptide comprising at least two Fc regions at its carboxy terminus. The at least two Fc regions can be linked to the polypeptide via at least one amino acid linker. The at least two Fc regions can be linked to each other via at least one amino acid linker. For example, the antigen binding polypeptide or polypeptide comprised within the antigen binding polypeptide complex may have a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc-Fc; VL1-VL2-VH3-

VL3-VH2-VH1-Fc-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc-Fc; VH1-VL2-VL3-VH3-VH2-VL1-Fc-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc-L7-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc-L7-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc-L7-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc-L7-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc-L7-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc-Fc; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc-L7-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

[0132] In some aspects, the antigen binding polypeptide complex comprises a first polypeptide and a second polypeptide each comprising at least one Fc; which is optionally positioned at the carboxy terminus. For example, the antigen binding complex may comprise a first polypeptide and a second polypeptide,, wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-

L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc; wherein the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy

chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11 and L12 are amino acid linkers. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VH3-VL3-VL2-VL1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc.

VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VL3-VH3-VL2-VH1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VH3-VL3-VH2-VL1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-

VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VH3-VL3-VH2-VH1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VL3-VH3-VL2-VL1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-

VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VH3-VL3-VL2-VH1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VL3-VH3-VH2-VL1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-

L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc;

VL4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc.

VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VH4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VL4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VL4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VH4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VL4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-

VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-

VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VL6-L10-VL5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-L1-VL2-L2-VH3-L3-VL3-L4-

VH2-L5-VH1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; or VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc.

VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VL4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc.

L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-

VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc. In some aspects, the first polypeptide has a structure represented by VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc; and the second polypeptide has a structure represented by Fc; VL4-VH4-Fc; VH4-VL4-Fc; VL4-L7-VH4-Fc; VL4-L7-VH4-L8-Fc; VH4-L7-VL4-Fc; VH4-L7-VL4-L8-Fc; VL4-VL5-VH5-VH4-Fc; VH4-

VH5-VL5-VL4-Fc; VL4-L7-VL5-L8-VH5-L9-VH4-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-Fc; L7-VL5-L8-VH5-L9-VH4-L10-Fc; VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc; VL4-VL5-VL6-VH6-VH5-VH4-Fc; VH4-VH5-VH6-VL6-VL5-VL4-Fc; VL4-VH5-VL6-VH6-VL5-VH4-Fc; VH4-VL5-VH6-VL6-VH5-VL4-Fc; VL4-VL5-VH6-VL6-VH5-VH4-Fc; VH4-VH5-VL6-VH6-VL5-VL4-Fc; VL4-VH5-VH6-VL6-VL5-VH4-Fc; VH4-VL5-VL6-VH6-VH5-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc; VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc; VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc; VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc; VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc; VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc; VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc; VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc; VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-L12-Fc; or VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc.

[0133] In some aspects, the antigen binding polypeptide further comprises at least one CH1 region and/or CL region, which is optionally positioned at its carboxy terminus. For example, the carboxy terminus of the polypeptide may comprise a CH1 region. For example, the carboxy terminus of the polypeptide may comprise a CL region. For example, the carboxy terminus of the polypeptide may comprise both a CH1 and a CL region. In some aspects, the carboxy terminus of the polypeptide comprises the structure CH1-CL. In some aspects, the carboxy terminus of the polypeptide comprises the structure CL-CH1. The CH1 region and/or CL region can be linked to the polypeptide via one or more amino acid linker. When both the CH1 region and CL region are present, they can be linked to each other via one or more amino acid linker. For example, the antigen binding polypeptide may have a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL; VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1; VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL; VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1; VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL; VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1; VH1-VL2-VH3-VL3-VH2-VL1-CH1-CL; VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1; VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL; VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1; VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL; VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1; VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL; VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1; VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-

L6-CH1-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-L7-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-L7-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-CL; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-CL; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-L7-CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-L7-CL; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-CH1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-CH1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-L7-CH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-CL; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-CL; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-CH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-L7-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-L7-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-L7-CL; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-L7-CH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-L7-CH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-L7-CH1; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable

region; VL3 is a third immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; CH1 is a heavy chain constant region 1; CL is a light chain constant region; and L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

[0134] In some aspects, the antigen binding polypeptide complex as defined herein further comprises at least one CH1 region and/or CL region, which is optionally positioned at the carboxy terminus of the first polypeptide and/or second polypeptide. For example, the carboxy terminus of the first polypeptide and/or second polypeptide may comprise a CH1 region. For example, the carboxy terminus of the first polypeptide and/or second polypeptide may comprise a CL region. For example, the carboxy terminus of the first polypeptide and/or second polypeptide may comprise both a CH1 and a CL region. In some aspects, the carboxy terminus of the first polypeptide and/or second polypeptide comprises the structure CH1-CL. In some aspects, the carboxy terminus of the first polypeptide and/or second polypeptide comprises the structure CL-CH1. The CH1 region and/or CL region can be linked to the first polypeptide and/or second polypeptide via one or more amino acid linker. When both the CH1 region and CL region are present, they can be linked to each other via one or more amino acid linker. For example, the antigen binding complex may comprise a first polypeptide and a second polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-CH1; VL1-VL2-VL3-VH3-VH2-VH1-CL; VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL; VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1; VH1-VH2-VH3-VL3-VL2-VL1-CH1; VH1-VH2-VH3-VL3-VL2-VL1-CL; VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL; VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1; VL1-VH2-VL3-VH3-VL2-VH1-CH1; VL1-VH2-VL3-VH3-VL2-VH1-CL; VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL; VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1; VH1-VL2-VH3-VL3-VH2-VL1-CH1; VH1-VL2-VH3-VL3-VH2-VL1-CL; VH1-VL2-VH3-VL3-VH2-VL1-CH1-CL; VL1-VL2-VH3-VL3-VH2-VH1-CH1; VL1-VL2-VH3-VL3-VH2-VH1-CL; VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL; VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1; VH1-VH2-VL3-VH3-VL2-VL1-CH1; VH1-VH2-VL3-VH3-VL2-VL1-CL; VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL; VL1-VH2-VH3-VL3-VL2-VH1-CH1; VL1-VH2-VH3-VL3-VL2-VH1-CL; VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL; VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1; VH1-VL2-VL3-VH3-VH2-VL1-CH1; VH1-VL2-VL3-VH3-VH2-VL1-CL; VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL;

[illegible]

L3-VH3-L4-VL2-L5-VL1-L6-CL; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-CL;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-CL; VH1-L1-VH2-L2-VL3-L3-
 VH3-L4-VL2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-
 CH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-CH1; VH1-L1-VH2-L2-VL3-
 L3-VH3-L4-VL2-L5-VL1-L6-CL-L7-CH1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-
 CH1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1; VL1-L1-VH2-L2-VH3-L3-
 VL3-L4-VL2-L5-VH1-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL; VL1-L1-
 VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-
 L5-VH1-L6-CH1-CL; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-L7-CL; VL1-
 L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-CH1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-
 VL2-L5-VH1-L6-CL-CH1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-L7-CH1;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1; VH1-L1-VL2-L2-VL3-L3-VH3-L4-
 VH2-L5-VL1-L6-CH1; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL; VH1-L1-VL2-
 L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-
 CH1-CL; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-CL; VH1-L1-VL2-L2-
 VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-L7-CL; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-
 VL1-CL-CH1; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-CH1; or VH1-L1-VL2-
 L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-L7-CH1; wherein the second polypeptide has a
 structure represented by VL4-VH4-CH1; VL4-VH4-CL; VL4-VH4-CH1-CL; VL4-VH4-CL-
 CH1; VH4-VL4-CH1; VH4-VL4-CL; VH4-VL4-CH1-CL; VH4-VL4-CL-CH1; VL4-L8-VH4-
 CH1; VL4-L8-VH4-CL; VL4-L8-VH4-CH1-CL; VL4-L8-VH4-CL-CH1; VH4-L8-VL4-CH1;
 VH4-L8-VL4-CL; VH4-L8-VH4-CH1-CL; VH4-L8-VH4-CL-CH1; VL4-VL5-VH5-VH4-CH1;
 VL4-VL5-VH5-VH4-CL; VL4-VL5-VH5-VH4-CH1-CL; VL4-VL5-VH5-VH4-CL-CH1; VH4-
 VH5-VL5-VL4-CH1; VH4-VH5-VL5-VL4-CL; VH4-VH5-VL5-VL4-CH1-CL; VH4-VH5-
 VL5-VL4-CL-CH1; VL4-L8-VL5-L9-VH5-L10-VH4-CH1; VL4-L8-VL5-L9-VH5-L10-VH4-
 CL; VL4-L8-VL5-L9-VH5-L10-VH4-CH1-CL; VL4-L8-VL5-L9-VH5-L10-VH4-CL-CH1;
 VH4-L8-VH5-L9-VL5-L10-VL4-CH1; VH4-L8-VH5-L9-VL5-L10-VL4-CL; VH4-L8-VH5-L9-
 VL5-L10-VL4-CH1-CL; VH4-L8-VH5-L9-VL5-L10-VL4-CL-CH1; VL4-VL5-VL6-VH6-VH5-
 VH4-CH1; VL4-VL5-VL6-VH6-VH5-VH4-CL; VL4-VL5-VL6-VH6-VH5-VH4-CH1-CL;
 VL4-VL5-VL6-VH6-VH5-VH4-CL-CH1; VH4-VH5-VH6-VL6-VL5-VL4-CH1; VH4-VH5-
 VH6-VL6-VL5-VL4-CL; VH4-VH5-VH6-VL6-VL5-VL4-CH1-CL; VH4-VH5-VH6-VL6-VL5-
 VL4-CL-CH1; VL4-VH5-VL6-VH6-VL5-VH4-CH1; VL4-VH5-VL6-VH6-VL5-VH4-CL; VL4-
 VH5-VL6-VH6-VL5-VH4-CH1-CL; VL4-VH5-VL6-VH6-VL5-VH4-CL-CH1; VH4-VL5-

VH6-VL6-VH5-VL4-CH1; VH4-VL5-VH6-VL6-VH5-VL4-CL; VH4-VL5-VH6-VL6-VH5-VL4-CH1-CL; VH4-VL5-VH6-VL6-VH5-VL4-CL-CH1; VL4-VL5-VH6-VL6-VH5-VH4-CH1; VL4-VL5-VH6-VL6-VH5-VH4-CL; VL4-VL5-VH6-VL6-VH5-VH4-CH1-CL; VL4-VL5-VH6-VL6-VH5-VH4-CL-CH1; VH4-VH5-VL6-VH6-VL5-VL4-CH1; VH4-VH5-VL6-VH6-VL5-VL4-CL; VH4-VH5-VL6-VH6-VL5-VL4-CH1-CL; VH4-VH5-VL6-VH6-VL5-VL4-CL-CH1; VL4-VH5-VH6-VL6-VL5-VH4-CH1; VL4-VH5-VH6-VL6-VL5-VH4-CL; VL4-VH5-VH6-VL6-VL5-VH4-CH1-CL; VL4-VH5-VH6-VL6-VL5-VH4-CL-CH1; VH4-VL5-VL6-VH6-VH5-VL4-CH1; VH4-VL5-VL6-VH6-VH5-VL4-CL; VH4-VL5-VL6-VH6-VH5-VL4-CH1-CL; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CH1; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CL; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CH1-CL; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CL-CH1; VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CH1; VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CL; VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CH1-CL; VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CL-CH1; VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CH1; VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CL; VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CH1-CL; VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CL-CH1; VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L11-VL4-CL; VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CH1-CL; VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CL-CH1; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CH1; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CL; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CH1-CL; VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CL-CH1; VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CH1; VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CL; VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CH1-CL; VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CH1; VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CL; VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CH1-CL; VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CL-CH1; VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CL; VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CH1-CL; or VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CL-CH1; VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CH1; VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CL; VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CH1-CL; VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CL-CH1;

VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CH1; VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CL; VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CH1-CL; VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CL-CH1; VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CH1; VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CL; VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CH1-CL; VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CL-CH1; VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CH1; VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CL; VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CH1-CL; or VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CL-CH1; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; CH1 is a heavy chain constant region 1; CL is a light chain constant region; and L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and L13 are amino acid linkers. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VL4-VL5-VH6-VL6-VH5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by

VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1, CL, CH1-CL, or CL-CH1 is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their

carboxy termini; optionally wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or

second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy

terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and

the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1, CL, CH1-CL, or CL-CH1 is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; optionally wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-

VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4;

VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the

VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1, CL, CH1-CL, or CL-CH1 is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4.

VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; optionally wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2,

and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4,

VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a

CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1, CL, CH1-CL, or CL-CH1 is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; optionally wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, and the CH1, CL, CH1-CL, or CL-CH1 when present is

linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4,

VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini.

VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1, CL, CH1-CL, or CL-CH1 is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-

VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; optionally wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4, or VH4-

VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-

CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker.

VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1, CL, CH1-CL, or CL-CH1 is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; optionally wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the

VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more

amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-

VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1, CL, CH1-CL, or CL-CH1 is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has

the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; optionally wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4;

VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, VH4-

VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-

VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1, CL, CH1-CL, or CL-CH1 is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; optionally wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a

CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, and the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide

when present are linked to each other via one or more amino acid linker; and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has the structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1, CL, CH1-CL, or CL-CH1 at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker, the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker, the CH1, CL, CH1-CL, or CL-CH1 when present is linked to the carboxy terminus of the first and/or second polypeptide via one or more amino acid linker, and the CH1 and CL when both present in the first and/or second polypeptide are linked to each other via one or more amino acid linker.

[0135] In some aspects, the antigen binding polypeptide complex as defined herein further comprises at least two of an Fc region, a CH1 region and a CL region which is optionally positioned at the carboxy terminus of the first polypeptide and/or second polypeptide. For example, the carboxy terminus of the first polypeptide and/or second polypeptide may comprise the structure CH1-Fc. For example, the carboxy terminus of the first polypeptide and/or second polypeptide may comprise the structure CL-Fc. For example, the carboxy terminus of the first polypeptide and/or second polypeptide may comprise the structure CL-CH1-Fc. For example, the carboxy

terminus of the first polypeptide and/or second polypeptide may comprise the structure CH1-CL-Fc. In some aspects, the first polypeptide may comprise at its C-terminus at least two of an Fc region, a CH1 region and a CL region and the second polypeptide may comprise at its C-terminus an Fc region. The Fc region, CH1 region and/or CL region can be linked to the first polypeptide and/or second polypeptide via at least one amino acid linker. The Fc region, CH1 region and/or CL region can be linked to each other via at least one amino acid linker. For example, the antigen binding complex may comprise a first polypeptide and a second polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-CH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-CH1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-CH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-CH1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-CH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-CH1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-CH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-CH1-Fc; VL1-VL2-VL3-VH3-VH2-VH1-CL-Fc; VH1-VH2-VH3-VL3-VL2-VL1-CL-Fc; VL1-VH2-VL3-VH3-VL2-VH1-CL-Fc; VH1-VL2-VH3-VL3-VH2-VL1-CL-Fc; VL1-VL2-VH3-VL3-VH2-VH1-CL-Fc; VL1-VH2-VH3-VL3-VL2-VH1-CL-Fc; VH1-VH2-VL3-VH3-VL2-VL1-CL-Fc; VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL-Fc; VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL-Fc; VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL-Fc; VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL-Fc; VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL-Fc; VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1-Fc; VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-

CH1-CL-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-CL-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-CL-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-CL-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL-Fc; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-CL-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-CH1-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-CH1-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-CH1-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1-Fc; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-CH1-Fc; wherein the second polypeptide has a structure represented by Fc; VL4-VH4-CH1-Fc; VL4-VH4-CL-Fc; VL4-VH4-CH1-CL-Fc; VL4-VH4-CL-CH1-Fc; VH4-VL4-CH1-Fc; VH4-VL4-CL-Fc; VH4-VL4-CH1-CL-Fc; VH4-VL4-CL-CH1-Fc; VL4-L6-VH4-CH1-Fc; VL4-L6-VH4-CL-Fc; VL4-L6-VH4-CH1-CL-Fc; VL4-L6-VH4-CL-CH1-Fc; VH4-L6-VL4-CH1-Fc; VH4-L6-VL4-CL-Fc; VH4-L6-VL4-CH1-CL-Fc; VH4-L6-VL4-CL-CH1-Fc; VL4-VL5-VH5-VH4-CH1-Fc; VL4-VL5-VH5-VH4-CL-Fc; VL4-VL5-VH5-VH4-CH1-CL-Fc; VL4-VL5-VH5-VH4-CL-CH1-Fc; VH4-VH5-VL5-VL4-CH1-Fc; VH4-VH5-VL5-VL4-CL-Fc; VH4-VH5-VL5-VL4-CH1-CL-Fc; VH4-VH5-VL5-VL4-CL-CH1-Fc; VL4-L6-VL5-L7-VH5-L8-VH4-CH1-Fc; VL4-L6-VL5-L7-VH5-L8-VH4-CL-Fc; VL4-L6-VL5-L7-VH5-L8-VH4-CH1-CL-Fc; VL4-L6-VL5-L7-VH5-L8-VH4-CL-CH1-Fc; VH4-L6-VH5-L7-VL5-L8-VL4-CH1-CL-Fc; VH4-L6-VH5-L7-VL5-L8-VL4-CH1-CL-Fc; VH4-L6-VH5-L7-VL5-L8-VL4-CH1-CL-CH1-Fc; VL4-VL5-VL6-VH6-VH5-VH4-CH1-Fc; VL4-VL5-VL6-VH6-VH5-VH4-CL-Fc; VL4-VL5-VL6-VH6-VH5-VH4-CH1-CL-Fc; VL4-VL5-VL6-VH6-VH5-VH4-CL-CH1-Fc; VH4-VH5-VH6-VL6-VL5-VL4-CH1-Fc; VH4-VH5-VH6-VL6-VL5-VL4-CL-Fc; VH4-VH5-VH6-VL6-VL5-VL4-CH1-CL-Fc; VH4-VH5-VH6-VL6-VL5-VL4-CL-CH1-Fc; VL4-VH5-VL6-VH6-VL5-VH4-CH1-Fc; VL4-VH5-VL6-VH6-VL5-VH4-CL-Fc; VL4-VH5-VL6-VH6-VL5-VH4-CH1-CL-Fc; VL4-VH5-VL6-VH6-VL5-VH4-CL-CH1-Fc; VH4-VL5-VH6-VL6-VH5-VL4-CH1-Fc; VH4-VL5-VH6-VL6-VH5-VL4-CL-Fc; VH4-VL5-VH6-VL6-VH5-VL4-CL-CH1-Fc; VL4-VL5-VH6-VL6-VH5-VH4-CH1-Fc; VL4-VL5-VH6-VL6-VH5-VH4-CL-Fc; VL4-VL5-VH6-VL6-VH5-VH4-CH1-CL-Fc; VL4-VL5-VH6-VL6-VH5-VH4-CL-CH1-Fc; VH4-VH5-VL6-VH6-VL5-VL4-CH1-Fc; VH4-VH5-VL6-VH6-VL5-VL4-CL-Fc; VH4-VH5-VL6-VH6-VL5-VL4-CH1-CL-Fc; VH4-VH5-VL6-VH6-VL5-VL4-CL-CH1-Fc; VL4-VH5-VH6-VL6-

[illegible]

VL6-L8-VH6-L9-VL5-L10-VH4-L11-CL-CH1-Fc; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CH1-Fc; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CL-Fc; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CH1-CL-Fc; or VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CL-CH1-Fc; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CH1-Fc; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CL-Fc; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CH1-CL-Fc; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CL-CH1-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CH1-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CL-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CH1-CL-Fc; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CL-CH1-Fc; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CH1-Fc; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CL-Fc; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CH1-CL-Fc; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CL-CH1-Fc; VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CH1-Fc; VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CL-Fc; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CL-CH1-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; CH1 is a heavy chain constant region 1; CL is a light chain constant region; and L1, L2, L3, L4, L5, L6, L7, L8, L9, L10 and L11 are amino acid linkers. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has a structure represented by Fc; wherein the first polypeptide comprises a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at its carboxy terminus; optionally wherein VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has a structure represented by Fc; wherein the first polypeptide comprises a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-

CH1-Fc at its carboxy terminus; optionally wherein VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has a structure represented by Fc; wherein the first polypeptide comprises a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at its carboxy terminus; optionally wherein VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has a structure represented by Fc; wherein the first polypeptide comprises a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at its carboxy terminus; optionally wherein VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has a structure represented by Fc; wherein the first polypeptide comprises a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at its carboxy terminus; optionally wherein VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has a structure represented by Fc; wherein the first polypeptide comprises a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at its carboxy terminus; optionally wherein VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has a structure represented by Fc; wherein the first polypeptide comprises a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at its carboxy terminus; optionally wherein VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has a structure represented by Fc; wherein the first polypeptide comprises a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at its carboxy terminus; optionally wherein VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4;

wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present in the second polypeptide is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-

CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present in the second polypeptide

is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VH3-VL3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-

VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present in the second polypeptide is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker.

CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VL3-VH3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other

via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present in the second polypeptide is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VH3-VL3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second

polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present in the second polypeptide is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4;

VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VH3-VL3-VH2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-

VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present in the second polypeptide is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VH2-VL3-VH3-VL2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and

wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present in the second polypeptide is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In

some aspects, the first polypeptide has a structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VL1-VH2-VH3-VL3-VL2-VH1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has a structure represented by

VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and/or wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present in the second polypeptide is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker. In some aspects, the first polypeptide has a structure represented by VH1-VL2-VL3-VH3-VH2-VL1, and the second polypeptide has a structure represented by VL4-VH4, VH4-VL4, VL4-VL5-VH5-VH4, VH4-VH5-VL5-VL4, VL4-VL5-VL6-VH6-VH5-VH4, VH4-VH5-VH6-VL6-VL5-VL4, VL4-VH5-VL6-VH6-VL5-VH4, VH4-VL5-VH6-VL6-VH5-VL4, VL4-VL5-VH6-VL6-VH5-VH4, VH4-VH5-VL6-VH6-VL5-VL4, VL4-VH5-VH6-VL6-VL5-VH4 or VH4-VL5-VL6-VH6-VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker.

VH5-VL4; wherein the first polypeptide and second polypeptide each comprise a CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc at their carboxy termini; wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker and wherein the VL4, VL5, VL6, VH4, VH5, and VH6 of the second polypeptide when present are linked to each other via one or more amino acid linker; optionally wherein the CH1-Fc, CL-Fc, CH1-CL-Fc, or CL-CH1-Fc when present is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker.

[0136] In some aspects, the invention is directed to an antigen binding polypeptide comprising at least two CH₃ regions or an antigen binding polypeptide complex comprising a polypeptide comprising at least two CH₃ regions. For example, the antigen binding polypeptide or antigen binding polypeptide complex may comprise a polypeptide having a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-CH₃-CH₃; VH1-VH2-VH3-VL3-VL2-VL1-CH₃-CH₃; VL1-VH2-VL3-VH3-VL2-VH1-CH₃-CH₃; VH1-VL2-VH3-VL3-VH2-VL1-CH₃-CH₃; VL1-VL2-VH3-VL3-VH2-VH1-CH₃-CH₃; VH1-VH2-VL3-VH3-VL2-VL1-CH₃-CH₃; VL1-VH2-VH3-VL3-VL2-VH1-CH₃-CH₃; VH1-VL2-VL3-VH3-VH2-VL1-CH₃-CH₃; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH₃-CH₃; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH₃-CH₃; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH₃-CH₃; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH₃-CH₃; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH₃-CH₃; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH₃-CH₃; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH₃-CH₃; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH₃-CH₃; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH₃-CH₃; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH₃-CH₃; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH₃-CH₃; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH₃-CH₃; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH₃-CH₃; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH₃-CH₃; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH₃-CH₃; VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH₃-CH₃; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH₃-CH₃; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH₃-CH₃; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH₃-CH₃; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH₃-L7-CH₃; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third

immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; CH3 is an immunoglobulin heavy chain constant region 3; and L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

[0137] In some aspects, an antigen binding polypeptide complex of the invention comprises first polypeptide, a second polypeptide, and a third polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; wherein the second polypeptide has a structure represented by VL4-VL5; VL4-L6-VL5; VL4-VL5-VL6; or VL4-L6-VL5-L7-VL6; wherein the third polypeptide has a structure represented by VH4-VH5; VH4-L8-VH5; VH4-VH5-VH6; or VH4-L8-VH5-L9-VH6; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; and L1, L2, L3, L4, L5, L6, L7, L8 and L9 are amino acid linkers. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the

structure represented by VL4-VL5; and the third polypeptide has the structure represented by VH4-VH5. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-VL5; and the third polypeptide has the structure represented by VH4-L8-VH5. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-VL5; and the third polypeptide has the structure represented by VH4-VH5-VH6. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-VL5; and the third polypeptide has the structure represented by VH4-L8-VH5-L9-VH6. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has

L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-L6-VL5; and the third polypeptide has the structure represented by VH4-VH5. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-L6-VL5; and the third polypeptide has the structure represented by VH4-L8-VH5. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-L6-VL5; and the third polypeptide has the structure represented by VH4-VH5-VH6. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-L6-VL5; and the third

polypeptide has the structure represented by VH4-L8-VH5-L9-VH6. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-VL5-VL6; and the third polypeptide has the structure represented by VH4-VH5. In some aspects, the first polypeptide may have a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-VL5-VL6; and the third polypeptide has the structure represented by VH4-L8-VH5. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-VL5-VL6; and the third polypeptide has the structure represented by VH4-VH5-VH6. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-VL5-VL6; and the third polypeptide has the structure represented by VH4-L8-VH5-L9-VH6. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-L6-VL5-L7-VL6; and the third polypeptide has the structure represented by VH4-VH5. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-L6-VL5-L7-VL6; and the third polypeptide has the structure represented by VH4-L8-VH5. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-L6-

VL5-L7-VL6; and the third polypeptide has the structure represented by VH4-VH5-VH6. In some aspects, the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; the second polypeptide has the structure represented by VL4-L6-VL5-L7-VL6; and the third polypeptide has the structure represented by VH4-L8-VH5-L9-VH6.

[0138] In some aspects, an antigen binding polypeptide complex of the invention comprises a first polypeptide, a second polypeptide, and a third polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; VH1-VL2-VL3-VH3-VH2-VL1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc; wherein the second polypeptide has a structure represented by VL4-VL5; VL4-L7-VL5; VL4-CL; VL4-L7-CL; VL4-CH1; VL4-L7-CH1; VH4-VH5; VH4-L7-VH5; VH4-CL; VH4-L7-CL; VH4-CH1; VH4-L7-CH1; VL4-VL5-VL6; VL4-L7-VL5-L8-VL6; VL4-VL5-VL6-CL; VL4-L7-VL5-L8-VL6-CL; VL4-L7-VL5-L8-VL6-L9-CL; VL4-VL5-VL6-CH1; VL4-L7-VL5-L8-VL6-CH1; VL4-L7-VL5-L8-VL6-L9-CH1; VH4-VH5-VH6; VH4-L7-VH5-L8-VH6; VH4-VH5-VH6-CL; VH4-L7-VH5-L8-VH6-CL; VH4-L7-VH5-L8-VH6-L9-CL; VH4-VH5-VH6-CH1; VH4-L7-VH5-L8-VH6-CH1; or VH4-L7-VH5-L8-VH6-L9-CH1; wherein the third polypeptide has a

structure represented by VH4-VH5-Fc; VH4-L10-VH5-Fc; VH4-L10-VH5-L11-Fc; VH4-CH1-Fc; VH4-L10-CH1-Fc; VH4-L10-CH1-L11-Fc; VH4-CL-Fc; VH4-L10-CL-Fc; VH4-L10-CL-L11-Fc; VH4-VH5-Fc; VH4-L10-VH5-Fc; VH4-L10-VH5-L11-Fc; VH4-VH5-VH6-Fc; VH4-L10-VH5-L11-VH6-Fc; VH4-L10-VH5-L11-VH6-L12-Fc; VH4-VH5-VH6-CH1-Fc; VH4-L10-VH5-L11-VH6-CH1-Fc; VH4-L10-VH5-L11-VH6-L12-CH1-Fc; VH4-L10-VH5-L11-VH6-L12-CH1-L13-Fc; VH4-VH5-VH6-CL-Fc; VH4-L10-VH5-L11-VH6-CL-Fc; VH4-L10-VH5-L11-VH6-L12-CL-Fc; VH4-L10-VH5-L11-VH6-L12-CL-L13-Fc; VL4-VL5-VL6-Fc; VL4-L10-VL5-L11-VL6-Fc; VL4-L10-VL5-L11-VL6-L12-Fc; VL4-VL5-VL6-CH1-Fc; VL4-L10-VL5-L11-VL6-CH1-Fc; VL4-L10-VL5-L11-VL6-L12-CH1-Fc; VL4-L10-VL5-L11-VL6-L12-CH1-L13-Fc; VL4-VL5-VL6-CL-Fc; VL4-L10-VL5-L11-VL6-CL-Fc; VL4-L10-VL5-L11-VL6-L12-CL-Fc; or VL4-L10-VL5-L11-VL6-L12-CL-L13-Fc; wherein VL1 is a first immunoglobulin light chain variable region; VL2 is a second immunoglobulin light chain variable region; VL3 is a third immunoglobulin light chain variable region; VL4 is a fourth immunoglobulin light chain variable region; VL5 is a fifth immunoglobulin light chain variable region; VL6 is a sixth immunoglobulin light chain variable region; VH1 is a first immunoglobulin heavy chain variable region; VH2 is a second immunoglobulin heavy chain variable region; VH3 is a third immunoglobulin heavy chain variable region; VH4 is a fourth immunoglobulin heavy chain variable region; VH5 is a fifth immunoglobulin heavy chain variable region; VH6 is a sixth immunoglobulin heavy chain variable region; Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; CH1 is a heavy chain constant region 1; CL is a light chain constant region; and L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and L13 are amino acid linkers. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4; and the third polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally

wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4; and the third polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4; and the third polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4; and the third polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or

CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5; optionally wherein the VL4 and VL5 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5, optionally wherein the VL4 and VL5 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-

VH5; optionally wherein the VH4 and VH5 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5, optionally wherein the VH4 and VH5 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked

to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL; optionally wherein the VL4, VL5, VL6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL, optionally wherein the VL4, VL5, VL6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL, optionally wherein the VL4, VL5, VL6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker.

VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-

VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1; optionally wherein the VL4, VL5, VL6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5, VL6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the

first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6; optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL; optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or

more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL; optionally wherein the VH4, VH5, VH6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5, VH6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; In some aspects, the first polypeptide has the

structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1; optionally wherein the VH4, VH5, VH6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus; optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid

linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VH4, VH5, VH6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and the third polypeptide has the structure represented by VH4; wherein the third polypeptide comprises a CH1-Fc or CL-Fc at its carboxy terminus optionally wherein the CH1-Fc or CL-Fc is linked to the carboxy terminus of the third polypeptide via one or more amino acid linker and optionally wherein the CH1 and Fc or CL and Fc are linked by one or more amino acid linker.

[0139] In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5

and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5; optionally wherein the VL4 and VL5 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5; optionally wherein the VL4 and VL5 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker.

VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5, optionally wherein the VL4 and VL5 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5; optionally wherein the VH4 and VH5 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5, optionally wherein the VH4 and VH5 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6; optionally wherein the VL4, VL5 and VL6 of the

second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL; optionally wherein the VL4, VL5, VL6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL, optionally wherein the VL4, VL5, VL6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-

VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide

has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1; optionally wherein the VL4, VL5, VL6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5, VL6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6; optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid

linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL; optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc;

optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL; optionally wherein the VH4, VH5, VH6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5, VH6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure

represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1; optionally wherein the VH4, VH5, VH6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VH4, VH5, VH6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure represented by VH4-VH5-Fc; optionally wherein the VH4 and VH5 or the VH4, VH5 and Fc are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some

aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or

VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5; optionally wherein the VL4 and VL5 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5, optionally wherein the VL4 and VL5 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5; optionally wherein the VH4 and VH5 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-

VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5, optionally wherein the VH4 and VH5 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via

one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL; optionally wherein the VL4, VL5, VL6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL, optionally wherein the VL4, VL5, VL6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL;

optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one

or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1; optionally wherein the VL4, VL5, VL6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5, VL6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5, VL6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker.

VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6; optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL; optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc;

VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL; optionally wherein the VH4, VH5, VH6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5, VH6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5, VH6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-

VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1; optionally wherein the VH4, VH5, VH6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented

by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VH4, VH5, VH6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VL4-VL5-VL6-Fc, VL4-VL5-VL6-CH1-Fc or VL4-VL5-VL6-CL-Fc, optionally wherein the VL4, VL5, and VL6 when present are linked to each other via one or more amino acid linker; optionally wherein the VL4, VL5, VL6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are

linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4; wherein the second polypeptide comprises a CL or CH1 at its carboxy terminus, optionally wherein the CL or CH1 is linked to the carboxy terminus of the second polypeptide via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5; optionally wherein the VL4 and VL5 of the second polypeptide are linked to each other via one or

more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5, optionally wherein the VL4 and VL5 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5; optionally wherein the VH4 and VH5 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5, optionally wherein the VH4 and

VH5 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the

second polypeptide has the structure represented by VL4-VL5-VL6-CL; optionally wherein the VL4, VL5, VL6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL, optionally wherein the VL4, VL5, VL6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2,

VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CL, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1; optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5 and VL6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker.

VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1; optionally wherein the VL4, VL5, VL6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VL4, VL5, VL6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6; optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc;

VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL; optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide

has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL; optionally wherein the VH4, VH5, VH6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CL, optionally wherein the VH4, VH5, VH6 and CL of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present

are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1, optionally wherein the VH4, VH5 and VH6 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, and VH3 of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VH4-VH5-VH6-CH1; optionally wherein the VH4, VH5, VH6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. In some aspects, the first polypeptide has the structure represented by VL1-VL2-VL3-VH3-VH2-VH1-Fc; VH1-VH2-VH3-VL3-VL2-VL1-Fc; VL1-VH2-VL3-VH3-VL2-VH1-Fc; VH1-VL2-VH3-VL3-VH2-VL1-Fc; VL1-VL2-VH3-VL3-VH2-VH1-Fc; VH1-VH2-VL3-VH3-VL2-VL1-Fc; VL1-VH2-VH3-VL3-VL2-VH1-Fc; or VH1-VL2-VL3-VH3-VH2-VL1-Fc; optionally wherein the VL1, VL2, VL3, VH1, VH2, VH3 and Fc of the first polypeptide are linked to each other via one or more amino acid linker; the second polypeptide has the structure represented by VL4-VL5-VL6-CH1, optionally wherein the VH4, VH5, VH6 and CH1 of the second polypeptide are linked to each other via one or more amino acid linker; and wherein the third polypeptide has the structure VH4-VH5-VH6-Fc, VH4-VH5-VH6-CH1-Fc or VH4-VH5-VH6-CL-Fc, optionally wherein the VH4, VH5, and VH6 when present are linked to

each other via one or more amino acid linker; optionally wherein the VH4, VH5, VH6, CH1, CL and Fc when present are linked to each other via one or more amino acid linker. Any one of the first polypeptides described herein may be combined with any one of the second and/or third polypeptides described herein to form an antigen binding polypeptide complex of the invention.

[0140] All the disclosures relating to the antigen binding polypeptide structures described herein and the antigen binding polypeptide complex structures described herein apply to and can be combined with all the VH and VL regions described herein including all the target antigens described herein and all the VH and VL sequences and CDR sequences described herein.

[0141] In some aspects, provided herein is an antigen binding polypeptide having a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; wherein: VL1 is a first immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25, CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC9L, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKP46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF,

VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VL2 is a second immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VL3 is a third immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase,

STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VH1 is a first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25, CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VH2 is a second immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25, CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1,

MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VH3 is a third immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; L1, L2, L3, L4 and L5 are amino acid linkers; wherein said antigen binding polypeptide further comprises at least one of the following (i)-(xxi): (i) an Fc region having an optional immunoglobulin hinge, wherein the immunoglobulin hinge comprises an upper hinge region, a middle hinge region, a lower hinge region, or a combination thereof; (ii) a linker selected from the group consisting of L1, L2, L3, L4 or L5 having a length of from about 1 amino acid to about 50 amino acids; (iii) a linker selected from the group consisting of L1, L2, L3, L4 or L5 selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, 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: 679, SEQ ID NO: 680, SEQ ID NO: 681, SEQ ID NO: 682, SEQ ID NO: 683, SEQ ID NO: 684, SEQ ID NO: 685, and SEQ ID

NO: 686, or a sequence having at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, or at least 95% identity to any one of SEQ ID NOs:1-19 and 679-686; (iv) a linker selected from the group consisting of L1, L2, L3, L4 and L5 which is non-immunogenic; (v) a linker selected from the group consisting of L1, L2, L3, L4 and L5 wherein said linker does not contain a consensus T cell epitope; (vi) an Fc region comprising at least one knob-into-hole modification; (vii) a detectable label; (viii) a detectable label selected from the group consisting of a radioactive label, chemiluminescent label, fluorescent label, enzyme, or peptide tag, or a combination thereof; (ix) a peptide tag; (x) a peptide tag selected from a polyhisitidine tag consisting of from about 4 to about 10 histidine residues; (xi) a peptide tag having about 8 histidine residues; (xii) the polypeptide is conjugated to an agent to form an antibody-agent conjugate; (xiii) an antibody-agent conjugate wherein the agent is selected from the group consisting of a cytotoxic agent, an immunomodulating agent, an imaging agent, a therapeutic protein, or a combination thereof; (xiv) an antigen binding polypeptide having an equilibrium dissociation constant (KD) of from about 10 μ M to about 1 pM when bound to an epitope on a target antigen or when complexed with another antigen binding polypeptide to form an antigen binding polypeptide complex having at least two antigen binding polypeptides; (xv) an antibody or antigen binding fragment thereof; (xvi) an antibody or antigen binding fragment thereof selected from the group consisting of IgG, IgM, IgE, IgA or IgD; (xvii) an antibody or antigen binding fragment thereof selected from an IgG antibody selected from the group consisting of IgG1, IgG2, IgG3 or IgG4; (xviii) an antibody or antigen binding fragment selected from the group consisting of Fab, scFab, Fab', F(ab')₂, Fv or scFv; (xix) an antigen binding polypeptide having an effector function mutation; (xx) an antigen bind polypeptide which, when formed into an antigen binding polypeptide complex, is an IgG1 or IgG4 antibody and the knob-into-hole modification comprises: (i) knob substitutions of S354C and T366W and hole substitutions of Y349C, T366S, L368A and Y407V; (ii) hole substitutions of L234A, L235A and P239A; (iii) hole substitutions of L234A and L235A; (iv) hole substitutions of M428L and N433S; (v) hole substitutions of M252Y, S254T and T256E; or (vi) a combination thereof, based on the EU numbering scheme; and (xxi) an antigen binding polypeptide as part of a chimeric receptor antigen. For the avoidance of doubt, all the antigen binding polypeptide structures described herein can be combined with any one or more of the HIV targets described herein. Any and all disclosure herein in relation to targets for antigen binding polypeptides of the invention is generally applicable, and applies equally and without reservation to each and every antigen binding polypeptide and antigen binding polypeptide complex described herein. For the avoidance of doubt, the VL1, VL2, VL3, VL4, VL5, VL6, VH1, VH2, VH3, VH4, VH5 and/or

VH6 of each and every antigen binding polypeptide and antigen binding polypeptide complex described herein may independently bind to any one of said particularly preferred targets.

[0142] In some aspects, provided herein is an antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide; wherein the first polypeptide has a structure represented by VL1-VL2-VL3-VH3-VH2-VH1; VH1-VH2-VH3-VL3-VL2-VL1; VL1-VH2-VL3-VH3-VL2-VH1; VH1-VL2-VH3-VL3-VH2-VL1; VL1-VL2-VH3-VL3-VH2-VH1; VH1-VH2-VL3-VH3-VL2-VL1; VL1-VH2-VH3-VL3-VL2-VH1; VH1-VL2-VL3-VH3-VH2-VL1; VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1; VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1; VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1; VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1; VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1; wherein the second polypeptide has a structure represented by: Fc; VL4-VH4; VH4-VL4; VL4-L6-VH4; VH4-L6-VL4; VL4-VL5-VH5-VH4; VH4-VH5-VL5-VL4; VL4-L6-VL5-L7-VH5-L8-VH4; VH4-L6-VH5-L7-VL5-L8-VL4; VL4-VL5-VL6-VH6-VH5-VH4; VH4-VH5-VH6-VL6-VL5-VL4; VL4-VH5-VL6-VH6-VL5-VH4; VH4-VL5-VH6-VL6-VH5-VL4; VL4-VL5-VH6-VL6-VH5-VH4; VH4-VH5-VL6-VH6-VL5-VL4; VL4-VH5-VH6-VL6-VL5-VH4; VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4; VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4; VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4; VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4; VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4; wherein VL1 is a first immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25, CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFN α , IgE, IGF1R, IL2R β , IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23,

IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VL2 is a second immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VL3 is a third immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE,

IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VL4 is a fourth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VL5 is a fifth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-

cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VL6 is a sixth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VH1 is a first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133,

CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VH2 is a second immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VH3 is a third immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11,

CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GPCR, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VH4 is a fourth first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A; VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL,

DEMANDE OU BREVET VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVET COMPREND PLUS D'UN TOME.

CECI EST LE TOME 1 DE 4
CONTENANT LES PAGES 1 À 168

NOTE : Pour les tomes additionels, veuillez contacter le Bureau canadien des brevets

JUMBO APPLICATIONS/PATENTS

THIS SECTION OF THE APPLICATION/PATENT CONTAINS MORE THAN ONE VOLUME

THIS IS VOLUME 1 OF 4
CONTAINING PAGES 1 TO 168

NOTE: For additional volumes, please contact the Canadian Patent Office

NOM DU FICHIER / FILE NAME :

NOTE POUR LE TOME / VOLUME NOTE:

WHAT IS CLAIMED IS:

1. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;

VH1-VH2-VH3-VL3-VL2-VL1;

VL1-VH2-VL3-VH3-VL2-VH1;

VH1-VL2-VH3-VL3-VH2-VL1;

VL1-VL2-VH3-VL3-VH2-VH1;

VH1-VH2-VL3-VH3-VL2-VL1;

VL1-VH2-VH3-VL3-VL2-VH1;

VH1-VL2-VL3-VH3-VH2-VL1;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein:

VL1 is a first immunoglobulin light chain variable region;

VL2 is a second immunoglobulin light chain variable region;

VL3 is a third immunoglobulin light chain variable region;

VH1 is a first immunoglobulin heavy chain variable region;

VH2 is a second immunoglobulin heavy chain variable region;

VH3 is a third immunoglobulin heavy chain variable region; and

L1, L2, L3, L4 and L5 are amino acid linkers.

2. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;

VH1-VH2-VH3-VL3-VL2-VL1;

VL1-VH2-VL3-VH3-VL2-VH1;

VH1-VL2-VH3-VL3-VH2-VL1;
 VL1-VL2-VH3-VL3-VH2-VH1;
 VH1-VH2-VL3-VH3-VL2-VL1;
 VL1-VH2-VH3-VL3-VL2-VH1;
 VH1-VL2-VL3-VH3-VH2-VL1;
 VL1-L1-VL2-L2-VL3-L3-VII3-L4-VII2-L5-VII1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein the second polypeptide has a structure represented by:

Fc;

VL4-VH4;

VH4-VL4;

VL4-L6-VH4;

VH4-L6-VL4;

VL4-VL5-VH5-VH4;

VH4-VH5-VL5-VL4;

VL4-L6-VL5-L7-VH5-L8-VH4;

VH4-L6-VH5-L7-VL5-L8-VL4;

VL4-VL5-VL6-VH6-VH5-VH4;

VH4-VH5-VH6-VL6-VL5-VL4;

VL4-VH5-VL6-VH6-VL5-VH4;

VH4-VL5-VH6-VL6-VH5-VL4;

VL4-VL5-VH6-VL6-VH5-VH4;

VH4-VH5-VL6-VH6-VL5-VL4;

VL4-VH5-VH6-VL6-VL5-VH4;

VH4-VL5-VL6-VH6-VH5-VL4;

VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4;

VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4;

VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4;
 VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4;
 VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4;
 VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or
 VII4-L6-VL5-L7-VL6-L8-VII6-L9-VII5-L10-VL4;
 wherein:

VL1 is a first immunoglobulin light chain variable region;
 VL2 is a second immunoglobulin light chain variable region;
 VL3 is a third immunoglobulin light chain variable region;
 VL4 is a fourth immunoglobulin light chain variable region;
 VL5 is a fifth immunoglobulin light chain variable region;
 VL6 is a sixth immunoglobulin light chain variable region;
 VH1 is a first immunoglobulin heavy chain variable region;
 VH2 is a second immunoglobulin heavy chain variable region;
 VH3 is a third immunoglobulin heavy chain variable region;
 VH4 is a fourth immunoglobulin heavy chain variable region;
 VH5 is a fifth immunoglobulin heavy chain variable region;
 VH6 is a sixth immunoglobulin heavy chain variable region; and
 L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 are amino acid linkers.

3. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-Fc;
 VH1-VH2-VH3-VL3-VL2-VL1-Fc;
 VL1-VH2-VL3-VH3-VL2-VH1-Fc;
 VH1-VL2-VH3-VL3-VH2-VL1-Fc;
 VL1-VL2-VH3-VL3-VH2-VH1-Fc;
 VH1-VH2-VL3-VH3-VL2-VL1-Fc;
 VL1-VH2-VH3-VL3-VL2-VH1-Fc;
 VH1-VL2-VL3-VH3-VH2-VL1-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc;

wherein:

VL1 is a first immunoglobulin light chain variable region;

VL2 is a second immunoglobulin light chain variable region;

VL3 is a third immunoglobulin light chain variable region;

VH1 is a first immunoglobulin heavy chain variable region;

VH2 is a second immunoglobulin heavy chain variable region;

VH3 is a third immunoglobulin heavy chain variable region;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and

L1, L2, L3, L4, L5 and L6 are amino acid linkers.

4. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-Fc-Fc;
 VH1-VH2-VH3-VL3-VL2-VL1-Fc-Fc;
 VL1-VH2-VL3-VH3-VL2-VH1-Fc-Fc;
 VH1-VL2-VH3-VL3-VH2-VL1-Fc-Fc;
 VL1-VL2-VH3-VL3-VH2-VH1-Fc-Fc;
 VH1-VH2-VL3-VH3-VL2-VL1-Fc-Fc;
 VL1-VH2-VH3-VL3-VL2-VH1-Fc-Fc;

VH1-VL2-VL3-VH3-VH2-VL1-Fc-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc-L7-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc-Fc;
 VII1-L1-VII2-L2-VII3-L3-VL3-L4-VL2-L5-VL1-L6-Fc-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc-L7-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc-L7-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc-L7-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc-L7-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc-L7-Fc;
 L1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc-L7-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc-Fc; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc-L7-Fc;
 wherein:

VL1 is a first immunoglobulin light chain variable region;

VL2 is a second immunoglobulin light chain variable region;

VL3 is a third immunoglobulin light chain variable region;

VH1 is a first immunoglobulin heavy chain variable region;

VH2 is a second immunoglobulin heavy chain variable region;

VH3 is a third immunoglobulin heavy chain variable region;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and

L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

5. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide,

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-Fc;
 VH1-VH2-VH3-VL3-VL2-VL1-Fc;
 VL1-VH2-VL3-VH3-VL2-VH1-Fc;
 VH1-VL2-VH3-VL3-VH2-VL1-Fc;
 VL1-VL2-VH3-VL3-VH2-VH1-Fc;
 VH1-VH2-VL3-VH3-VL2-VL1-Fc;
 VL1-VH2-VH3-VL3-VL2-VH1-Fc;
 VH1-VL2-VL3-VH3-VH2-VL1-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc;

wherein the second polypeptide has a structure represented by:

Fc;

VL4-VH4-Fc;

VH4-VL4-Fc;

VL4-L7-VH4-Fc;

VH4-L7-VL4-Fc;

VL4-L7-VH4-L8-Fc;

VH4-L7-VL4-L8-Fc;

VL4-CL-VH4-CH1-Fc;

VH4-CL-VL4-CH1-Fc;

VL4-CH1-VH4-CL-Fc;

VH4-CH1-VL4-CL-Fc;

VL4-L7-CL-L8-VH4-L9-CH1-Fc;

VL4-L7-CL-L8-VH4-L9-CH1-L10-Fc;

VH4-L7-CL-L8-VL4-L9-CH1-Fc;

VH4-L7-CL-L8-VL4-L9-CH1-L10-Fc;

VL4-L7-CH1-L8-VH4-L9-CL-Fc;

VL4-L7-CH1-L8-VH4-L9-CL-L10-Fc;

VH4-L7-CH1-L8-VL4-L9-CL-Fc;

VH4-L7-CH1-L8-VL4-L9-CL-L10-Fc;

VL4-VL5-VH5-VH4-Fc;

VH4-VH5-VL5-VL4-Fc;

VL4-L7-VL5-L8-VH5-L9-VH4-Fc;

VH4-L7-VH5-L8-VL5-L9-VL4-Fc;

VL4-L7-VL5-L8-VH5-L9-VH4-L10-Fc;

VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc;

VL4-VL5-VL6-VH6-VH5-VH4-Fc;

VH4-VH5-VH6-VL6-VL5-VL4-Fc;

VL4-VH5-VL6-VH6-VL5-VH4-Fc;

VH4-VL5-VH6-VL6-VH5-VL4-Fc;

VL4-VL5-VH6-VL6-VH5-VH4-Fc;

VH4-VH5-VL6-VH6-VL5-VL4-Fc;

VL4-VH5-VH6-VL6-VL5-VH4-Fc;

VH4-VL5-VL6-VH6-VH5-VL4-Fc;
 VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc;
 VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc;
 VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc;
 VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc;
 VL4-L7-VL5-L8-VII6-L9-VL6-L10-VII5-L11-VII4-Fc;
 VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc;
 VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc;
 VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc;
 VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc;
 VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc;
 VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc;
 VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc;
 VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc;
 VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-L12-Fc;
 VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; or
 VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-L12-Fc;

wherein:

VL1 is a first immunoglobulin light chain variable region;
 VL2 is a second immunoglobulin light chain variable region;
 VL3 is a third immunoglobulin light chain variable region;
 VL4 is a fourth immunoglobulin light chain variable region;
 VL5 is a fifth immunoglobulin light chain variable region;
 VL6 is a sixth immunoglobulin light chain variable region;
 VH1 is a first immunoglobulin heavy chain variable region;
 VH2 is a second immunoglobulin heavy chain variable region;
 VH3 is a third immunoglobulin heavy chain variable region;
 VH4 is a fourth immunoglobulin heavy chain variable region;
 VH5 is a fifth immunoglobulin heavy chain variable region;
 VH6 is a sixth immunoglobulin heavy chain variable region;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge;
 CH1 is a heavy chain constant region 1;

CL is a light chain constant region; and

L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11 and L12 are amino acid linkers.

6. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL;
 VL1-VL2-VL3-VII3-VII2-VII1-CL-CIII1;
 VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL;
 VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1;
 VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL;
 VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1;
 VH1-VL2-VH3-VL3-VH2-VL1-CH1-CL;
 VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1;
 VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL;
 VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1;
 VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL;
 VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1;
 VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL;
 VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1;
 VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL;
 VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-CL;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-L7-CL;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-CH1;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-CH1;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-L7-CH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-CL;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-CL;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-L7-CL;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-CH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-L7-CH1;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-L7-CH1;
VII1-L1-VL2-L2-VII3-L3-VL3-L4-VII2-L5-VL1-CII1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-CL;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-CL;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-CH1;

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-CH1; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-L7-CH1;

wherein:

VL1 is a first immunoglobulin light chain variable region;

VL2 is a second immunoglobulin light chain variable region;

VL3 is a third immunoglobulin light chain variable region;

VH1 is a first immunoglobulin heavy chain variable region;

VH2 is a second immunoglobulin heavy chain variable region;

VH3 is a third immunoglobulin heavy chain variable region;

CH1 is a heavy chain constant region 1;

CL is a light chain constant region; and

L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

7. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-CH1;

VL1-VL2-VL3-VH3-VH2-VH1-CL;

VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL;

VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1;

VH1-VH2-VH3-VL3-VL2-VL1-CH1;

VH1-VH2-VH3-VL3-VL2-VL1-CL;

VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL;

VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1;

VL1-VH2-VL3-VH3-VL2-VH1-CH1;

VL1-VH2-VL3-VH3-VL2-VH1-CL;

VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL;

VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1;

VH1-VL2-VH3-VL3-VH2-VL1-CH1;

VH1-VL2-VH3-VL3-VH2-VL1-CL;

VH1-VL2-VH3-VL3-VH2-VL1-CH1-CL;

VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1;

VL1-VL2-VH3-VL3-VH2-VH1-CH1;

VL1-VL2-VH3-VL3-VH2-VH1-CL;
VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL;
VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1;
VH1-VH2-VL3-VH3-VL2-VL1-CH1;
VH1-VH2-VL3-VH3-VL2-VL1-CL;
VII1-VII2-VL3-VII3-VL2-VL1-CII1-CL;
VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1;
VL1-VH2-VH3-VL3-VL2-VH1-CH1;
VL1-VH2-VH3-VL3-VL2-VH1-CL;
VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL;
VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1;
VH1-VL2-VL3-VH3-VH2-VL1-CH1;
VH1-VL2-VL3-VH3-VH2-VL1-CL;
VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL;
VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-CL;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-CL;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-CH1;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL;
VL1-L1-VII2-L2-VL3-L3-VII3-L4-VL2-L5-VII1-L6-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-CL;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-CL;
 VII1-L1-VII2-L2-VL3-L3-VII3-L4-VL2-L5-VL1-L6-CII1-L7-CL;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-CH1;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-CH1;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-L7-CH1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-CL;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-L7-CL;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-CH1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-CH1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-L7-CH1;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-CL;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-CL;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-L7-CL;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-CH1;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-CH1; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-L7-CH1;
 wherein the second polypeptide has a structure represented by:
 VL4-VH4-CH1;
 VL4-VH4-CL;
 VL4-VH4-CH1-CL;

VL4-VH4-CL-CH1;
VH4-VL4-CH1;
VH4-VL4-CL;
VH4-VL4-CH1-CL;
VH4-VL4-CL-CH1;
VL4-L8-VII4-CH1;
VL4-L8-VH4-CL;
VL4-L8-VH4-CH1-CL;
VL4-L8-VH4-CL-CH1;
VH4-L8-VL4-CH1;
VH4-L8-VL4-CL;
VH4-L8-VH4-CH1-CL;
VH4-L8-VH4-CL-CH1;
VL4-VL5-VH5-VH4-CH1;
VL4-VL5-VH5-VH4-CL;
VL4-VL5-VH5-VH4-CH1-CL;
VL4-VL5-VH5-VH4-CL-CH1;
VH4-VH5-VL5-VL4-CH1;
VH4-VH5-VL5-VL4-CL;
VH4-VH5-VL5-VL4-CH1-CL;
VH4-VH5-VL5-VL4-CL-CH1;
VL4-L8-VL5-L9-VH5-L10-VH4-CH1;
VL4-L8-VL5-L9-VH5-L10-VH4-CL;
VL4-L8-VL5-L9-VH5-L10-VH4-CH1-CL;
VL4-L8-VL5-L9-VH5-L10-VH4-CL-CH1;
VH4-L8-VH5-L9-VL5-L10-VL4-CH1;
VH4-L8-VH5-L9-VL5-L10-VL4-CL;
VH4-L8-VH5-L9-VL5-L10-VL4-CH1-CL;
VH4-L8-VH5-L9-VL5-L10-VL4-CL-CH1;
VL4-VL5-VL6-VH6-VH5-VH4-CH1;
VL4-VL5-VL6-VH6-VH5-VH4-CL;
VL4-VL5-VL6-VH6-VH5-VH4-CH1-CL;
VL4-VL5-VL6-VH6-VH5-VH4-CL-CH1;

VH4-VH5-VH6-VL6-VL5-VL4-CH1;
VH4-VH5-VH6-VL6-VL5-VL4-CL;
VH4-VH5-VH6-VL6-VL5-VL4-CH1-CL;
VH4-VH5-VH6-VL6-VL5-VL4-CL-CH1;
VL4-VH5-VL6-VH6-VL5-VH4-CH1;
VL4-VII5-VL6-VII6-VL5-VII4-CL;
VL4-VH5-VL6-VH6-VL5-VH4-CH1-CL;
VL4-VH5-VL6-VH6-VL5-VH4-CL-CH1;
VH4-VL5-VH6-VL6-VH5-VL4-CH1;
VH4-VL5-VH6-VL6-VH5-VL4-CL;
VH4-VL5-VH6-VL6-VH5-VL4-CH1-CL;
VH4-VL5-VH6-VL6-VH5-VL4-CL-CH1;
VL4-VL5-VH6-VL6-VH5-VH4-CH1;
VL4-VL5-VH6-VL6-VH5-VH4-CL;
VL4-VL5-VH6-VL6-VH5-VH4-CH1-CL;
VL4-VL5-VH6-VL6-VH5-VH4-CL-CH1;
VH4-VH5-VL6-VH6-VL5-VL4-CH1;
VH4-VH5-VL6-VH6-VL5-VL4-CL;
VH4-VH5-VL6-VH6-VL5-VL4-CH1-CL;
VH4-VH5-VL6-VH6-VL5-VL4-CL-CH1;
VL4-VH5-VH6-VL6-VL5-VH4-CH1;
VL4-VH5-VH6-VL6-VL5-VH4-CL;
VL4-VH5-VH6-VL6-VL5-VH4-CH1-CL;
VL4-VH5-VH6-VL6-VL5-VH4-CL-CH1;
VH4-VL5-VL6-VH6-VH5-VL4-CH1;
VH4-VL5-VL6-VH6-VH5-VL4-CL;
VH4-VL5-VL6-VH6-VH5-VL4-CH1-CL;
VH4-VL5-VL6-VH6-VH5-VL4-CL-CH1;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CH1;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CL;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CH1-CL;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CL-CH1;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CH1;

VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CL;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CH1-CL;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CL-CH1;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CH1;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CL;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CH1-CL;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CL-CH1;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CH1;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CL;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CH1-CL;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CL-CH1;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CH1;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CL;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CH1-CL;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CL-CH1;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CH1;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CL;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CH1-CL;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CL-CH1;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-CH1;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-CL;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-CH1-CL;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-CL-CH1;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-CH1;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-CL;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-CH1-CL;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-CL-CH1;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CH1;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CL;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CH1-CL;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CL-CH1;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CH1;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CL;

VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CH1-CL;
 VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CL-CH1;
 VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CH1;
 VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CL;
 VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CH1-CL;
 VL4-L8-VII5-L9-VL6-L10-VII6-L11-VL5-L12-VII4-L13-CL-CII1;
 VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CH1;
 VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CL;
 VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CH1-CL;
 VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CL-CH1;
 VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CH1;
 VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CL;
 VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CH1-CL;
 VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CL-CH1;
 VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CH1;
 VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CL;
 VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CH1-CL;
 VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CL-CH1;
 VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CH1;
 VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CL;
 VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CH1-CL;
 VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CH1;
 VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CH1;
 VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CL;
 VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CH1-CL; or
 VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CL-CH1;
 wherein:

VL1 is a first immunoglobulin light chain variable region;

VL2 is a second immunoglobulin light chain variable region;

VL3 is a third immunoglobulin light chain variable region;

VL4 is a fourth immunoglobulin light chain variable region;

VL5 is a fifth immunoglobulin light chain variable region;

VL6 is a sixth immunoglobulin light chain variable region;

VH1 is a first immunoglobulin heavy chain variable region;
 VH2 is a second immunoglobulin heavy chain variable region;
 VH3 is a third immunoglobulin heavy chain variable region;
 VH4 is a fourth immunoglobulin heavy chain variable region;
 VH5 is a fifth immunoglobulin heavy chain variable region;
 VH6 is a sixth immunoglobulin heavy chain variable region;
 CH1 is a heavy chain constant region 1;
 CL is a light chain constant region; and
 L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and L13 are amino acid linkers.

8. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide,

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-CH1-Fc;
 VH1-VH2-VH3-VL3-VL2-VL1-CH1-Fc;
 VL1-VH2-VL3-VH3-VL2-VH1-CH1-Fc;
 VH1-VL2-VH3-VL3-VH2-VL1-CH1-Fc;
 VL1-VL2-VH3-VL3-VH2-VH1-CH1-Fc;
 VH1-VH2-VL3-VH3-VL2-VL1-CH1-Fc;
 VL1-VH2-VH3-VL3-VL2-VH1-CH1-Fc;
 VH1-VL2-VL3-VH3-VH2-VL1-CH1-Fc;
 VL1-VL2-VL3-VH3-VH2-VH1-CL-Fc;
 VH1-VH2-VH3-VL3-VL2-VL1-CL-Fc;
 VL1-VH2-VL3-VH3-VL2-VH1-CL-Fc;
 VH1-VL2-VH3-VL3-VH2-VL1-CL-Fc;
 VL1-VL2-VH3-VL3-VH2-VH1-CL-Fc;
 VH1-VH2-VL3-VH3-VL2-VL1-CL-Fc;
 VL1-VH2-VH3-VL3-VL2-VH1-CL-Fc;
 VH1-VL2-VL3-VH3-VH2-VL1-CL-Fc;
 VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL-Fc;
 VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL-Fc;
 VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL-Fc;
 VH1-VL2-VH3-VL3-VH2-VL1-CH1-CL-Fc;

VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL-Fc;
VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL-Fc;
VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL-Fc;
VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL-Fc;
VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1-Fc;
VII1-VII2-VII3-VL3-VL2-VL1-CL-CII1-Fc;
VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1-Fc;
VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1-Fc;
VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1-Fc;
VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1-Fc;
VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1-Fc;
VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1-Fc;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-Fc;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-Fc;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-Fc;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-Fc;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-Fc;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-Fc;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-Fc;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-Fc;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-Fc;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-Fc;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-Fc;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-Fc;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-Fc;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-Fc;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-Fc;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-Fc;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL-Fc;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-CL-Fc;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL-Fc;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-CL-Fc;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL-Fc;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-CL-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-CL-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-CH1-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1-Fc;
 VL1-L1-VII2-L2-VL3-L3-VII3-L4-VL2-L5-VII1-CL-CH1-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-CH1-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-CH1-Fc; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-CH1-Fc

wherein the second polypeptide has a structure represented by:

Fc;

VL4-VH4-CH1-Fc;

VL4-VH4-CL-Fc;

VL4-VH4-CH1-CL-Fc;

VL4-VH4-CL-CH1-Fc;

VH4-VL4-CH1-Fc;

VH4-VL4-CL-Fc;

VH4-VL4-CH1-CL-Fc;

VH4-VL4-CL-CH1-Fc;

VL4-L6-VH4-CH1-Fc;

VL4-L6-VH4-CL-Fc;

VL4-L6-VH4-CH1-CL-Fc;

VL4-L6-VH4-CL-CH1-Fc;

VH4-L6-VL4-CH1-Fc;

VH4-L6-VL4-CL-Fc;

VH4-L6-VL4-CH1-CL-Fc;

VH4-L6-VL4-CL-CH1-Fc;

VL4-VL5-VH5-VH4-CH1-Fc;

VL4-VL5-VH5-VH4-CL-Fc;

VL4-VL5-VH5-VH4-CH1-CL-Fc;

VL4-VL5-VH5-VH4-CL-CH1-Fc;

VH4-VH5-VL5-VL4-CH1-Fc;
VH4-VH5-VL5-VL4-CL-Fc;
VH4-VH5-VL5-VL4-CH1-CL-Fc;
VH4-VH5-VL5-VL4-CL-CH1-Fc;
VL4-L6-VL5-L7-VH5-L8-VH4-CH1-Fc;
VL4-L6-VL5-L7-VII5-L8-VII4-CL-Fc;
VL4-L6-VL5-L7-VH5-L8-VH4-CH1-CL-Fc;
VL4-L6-VL5-L7-VH5-L8-VH4-CL-CH1-Fc;
VH4-L6-VH5-L7-VL5-L8-VL4-CH1-Fc;
VH4-L6-VH5-L7-VL5-L8-VL4-CL-Fc;
VH4-L6-VH5-L7-VL5-L8-VL4-CH1-CL-Fc;
VH4-L6-VH5-L7-VL5-L8-VL4-CL-CH1-Fc;
VL4-VL5-VL6-VH6-VH5-VH4-CH1-Fc;
VL4-VL5-VL6-VH6-VH5-VH4-CL-Fc;
VL4-VL5-VL6-VH6-VH5-VH4-CH1-CL-Fc;
VL4-VL5-VL6-VH6-VH5-VH4-CL-CH1-Fc;
VH4-VH5-VH6-VL6-VL5-VL4-CH1-Fc;
VH4-VH5-VH6-VL6-VL5-VL4-CL-Fc;
VH4-VH5-VH6-VL6-VL5-VL4-CH1-CL-Fc;
VH4-VH5-VH6-VL6-VL5-VL4-CL-CH1-Fc;
VL4-VH5-VL6-VH6-VL5-VH4-CH1-Fc;
VL4-VH5-VL6-VH6-VL5-VH4-CL-Fc;
VL4-VH5-VL6-VH6-VL5-VH4-CH1-CL-Fc;
VL4-VH5-VL6-VH6-VL5-VH4-CL-CH1-Fc;
VH4-VL5-VH6-VL6-VH5-VL4-CH1-Fc;
VH4-VL5-VH6-VL6-VH5-VL4-CL-Fc;
VH4-VL5-VH6-VL6-VH5-VL4-CH1-CL-Fc;
VL4-VL5-VH6-VL6-VH5-VH4-CH1-Fc;
VL4-VL5-VH6-VL6-VH5-VH4-CL-Fc;
VL4-VL5-VH6-VL6-VH5-VH4-CH1-CL-Fc;
VL4-VL5-VH6-VL6-VH5-VH4-CL-CH1-Fc;
VH4-VH5-VL6-VH6-VL5-VL4-CH1-Fc;

VH4-VH5-VL6-VH6-VL5-VL4-CL-Fc;
VH4-VH5-VL6-VH6-VL5-VL4-CH1-CL-Fc;
VH4-VH5-VL6-VH6-VL5-VL4-CL-CH1-Fc;
VL4-VH5-VH6-VL6-VL5-VH4-CH1-Fc;
VL4-VH5-VH6-VL6-VL5-VH4-CL-Fc;
VL4-VII5-VII6-VL6-VL5-VII4-CII1-CL-Fc;
VL4-VH5-VH6-VL6-VL5-VH4-CL-CH1-Fc;
VH4-VL5-VL6-VH6-VH5-VL4-CH1-Fc;
VH4-VL5-VL6-VH6-VH5-VL4-CL-Fc;
VH4-VL5-VL6-VH6-VH5-VL4-CH1-CL-Fc;
VH4-VL5-VL6-VH6-VH5-VL4-CL-CH1-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-CH1-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-CL-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-CH1-CL-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-CL-CH1-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-CH1-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-CL-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-CH1-CL-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-CL-CH1-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-CH1-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-CL-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-CH1-CL-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-CL-CH1-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-CH1-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-CL-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-CH1-CL-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-CL-CH1-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-CH1-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-CL-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-CH1-CL-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-CL-CH1-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CH1-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CL-Fc;

VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CH1-CL-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CL-CH1-Fc;
VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CH1-Fc;
VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CL-Fc;
VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CH1-CL-Fc;
VL4-L6-VII5-L7-VII6-L8-VL6-L9-VL5-L10-VII4-CL-CH1-Fc;
VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CH1-Fc;
VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CL-Fc;
VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CH1-CL-Fc;
VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CL-CH1-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CH1-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CL-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CH1-CL-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CL-CH1-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CH1-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CL-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CH1-CL-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CL-CH1-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CH1-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CL-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CH1-CL-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CL-CH1-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CH1-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CL-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CH1-CL-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CL-CH1-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CH1-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CL-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CH1-CL-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CL-CH1-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CH1-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CL-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CH1-CL-Fc;

VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CL-CH1-Fc;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CH1-Fc;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CL-Fc;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CH1-CL-Fc;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CL-CH1-Fc;
 VII4-L6-VL5-L7-VL6-L8-VII6-L9-VII5-L10-VL4-L11-CII1-Fc;
 VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CL-Fc;
 VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CH1-CL-Fc; or
 VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CL-CH1-Fc;
 wherein:

VL1 is a first immunoglobulin light chain variable region;

VL2 is a second immunoglobulin light chain variable region;

VL3 is a third immunoglobulin light chain variable region;

VL4 is a fourth immunoglobulin light chain variable region;

VL5 is a fifth immunoglobulin light chain variable region;

VL6 is a sixth immunoglobulin light chain variable region;

VH1 is a first immunoglobulin heavy chain variable region;

VH2 is a second immunoglobulin heavy chain variable region;

VH3 is a third immunoglobulin heavy chain variable region;

VH4 is a fourth immunoglobulin heavy chain variable region;

VH5 is a fifth immunoglobulin heavy chain variable region;

VH6 is a sixth immunoglobulin heavy chain variable region;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge;

CH1 is a heavy chain constant region 1;

CL is a light chain constant region; and

L1, L2, L3, L4, L5, L6, L7, L8, L9, L10 and L11 are amino acid linkers.

9. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-CH3-CH3;

VH1-VH2-VH3-VL3-VL2-VL1-CH3-CH3;

VL1-VH2-VL3-VH3-VL2-VH1-CH3-CH3;

VH1-VL2-VH3-VL3-VH2-VL1-CH3-CH3;

VL1-VL2-VH3-VL3-VH2-VH1-CH3-CH3;
 VH1-VH2-VL3-VH3-VL2-VL1-CH3-CH3;
 VL1-VH2-VH3-VL3-VL2-VH1-CH3-CH3;
 VH1-VL2-VL3-VH3-VH2-VL1-CH3-CH3;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH3-CH3;
 VII1-L1-VII2-L2-VII3-L3-VL3-L4-VL2-L5-VL1-CII3-CII3;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH3-CH3;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH3-CH3;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH3-CH3;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH3-CH3;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH3-CH3;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH3-CH3;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH3-CH3;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH3-CH3;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH3-CH3;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH3-CH3;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH3-CH3;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH3-CH3;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH3-CH3;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH3-CH3;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH3-L7-CH3;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH3-L7-CH3;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH3-L7-CH3;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH3-L7-CH3;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH3-L7-CH3;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH3-L7-CH3; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH3-L7-CH3;

wherein:

VL1 is a first immunoglobulin light chain variable region;

VL2 is a second immunoglobulin light chain variable region;

VL3 is a third immunoglobulin light chain variable region;

VH1 is a first immunoglobulin heavy chain variable region;

VH2 is a second immunoglobulin heavy chain variable region;
 VH3 is a third immunoglobulin heavy chain variable region;
 CH3 is an immunoglobulin heavy chain constant region 3; and
 L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

10. An antigen binding polypeptide complex comprising a first polypeptide, a second polypeptide, and a third polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;
 VH1-VH2-VH3-VL3-VL2-VL1;
 VL1-VH2-VL3-VH3-VL2-VH1;
 VH1-VL2-VH3-VL3-VH2-VL1;
 VL1-VL2-VH3-VL3-VH2-VH1;
 VH1-VH2-VL3-VH3-VL2-VL1;
 VL1-VH2-VH3-VL3-VL2-VH1;
 VH1-VL2-VL3-VH3-VH2-VL1;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein the second polypeptide has a structure represented by:

VL4-VL5;
 VL4-L6-VL5;
 VL4-VL5-VL6; or
 VL4-L6-VL5-L7-VL6;

wherein the third polypeptide has a structure represented by:

VH4-VH5;
 VH4-L6-VH5;
 VH4-VH5-VH6; or

VH4-L6-VH5-L7-VH6;

wherein:

VL1 is a first immunoglobulin light chain variable region;

VL2 is a second immunoglobulin light chain variable region;

VL3 is a third immunoglobulin light chain variable region;

VL4 is a fourth immunoglobulin light chain variable region;

VL5 is a fifth immunoglobulin light chain variable region;

VL6 is a sixth immunoglobulin light chain variable region;

VH1 is a first immunoglobulin heavy chain variable region;

VH2 is a second immunoglobulin heavy chain variable region;

VH3 is a third immunoglobulin heavy chain variable region;

VH4 is a fourth immunoglobulin heavy chain variable region;

VH5 is a fifth immunoglobulin heavy chain variable region;

VH6 is a sixth immunoglobulin heavy chain variable region; and

L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

11. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;

VH1-VH2-VH3-VL3-VL2-VL1;

VL1-VH2-VL3-VH3-VL2-VH1;

VH1-VL2-VH3-VL3-VH2-VL1;

VL1-VL2-VH3-VL3-VH2-VH1;

VH1-VH2-VL3-VH3-VL2-VL1;

VL1-VH2-VH3-VL3-VL2-VH1;

VH1-VL2-VL3-VH3-VH2-VL1;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL2 is a second immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2,

PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL3 is a third immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8,

IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFalpha, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFalpha, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-

cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

L1, L2, L3, L4 and L5 are amino acid linkers;

wherein said antigen binding polypeptide further comprises at least one of the following (i)-(xxi):

(i) an Fc region having an optional immunoglobulin hinge, wherein the immunoglobulin hinge comprises an upper hinge region, a middle hinge region, a lower hinge region, or a combination thereof;

(ii) a linker selected from the group consisting of L1, L2, L3, L4 or L5 having a length of from about 1 amino acid to about 50 amino acids;

(iii) a linker selected from the group consisting of L1, L2, L3, L4 or L5 selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, 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: 679, SEQ ID NO: 680, SEQ ID NO: 681, SEQ ID NO: 682, SEQ ID NO: 683, SEQ ID NO: 684, SEQ ID NO: 685, and SEQ ID NO: 686, or a sequence having at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, or at least 95% identity to any one of SEQ ID NOs:1-19 and 679-686;

(iv) a linker selected from the group consisting of L1, L2, L3, L4 and L5 which is non-immunogenic;

(v) a linker selected from the group consisting of L1, L2, L3, L4 and L5 wherein said linker does not contain a consensus T cell epitope;

(vi) an Fc region comprising at least one knob-into-hole modification;

(vii) a detectable label;

(viii) a detectable label selected from the group consisting of a radioactive label,

chemiluminescent label, fluorescent label, enzyme, or peptide tag, or a combination thereof;

- (ix) a peptide tag;
- (x) a peptide tag selected from a polyhistidine tag consisting of from about 4 to about 10 histidine residues;
- (xi) a peptide tag having about 8 histidine residues;
- (xii) the polypeptide is conjugated to an agent to form an antibody-agent conjugate;
- (xiii) an antibody-agent conjugate wherein the agent is selected from the group consisting of a cytotoxic agent, an immunomodulating agent, an imaging agent, a therapeutic protein, or a combination thereof;
- (xiv) an antigen binding polypeptide having an equilibrium dissociation constant (KD) of from about 10 μ M to about 1 pM when bound to an epitope on a target antigen or when complexed with another antigen binding polypeptide to form an antigen binding polypeptide complex having at least two antigen binding polypeptides;
- (xv) an antibody or antigen binding fragment thereof;
- (xvi) an antibody or antigen binding fragment thereof selected from the group consisting of IgG, IgM, IgE, IgA or IgD;
- (xvii) an antibody or antigen binding fragment thereof selected from an IgG antibody selected from the group consisting of IgG1, IgG2, IgG3 or IgG4;
- (xviii) an antibody or antigen binding fragment selected from the group consisting of Fab, scFab, Fab', F(ab')₂, Fv or scFv;
- (xix) an antigen binding polypeptide having an effector function mutation;
- (xx) an antigen bind polypeptide which, when formed into an antigen binding polypeptide complex, is an IgG1 or IgG4 antibody and the knob-into-hole modification comprises:
 - (i) knob substitutions of S354C and T366W and hole substitutions of Y349C, T366S, L368A and Y407V;
 - (ii) hole substitutions of L234A, L235A and P239A;
 - (iii) hole substitutions of L234A and L235A;
 - (iv) hole substitutions of M428L and N433S;
 - (v) hole substitutions of M252Y, S254T and T256E; or
 - (vi) a combination thereof, based on the EU numbering scheme; and
- (xxi) an antigen binding polypeptide as part of a chimeric receptor antigen.

12. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;
 VH1-VH2-VH3-VL3-VL2-VL1;
 VL1-VII2-VL3-VII3-VL2-VII1;
 VH1-VL2-VH3-VL3-VH2-VL1;
 VL1-VL2-VH3-VL3-VH2-VH1;
 VH1-VH2-VL3-VH3-VL2-VL1;
 VL1-VH2-VH3-VL3-VL2-VH1;
 VH1-VL2-VL3-VH3-VH2-VL1;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein the second polypeptide has a structure represented by:

Fc;

VL4-VH4;
 VH4-VL4;
 VL4-L6-VH4;
 VH4-L6-VL4;
 VL4-VL5-VH5-VH4;
 VH4-VH5-VL5-VL4;
 VL4-L6-VL5-L7-VH5-L8-VH4;
 VH4-L6-VH5-L7-VL5-L8-VL4;
 VL4-VL5-VL6-VH6-VH5-VH4;
 VH4-VH5-VH6-VL6-VL5-VL4;
 VL4-VH5-VL6-VH6-VL5-VH4;
 VH4-VL5-VH6-VL6-VH5-VL4;

VL4-VL5-VH6-VL6-VH5-VH4;
 VH4-VH5-VL6-VH6-VL5-VL4;
 VL4-VH5-VH6-VL6-VL5-VH4;
 VH4-VL5-VL6-VH6-VH5-VL4;
 VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4;
 VII4-L6-VII5-L7-VII6-L8-VL6-L9-VL5-L10-VL4;
 VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4;
 VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4;
 VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4;
 VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or
 VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4;
 wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25, CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL2 is a second immunoglobulin light chain variable region that specifically binds to at

least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTII2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, ILIA, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL3 is a third immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, ILIA, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55,

TREMI, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GTRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpa, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREMI, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GTRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16,

NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R,

IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TAC1, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TAC1, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-

3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH4 is a fourth first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11,

CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GTRL, GPR5, IHER2, IHER3, ICOSL, ICOS, IIIILA2, IIMGB1, IIVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, ILIA, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GTRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, ILIA, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 are amino acid linkers;

wherein said antigen binding polypeptide complex further comprises at least one of the following (i)-(xxi):

(i) an Fc region having an optional immunoglobulin hinge, wherein the immunoglobulin hinge comprises an upper hinge region, a middle hinge region, a lower hinge region, or a combination thereof;

(ii) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6, L7, L8, L9, or L10 having a length of from about 1 amino acid to about 50 amino acids;

(iii) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6, L7, L8, L9, or L10 selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, 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: 679, SEQ ID NO: 680, SEQ ID NO: 681, SEQ ID NO: 682, SEQ ID NO: 683, SEQ ID NO: 684, SEQ ID NO: 685, and SEQ ID NO: 686, or a sequence having at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, or at least 95% identity to any one of SEQ ID NOs: 1-19 and 679-686;

(iv) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6, L7, L8, L9, and L10 which is non-immunogenic;

(v) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6, L7, L8, L9, and L10 wherein said linker does not contain a consensus T cell epitope;

(vi) an Fc region comprising at least one knob-into-hole modification;

(vii) a detectable label;

(viii) a detectable label selected from the group consisting of a radioactive label, chemiluminescent label, fluorescent label, enzyme, or peptide tag, or a combination thereof;

(ix) a peptide tag;

(x) a peptide tag selected from a polyhistidine tag consisting of from about 4 to about 10 histidine residues;

(xi) a peptide tag having about 8 histidine residues;

(xii) the polypeptide is conjugated to an agent to form an antibody-agent conjugate;

(xiii) an antibody-agent conjugate wherein the agent is selected from the group consisting of a cytotoxic agent, an immunomodulating agent, an imaging agent, a therapeutic protein, or a combination thereof;

(xiv) an antigen binding polypeptide having an equilibrium dissociation constant (KD)

of from about 10 μ M to about 1 pM when bound to an epitope on a target antigen or when complexed with another antigen binding polypeptide to form an antigen binding polypeptide complex having at least two antigen binding polypeptides;

- (xv) an antibody or antigen binding fragment thereof;
- (xvi) an antibody or antigen binding fragment thereof selected from the group consisting of IgG, IgM, IgE, IgA or IgD;
- (xvii) an antibody or antigen binding fragment thereof selected from an IgG antibody selected from the group consisting of IgG1, IgG2, IgG3 or IgG4;
- (xviii) an antibody or antigen binding fragment selected from the group consisting of Fab, scFab, Fab', F(ab')₂, Fv or scFv;
- (xix) an antigen binding polypeptide having an effector function mutation;
- (xx) an antigen bind polypeptide which, when formed into an antigen binding polypeptide complex, is an IgG1 or IgG4 antibody and the knob-into-hole modification comprises:
 - (i) knob substitutions of S354C and T366W and hole substitutions of Y349C, T366S, L368A and Y407V;
 - (ii) hole substitutions of L234A, L235A and P239A;
 - (iii) hole substitutions of L234A and L235A;
 - (iv) hole substitutions of M428L and N433S;
 - (v) hole substitutions of M252Y, S254T and T256E; or
 - (vi) a combination thereof, based on the EU numbering scheme; and
- (xxi) an antigen binding polypeptide as part of a chimeric receptor antigen.

13. An antigen binding polypeptide complex comprising a first polypeptide, a second polypeptide, and a third polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;
 VH1-VH2-VH3-VL3-VL2-VL1;
 VL1-VH2-VL3-VH3-VL2-VH1;
 VH1-VL2-VH3-VL3-VH2-VL1;
 VL1-VL2-VH3-VL3-VH2-VH1;
 VH1-VH2-VL3-VH3-VL2-VL1;
 VL1-VH2-VH3-VL3-VL2-VH1;
 VH1-VL2-VL3-VH3-VH2-VL1;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;
 VII1-L1-VII2-L2-VL3-L3-VII3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein the second polypeptide has a structure represented by:

VL4-VL5;
 VL4-L6-VL5;
 VL4-VL5-VL6; or
 VL4-L6-VL5-L7-VL6;

wherein the third polypeptide has a structure represented by:

VH4-VH5;
 VH4-L6-VH5;
 VH4-VH5-VH6; or
 VH4-L6-VH5-L7-VH6;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25, CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2,

PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL2 is a second immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL3 is a third immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R,

IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin,

EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GITR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38,

CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GITRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalph, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL,

ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GTRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH4 is a fourth first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GTRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa,

TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GTRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1, MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpa, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of A2AR, APRIL, ATPDase, BAFF, BAFFR, BCMA, BlyS, BTK, BTLA, B7DC, B7H1, B7H2, B7H3, B7H4, B7H5, B7H6, B7H7, B7RP1, B7-4, C3, C5, CCL2, CCL3, CCL4, CCL5, CCL7, CCL8, CCL11, CCL15, CCL17, CCL19, CCL20, CCL21, CCL25 CCR3, CCR4, CD3, CD19, CD20, CD24, CD27, CD28, CD38, CD39, CD40, CD40L, CD47, CD52, CD70, CD80, CD86, CD123, CD133, CD137, CD137L, CD160, CD272, CEACAM5, CLEC9, CLEC91, CRTH2, CSF-1, CSF-2, CSF-3, CXCL1, CXCL2, CXCL4, CXCL12, CXCL13, CXCR3, cMet, CTLA4, DLL3, DNNGR-1, E-cadherin, EGFR, ENTPD1, EpCAM, FCER1, FCER1A, FCER2, FGFR, FLAP, FOLH1, Gi24, GTR, GTRL, GPR5, HER2, HER3, ICOSL, ICOS, HHLA2, HMGB1, HVEM, IDO, IFNa, IgE, IGF1R, IL2Rbeta, IL1, IL1A, IL1B, IL1F10, IL2, IL4, IL4Ra, IL5, IL5R, IL6, IL7, IL7Ra, IL8, IL9, IL9R, IL10, rhIL10, IL12, IL13, IL13Ra1, IL13Ra2, IL15, IL17, IL17Rb, IL18, IL22, IL23, IL25, IL7, IL33, IL35, ITGB4, ITK, KIR, LAG3, LAMP1, leptin, LPFS2, MHC class II, MUC-1,

MUC-16, NCR3LG1, NKG2D, NKp46, NTPDase-1, OX40, OX40L, PD-1, PD-L1, PD-L2, PROM1, S152, SIRPalpha, SISP1, SLC, SPG64, ST2, STEAP1, STEAP2, Syk kinase, STEAP1, TROP2, TACI, TDO, T14, TIGIT, TIM3, TLR, TLR2, TLR4, TLR5, TLR9, TMEF1, TNFa, TNFRSF7, Tp55, TREM1, TSLP, TSLPR, TWEAK, VEGF, VISTA, Vstm3, WUCAM, DLL4, TGFbeta, GP100, GPRC5D, CD30 and CD16A;

L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers;

wherein said antigen binding polypeptide complex further comprises at least one of the following (i)-(xxi):

(i) an Fc region having an optional immunoglobulin hinge, wherein the immunoglobulin hinge comprises an upper hinge region, a middle hinge region, a lower hinge region, or a combination thereof;

(ii) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6 and L7 having a length of from about 1 amino acid to about 50 amino acids;

(iii) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6 and L7 selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, 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: 679, SEQ ID NO: 680, SEQ ID NO: 681, SEQ ID NO: 682, SEQ ID NO: 683, SEQ ID NO: 684, SEQ ID NO: 685, and SEQ ID NO: 686, or a sequence having at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, or at least 95% identity to any one of SEQ ID NOs:1-19 and 679-686;

(iv) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6 and L7 which is non-immunogenic;

(v) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6 and L7 wherein said linker does not contain a consensus T cell epitope;

(vi) an Fc region comprising at least one knob-into-hole modification;

(vii) a detectable label;

(viii) a detectable label selected from the group consisting of a radioactive label, chemiluminescent label, fluorescent label, enzyme, or peptide tag, or a combination thereof;

(ix) a peptide tag;

(x) a peptide tag selected from a polyhisitidine tag consisting of from about 4 to about 10 histidine residues;

(xi) a peptide tag having about 8 histidine residues;

- (xii) the polypeptide is conjugated to an agent to form an antibody-agent conjugate;
- (xiii) an antibody-agent conjugate wherein the agent is selected from the group consisting of a cytotoxic agent, an immunomodulating agent, an imaging agent, a therapeutic protein, or a combination thereof;
- (xiv) an antigen binding polypeptide having an equilibrium dissociation constant (KD) of from about 10 μ M to about 1 pM when bound to an epitope on a target antigen or when complexed with another antigen binding polypeptide to form an antigen binding polypeptide complex having at least two antigen binding polypeptides;
- (xv) an antibody or antigen binding fragment thereof;
- (xvi) an antibody or antigen binding fragment thereof selected from the group consisting of IgG, IgM, IgE, IgA or IgD;
- (xvii) an antibody or antigen binding fragment thereof selected from an IgG antibody selected from the group consisting of IgG1, IgG2, IgG3 or IgG4;
- (xviii) an antibody or antigen binding fragment selected from the group consisting of Fab, scFab, Fab', F(ab')₂, Fv or scFv;
- (xix) an antigen binding polypeptide having an effector function mutation;
- (xx) an antigen bind polypeptide which, when formed into an antigen binding polypeptide complex, is an IgG1 or IgG4 antibody and the knob-into-hole modification comprises:
 - (i) knob substitutions of S354C and T366W and hole substitutions of Y349C, T366S, L368A and Y407V;
 - (ii) hole substitutions of L234A, L235A and P239A;
 - (iii) hole substitutions of L234A and L235A;
 - (iv) hole substitutions of M428L and N433S;
 - (v) hole substitutions of M252Y, S254T and T256E; or
 - (vi) a combination thereof, based on the EU numbering scheme; and
- (xxi) an antigen binding polypeptide as part of a chimeric receptor antigen.

14. The antigen binding polypeptide complex of any one of claims 1-13, wherein VH1, VL1, VH4 and VL4 specifically bind to the same antigen; VH2, VL2, VH5 and VL5 specifically bind to the same antigen; and VH3, VL3, VH6 and VL6 specifically bind to the same antigen.

15. The antigen binding polypeptide complex of any one of claims 1-13, wherein VL1, VL2, VL3 and VL4 specifically bind to different antigens.

16. The antigen binding polypeptide complex of any one of claims 1-13, wherein VL1, VL2, VL3, VL4 and VL5 specifically bind to different antigens.

17. The antigen binding polypeptide complex of any one of claims 1-13, wherein VL1, VL2, VL3, VL4, VL5 and VL6 specifically bind to different antigens.

18. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;

VH1-VH2-VH3-VL3-VL2-VL1;

VL1-VH2-VL3-VH3-VL2-VH1;

VH1-VL2-VH3-VL3-VH2-VL1;

VL1-VL2-VH3-VL3-VH2-VH1;

VH1-VH2-VL3-VH3-VL2-VL1;

VL1-VH2-VH3-VL3-VL2-VH1;

VH1-VL2-VL3-VH3-VH2-VL1;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein; and

L1, L2, L3, L4 and L5 are amino acid linkers.

19. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;

VH1-VH2-VH3-VL3-VL2-VL1;

VL1-VH2-VL3-VH3-VL2-VH1;

VH1-VL2-VH3-VL3-VH2-VL1;

VL1-VL2-VH3-VL3-VH2-VH1;

VH1-VH2-VL3-VH3-VL2-VL1;

VL1-VH2-VH3-VL3-VL2-VH1;

VH1-VL2-VL3-VH3-VH2-VL1;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein the second polypeptide has a structure represented by:

VL4-VH4;

VH4-VL4;

VL4-L6-VH4;

VH4-L6-VL4;

VL4-VL5-VH5-VH4;

VH4-VH5-VL5-VL4;

VL4-L6-VL5-L7-VH5-L8-VH4;

VH4-L6-VH5-L7-VL5-L8-VL4;
 VL4-VL5-VL6-VH6-VH5-VH4;
 VH4-VH5-VH6-VL6-VL5-VL4;
 VL4-VH5-VL6-VH6-VL5-VH4;
 VH4-VL5-VH6-VL6-VH5-VL4;
 VL4-VL5-VII6-VL6-VII5-VII4;
 VH4-VH5-VL6-VH6-VL5-VL4;
 VL4-VH5-VH6-VL6-VL5-VH4;
 VH4-VL5-VL6-VH6-VH5-VL4;
 VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4;
 VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4;
 VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4;
 VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4;
 VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4;
 VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or
 VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4;
 wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH4 is a fourth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to an HIV protein; and

L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 are amino acid linkers.

20. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-Fc;

VH1-VH2-VH3-VL3-VL2-VL1-Fc;

VL1-VH2-VL3-VH3-VL2-VH1-Fc;

VH1-VL2-VH3-VL3-VH2-VL1-Fc;

VL1-VL2-VH3-VL3-VH2-VH1-Fc;

VH1-VH2-VL3-VH3-VL2-VL1-Fc;

VL1-VH2-VH3-VL3-VL2-VH1-Fc;

VH1-VL2-VL3-VH3-VH2-VL1-Fc;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and

L1, L2, L3, L4, L5 and L6 are amino acid linkers.

21. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-Fc-Fc;
 VH1-VH2-VH3-VL3-VL2-VL1-Fc-Fc;
 VL1-VH2-VL3-VH3-VL2-VH1-Fc-Fc;
 VH1-VL2-VH3-VL3-VH2-VL1-Fc-Fc;
 VL1-VL2-VH3-VL3-VH2-VH1-Fc-Fc;
 VH1-VH2-VL3-VH3-VL2-VL1-Fc-Fc;
 VL1-VH2-VH3-VL3-VL2-VH1-Fc-Fc;
 VH1-VL2-VL3-VH3-VH2-VL1-Fc-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc-Fc;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc-L7-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc-L7-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc-Fc;
 VL1-L1-VII2-L2-VL3-L3-VII3-L4-VL2-L5-VII1-L6-Fc-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc-L7-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc-L7-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc-L7-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc-L7-Fc;
 L1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc-L7-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc-Fc; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc-L7-Fc;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and

L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

22. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide,

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-Fc;

VH1-VH2-VH3-VL3-VL2-VL1-Fc;

VL1-VH2-VL3-VH3-VL2-VH1-Fc;

VH1-VL2-VH3-VL3-VH2-VL1-Fc;

VL1-VL2-VH3-VL3-VH2-VH1-Fc;

VH1-VH2-VL3-VH3-VL2-VL1-Fc;

VL1-VH2-VH3-VL3-VL2-VH1-Fc;

VH1-VL2-VL3-VH3-VH2-VL1-Fc;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc;

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc; or

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc;

wherein the second polypeptide has a structure represented by:

Fc;

VL4-VH4-Fc;

VH4-VL4-Fc;

VL4-L7-VII4-Fc;

VH4-L7-VL4-Fc;

VL4-L7-VH4-L8-Fc;

VH4-L7-VL4-L8-Fc;

VL4-VL5-VH5-VH4-Fc;

VH4-VH5-VL5-VL4-Fc;

VL4-L7-VL5-L8-VH5-L9-VH4-Fc;

VH4-L7-VH5-L8-VL5-L9-VL4-Fc;

VL4-L7-VL5-L8-VH5-L9-VH4-L10-Fc;

VH4-L7-VH5-L8-VL5-L9-VL4-L10-Fc;

VL4-VL5-VL6-VH6-VH5-VH4-Fc;

VH4-VH5-VH6-VL6-VL5-VL4-Fc;

VL4-VH5-VL6-VH6-VL5-VH4-Fc;

VH4-VL5-VH6-VL6-VH5-VL4-Fc;

VL4-VL5-VH6-VL6-VH5-VH4-Fc;

VH4-VH5-VL6-VH6-VL5-VL4-Fc;

VL4-VH5-VH6-VL6-VL5-VH4-Fc;

VH4-VL5-VL6-VH6-VH5-VL4-Fc;

VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-Fc;

VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-Fc;

VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-Fc;

VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-Fc;

VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-Fc;

VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-Fc;

VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-Fc;

VH4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VL4-Fc;

VL4-L7-VL5-L8-VL6-L9-VH6-L10-VH5-L11-VH4-L12-Fc;

VH4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VL4-L12-Fc;

VL4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VH4-L12-Fc;
VH4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VL4-L12-Fc;
VL4-L7-VL5-L8-VH6-L9-VL6-L10-VH5-L11-VH4-L12-Fc;
VH4-L7-VH5-L8-VL6-L9-VH6-L10-VL5-L11-VL4-L12-Fc;
VL4-L7-VH5-L8-VH6-L9-VL6-L10-VL5-L11-VH4-L12-Fc; or
VII4-L7-VL5-L8-VL6-L9-VII6-L10-VII5-L11-VL4-L12-Fc;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH4 is a fourth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge; and

L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11 and L12 are amino acid linkers.

23. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL;
 VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1;
 VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL;
 VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1;
 VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL;
 VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1;
 VH1-VL2-VH3-VL3-VH2-VL1-CH1-CL;
 VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1;
 VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL;
 VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1;
 VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL;
 VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1;
 VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL;
 VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1;
 VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL;
 VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-CL;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-L7-CL;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-CH1;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-CH1;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-L7-CH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-CL;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-CL;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-L7-CL;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-CH1;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-CH1;
VL1-L1-VII2-L2-VL3-L3-VII3-L4-VL2-L5-VII1-L6-CL-CII1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-CL;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-CL;

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-L7-CL;

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-CH1;

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-CH1; or

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-L7-CH1;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

CH1 is a heavy chain constant region 1;

CL is a light chain constant region; and

L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

24. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-CH1;

VL1-VL2-VL3-VH3-VH2-VH1-CL;

VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL;

VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1;

VH1-VH2-VH3-VL3-VL2-VL1-CH1;

VH1-VH2-VH3-VL3-VL2-VL1-CL;

VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL;

VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1;

VL1-VH2-VL3-VH3-VL2-VH1-CH1;

VL1-VH2-VL3-VH3-VL2-VH1-CL;
VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL;
VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1;
VH1-VL2-VH3-VL3-VH2-VL1-CH1;
VH1-VL2-VH3-VL3-VH2-VL1-CL;
VII1-VL2-VII3-VL3-VII2-VL1-CH1-CL;
VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1;
VL1-VL2-VH3-VL3-VH2-VH1-CH1;
VL1-VL2-VH3-VL3-VH2-VH1-CL;
VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL;
VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1;
VH1-VH2-VL3-VH3-VL2-VL1-CH1;
VH1-VH2-VL3-VH3-VL2-VL1-CL;
VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL;
VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1;
VL1-VH2-VH3-VL3-VL2-VH1-CH1;
VL1-VH2-VH3-VL3-VL2-VH1-CL;
VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL;
VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1;
VH1-VL2-VL3-VH3-VH2-VL1-CH1;
VH1-VL2-VL3-VH3-VH2-VL1-CL;
VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL;
VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-CH1;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CL-L7-CH1;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-CL;
VII1-L1-VII2-L2-VII3-L3-VL3-L4-VL2-L5-VL1-L6-CII1-CL;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-CH1;
VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-CH1;
VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-CH1;
VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1;
VL1-L1-VL2-L2-VII3-L3-VL3-L4-VII2-L5-VII1-L6-CL-CII1;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-CH1;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CL-L7-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH1-L7-CL;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-CH1;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CL-L7-CH1;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-CL;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-CL;

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH1-L7-CL;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-CH1;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-CH1; or
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CL-L7-CH1;
wherein the second polypeptide has a structure represented by:
VL4-VII4-CII1;
VL4-VH4-CL;
VL4-VH4-CH1-CL;
VL4-VH4-CL-CH1;
VH4-VL4-CH1;
VH4-VL4-CL;
VH4-VL4-CH1-CL;
VH4-VL4-CL-CH1;
VL4-L8-VH4-CH1;
VL4-L8-VH4-CL;
VL4-L8-VH4-CH1-CL;
VL4-L8-VH4-CL-CH1;
VH4-L8-VL4-CH1;
VH4-L8-VL4-CL;
VH4-L8-VH4-CH1-CL;
VH4-L8-VH4-CL-CH1;
VL4-VL5-VH5-VH4-CH1;
VL4-VL5-VH5-VH4-CL;
VL4-VL5-VH5-VH4-CH1-CL;
VL4-VL5-VH5-VH4-CL-CH1;
VH4-VH5-VL5-VL4-CH1;
VH4-VH5-VL5-VL4-CL;
VH4-VH5-VL5-VL4-CH1-CL;
VH4-VH5-VL5-VL4-CL-CH1;
VL4-L8-VL5-L9-VH5-L10-VH4-CH1;
VL4-L8-VL5-L9-VH5-L10-VH4-CL;
VL4-L8-VL5-L9-VH5-L10-VH4-CH1-CL;
VL4-L8-VL5-L9-VH5-L10-VH4-CL-CH1;

VH4-L8-VH5-L9-VL5-L10-VL4-CH1;
VH4-L8-VH5-L9-VL5-L10-VL4-CL;
VH4-L8-VH5-L9-VL5-L10-VL4-CH1-CL;
VH4-L8-VH5-L9-VL5-L10-VL4-CL-CH1;
VL4-VL5-VL6-VH6-VH5-VH4-CH1;
VL4-VL5-VL6-VH6-VH5-VH4-CL;
VL4-VL5-VL6-VH6-VH5-VH4-CH1-CL;
VL4-VL5-VL6-VH6-VH5-VH4-CL-CH1;
VH4-VH5-VH6-VL6-VL5-VL4-CH1;
VH4-VH5-VH6-VL6-VL5-VL4-CL;
VH4-VH5-VH6-VL6-VL5-VL4-CH1-CL;
VH4-VH5-VH6-VL6-VL5-VL4-CL-CH1;
VL4-VH5-VL6-VH6-VL5-VH4-CH1;
VL4-VH5-VL6-VH6-VL5-VH4-CL;
VL4-VH5-VL6-VH6-VL5-VH4-CH1-CL;
VL4-VH5-VL6-VH6-VL5-VH4-CL-CH1;
VH4-VL5-VH6-VL6-VH5-VL4-CH1;
VH4-VL5-VH6-VL6-VH5-VL4-CL;
VH4-VL5-VH6-VL6-VH5-VL4-CH1-CL;
VH4-VL5-VH6-VL6-VH5-VL4-CL-CH1;
VL4-VL5-VH6-VL6-VH5-VH4-CH1;
VL4-VL5-VH6-VL6-VH5-VH4-CL;
VL4-VL5-VH6-VL6-VH5-VH4-CH1-CL;
VL4-VL5-VH6-VL6-VH5-VH4-CL-CH1;
VH4-VH5-VL6-VH6-VL5-VL4-CH1;
VH4-VH5-VL6-VH6-VL5-VL4-CL;
VH4-VH5-VL6-VH6-VL5-VL4-CH1-CL;
VH4-VH5-VL6-VH6-VL5-VL4-CL-CH1;
VL4-VH5-VH6-VL6-VL5-VH4-CH1;
VL4-VH5-VH6-VL6-VL5-VH4-CL;
VL4-VH5-VH6-VL6-VL5-VH4-CH1-CL;
VL4-VH5-VH6-VL6-VL5-VH4-CL-CH1;
VH4-VL5-VL6-VH6-VH5-VL4-CH1;

VH4-VL5-VL6-VH6-VH5-VL4-CL;
VH4-VL5-VL6-VH6-VH5-VL4-CH1-CL;
VH4-VL5-VL6-VH6-VH5-VL4-CL-CH1;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CH1;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CL;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CH1-CL;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-CL-CH1;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CH1;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CL;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CH1-CL;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-CL-CH1;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CH1;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CL;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CH1-CL;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-CL-CH1;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CH1;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CL;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CH1-CL;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-CL-CH1;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CH1;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CL;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CH1-CL;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-CL-CH1;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CH1;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CL;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CH1-CL;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-CL-CH1;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-CH1;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-CL;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-CH1-CL;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-CL-CH1;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-CH1;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-CL;

VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-CH1-CL;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-CL-CH1;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CH1;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CL;
VL4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VH4-L13-CH1-CL;
VL4-L8-VL5-L9-VL6-L10-VII6-L11-VII5-L12-VII4-L13-CL-CII1;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CH1;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CL;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CH1-CL;
VH4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VL4-L13-CL-CH1;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CH1;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CL;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CH1-CL;
VL4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VH4-L13-CL-CH1;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CH1;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CL;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CH1-CL;
VH4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VL4-L13-CL-CH1;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CH1;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CL;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CH1-CL;
VL4-L8-VL5-L9-VH6-L10-VL6-L11-VH5-L12-VH4-L13-CL-CH1;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CH1;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CL;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CH1-CL;
VH4-L8-VH5-L9-VL6-L10-VH6-L11-VL5-L12-VL4-L13-CL-CH1;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CH1;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CL;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CH1-CL;
VL4-L8-VH5-L9-VH6-L10-VL6-L11-VL5-L12-VH4-L13-CH1;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CH1;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CL;
VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CH1-CL; or

VH4-L8-VL5-L9-VL6-L10-VH6-L11-VH5-L12-VL4-L13-CL-CH1;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH4 is a fourth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

CH1 is a heavy chain constant region 1;

CL is a light chain constant region; and

L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and L13 are amino acid linkers.

25. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide,

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-CH1-Fc;
VH1-VH2-VH3-VL3-VL2-VL1-CH1-Fc;
VL1-VH2-VL3-VH3-VL2-VH1-CH1-Fc;
VH1-VL2-VH3-VL3-VH2-VL1-CH1-Fc;
VL1-VL2-VH3-VL3-VH2-VH1-CH1-Fc;
VII1-VII2-VL3-VII3-VL2-VL1-CH1-Fc;
VL1-VH2-VH3-VL3-VL2-VH1-CH1-Fc;
VH1-VL2-VL3-VH3-VH2-VL1-CH1-Fc;
VL1-VL2-VL3-VH3-VH2-VH1-CL-Fc;
VH1-VH2-VH3-VL3-VL2-VL1-CL-Fc;
VL1-VH2-VL3-VH3-VL2-VH1-CL-Fc;
VH1-VL2-VH3-VL3-VH2-VL1-CL-Fc;
VL1-VL2-VH3-VL3-VH2-VH1-CL-Fc;
VH1-VH2-VL3-VH3-VL2-VL1-CL-Fc;
VL1-VH2-VH3-VL3-VL2-VH1-CL-Fc;
VH1-VL2-VL3-VH3-VH2-VL1-CL-Fc;
VL1-VL2-VL3-VH3-VH2-VH1-CH1-CL-Fc;
VH1-VH2-VH3-VL3-VL2-VL1-CH1-CL-Fc;
VL1-VH2-VL3-VH3-VL2-VH1-CH1-CL-Fc;
VH1-VL2-VH3-VL3-VH2-VL1-CH1-CL-Fc;
VL1-VL2-VH3-VL3-VH2-VH1-CH1-CL-Fc;
VH1-VH2-VL3-VH3-VL2-VL1-CH1-CL-Fc;
VL1-VH2-VH3-VL3-VL2-VH1-CH1-CL-Fc;
VH1-VL2-VL3-VH3-VH2-VL1-CH1-CL-Fc;
VL1-VL2-VL3-VH3-VH2-VH1-CL-CH1-Fc;
VH1-VH2-VH3-VL3-VL2-VL1-CL-CH1-Fc;
VL1-VH2-VL3-VH3-VL2-VH1-CL-CH1-Fc;
VH1-VL2-VH3-VL3-VH2-VL1-CL-CH1-Fc;
VL1-VL2-VH3-VL3-VH2-VH1-CL-CH1-Fc;
VH1-VH2-VL3-VH3-VL2-VL1-CL-CH1-Fc;
VL1-VH2-VH3-VL3-VL2-VH1-CL-CH1-Fc;
VH1-VL2-VL3-VH3-VH2-VL1-CL-CH1-Fc;
VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-Fc;
 VL1-L1-VII2-L2-VII3-L3-VL3-L4-VL2-L5-VII1-CII1-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CL-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH1-CL-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH1-CL-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH1-CL-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH1-CL-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH1-CL-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH1-CL-Fc;
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH1-CL-Fc;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH1-CL-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1-Fc;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CL-CH1-Fc;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CL-CH1-Fc;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CL-CH1-Fc;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CL-CH1-Fc;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CL-CH1-Fc;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CL-CH1-Fc; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CL-CH1-Fc
 wherein the second polypeptide has a structure represented by:
 Fc;

VL4-VH4-CH1-Fc;
VL4-VH4-CL-Fc;
VL4-VH4-CH1-CL-Fc;
VL4-VH4-CL-CH1-Fc;
VH4-VL4-CH1-Fc;
VII4-VL4-CL-Fc;
VH4-VL4-CH1-CL-Fc;
VH4-VL4-CL-CH1-Fc;
VL4-L6-VH4-CH1-Fc;
VL4-L6-VH4-CL-Fc;
VL4-L6-VH4-CH1-CL-Fc;
VL4-L6-VH4-CL-CH1-Fc;
VH4-L6-VL4-CH1-Fc;
VH4-L6-VL4-CL-Fc;
VH4-L6-VL4-CH1-CL-Fc;
VH4-L6-VL4-CL-CH1-Fc;
VL4-CL-VH4-CH1-Fc;
VH4-CL-VL4-CH1-Fc;
VL4-CH1-VH4-CL-Fc;
VH4-CH1-VL4-CL-Fc;
VL4-L6-CL-L7-VH4-L8-CH1-Fc;
VL4-L6-CL-L7-VH4-L8-CH1-L9-Fc;
VH4-L6-CL-L7-VL4-L8-CH1-Fc;
VH4-L6-CL-L7-VL4-L8-CH1-L9-Fc;
VL4-L6-CH1-L7-VH4-L8-CL-Fc;
VL4-L6-CH1-L7-VH4-L8-CL-L9-Fc;
VH4-L6-CH1-L7-VL4-L8-CL-Fc;
VH4-L6-CH1-L7-VL4-L8-CL-L9-Fc;
VL4-VL5-VH5-VH4-CH1-Fc;
VL4-VL5-VH5-VH4-CL-Fc;
VL4-VL5-VH5-VH4-CH1-CL-Fc;
VL4-VL5-VH5-VH4-CL-CH1-Fc;
VH4-VH5-VL5-VL4-CH1-Fc;

VH4-VH5-VL5-VL4-CL-Fc;
VH4-VH5-VL5-VL4-CH1-CL-Fc;
VH4-VH5-VL5-VL4-CL-CH1-Fc;
VL4-L6-VL5-L7-VH5-L8-VH4-CH1-Fc;
VL4-L6-VL5-L7-VH5-L8-VH4-CL-Fc;
VL4-L6-VL5-L7-VII5-L8-VII4-CH1-CL-Fc;
VL4-L6-VL5-L7-VH5-L8-VH4-CL-CH1-Fc;
VH4-L6-VH5-L7-VL5-L8-VL4-CH1-Fc;
VH4-L6-VH5-L7-VL5-L8-VL4-CL-Fc;
VH4-L6-VH5-L7-VL5-L8-VL4-CH1-CL-Fc;
VH4-L6-VH5-L7-VL5-L8-VL4-CL-CH1-Fc;
VL4-VL5-VL6-VH6-VH5-VH4-CH1-Fc;
VL4-VL5-VL6-VH6-VH5-VH4-CL-Fc;
VL4-VL5-VL6-VH6-VH5-VH4-CH1-CL-Fc;
VL4-VL5-VL6-VH6-VH5-VH4-CL-CH1-Fc;
VH4-VH5-VH6-VL6-VL5-VL4-CH1-Fc;
VH4-VH5-VH6-VL6-VL5-VL4-CL-Fc;
VH4-VH5-VH6-VL6-VL5-VL4-CH1-CL-Fc;
VH4-VH5-VH6-VL6-VL5-VL4-CL-CH1-Fc;
VL4-VH5-VL6-VH6-VL5-VH4-CH1-Fc;
VL4-VH5-VL6-VH6-VL5-VH4-CL-Fc;
VL4-VH5-VL6-VH6-VL5-VH4-CH1-CL-Fc;
VL4-VH5-VL6-VH6-VL5-VH4-CL-CH1-Fc;
VH4-VL5-VH6-VL6-VH5-VL4-CH1-Fc;
VH4-VL5-VH6-VL6-VH5-VL4-CL-Fc;
VH4-VL5-VH6-VL6-VH5-VL4-CH1-CL-Fc;
VH4-VL5-VH6-VL6-VH5-VL4-CL-CH1-Fc;
VL4-VL5-VH6-VL6-VH5-VH4-CH1-Fc;
VL4-VL5-VH6-VL6-VH5-VH4-CL-Fc;
VL4-VL5-VH6-VL6-VH5-VH4-CH1-CL-Fc;
VL4-VL5-VH6-VL6-VH5-VH4-CL-CH1-Fc;
VH4-VH5-VL6-VH6-VL5-VL4-CH1-Fc;
VH4-VH5-VL6-VH6-VL5-VL4-CL-Fc;

VH4-VH5-VL6-VH6-VL5-VL4-CH1-CL-Fc;
VH4-VH5-VL6-VH6-VL5-VL4-CL-CH1-Fc;
VL4-VH5-VH6-VL6-VL5-VH4-CH1-Fc;
VL4-VH5-VH6-VL6-VL5-VH4-CL-Fc;
VL4-VH5-VH6-VL6-VL5-VH4-CH1-CL-Fc;
VL4-VII5-VII6-VL6-VL5-VII4-CL-CIII1-Fc;
VH4-VL5-VL6-VH6-VH5-VL4-CH1-Fc;
VH4-VL5-VL6-VH6-VH5-VL4-CL-Fc;
VH4-VL5-VL6-VH6-VH5-VL4-CH1-CL-Fc;
VH4-VL5-VL6-VH6-VH5-VL4-CL-CH1-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-CH1-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-CL-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-CH1-CL-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-CL-CH1-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-CH1-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-CL-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-CH1-CL-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-CL-CH1-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-CH1-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-CL-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-CH1-CL-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-CL-CH1-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-CH1-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-CL-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-CH1-CL-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-CL-CH1-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-CH1-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-CL-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-CH1-CL-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-CL-CH1-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CH1-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CL-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CH1-CL-Fc;

VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-CL-CH1-Fc;
VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CH1-Fc;
VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CL-Fc;
VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CH1-CL-Fc;
VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-CL-CH1-Fc;
VII4-L6-VL5-L7-VL6-L8-VII6-L9-VII5-L10-VL4-CII1-Fc;
VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CL-Fc;
VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CH1-CL-Fc;
VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-CL-CH1-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CH1-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CL-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CH1-CL-Fc;
VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4-L11-CL-CH1-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CH1-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CL-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CH1-CL-Fc;
VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4-L11-CL-CH1-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CH1-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CL-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CH1-CL-Fc;
VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4-L11-CL-CH1-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CH1-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CL-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CH1-CL-Fc;
VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4-L11-CL-CH1-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CH1-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CL-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CH1-CL-Fc;
VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4-L11-CL-CH1-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CH1-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CL-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CH1-CL-Fc;
VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4-L11-CL-CH1-Fc;

VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CH1-Fc;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CL-Fc;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CH1-CL-Fc;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4-L11-CL-CH1-Fc;
 VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CH1-Fc;
 VII4-L6-VL5-L7-VL6-L8-VII6-L9-VII5-L10-VL4-L11-CL-Fc;
 VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CH1-CL-Fc; or
 VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4-L11-CL-CH1-Fc;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH4 is a fourth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge;

CH1 is a heavy chain constant region 1;

CL is a light chain constant region; and

L1, L2, L3, L4, L5, L6, L7, L8, L9, L10 and L11 are amino acid linkers.

26. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-CH3-CH3;

VH1-VH2-VH3-VL3-VL2-VL1-CH3-CH3;

VL1-VH2-VL3-VH3-VL2-VH1-CH3-CH3;

VH1-VL2-VH3-VL3-VH2-VL1-CH3-CH3;

VL1-VL2-VH3-VL3-VH2-VH1-CH3-CH3;

VH1-VH2-VL3-VH3-VL2-VL1-CH3-CH3;

VL1-VH2-VH3-VL3-VL2-VH1-CH3-CH3;

VH1-VL2-VL3-VH3-VH2-VL1-CH3-CH3;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-CH3-CH3;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-CH3-CH3;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-CH3-CH3;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-CH3-CH3;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-CH3-CH3;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-CH3-CH3;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-CH3-CH3;

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-CH3-CH3;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH3-CH3;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH3-CH3;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH3-CH3;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH3-CH3;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH3-CH3;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH3-CH3;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH3-CH3;

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-CH3-CH3;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-CH3-L7-CH3;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-CH3-L7-CH3;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-CH3-L7-CH3;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-CH3-L7-CH3;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-CH3-L7-CH3;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-CH3-L7-CH3;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-CH3-L7-CH3; or
 VII1-L1-VL2-L2-VL3-L3-VII3-L4-VII2-L5-VL1-L6-CII3-L7-CII3;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

CH3 is an immunoglobulin heavy chain constant region 3; and

L1, L2, L3, L4, L5, L6 and L7 are amino acid linkers.

27. An antigen binding polypeptide complex comprising a first polypeptide, a second polypeptide, and a third polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;
 VH1-VH2-VH3-VL3-VL2-VL1;
 VL1-VH2-VL3-VH3-VL2-VH1;
 VH1-VL2-VH3-VL3-VH2-VL1;
 VL1-VL2-VH3-VL3-VH2-VH1;
 VH1-VH2-VL3-VH3-VL2-VL1;
 VL1-VH2-VH3-VL3-VL2-VH1;
 VH1-VL2-VL3-VH3-VH2-VL1;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;
 VII1-L1-VII2-L2-VL3-L3-VII3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein the second polypeptide has a structure represented by:

VL4-VL5;
 VL4-L6-VL5;
 VL4-VL5-VL6;
 VL4-L6-VL5-L7-VL6;
 VL4-CL;
 VL4-L6-CL;
 VL4-VL5-CL;
 VL4-L6-VL5-CL;
 VL4-L6-VL5-L7-CL;
 VL4-VL5-VL6-CL;
 VL4-L6-VL5-L7-VL6-CL;
 VL4-L6-VL5-L7-VL6-L8-CL;
 VL4-CH1;
 VL4-L6-CH1;
 VL4-VL5-CH1;
 VL4-L6-VL5-CH1;
 VL4-L6-VL5-L7-CH1;
 VL4-VL5-VL6-CH1;
 VL4-L6-VL5-L7-VL6-CH1; or
 VL4-L6-VL5-L7-VL6-L8-CH1;

wherein the third polypeptide has a structure represented by:

VH4-VH5;
 VH4-L9-VH5;
 VH4-VH5-VH6;

VH4-L9-VH5-L10-VH6;
 VH4-CH1;
 VH4-L9-CH1;
 VH4-VH5-CH1;
 VH4-L9-VH5-CH1;
 VII4-L9-VII5-L10-CII1;
 VH4-VH5-VH6-CH1;
 VH4-L9-VH5-L10-VH6-CH1;
 VH4-L9-VH5-L10-VH6-L11-CH1;
 VH4-CL;
 VH4-L9-CL;
 VH4-VH5-CL;
 VH4-L9-VH5-CL;
 VH4-L9-VH5-L10-CL;
 VH4-VH5-VH6-CL;
 VH4-L9-VH5-L10-VH6-CL;
 VH4-L9-VH5-L10-VH6-L11-CL

or

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH4 is a fourth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

CH1 is a heavy chain constant region 1;

CL is a light chain constant region; and

L1, L2, L3, L4, L5, L6, L7, L8, L9, L10 and L11 are amino acid linkers.

28. An antigen binding polypeptide complex comprising a first polypeptide, a second polypeptide, and a third polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-Fc;

VH1-VH2-VH3-VL3-VL2-VL1-Fc;

VL1-VH2-VL3-VH3-VL2-VH1-Fc;

VH1-VL2-VH3-VL3-VH2-VL1-Fc;

VL1-VL2-VH3-VL3-VH2-VH1-Fc;

VH1-VH2-VL3-VH3-VL2-VL1-Fc;

VL1-VH2-VH3-VL3-VL2-VH1-Fc;

VH1-VL2-VL3-VH3-VH2-VL1-Fc;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc;
VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc;
VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc;
VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc;
VL1-L1-VII2-L2-VII3-L3-VL3-L4-VL2-L5-VII1-L6-Fc;
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc; or
VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc;
wherein the second polypeptide has a structure represented by:

VL4-VL5;
VL4-L7-VL5;
VL4-CL;
VL4-L7-CL;
VL4-CH1;
VL4-L7-CH1;
VH4-VH5;
VH4-L7-VH5;
VH4-CL;
VH4-L7-CL;
VH4-CH1;
VH4-L7-CH1;
VL4-VL5-VL6;
VL4-L7-VL5-L8-VL6;
VL4-VL5-VL6-CL;
VL4-L7-VL5-L8-VL6-CL;
VL4-L7-VL5-L8-VL6-L9-CL;
VL4-VL5-VL6-CH1;
VL4-L7-VL5-L8-VL6-CH1;
VL4-L7-VL5-L8-VL6-L9-CH1;
VH4-VH5-VH6;
VH4-L7-VH5-L8-VH6;
VH4-VH5-VH6-CL;
VH4-L7-VH5-L8-VH6-CL;

VH4-L7-VH5-L8-VH6-L9-CL;
VH4-VH5-VH6-CH1;
VH4-L7-VH5-L8-VH6-CH1; or
VH4-L7-VH5-L8-VH6-L9-CH1;
wherein the third polypeptide has a structure represented by:
VII4-VII5-Fc;
VH4-L10-VH5-Fc;
VH4-L10-VH5-L11-Fc;
VH4-CH1-Fc;
VH4-L10-CH1-Fc;
VH4-L10-CH1-L11-Fc;
VH4-CL-Fc;
VH4-L10-CL-Fc;
VH4-L10-CL-L11-Fc;
VH4-VH5-Fc;
VH4-L10-VH5-Fc;
VH4-L10-VH5-L11-Fc;
VH4-VH5-VH6-Fc;
VH4-L10-VH5-L11-VH6-Fc;
VH4-L10-VH5-L11-VH6-L12-Fc;
VH4-VH5-VH6-CH1-Fc;
VH4-L10-VH5-L11-VH6-CH1-Fc;
VH4-L10-VH5-L11-VH6-L12-CH1-Fc;
VH4-L10-VH5-L11-VH6-L12-CH1-L13-Fc;
VH4-VH5-VH6-CL-Fc;
VH4-L10-VH5-L11-VH6-CL-Fc;
VH4-L10-VH5-L11-VH6-L12-CL-Fc;
VH4-L10-VH5-L11-VH6-L12-CL-L13-Fc;
VL4-VL5-VL6-Fc;
VL4-L10-VL5-L11-VL6-Fc;
VL4-L10-VL5-L11-VL6-L12-Fc;
VL4-VL5-VL6-CH1-Fc;
VL4-L10-VL5-L11-VL6-CH1-Fc;

VL4-L10-VL5-L11-VL6-L12-CH1-Fc;
VL4-L10-VL5-L11-VL6-L12-CH1-L13-Fc;
VL4-VL5-VL6-CL-Fc;
VL4-L10-VL5-L11-VL6-CL-Fc;
VL4-L10-VL5-L11-VL6-L12-CL-Fc; or
VL4-L10-VL5-L11-VL6-L12-CL-L13-Fc;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH4 is a fourth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge;

CH1 is a heavy chain constant region 1;

CL is a light chain constant region; and

L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and L13 are amino acid linkers.

29. An antigen binding polypeptide complex comprising a first polypeptide, a second polypeptide, and a third polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1-Fc;

VH1-VH2-VH3-VL3-VL2-VL1-Fc;

VL1-VH2-VL3-VH3-VL2-VH1-Fc;

VH1-VL2-VH3-VL3-VH2-VL1-Fc;

VL1-VL2-VH3-VL3-VH2-VH1-Fc;

VH1-VH2-VL3-VH3-VL2-VL1-Fc;

VL1-VH2-VH3-VL3-VL2-VH1-Fc;

VH1-VL2-VL3-VH3-VH2-VL1-Fc;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-Fc;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1-L6-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-Fc;

VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1-L6-Fc;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-Fc;

VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1-L6-Fc;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-Fc;

VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1-L6-Fc;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-Fc;

VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1-L6-Fc;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-Fc;

VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1-L6-Fc;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-Fc;

VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1-L6-Fc;

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-Fc; or

VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1-L6-Fc;

wherein the second polypeptide has a structure represented by:

VL4-VL5-Fc;

VL4-L7-VL5-Fc;
VL4-L7-VL5-L8-Fc;
VL4-CL-Fc;
VL4-L7-CL-Fc;
VL4-L7-CL-L8-Fc;
VL4-CII1-Fc;
VL4-L7-CH1-Fc;
VL4-L7-CH1-L8-Fc;
VH4-VH5-Fc;
VH4-L7-VH5-Fc;
VH4-L7-VH5-L8-Fc;
VH4-CL-Fc;
VH4-L7-CL-Fc;
VH4-L7-CL-L8-Fc;
VH4-CH1-Fc;
VH4-L7-CH1-Fc;
VH4-L7-CH1-L8-Fc;
VL4-VL5-VL6-Fc;
VL4-L7-VL5-L8-VL6-Fc;
VL4-L7-VL5-L8-VL6-L9-Fc;
VL4-VL5-VL6-CL-Fc;
VL4-L7-VL5-L8-VL6-CL-Fc;
VL4-L7-VL5-L8-VL6-L9-CL-Fc;
VL4-L7-VL5-L8-VL6-L9-CL-L10-Fc;
VL4-VL5-VL6-CH1-Fc;
VL4-L7-VL5-L8-VL6-CH1-Fc;
VL4-L7-VL5-L8-VL6-L9-CH1-Fc;
VL4-L7-VL5-L8-VL6-L9-CH1-L10-Fc;
VH4-VH5-VH6-Fc;
VH4-L7-VH5-L8-VH6-Fc;
VH4-L7-VH5-L8-VH6-L9-Fc;
VH4-VH5-VH6-CL-Fc;
VH4-L7-VH5-L8-VH6-CL-Fc;

VH4-L7-VH5-L8-VH6-L9-CL-Fc;
VH4-L7-VH5-L8-VH6-L9-CL-L10-Fc;
VH4-VH5-VH6-CH1-Fc;
VH4-L7-VH5-L8-VH6-CH1-Fc;
VH4-L7-VH5-L8-VH6-L9-CH1-Fc; or
VII4-L7-VII5-L8-VII6-L9-CII1-L10-Fc;

wherein the third polypeptide has a structure represented by:

VH4-VH5;
VH4-L11-VH5;
VH4-CH1;
VH4-L11-CH1;
VH4-CL;
VH4-L11-CL;
VH4-VH5;
VH4-L11-VH5;
VH4-VH5-VH6;
VH4-L11-VH5-L12-VH6;
VH4-VH5-VH6-CH1;
VH4-L11-VH5-L12-VH6-CH1;
VH4-L11-VH5-L12-VH6-L13-CH1;
VH4-VH5-VH6-CL;
VH4-L11-VH5-L12-VH6-CL;
VH4-L11-VH5-L12-VH6-L13-CL;
VL4-VL5-VL6;
VL4-L11-VL5-L12-VL6;
VL4-VL5-VL6-CH1;
VL4-L11-VL5-L12-VL6-CH1;
VL4-L11-VL5-L12-VL6-L13-CH1;
VL4-VL5-VL6-CL;
VL4-L11-VL5-L12-VL6-CL; or
VL4-L11-VL5-L12-VL6-L13-CL;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL2 is a second immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL3 is a third immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to an HIV protein;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH4 is a fourth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to an HIV protein;

Fc is a region comprising an immunoglobulin heavy chain constant region 2 (CH2), an immunoglobulin heavy chain constant region 3 (CH3), and optionally, an immunoglobulin hinge;

CH1 is a heavy chain constant region 1;

CL is a light chain constant region; and

L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and L13 are amino acid linkers.

30. An antigen binding polypeptide having a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;

VH1-VH2-VH3-VL3-VL2-VL1;

VL1-VH2-VL3-VH3-VL2-VH1;
 VH1-VL2-VH3-VL3-VH2-VL1;
 VL1-VL2-VH3-VL3-VH2-VH1;
 VH1-VH2-VL3-VH3-VL2-VL1;
 VL1-VH2-VH3-VL3-VL2-VH1;
 VII1-VL2-VL3-VII3-VII2-VL1;
 VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VL2 is a second immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VL3 is a third immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

L1, L2, L3, L4 and L5 are amino acid linkers;

wherein said antigen binding polypeptide further comprises at least one of the following (i)-(xxi):

(i) an Fc region having an optional immunoglobulin hinge, wherein the immunoglobulin hinge comprises an upper hinge region, a middle hinge region, a lower hinge region, or a combination thereof;

(ii) a linker selected from the group consisting of L1, L2, L3, L4 and L5 having a length of from about 1 amino acid to about 50 amino acids;

(iii) a linker selected from the group consisting of L1, L2, L3, L4 and L5 selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, 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: 679, SEQ ID NO: 680, SEQ ID NO: 681, SEQ ID NO: 682, SEQ ID NO: 683, SEQ ID NO: 684, SEQ ID NO: 685, and SEQ ID NO: 686, or a sequence having at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, or at least 95% identity to any one of SEQ ID NOs:1-19 and 679-686;

(iv) a linker selected from the group consisting of L1, L2, L3, L4 and L5 which is non-immunogenic;

(v) a linker selected from the group consisting of L1, L2, L3, L4 and L5 wherein said linker does not contain a consensus T cell epitope;

(vi) an Fc region comprising at least one knob-into-hole modification;

(vii) a detectable label;

(viii) a detectable label selected from the group consisting of a radioactive label, chemiluminescent label, fluorescent label, enzyme, or peptide tag, or a combination thereof;

(ix) a peptide tag;

(x) a peptide tag selected from a polyhistidine tag consisting of from about 4 to about 10 histidine residues;

(xi) a peptide tag having about 8 histidine residues;

(xii) the polypeptide is conjugated to an agent to form an antibody-agent conjugate;

(xiii) an antibody-agent conjugate wherein the agent is selected from the group consisting of a cytotoxic agent, an immunomodulating agent, an imaging agent, a therapeutic protein, or a combination thereof;

(xiv) an antigen binding polypeptide having an equilibrium dissociation constant (KD)

of from about 10 μM to about 1 pM when bound to an epitope on a target antigen or when complexed with another antigen binding polypeptide to form an antigen binding polypeptide complex having at least two antigen binding polypeptides;

- (xv) an antibody or antigen binding fragment thereof;
- (xvi) an antibody or antigen binding fragment thereof selected from the group consisting of IgG, IgM, IgE, IgA or IgD;
- (xvii) an antibody or antigen binding fragment thereof selected from an IgG antibody selected from the group consisting of IgG1, IgG2, IgG3 or IgG4;
- (xviii) an antibody or antigen binding fragment selected from the group consisting of Fab, scFab, Fab', F(ab')₂, Fv or scFv;
- (xix) an antigen binding polypeptide having an effector function mutation;
- (xx) an antigen binding polypeptide which, when formed into an antigen binding polypeptide complex, is an IgG1 or IgG4 antibody and the knob-into-hole modification comprises:
 - (i) knob substitutions of S354C and T366W and hole substitutions of Y349C, T366S, L368A and Y407V;
 - (ii) hole substitutions of L234A, L235A and P239A;
 - (iii) hole substitutions of L234A and L235A;
 - (iv) hole substitutions of M428L and N433S;
 - (v) hole substitutions of M252Y, S254T and T256E; or
 - (vi) a combination thereof, based on the EU numbering scheme; and
- (xxi) an antigen binding polypeptide as part of a chimeric receptor antigen.

31. An antigen binding polypeptide complex comprising a first polypeptide and a second polypeptide;

wherein the first polypeptide has a structure represented by:

VL1-VL2-VL3-VH3-VH2-VH1;
 VH1-VH2-VH3-VL3-VL2-VL1;
 VL1-VH2-VL3-VH3-VL2-VH1;
 VH1-VL2-VH3-VL3-VH2-VL1;
 VL1-VL2-VH3-VL3-VH2-VH1;
 VH1-VH2-VL3-VH3-VL2-VL1;
 VL1-VH2-VH3-VL3-VL2-VH1;
 VH1-VL2-VL3-VH3-VH2-VL1;

VL1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VH1;
 VH1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VL3-L3-VH3-L4-VL2-L5-VH1;
 VH1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VL1;
 VL1-L1-VL2-L2-VH3-L3-VL3-L4-VH2-L5-VH1;
 VII1-L1-VII2-L2-VL3-L3-VII3-L4-VL2-L5-VL1;
 VL1-L1-VH2-L2-VH3-L3-VL3-L4-VL2-L5-VH1; or
 VH1-L1-VL2-L2-VL3-L3-VH3-L4-VH2-L5-VL1;

wherein the second polypeptide has a structure represented by:

VL4-VH4;
 VH4-VL4;
 VL4-L6-VH4;
 VH4-L6-VL4;
 VL4-VL5-VH5-VH4;
 VH4-VH5-VL5-VL4;
 VL4-L6-VL5-L7-VH5-L8-VH4;
 VH4-L6-VH5-L7-VL5-L8-VL4;
 VL4-VL5-VL6-VH6-VH5-VH4;
 VH4-VH5-VH6-VL6-VL5-VL4;
 VL4-VH5-VL6-VH6-VL5-VH4;
 VH4-VL5-VH6-VL6-VH5-VL4;
 VL4-VL5-VH6-VL6-VH5-VH4;
 VH4-VH5-VL6-VH6-VL5-VL4;
 VL4-VH5-VH6-VL6-VL5-VH4;
 VH4-VL5-VL6-VH6-VH5-VL4;
 VL4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VH4;
 VH4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VL4;
 VL4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VH4;
 VH4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VL4;
 VL4-L6-VL5-L7-VH6-L8-VL6-L9-VH5-L10-VH4;
 VH4-L6-VH5-L7-VL6-L8-VH6-L9-VL5-L10-VL4;
 VL4-L6-VH5-L7-VH6-L8-VL6-L9-VL5-L10-VH4; or
 VH4-L6-VL5-L7-VL6-L8-VH6-L9-VH5-L10-VL4;

wherein:

VL1 is a first immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VL2 is a second immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VL3 is a third immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VL4 is a fourth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VL5 is a fifth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VL6 is a sixth immunoglobulin light chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VH1 is a first immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VH2 is a second immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VH3 is a third immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VH4 is a fourth immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VH5 is a fifth immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

VH6 is a sixth immunoglobulin heavy chain variable region that specifically binds to at least one epitope on at least one antigen selected from the group consisting of Env, gp160, gp120, gp41, p17, p24, p7, p55, p66, p31, Nef, Tat, Rev, Vif, Vpr and Vpu;

L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 are amino acid linkers;

wherein said antigen binding polypeptide complex further comprises at least one of the following (i)-(xxi):

(i) an Fc region having an optional immunoglobulin hinge, wherein the immunoglobulin hinge comprises an upper hinge region, a middle hinge region, a lower hinge region, or a combination thereof;

(ii) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 having a length of from about 1 amino acid to about 50 amino acids;

(iii) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, 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: 679, SEQ ID NO: 680, SEQ ID NO: 681, SEQ ID NO: 682, SEQ ID NO: 683, SEQ ID NO: 684, SEQ ID NO: 685, and SEQ ID NO: 686, or a sequence having at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, or at least 95% identity to any one of SEQ ID NOs: 1-19 and 679-686;

(iv) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 which is non-immunogenic;

(v) a linker selected from the group consisting of L1, L2, L3, L4, L5, L6, L7, L8, L9 and L10 wherein said linker does not contain a consensus T cell epitope;

(vi) an Fc region comprising at least one knob-into-hole modification;

(vii) a detectable label;

(viii) a detectable label selected from the group consisting of a radioactive label, chemiluminescent label, fluorescent label, enzyme, or peptide tag, or a combination thereof;

(ix) a peptide tag;

(x) a peptide tag selected from a polyhisitidine tag consisting of from about 4 to about 10 histidine residues;

- (xi) a peptide tag having about 8 histidine residues;
- (xii) the polypeptide is conjugated to an agent to form an antibody-agent conjugate;
- (xiii) an antibody-agent conjugate wherein the agent is selected from the group consisting of a cytotoxic agent, an immunomodulating agent, an imaging agent, a therapeutic protein, or a combination thereof;
- (xiv) an antigen binding polypeptide having an equilibrium dissociation constant (KD) of from about 10 μ M to about 1 pM when bound to an epitope on a target antigen or when complexed with another antigen binding polypeptide to form an antigen binding polypeptide complex having at least two antigen binding polypeptides;
- (xv) an antibody or antigen binding fragment thereof;
- (xvi) an antibody or antigen binding fragment thereof selected from the group consisting of IgG, IgM, IgE, IgA or IgD;
- (xvii) an antibody or antigen binding fragment thereof selected from an IgG antibody selected from the group consisting of IgG1, IgG2, IgG3 or IgG4;
- (xviii) an antibody or antigen binding fragment selected from the group consisting of Fab, scFab, Fab', F(ab')₂, Fv or scFv;
- (xix) an antigen binding polypeptide having an effector function mutation;
- (xx) an antigen binding polypeptide which, when formed into an antigen binding polypeptide complex, is an IgG1 or IgG4 antibody and the knob-into-hole modification comprises:
 - (i) knob substitutions of S354C and T366W and hole substitutions of Y349C, T366S, L368A and Y407V;
 - (ii) hole substitutions of L234A, L235A and P239A;
 - (iii) hole substitutions of L234A and L235A;
 - (iv) holesubstitutions of M428L and N433S;
 - (v) hole substitutions of M252Y, S254T and T256E; or
 - (vi) a combination thereof, based on the EU numbering scheme; and
- (xxi) an antigen binding polypeptide as part of a chimeric receptor antigen.

32. The antigen binding polypeptide complex of any one of claims 18-31, wherein VH1, VH2, VH3 and VH4 specifically bind to different HIV proteins or to different epitopes on the same HIV protein.

33. The antigen binding polypeptide complex of any one of claims 18-31, wherein VH1, VH2, VH3, VH4 and VH5 specifically bind to different HIV proteins or to different epitopes on the same HIV protein.

34. The antigen binding polypeptide complex of any one of claims 18-31, wherein VH1, VH2, VH3, VH4, VH5 and VH6 specifically bind to different HIV proteins or to different epitopes on the same HIV protein.

35. The antigen binding polypeptide complex of any one of claims 18-34, wherein VL1, VL2, VL3 and VL4 specifically bind to different HIV proteins or to different epitopes on the same HIV protein.

36. The antigen binding polypeptide complex of any one of claims 18-34, wherein VL1, VL2, VL3, VL4 and VL5 specifically bind to different HIV proteins or to different epitopes on the same HIV protein.

37. The antigen binding polypeptide complex of any one of claims 18-34, wherein VL1, VL2, VL3, VL4, VL5 and VL6 specifically bind to different HIV proteins or to different epitopes on the same HIV protein.

38. The antigen binding polypeptide complex of any one of claims 18-31, wherein VH1, VL1, VH4 and VL4 specifically bind to the same HIV protein; VH2, VL2, VH5 and VL5 specifically bind to the same HIV protein; and VH3, VL3, VH6 and VL6 specifically bind to the same HIV protein.

39. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 18-38, wherein the HIV protein is an HIV envelope protein, an HIV structural protein, an HIV functional protein, or an HIV accessory protein.

40. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 18-39, wherein one or more of VH1, VH2, VH3, VH4, VH5 and VH6 comprises an amino acid sequence having at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identity to any one of SEQ ID NOs:349-352.

41. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 18-40, wherein one or more of VL1, VL2, VL3, VL4, VL5 and VL6 comprises an

amino acid sequence having at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identity to any one of SEQ ID NOs:353-356.

42. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 18-41 that binds to an HIV protein with an equilibrium dissociation constant (KD) of from about 10 μ M to about 1 pM.

43. An antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-17, wherein the antigen binding polypeptide or antigen polypeptide complex specifically binds to a viral peptide, protein, polypeptide, or a fragment thereof.

44. The antigen binding polypeptide or antigen binding polypeptide complex of claim 43, wherein the viral peptide is influenza virus neuraminidase, influenza virus hemagglutinin, human respiratory syncytial virus (RSV)-viral proteins, RSV F glycoprotein, RSV G glycoprotein, herpes simplex virus (HSV) viral proteins, herpes simplex virus glycoproteins gB, gC, gD, and gE, chlamydia MOMP and PorB antigens, core protein, matrix protein or other protein of Dengue virus, measles virus hemagglutinin, herpes simplex virus type 2 glycoprotein gB, poliovirus 1 VP1, envelope glycoproteins of HIV 1, hepatitis B surface antigen, diphtheria toxin, streptococcus 24M epitope, gonococcal pilin, pseudorabies virus g50 (gpD), pseudorabies virus II (gpB), pseudorabies virus III (gpC), pseudorabies virus glycoprotein H, pseudorabies virus glycoprotein E, transmissible gastroenteritis glycoprotein 195, transmissible gastroenteritis matrix protein, swine rotavirus glycoprotein 38, swine parvovirus capsid protein, Serpulina hydrodysenteriae protective antigen, bovine viral diarrhea glycoprotein 55, Newcastle disease virus hemagglutinin-neuraminidase, swine flu hemagglutinin, swine flu neuraminidase, foot and mouth disease virus, hog cholera virus, swine influenza virus, African swine fever virus, Mycoplasma mycoides subsp. mycoides, infectious bovine rhinotracheitis virus, infectious bovine rhinotracheitis virus glycoprotein E, glycoprotein G, infectious laryngotracheitis virus, infectious laryngotracheitis virus glycoprotein G or glycoprotein I, a glycoprotein of La Crosse virus, neonatal calf diarrhoea virus, Venezuelan equine encephalomyelitis virus, punta toro virus, murine leukemia virus, mouse mammary tumor virus, hepatitis B virus core protein and hepatitis B virus surface antigen or a fragment or derivative thereof, antigen of equine influenza virus or equine herpes virus, including equine influenza virus type A/ Alaska 91 neuraminidase, equine influenza virus type A/Miami 63 neuraminidase, equine influenza virus type A/Kentucky 81 neuraminidase, equine herpes virus type 1 glycoprotein B, and equine herpes virus type 1 glycoprotein D, antigen of bovine respiratory syncytial virus or bovine

parainfluenza virus, bovine respiratory syncytial virus attachment protein (BRSV G), bovine respiratory syncytial virus fusion protein (BRSV F), bovine respiratory syncytial virus nucleocapsid protein (BRSVN), bovine parainfluenza virus type 3 fusion protein, bovine parainfluenza virus type 3 hemagglutinin neuraminidase, bovine E viral diarrhoea virus glycoprotein 48 and glycoprotein 53, glycoprotein E of Dengue virus, or glycoprotein E1E2 of human hepatitis C virus.

45. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-44, wherein the immunoglobulin hinge comprises an upper hinge region, a middle hinge region, a lower hinge region, or a combination thereof.

46. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-45, wherein linkers L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and/or L13 have a length of from about 1 amino acid to about 50 amino acids.

47. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-46, wherein linkers L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12 and/or L13 comprise the amino acid sequence of g, a, gss, asg, ggssg, gssgs, gtvaa, asggs, astgg, asggsg, ggsaggssgss, sggsaggssggs, ggsaggsgsggggsasgsg, ggsaggsgsggggsasgsg, gggssgggsgsgsgsgsgsgs, ggggsgsgsgsgsggggsasgsg, gggssggsgsgsgsgsgsgsgs, sggsaggsgsgsgsgsgsgsgsgs, gsgssggggsgsgsgsgsgsgssg, ggggsgsgsgsggggssggggsgggsgsgggsgs, ggggsgsgsgsggggssggggsgggsgsgggsgssg, ggggsgsgsgsgggssggggsgggsgsgggsgggsgssss, gsgsg, gsggsagsgsggggsasgsg, ggggs, or gsggsggsgsggggsasgsg (SEQ ID NOs:1-19 and 679-686) or a sequence having at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, or at least 95% identity to any one of SEQ ID NOs:1-19 and 679-686.

48. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-47, wherein the amino acid linkers are non-immunogenic.

49. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-48, wherein the amino acid linkers do not contain a consensus T cell epitope.

50. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-49, wherein the Fc region comprises at least one knob-into-hole modification.

51. The antigen binding polypeptide complex of claim 50, wherein the antigen binding polypeptide complex is an IgG1 or IgG4 antibody and the knob-into-hole modification comprises:

(i) knob substitutions of S354C and T366W and hole substitutions of Y349C, T366S, L368A and Y407V;

(ii) hole substitutions of L234A, L235A and P239A;

(iii) hole substitutions of L234A and L235A;

(iv) hole substitutions of M428L and N433S;

(v) hole substitutions of M252Y, S254T and T256E; or

(vi) a combination thereof;

based on the EU numbering scheme.

52. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-51, wherein the antigen binding polypeptide or antigen binding polypeptide complex comprises a detectable label.

53. The antigen binding polypeptide or antigen binding polypeptide complex of claim 52, wherein the detectable label is a radioactive label, chemiluminescent label, fluorescent label, enzyme, or peptide tag, or a combination thereof.

54. The antigen binding polypeptide or antigen binding polypeptide complex of claim 53, wherein the peptide tag is a polyhistidine tag consisting of from about 4 to about 10 histidine residues.

55. The antigen binding polypeptide or antigen binding polypeptide complex of claim 54, wherein the polyhistidine tag consists of about 8 histidine residues.

56. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-55, wherein the antigen binding polypeptide or antigen binding polypeptide complex is conjugated to an agent as an antibody-drug conjugate (ADC).

57. The antigen binding polypeptide or antigen binding polypeptide complex of claim 56, wherein the agent is a cytotoxic agent, immunomodulating agent, imaging agent, or therapeutic protein, or a combination thereof.

58. The antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-57 that binds to an antigen with an equilibrium dissociation constant (K_D) of from about 10 μ M to about 1 pM.

59. An antibody or antigen binding fragment thereof comprising the antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-58.

60. The antibody or antigen binding fragment thereof of claim 59, wherein the antibody is IgG, IgM, IgE, IgA or IgD.

61. The antibody or antigen binding fragment thereof of claim 60, wherein the IgG is IgG1, IgG2, IgG3 or IgG4.

62. The antibody or antigen binding fragment thereof of claim 59, wherein the antigen binding fragment is a Fab, scFab, Fab', F(ab')₂, Fv, or scFv.

63. The antibody or antigen binding fragment thereof of claim 59, wherein the antibody is human or humanized.

64. A chimeric antigen receptor (CAR) comprising the antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-58.

65. An immune cell comprising the CAR of claim 64.

66. A pharmaceutical composition comprising (i) the antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-58, the antibody or antigen binding fragment thereof of any one of claims 59-63, the CAR of claim 64, the immune cell of claim 65, or a combination thereof, and (ii) a pharmaceutically acceptable carrier.

67. A kit comprising the antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-58, the antibody or antigen binding fragment thereof of any one of claims 59-63, the CAR of claim 64, the immune cell of claim 65, the pharmaceutical composition of claim 66, or a combination thereof.

68. A method of treating or preventing a virus infection, comprising administering to a subject in need thereof a therapeutically effective amount of the antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-58, the antibody or antigen binding fragment thereof of any one of claims 59-63, the CAR of claim 64, the immune cell of claim 65, the pharmaceutical composition of claim 66, or a combination thereof.

69. The method of claim 68, wherein the virus is influenza virus, respiratory syncytial virus (RSV), chlamydia, adenoviridae, mastadenovirus, aviadenovirus, herpesviridae, herpes simplex virus 1, herpes simplex virus 2, herpes simplex virus 5, herpes simplex virus 6, leviviridae, levivirus, enterobacteria phase MS2, allovirus, poxviridae, chordopoxvirinae, parapoxvirus, avipoxvirus, capripoxvirus, leporipoxvirus, suipoxvirus, molluscipoxvirus, entomopoxvirinae, papovaviridae, polyomavirus, papillomavirus, paramyxoviridae, paramyxovirus, parainfluenza virus 1, morbillivirus, measles virus, rubulavirus, mumps virus, pneumonovirinae, pneumovirus, metapneumo virus, avian pneumovirus, human metapneumovirus, picornaviridae, enterovirus, rhinovirus, hepatovirus, human hepatitis A virus, cardiovirus, andaptho virus, reoviridae, orthoreovirus, orbivirus, rotavirus, cypovirus, fijivirus, phytoreovirus, oryzavirus, retroviridae, mammalian type B retroviruses, mammalian type C retroviruses, avian type C retroviruses, type D retrovirus group, BLV-HTLV retroviruses, lentivirus, human immunodeficiency virus 1, human immunodeficiency virus 2, HTLV-I and -II viruses, SARS coronavirus, herpes simplex E virus, Epstein Barr virus, cytomegalovirus, hepatitis virus (HCV, HAV, HBV, HDV, HEV), toxoplasma gondii virus, treponema pallidum virus, human T-lymphotrophic virus, encephalitis virus, West Nile virus, Dengue virus, Varicella Zoster Virus, rubeola, mumps, rubella, spumavirus, flaviviridae, hepatitis C virus, hepadnaviridae, hepatitis B virus, togaviridae, alphavirus sindbis virus, rubivirus, rubella virus, rhabdoviridae, vesiculovirus, lyssavirus, ephemerovirus, cytorhabdo virus, necleorhabdo virus, arenaviridae, arenavirus, lymphocytic choriomeningitis virus, Ippy virus, lassa virus, coronaviridae, coronavirus, or torovirus.

70. A method of treating or preventing human immunodeficiency virus (HIV) infection, comprising administering to a subject in need thereof a therapeutically effective amount of the antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-58, the antibody or antigen binding fragment thereof of any one of claims 59-63, the CAR of claim 64, the immune cell of claim 65, the pharmaceutical composition of claim 66, or a combination thereof.

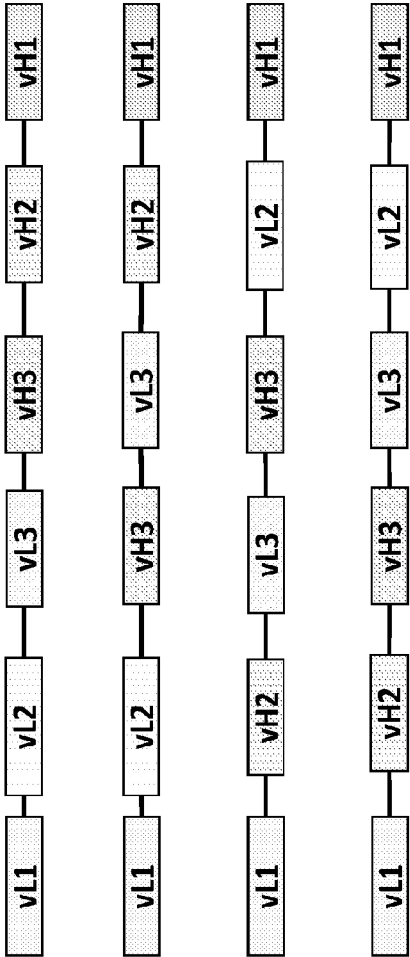
71. A method of treating or preventing acquired immune deficiency syndrome (AIDS), comprising administering to a subject in need thereof a therapeutically effective amount of the antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-58, the antibody or antigen binding fragment thereof of any one of claims 59-63, the CAR of claim 64, the immune cell of claim 65, the pharmaceutical composition of claim 66, or a combination thereof.

72. A method of treating or preventing AIDS-related complex (ARC), comprising administering to a subject in need thereof a therapeutically effective amount of the antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-58, the antibody or antigen binding fragment thereof of any one of claims 59-63, the CAR of claim 64, the immune cell of claim 65, the pharmaceutical composition of claim 66, or a combination thereof.

73. A method of treating or preventing an HIV-related opportunistic the antigen binding polypeptide or antigen binding polypeptide complex of any one of claims 1-58, the antibody or antigen binding fragment thereof of any one of claims 59-63, the CAR of claim 64, the immune cell of claim 65, the pharmaceutical composition of claim 66, or a combination thereof.

74. The method of claim 70 or 73, wherein the HIV is HIV-1.

FIG. 1A



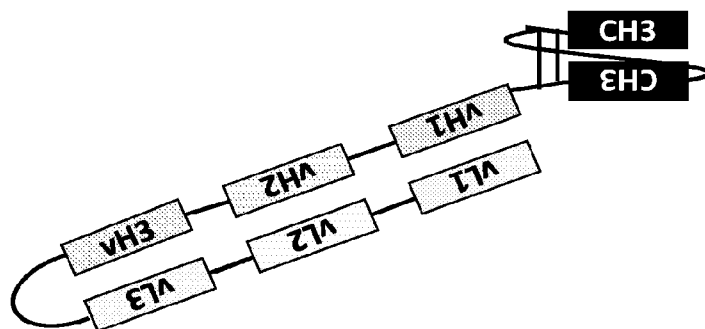


FIG. 1C

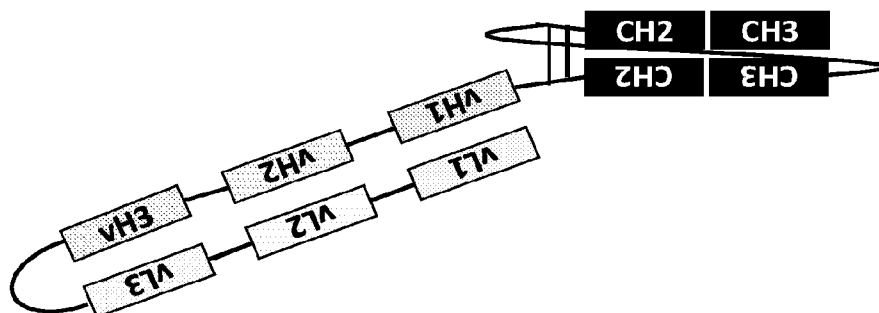


FIG. 1B

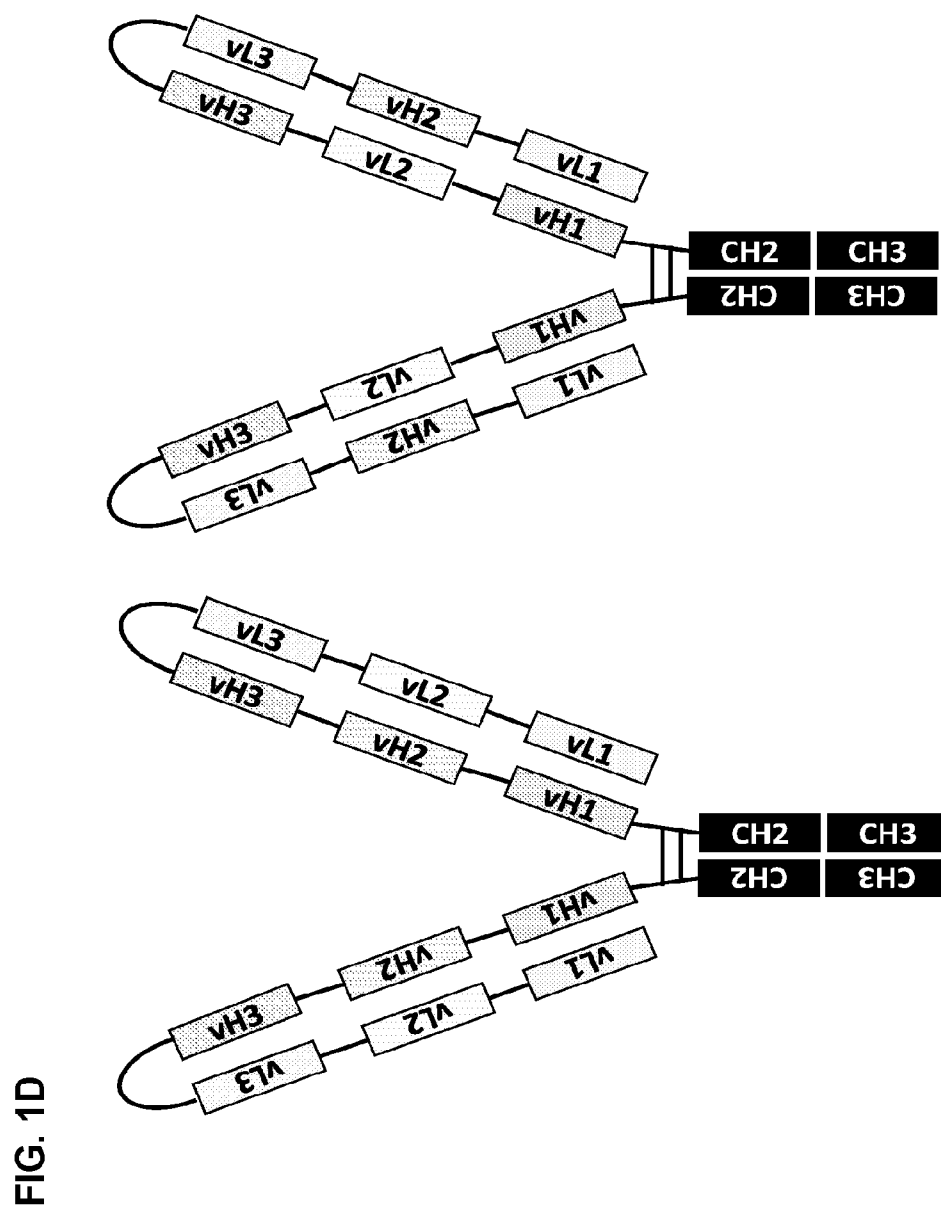


FIG. 1E

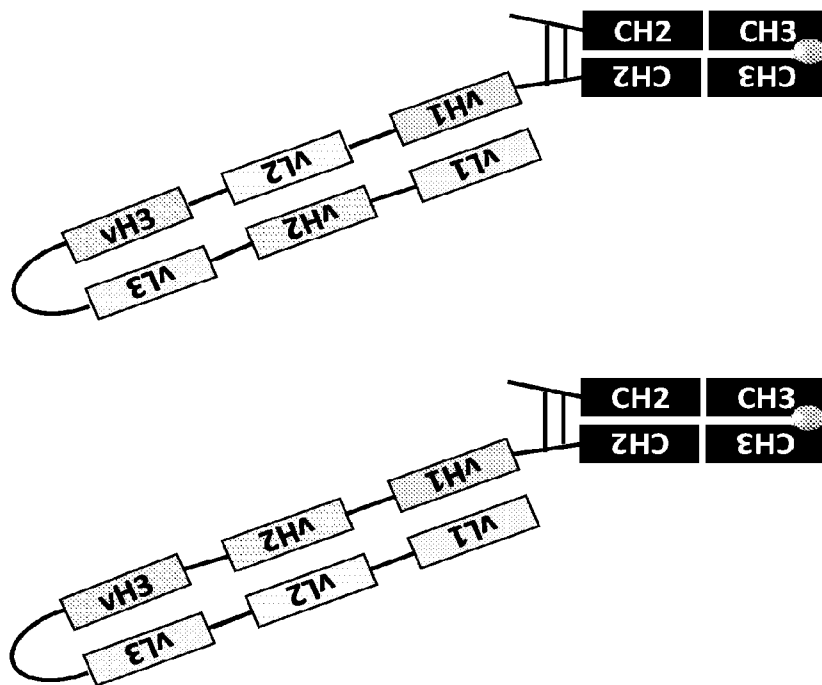


FIG. 2A

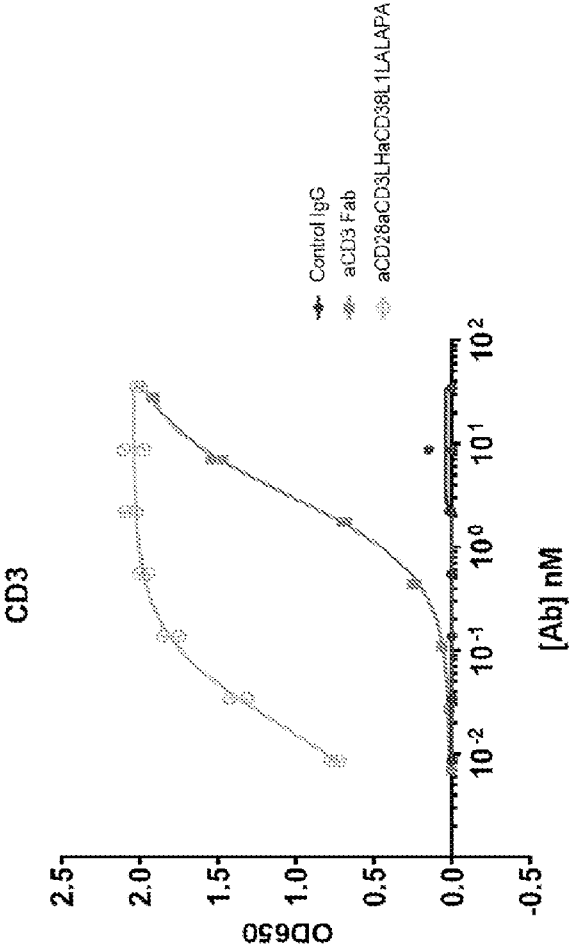


FIG. 2B

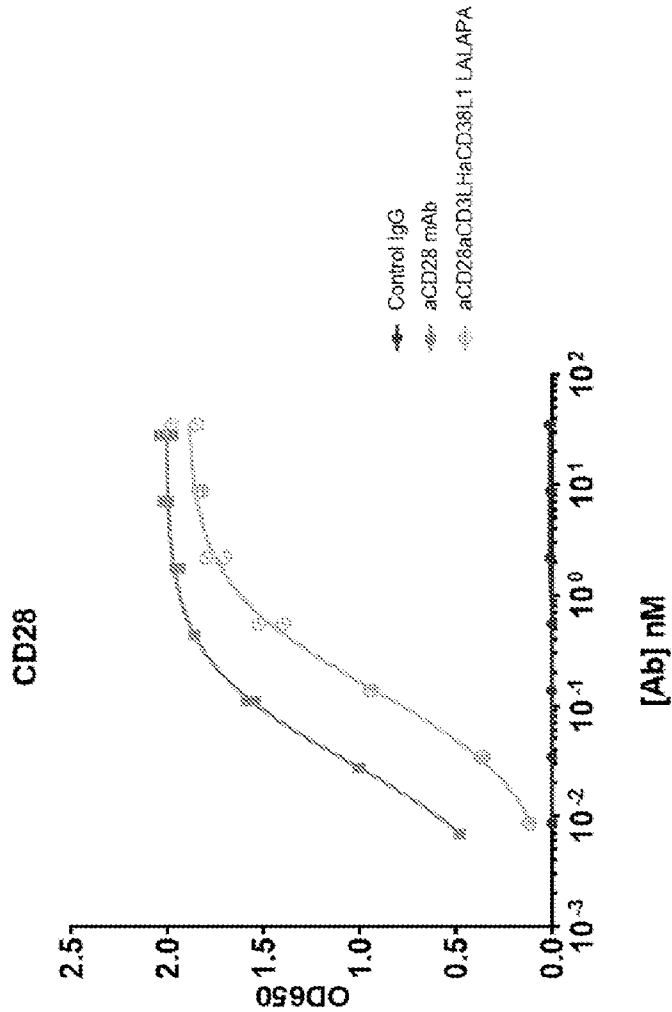


FIG. 2C

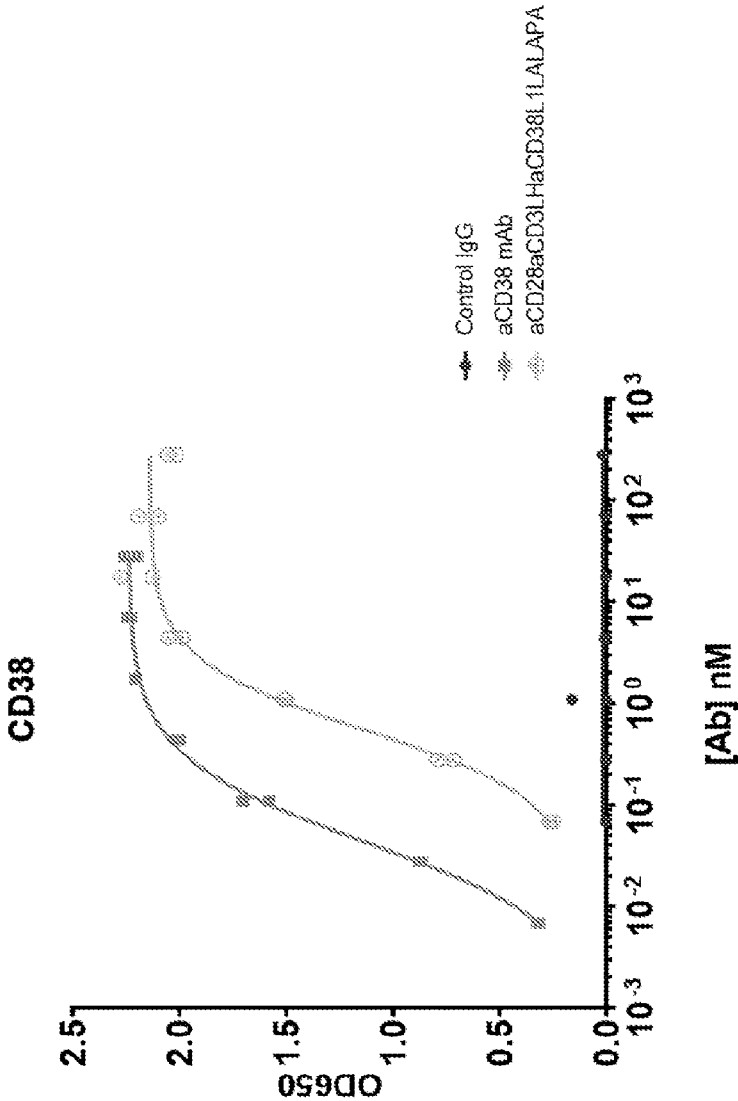


FIG. 3A

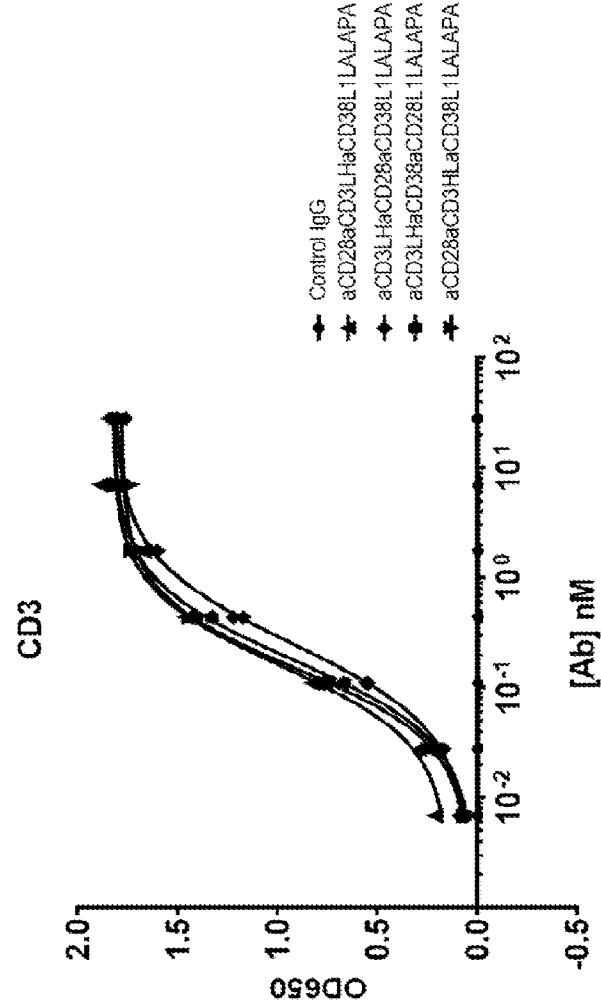


FIG. 3B

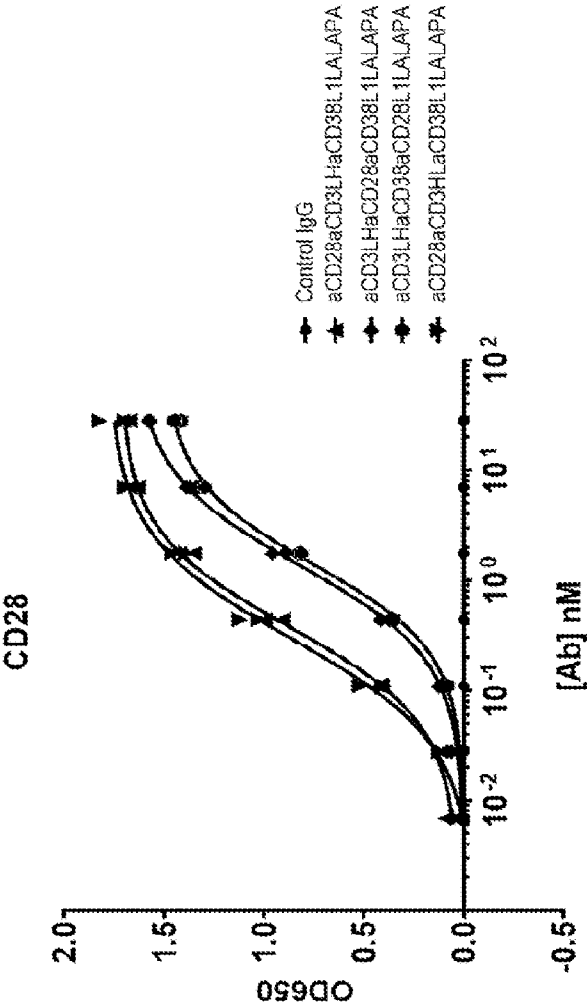


FIG. 3C

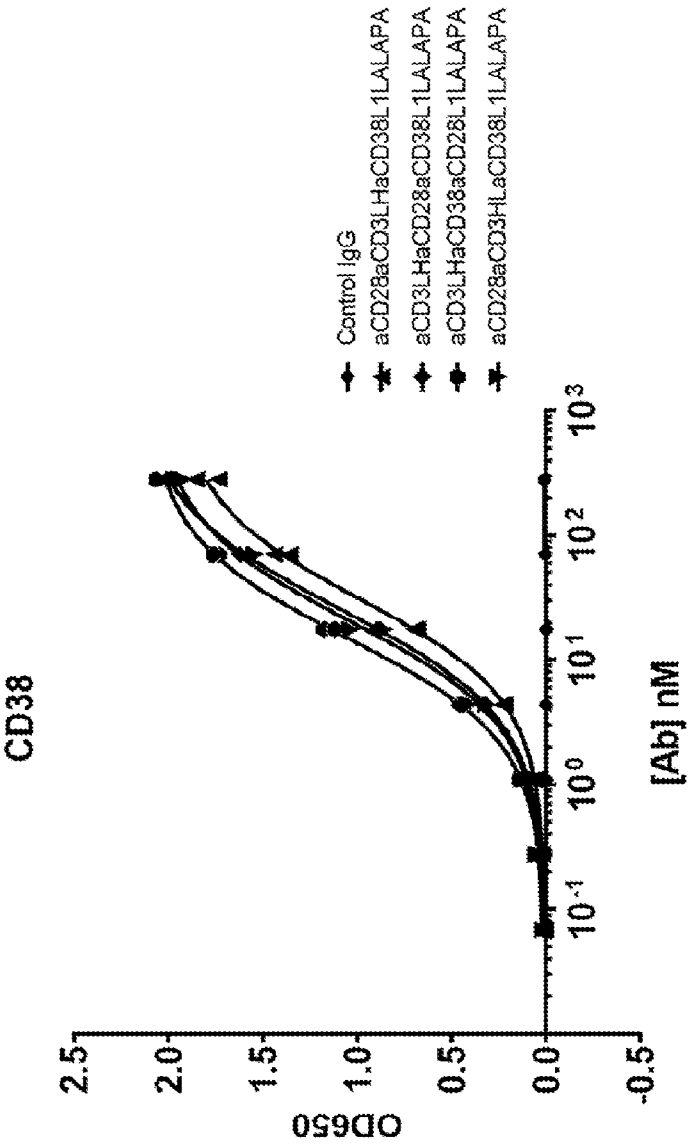


FIG. 4A

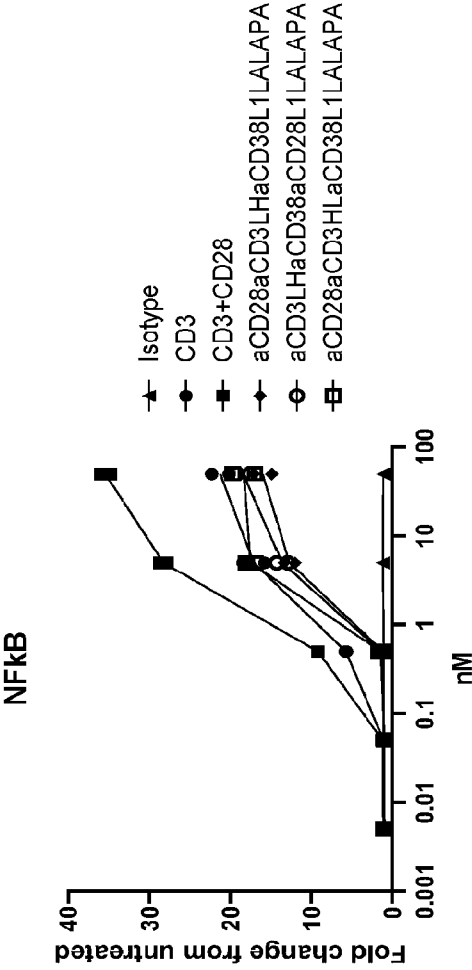


FIG. 4B

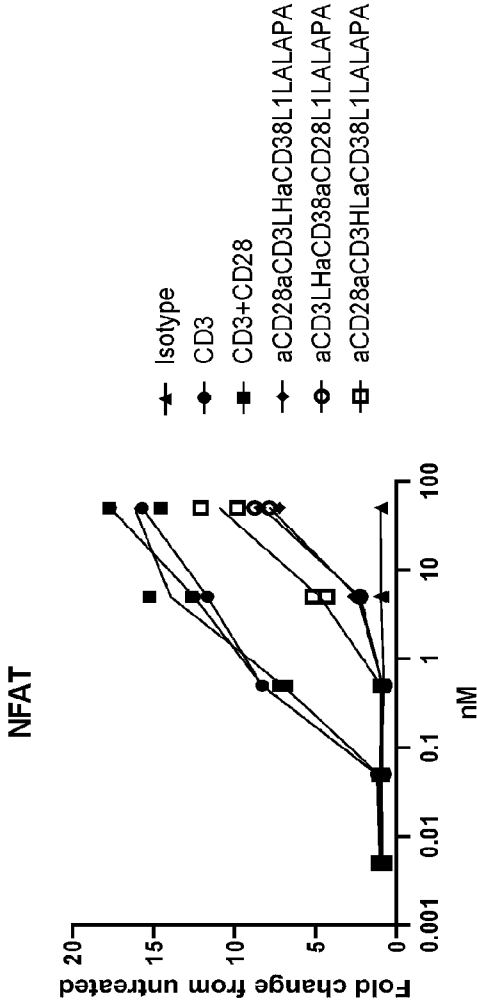


FIG. 5

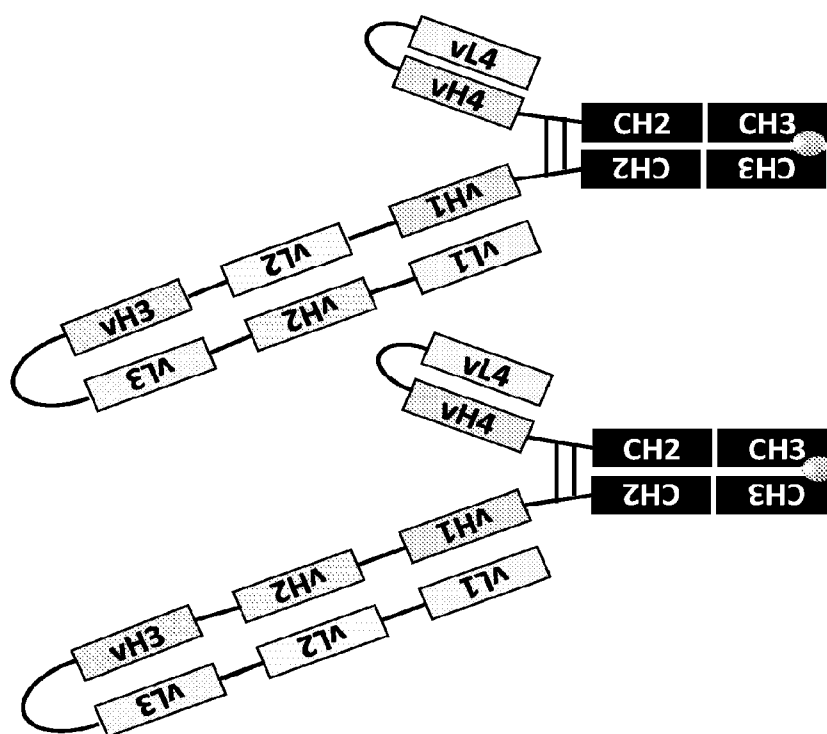


FIG. 6A

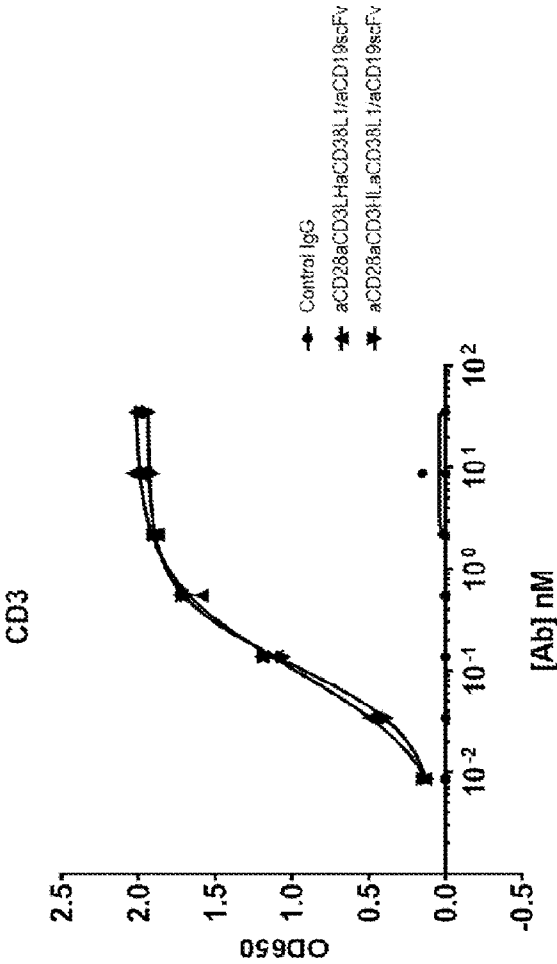


FIG. 6B

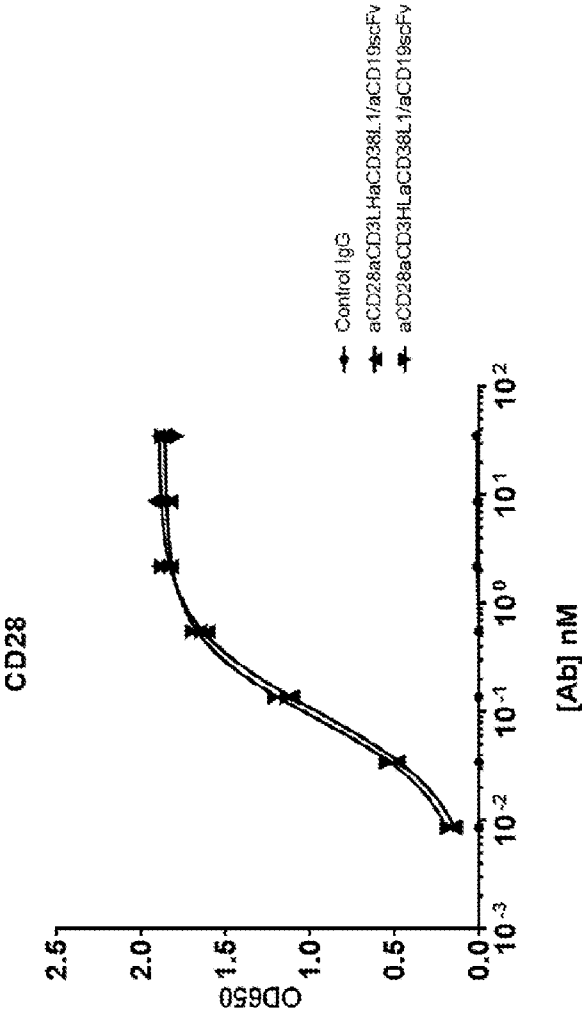


FIG. 6C

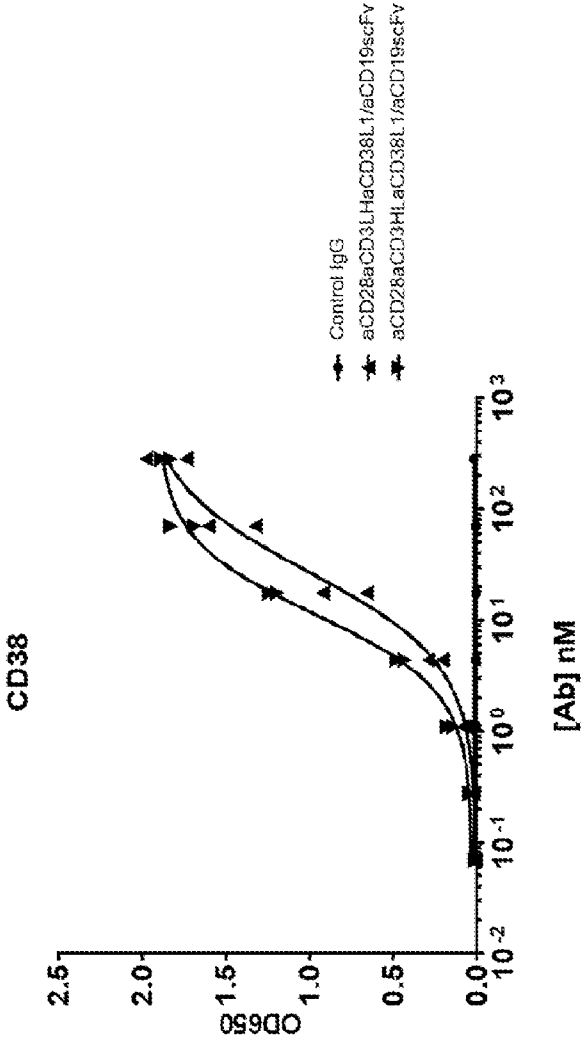


FIG. 6D

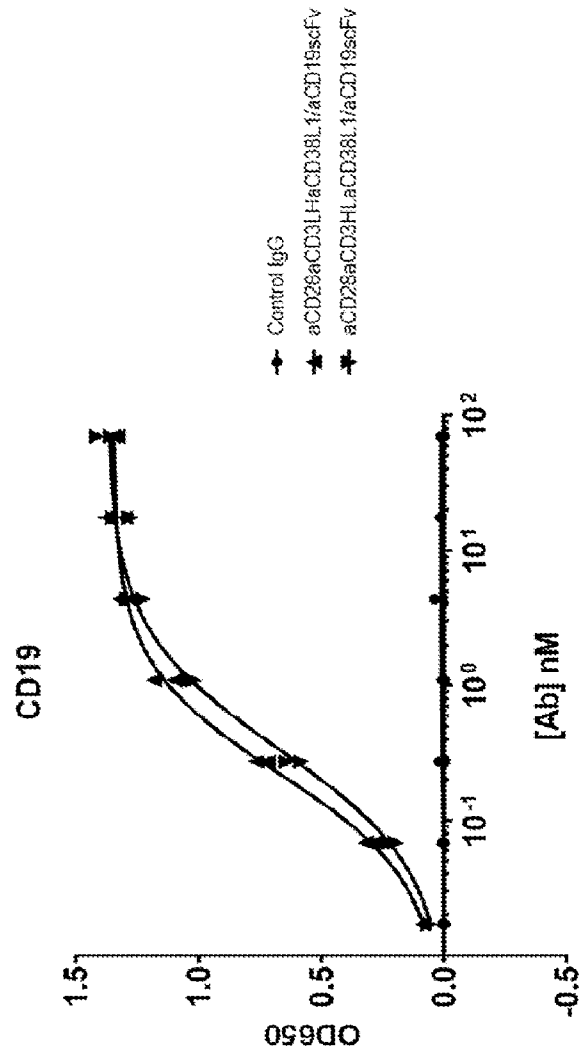


FIG. 7

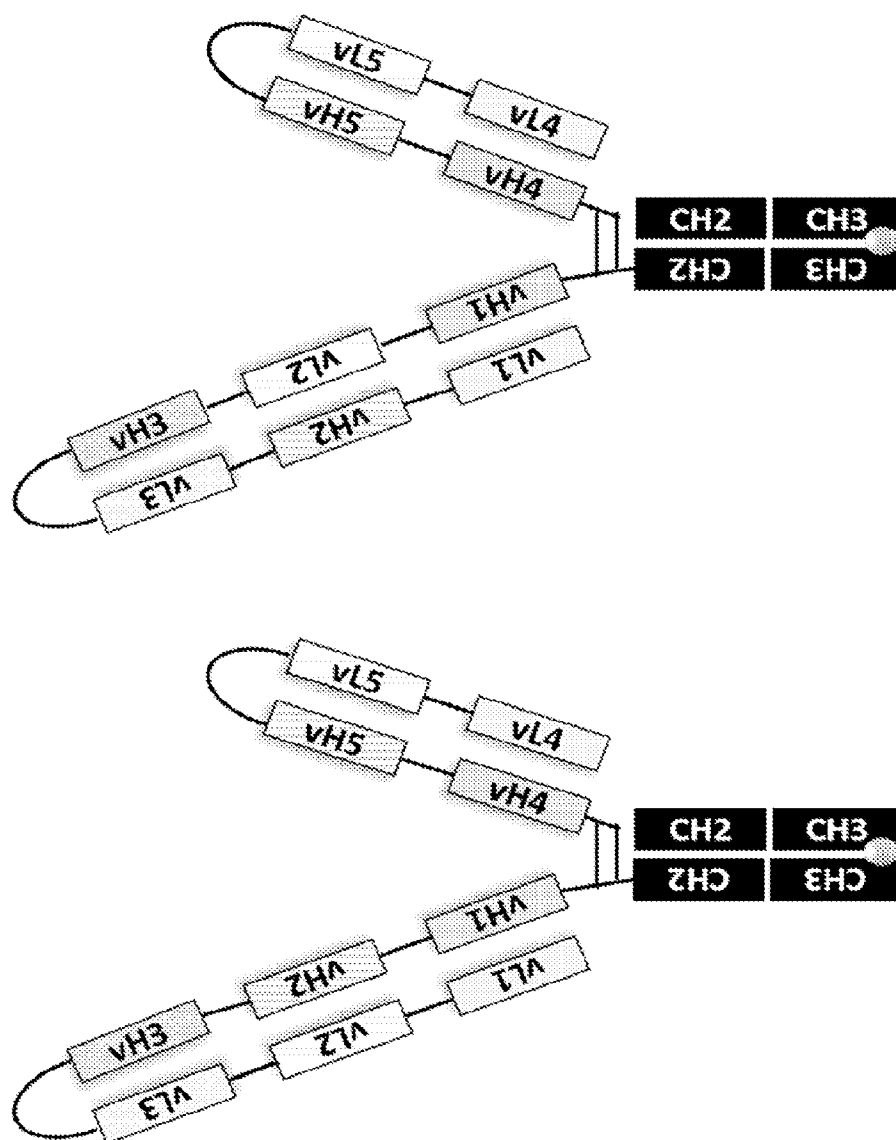


FIG. 8A

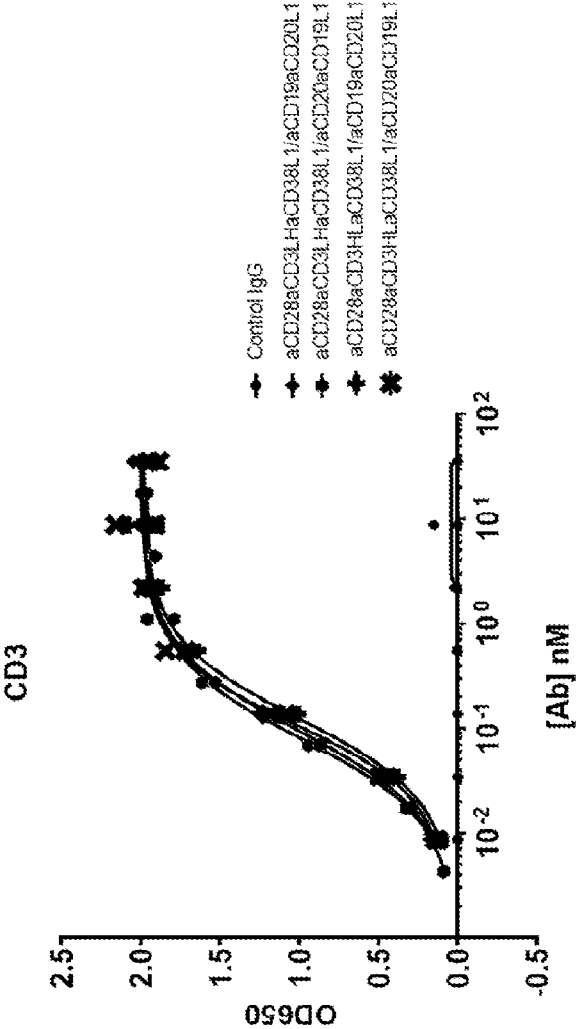


FIG. 8B

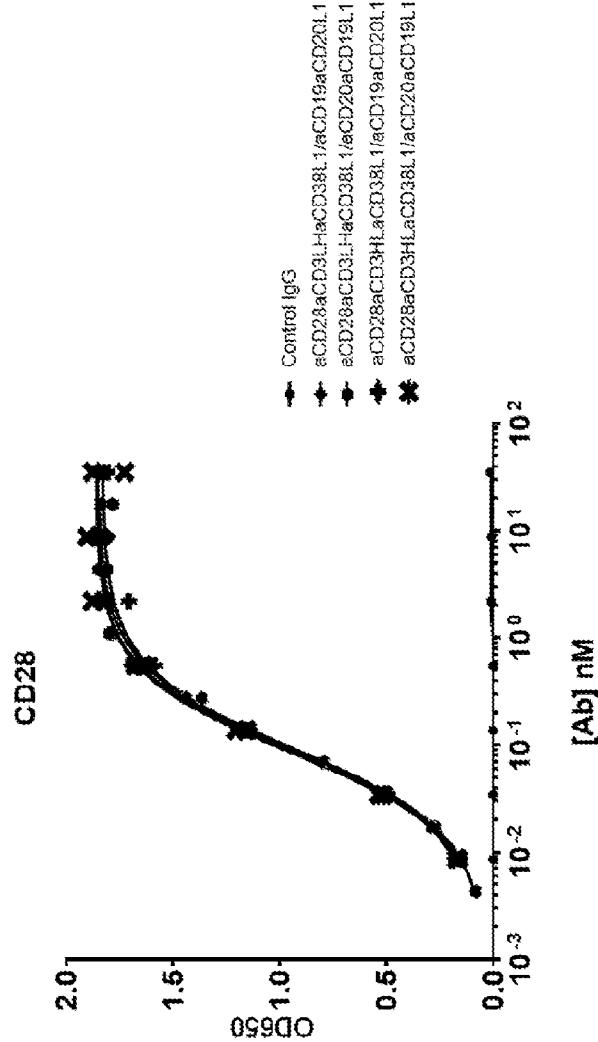


FIG. 8C

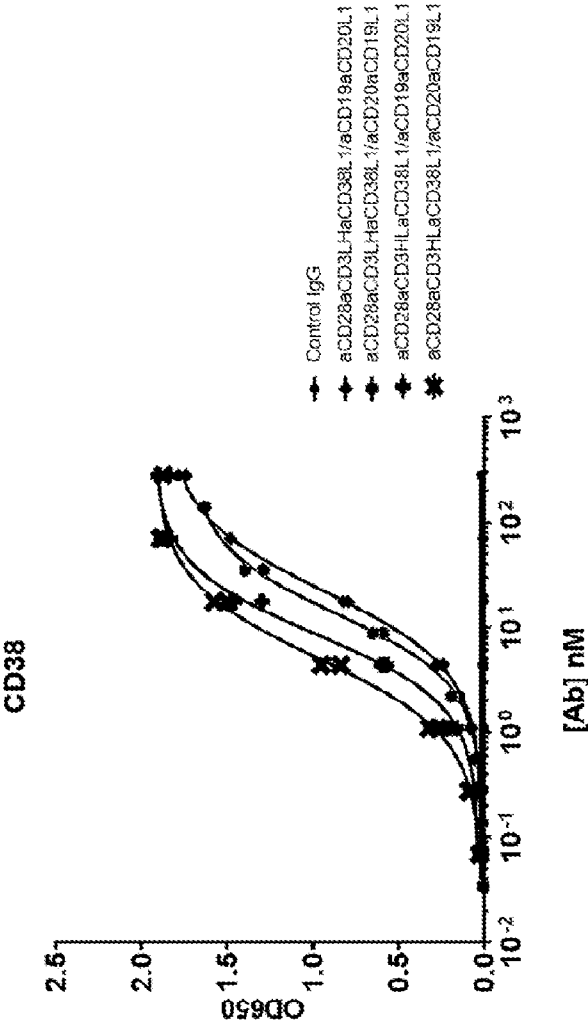


FIG. 8D

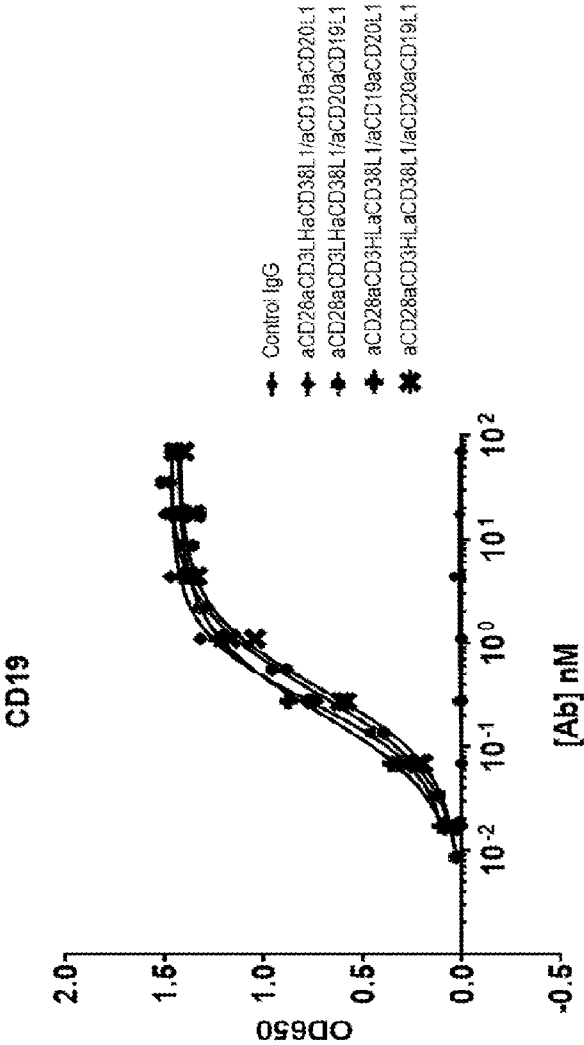


FIG. 9

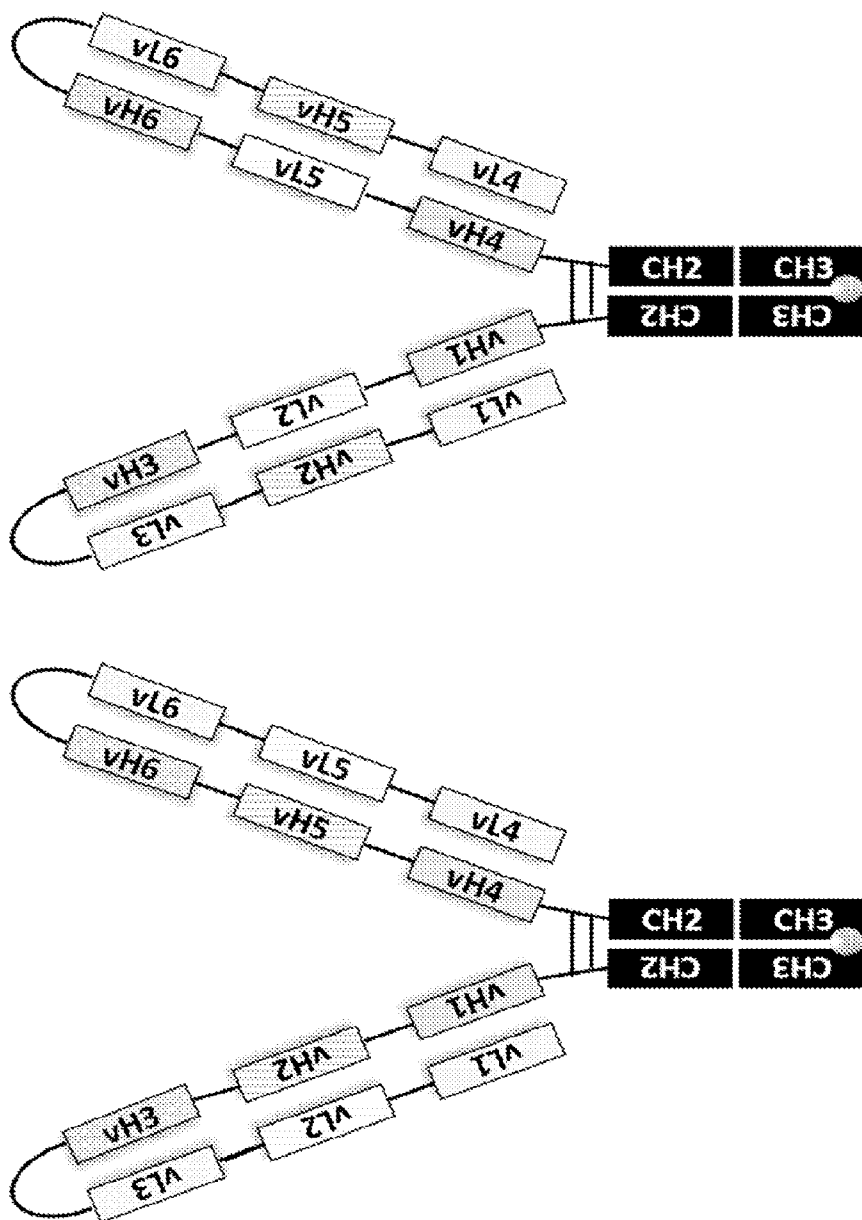


FIG. 10A

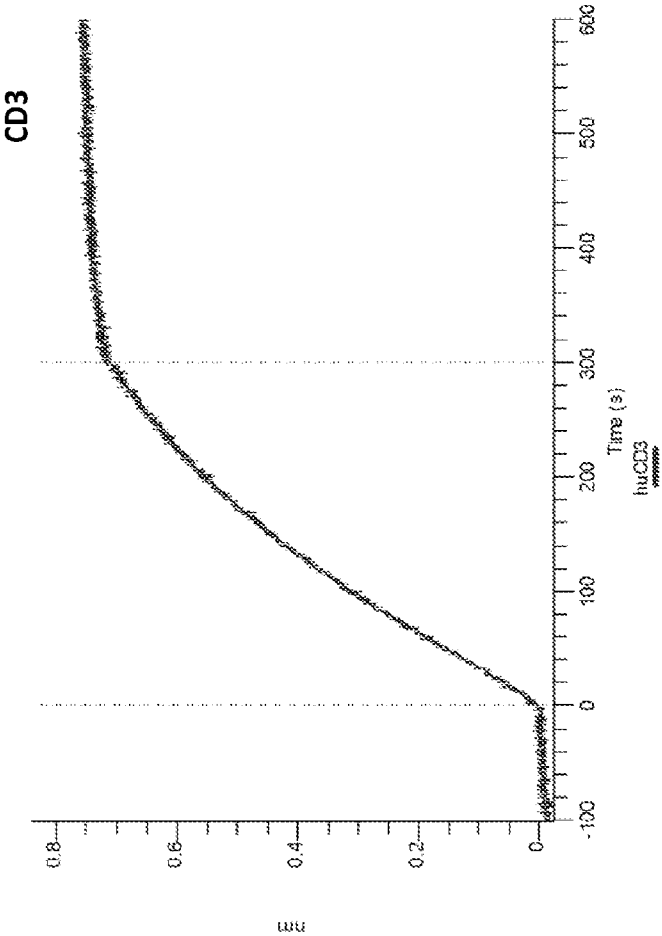


FIG. 10B

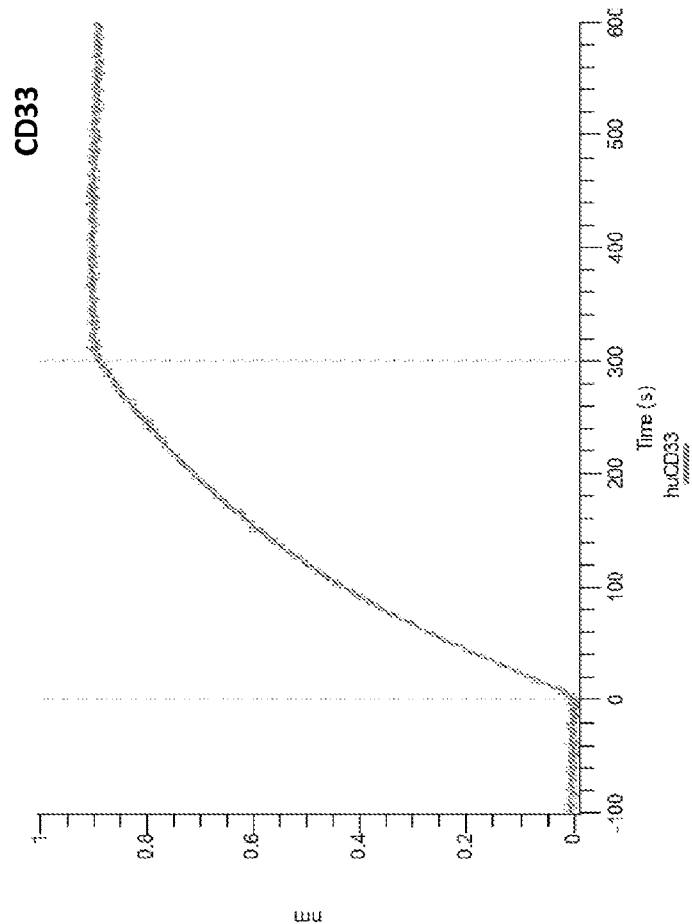


FIG. 10C

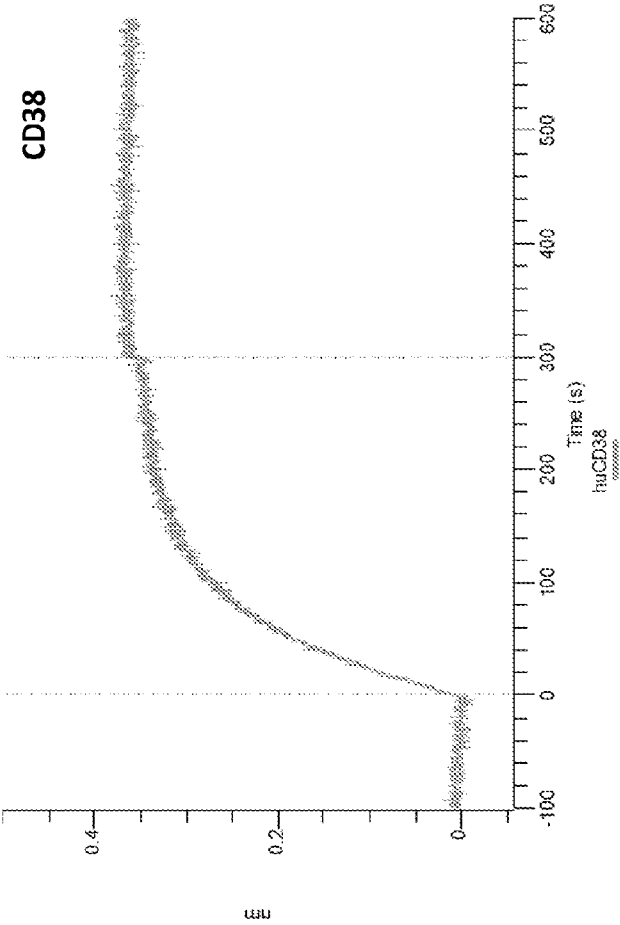


FIG. 10D

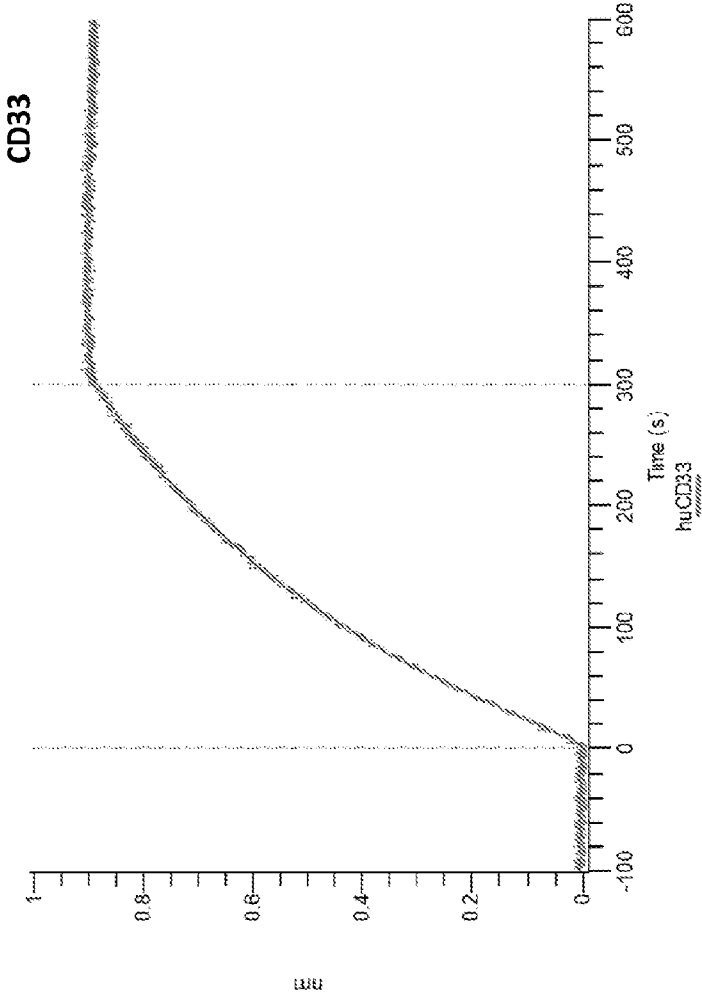


FIG. 10E

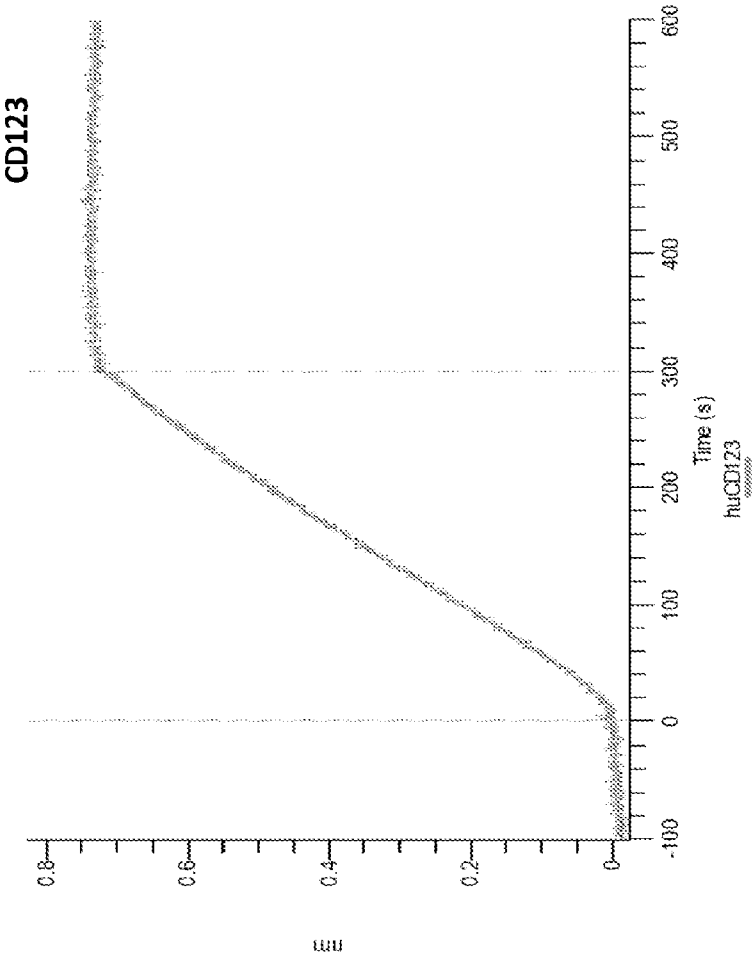


FIG. 10F

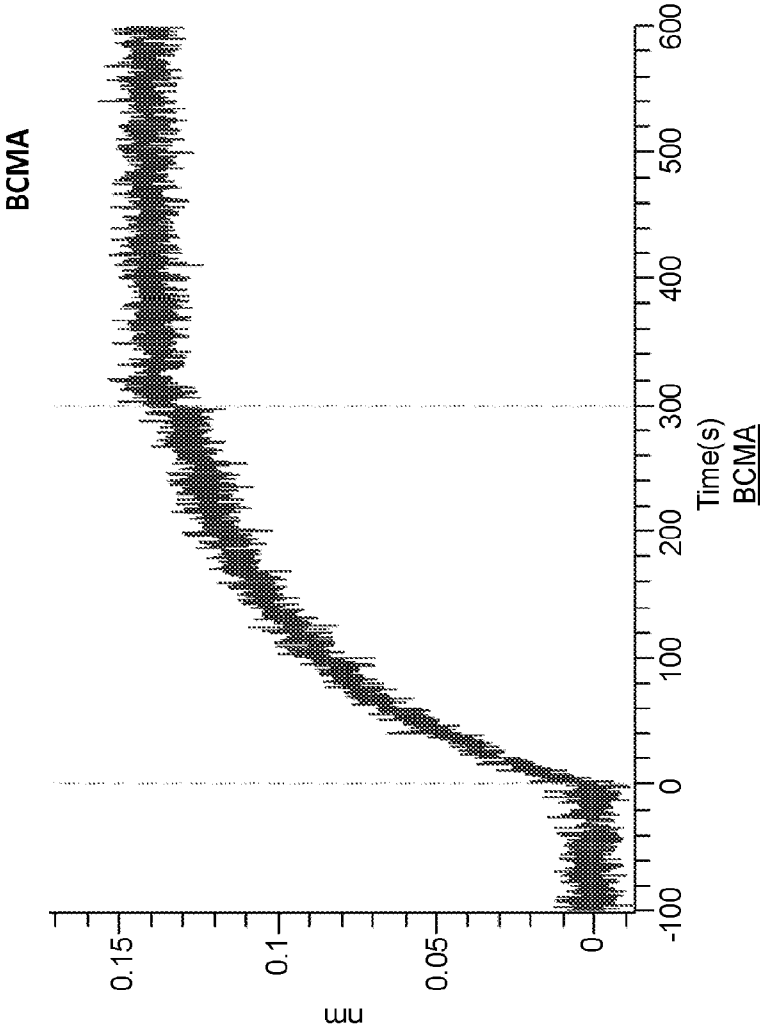


FIG. 11A

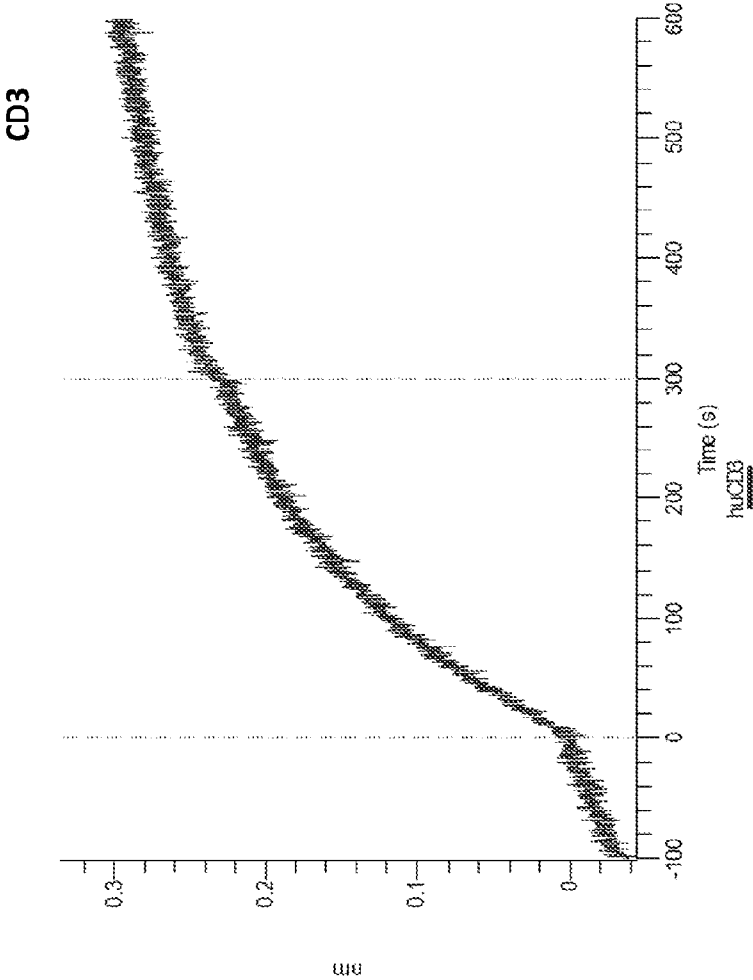


FIG. 11B

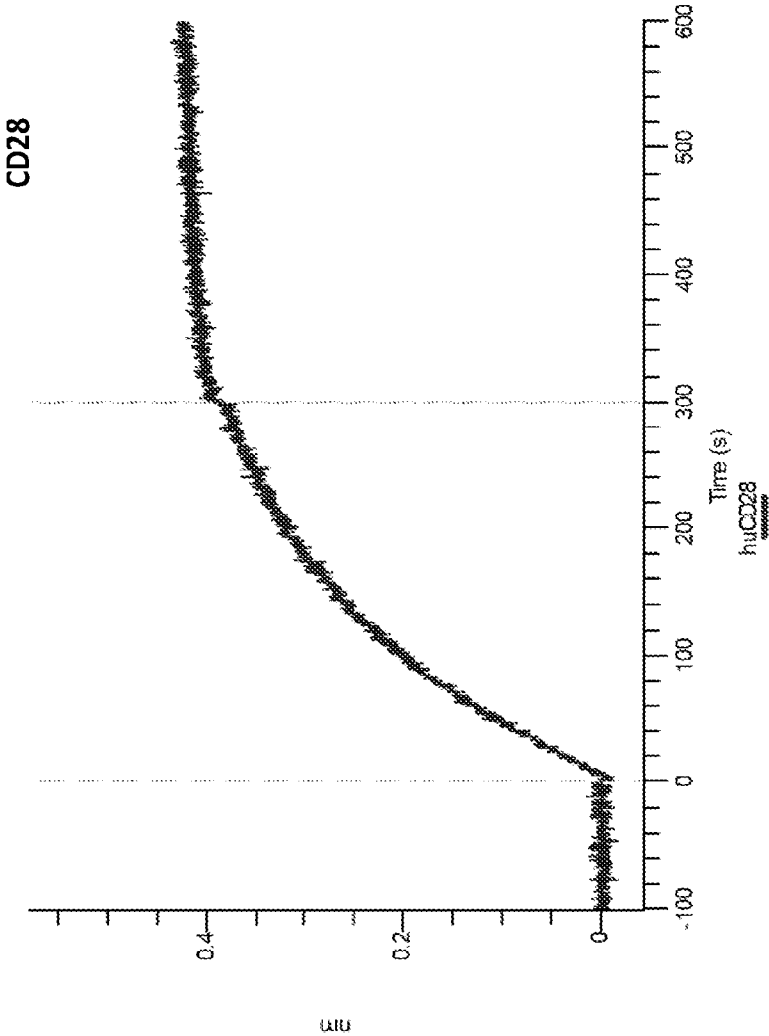


FIG. 11C

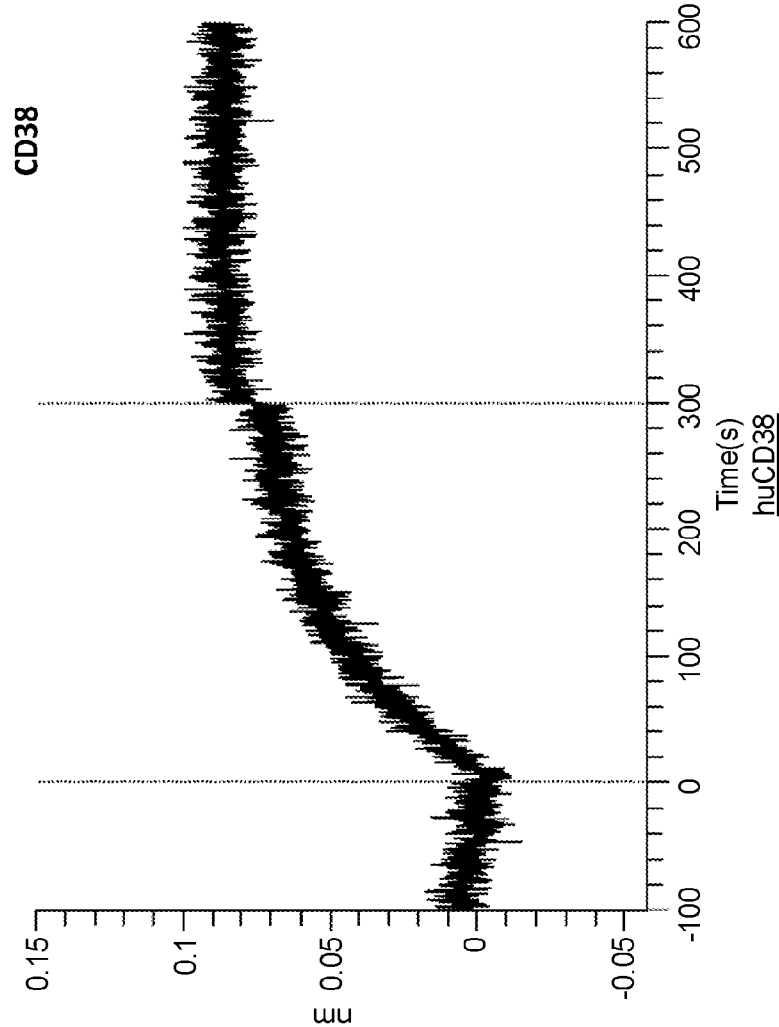


FIG. 11D

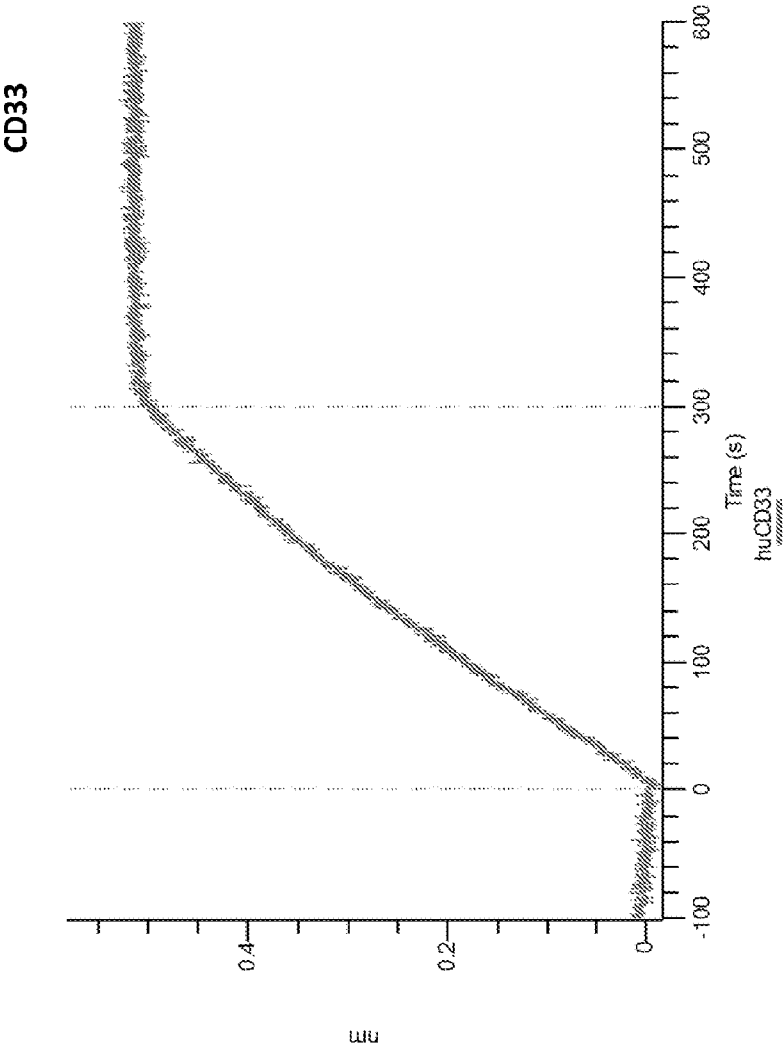


FIG. 11E

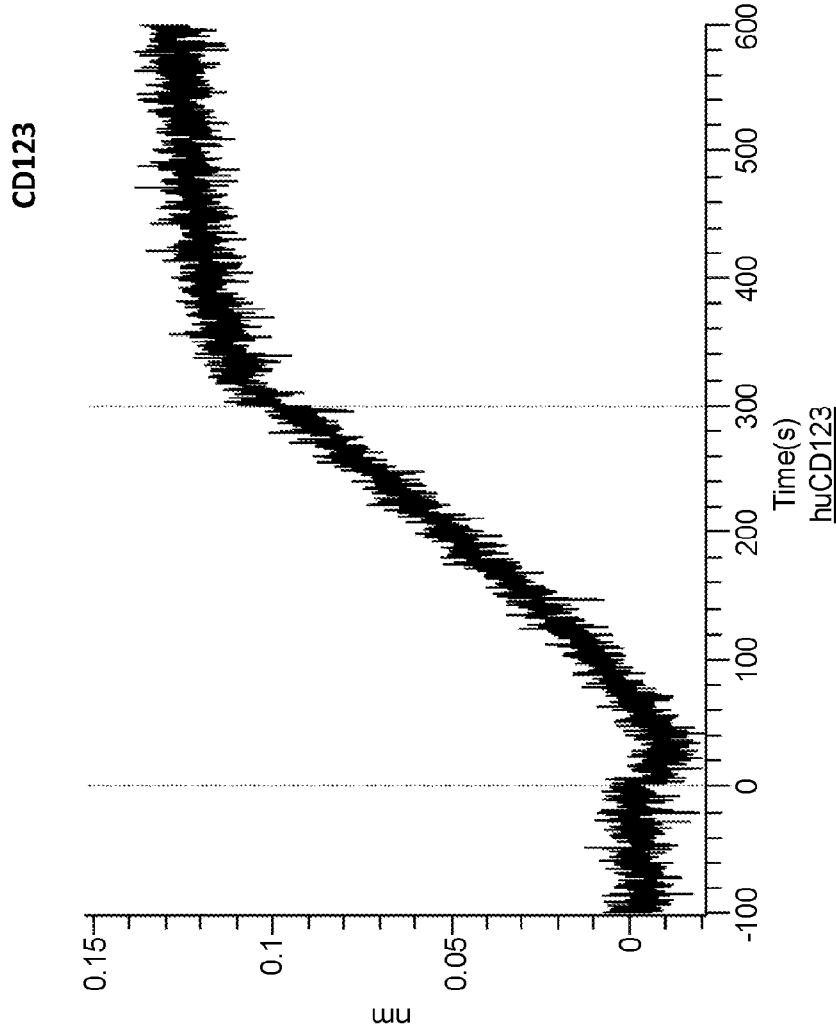


FIG. 11F

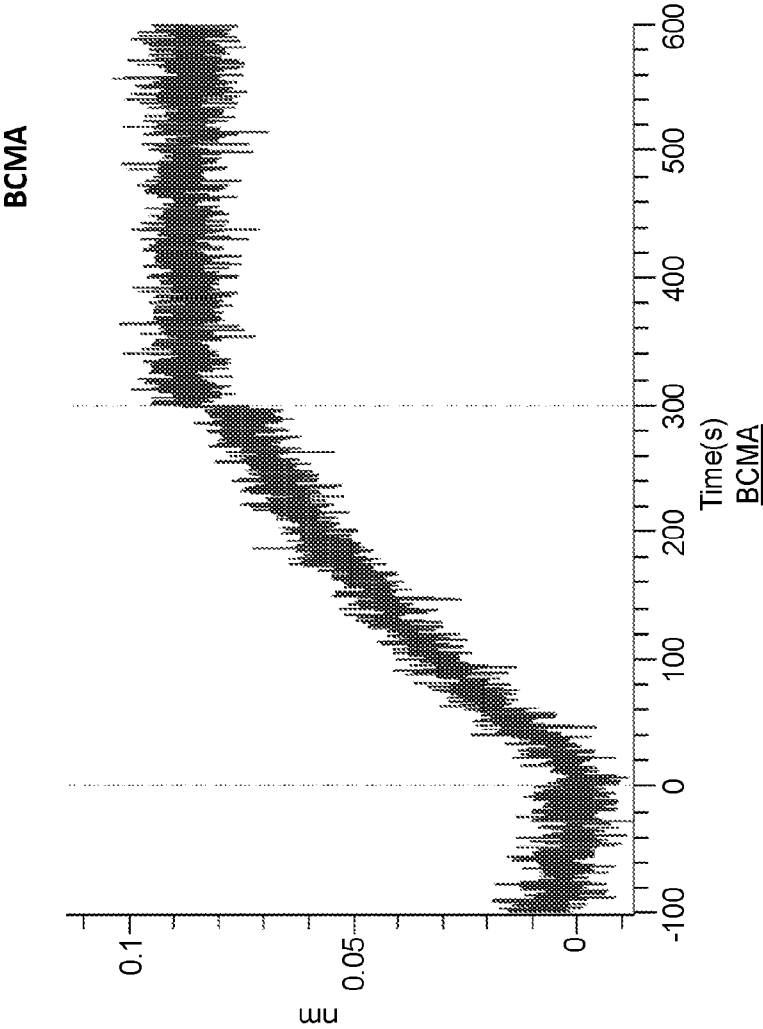


FIG. 12

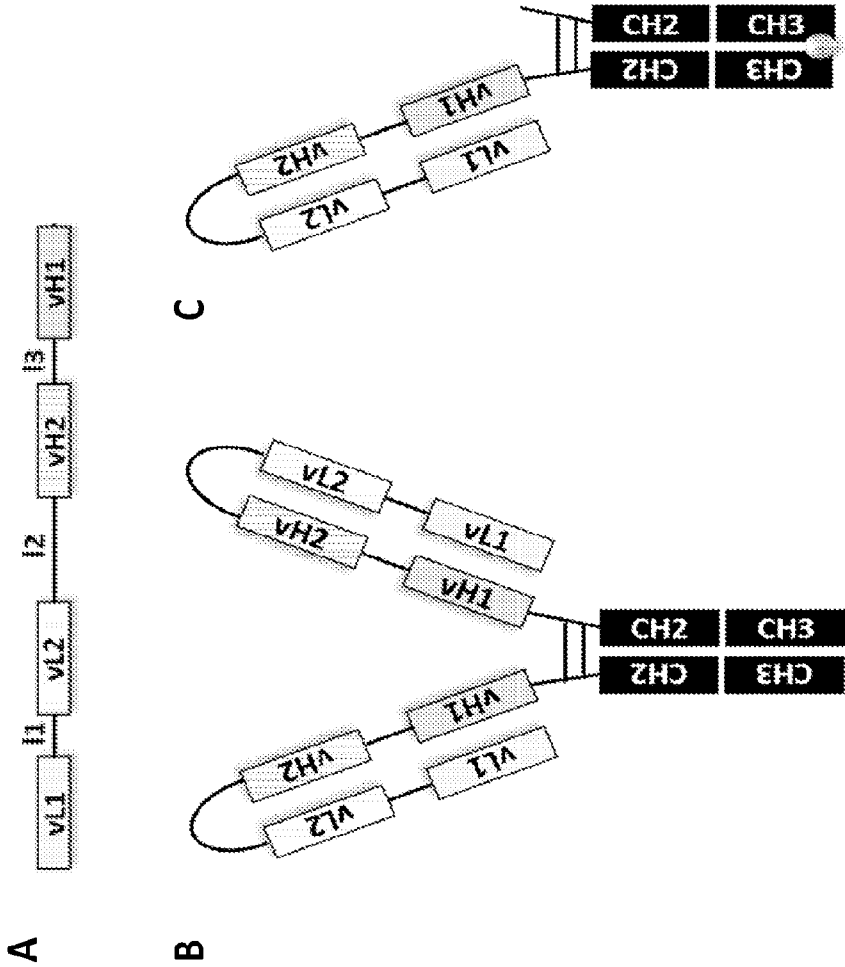


FIG. 12

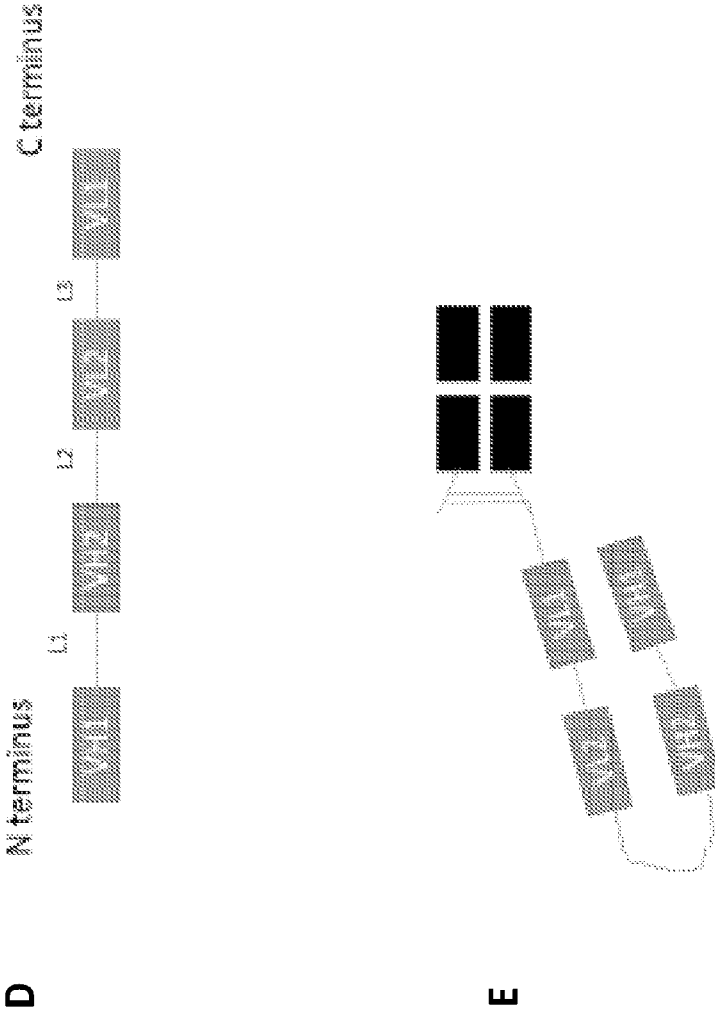


FIG. 12F

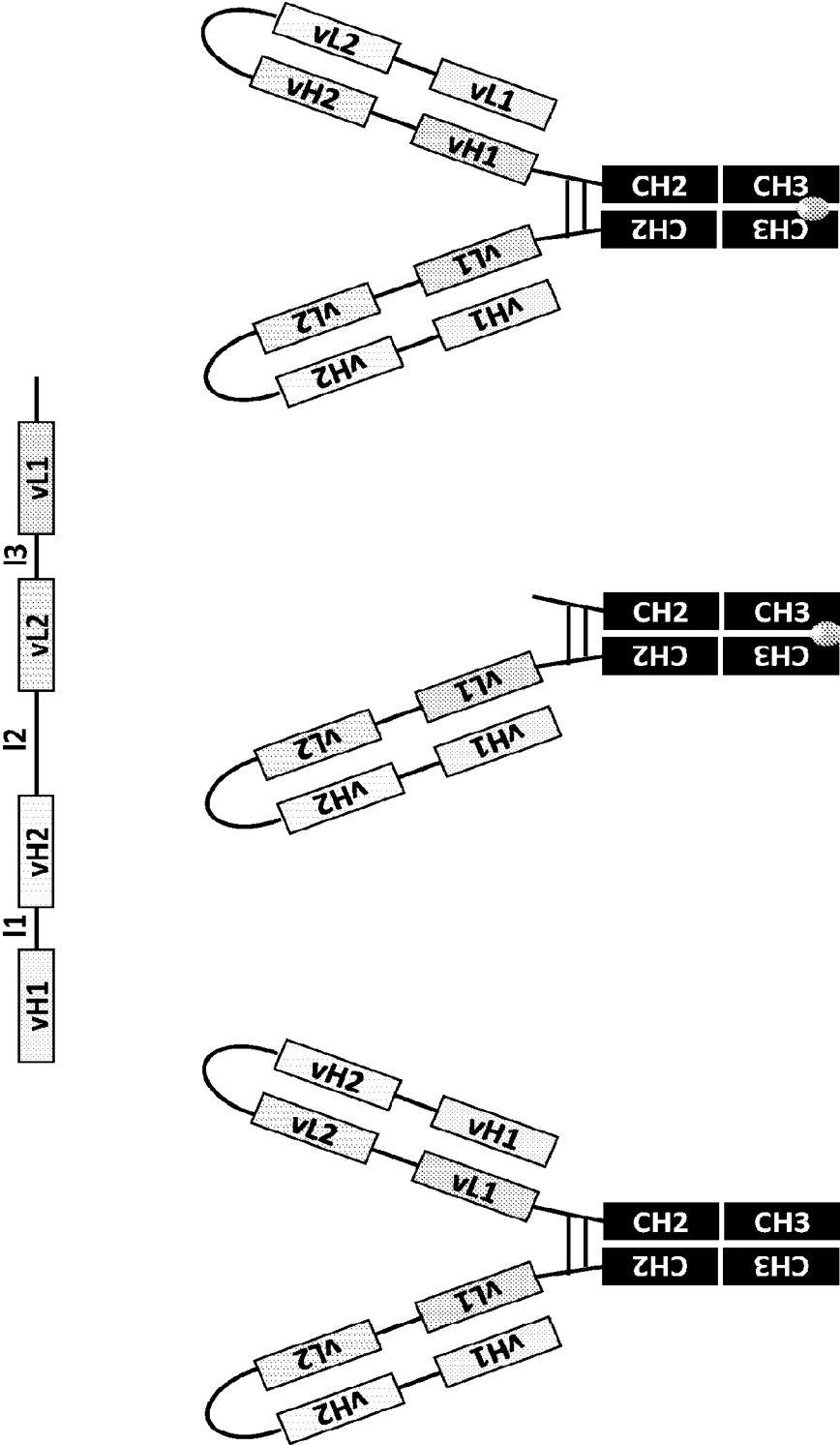


FIG. 13

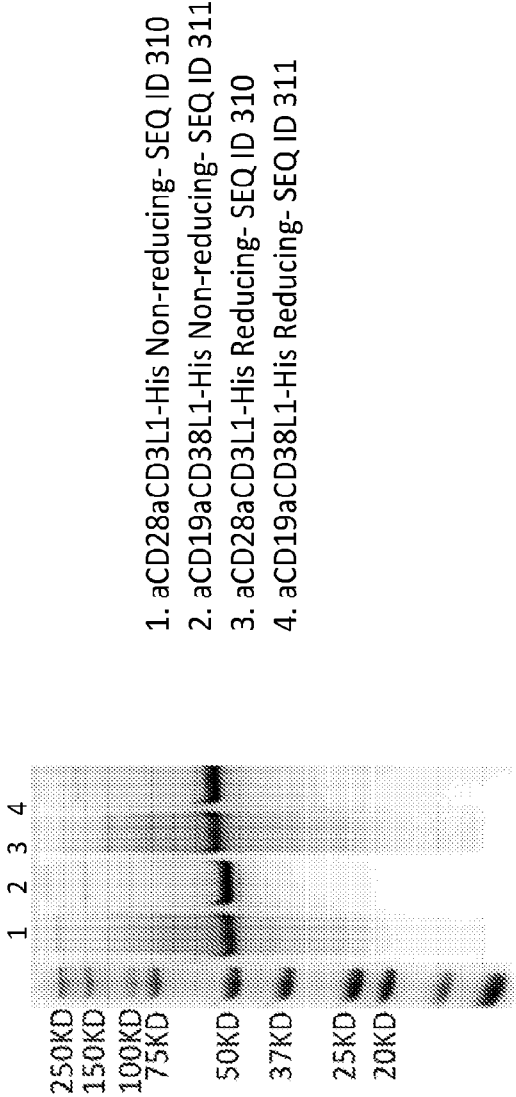
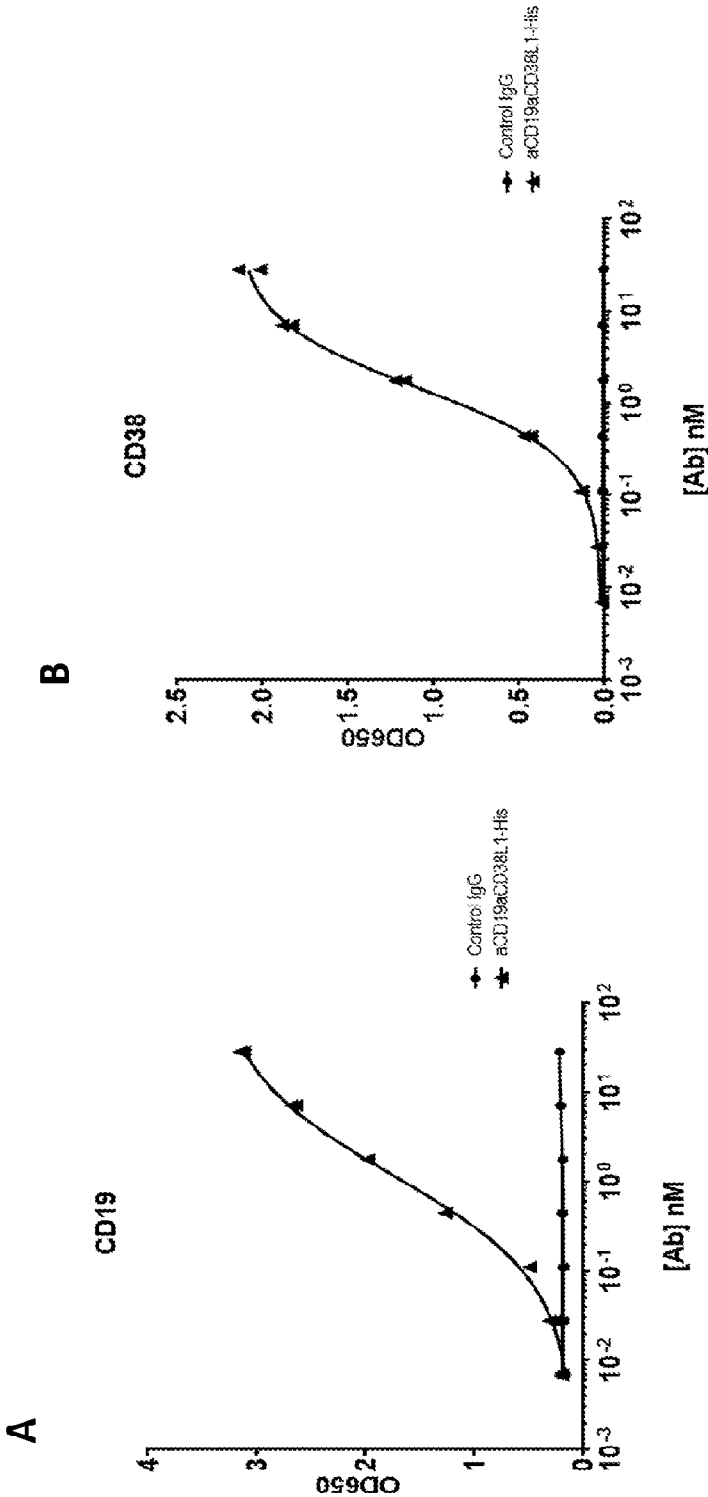


FIG. 14



SEQ ID: 311

FIG. 15

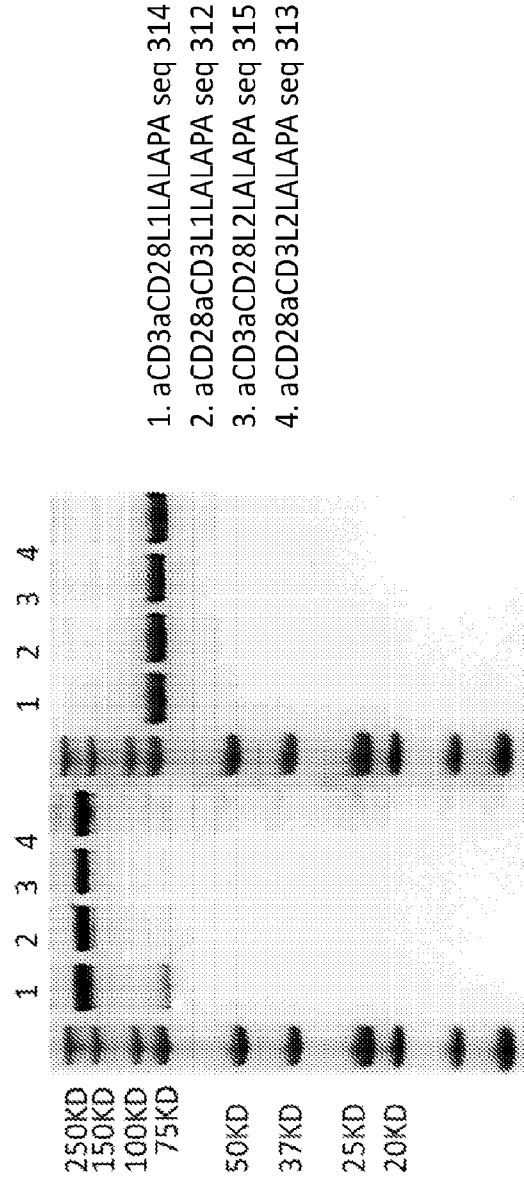


FIG. 16A

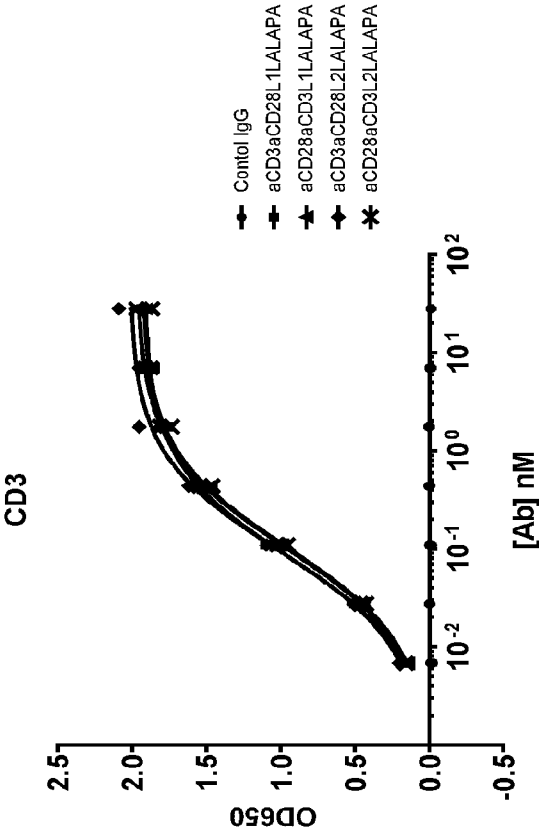


FIG. 16B

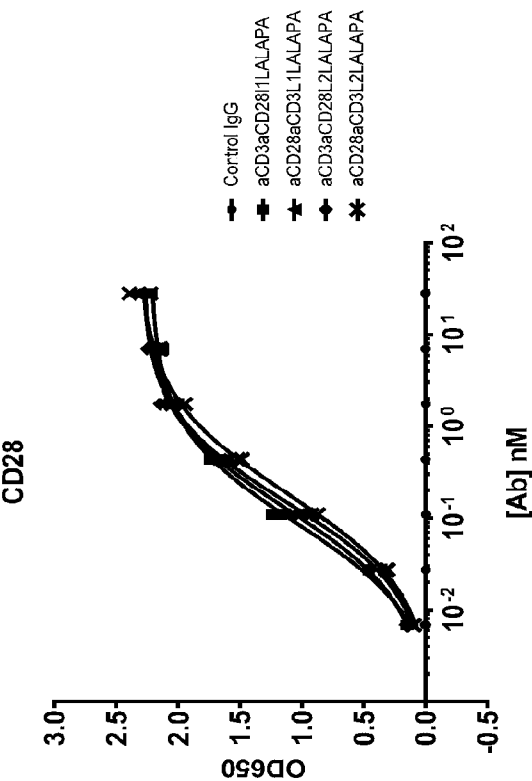
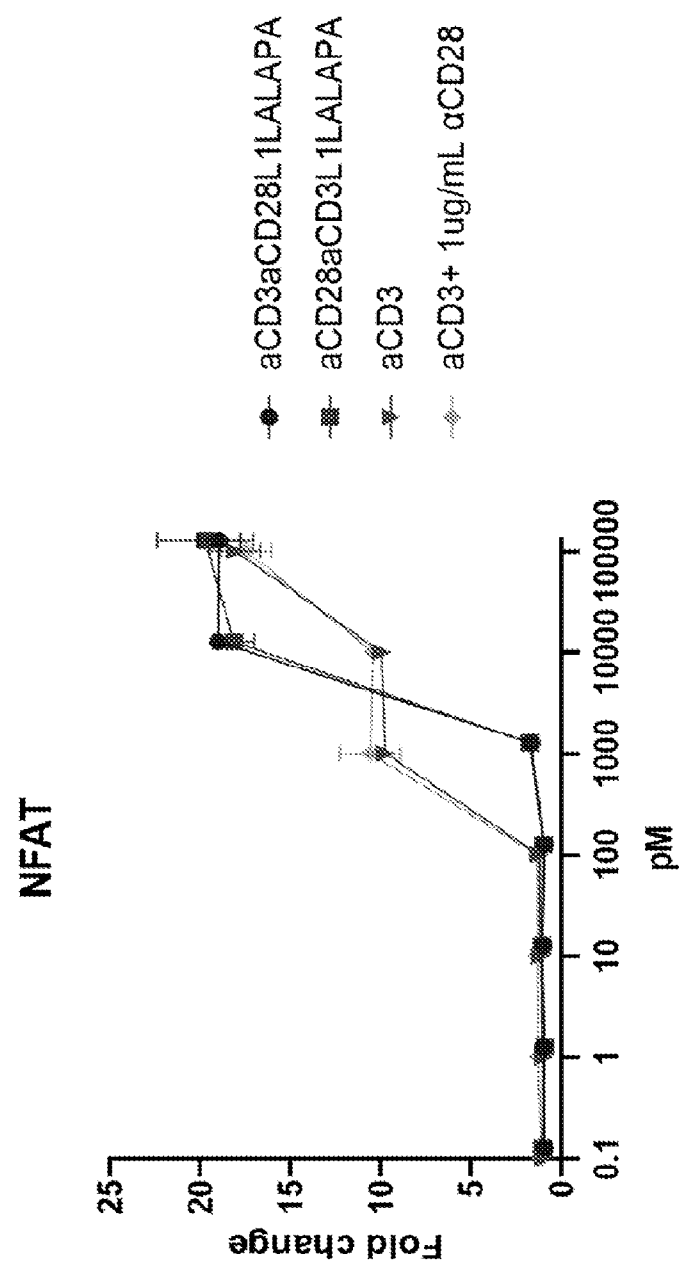


FIG. 17



45/99

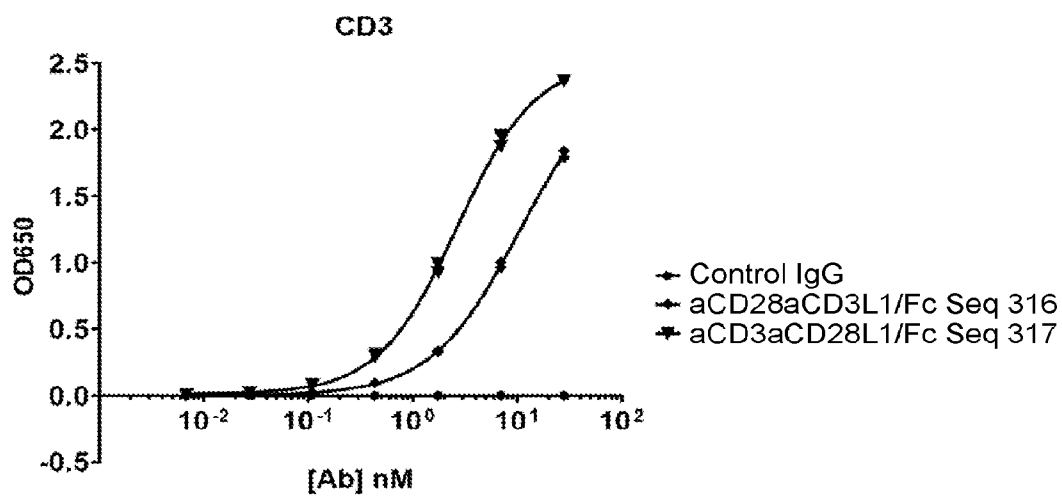
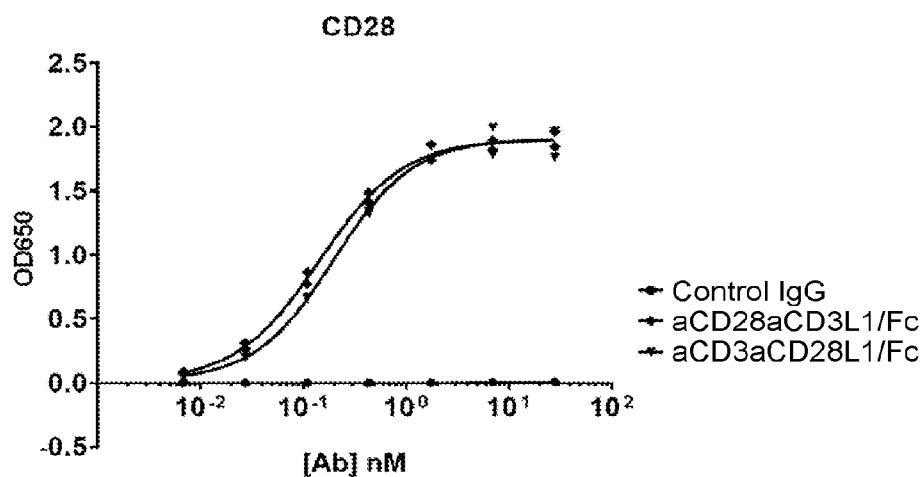
FIG. 18**A****B**

FIG. 19

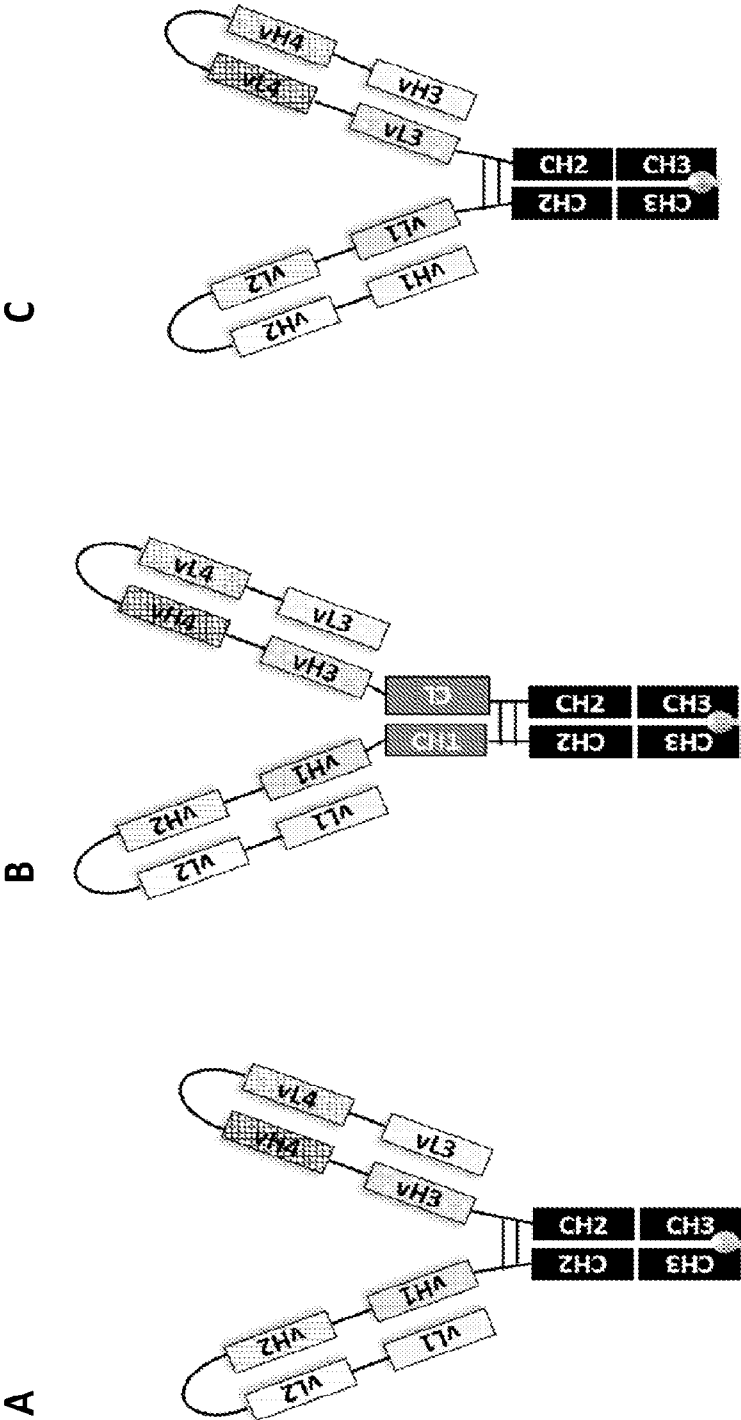


FIG. 20

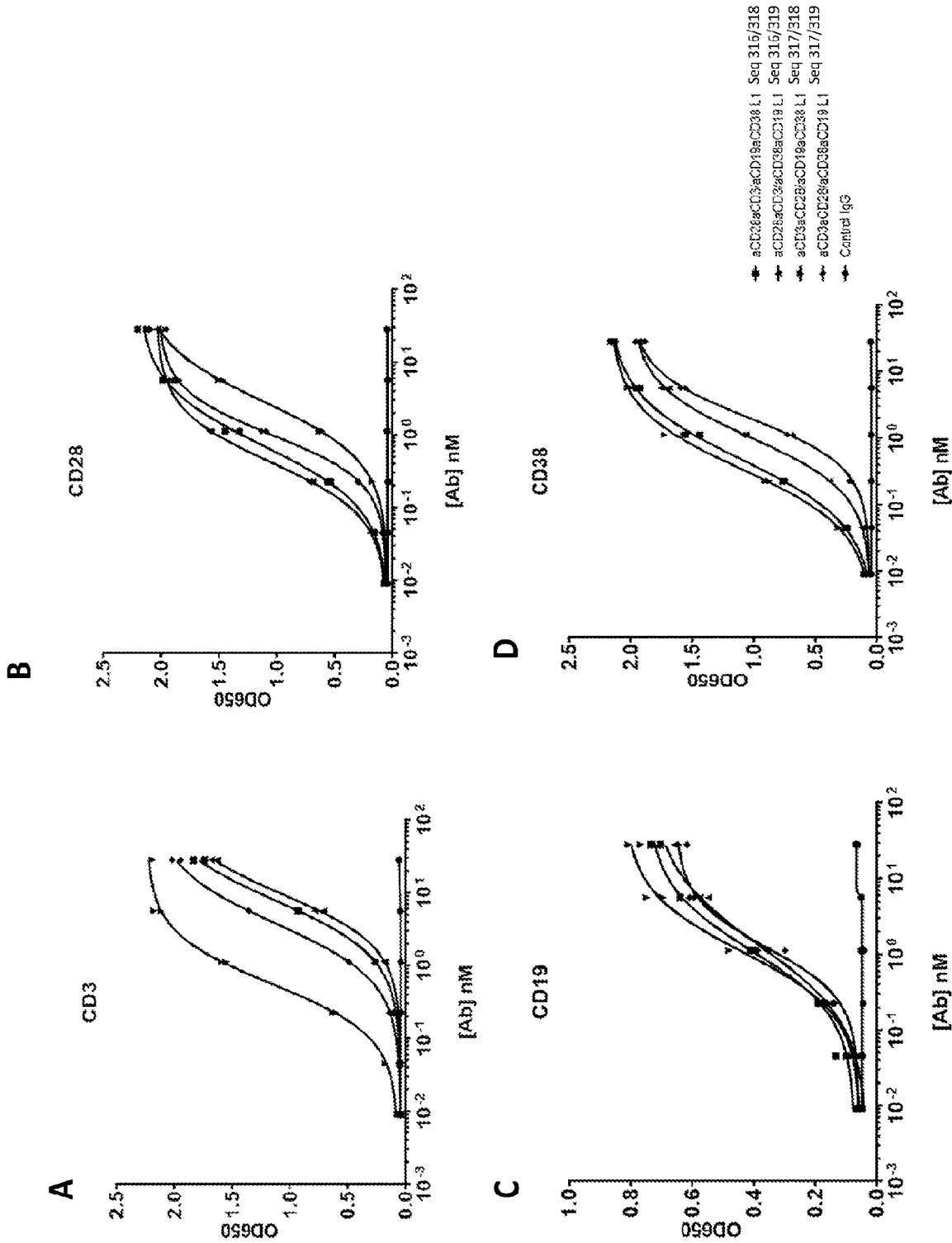


FIG. 21

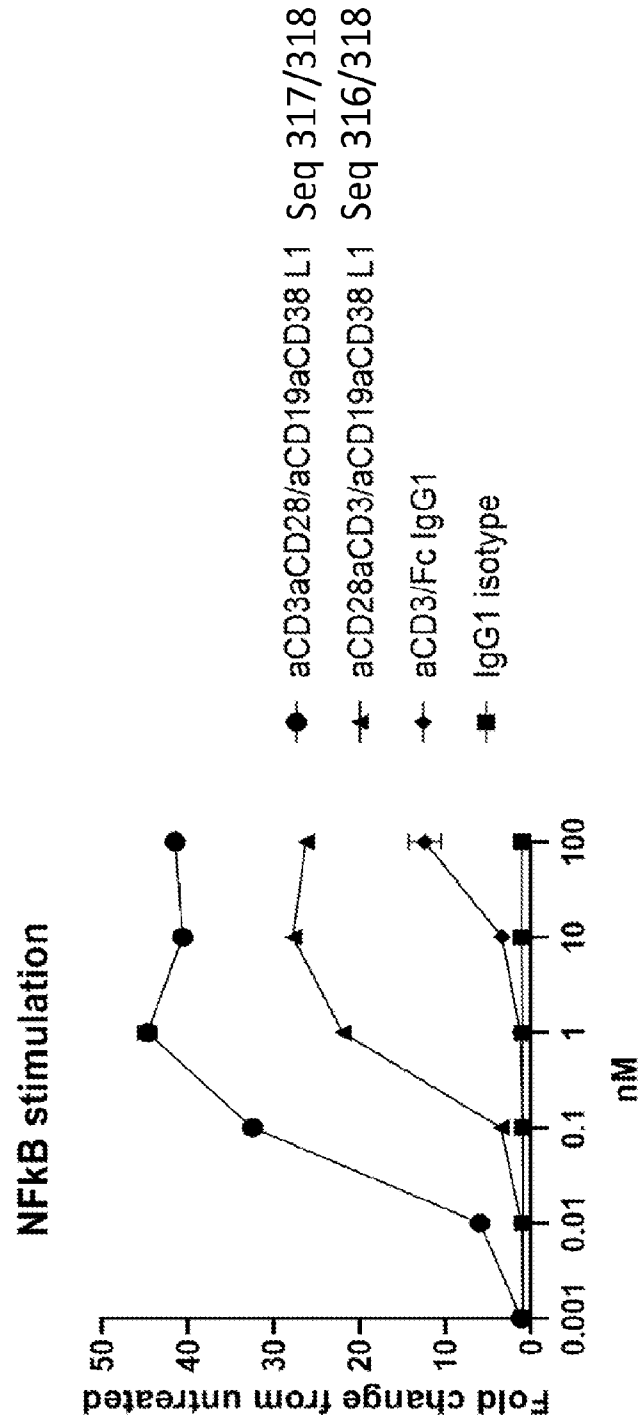


FIG. 22

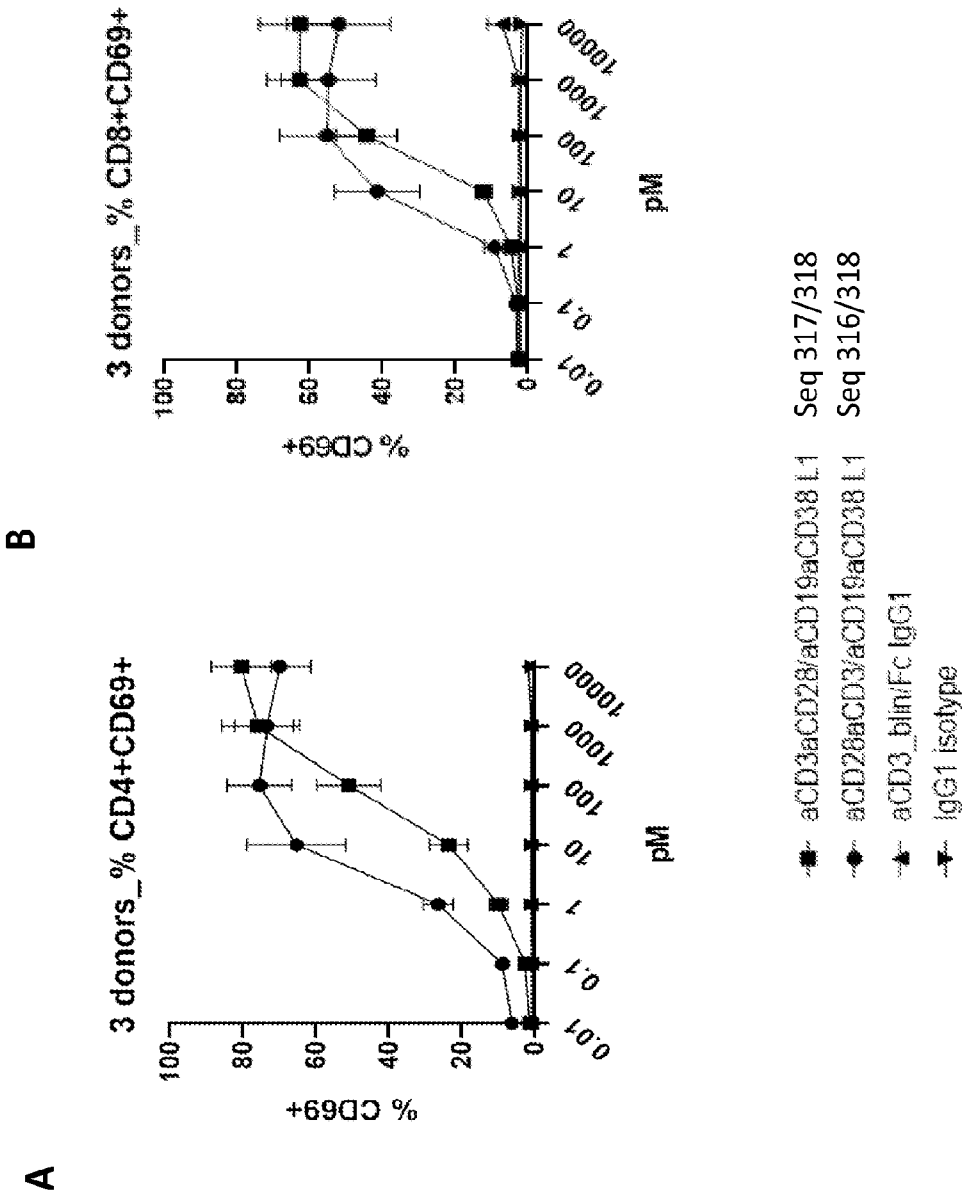


FIG. 23

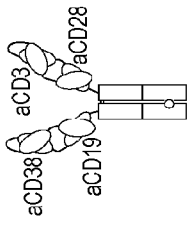
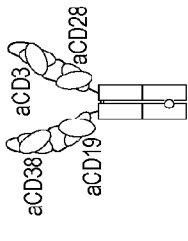
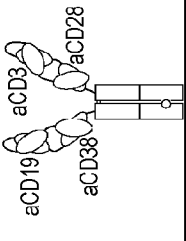
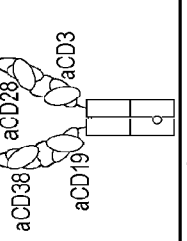
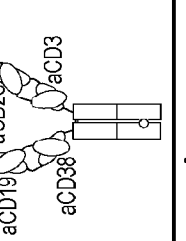
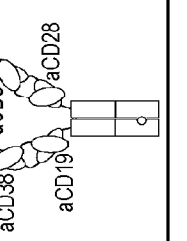
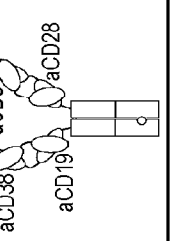
Ab	Linker		Yield (mg/L)	
aCD28aCD3/aCD19aCD38 L1	ggssg		20.3	Seq 316/318
aCD28aCD3/aCD38aCD19 L1	ggssg		3.43	Seq 316/319
aCD3 X aCD28/aCD19aCD38 L1	ggssg		34.25	Seq 317/318
aCD3aCD28/aCD38aCD19 L1	ggssg		9.25	Seq 317/319
aCD28aCD3/aCD19aCD38 L3	g		4.13	Seq 322/324
aCD28aCD3/aCD19aCD38 L4	sgsgssgsgs		22.61	Seq 323/325

FIG. 24

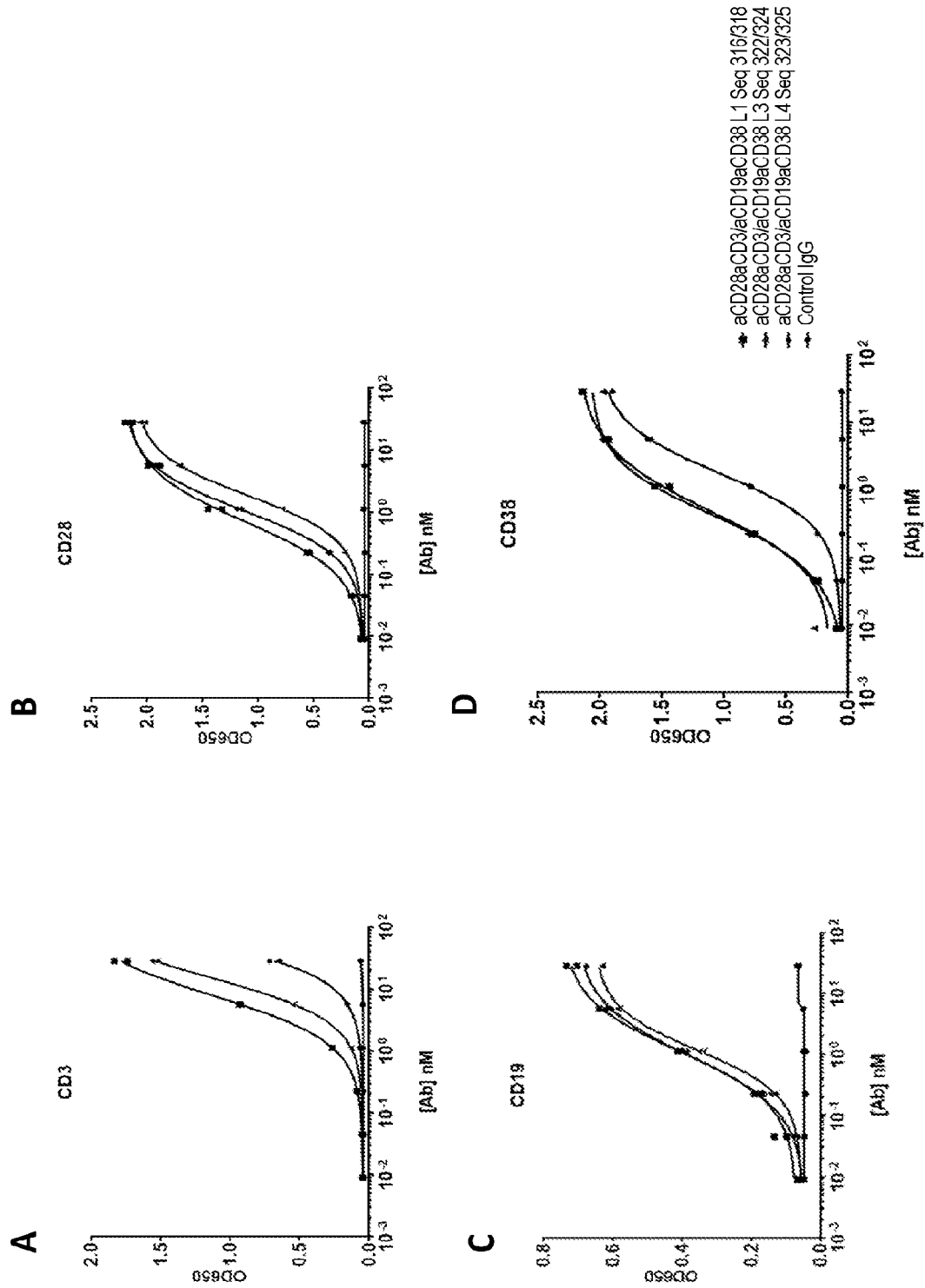


FIG. 25

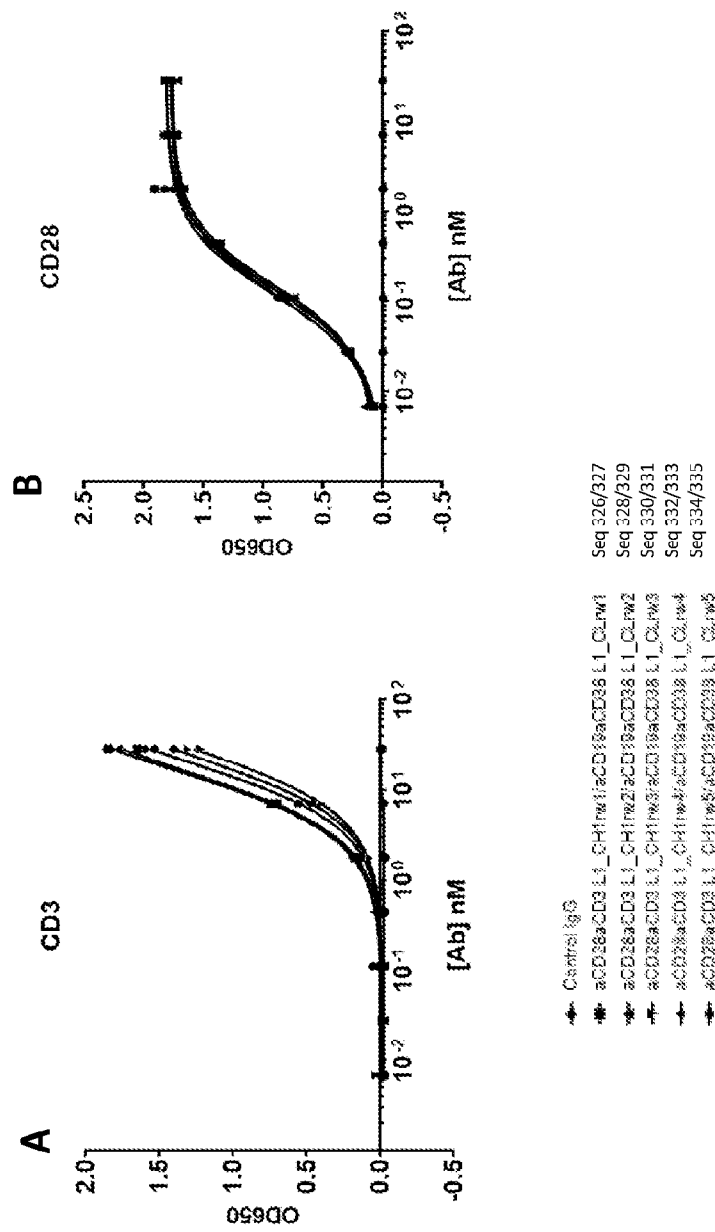


FIG. 25

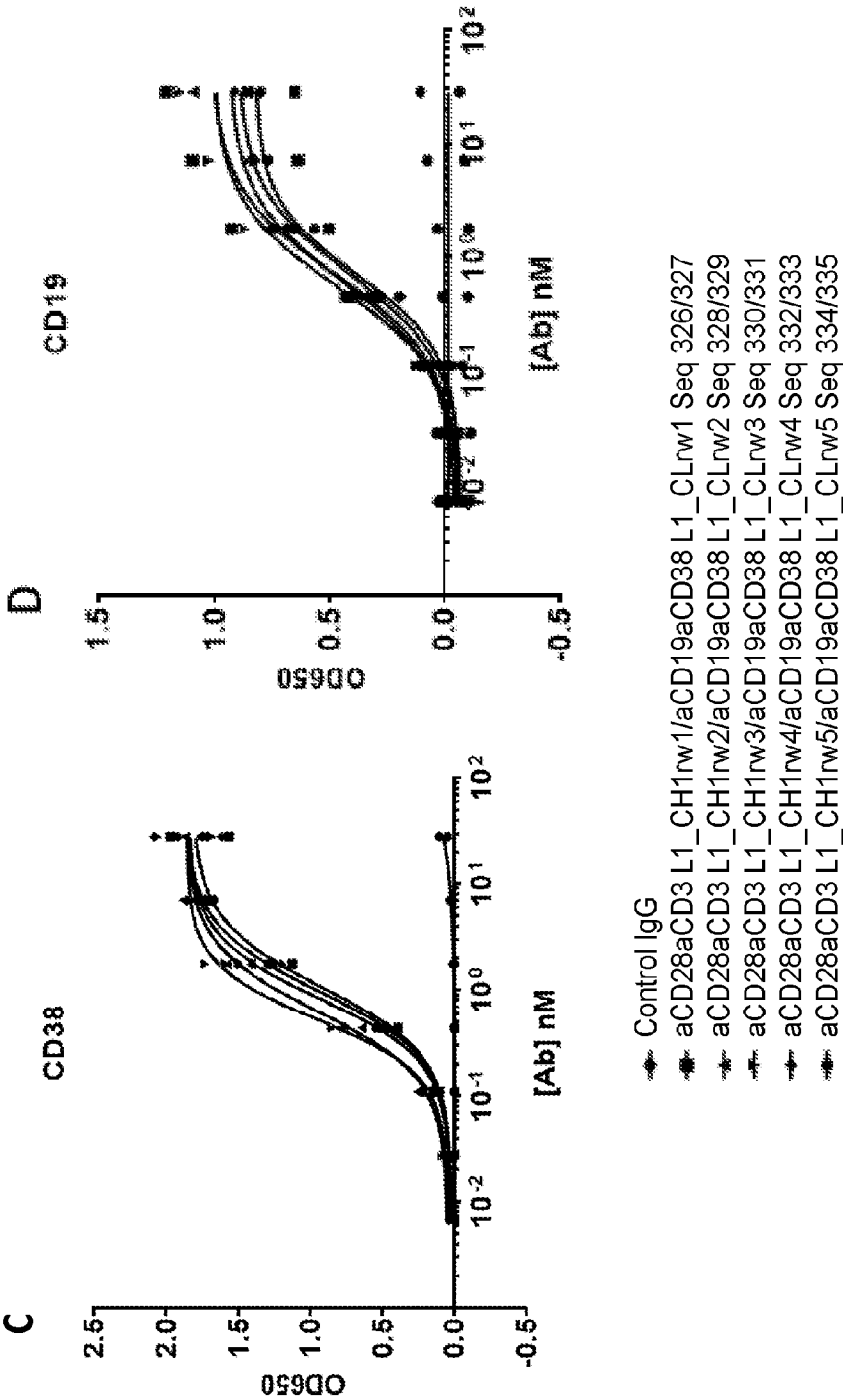


FIG. 26

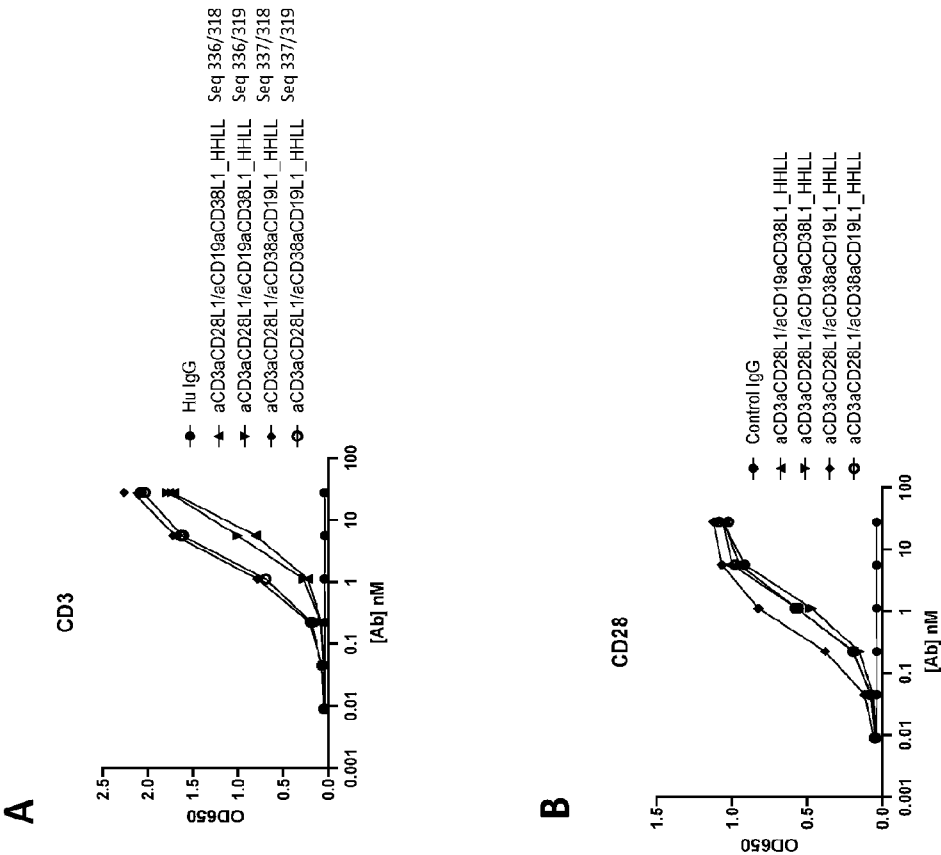


FIG. 26

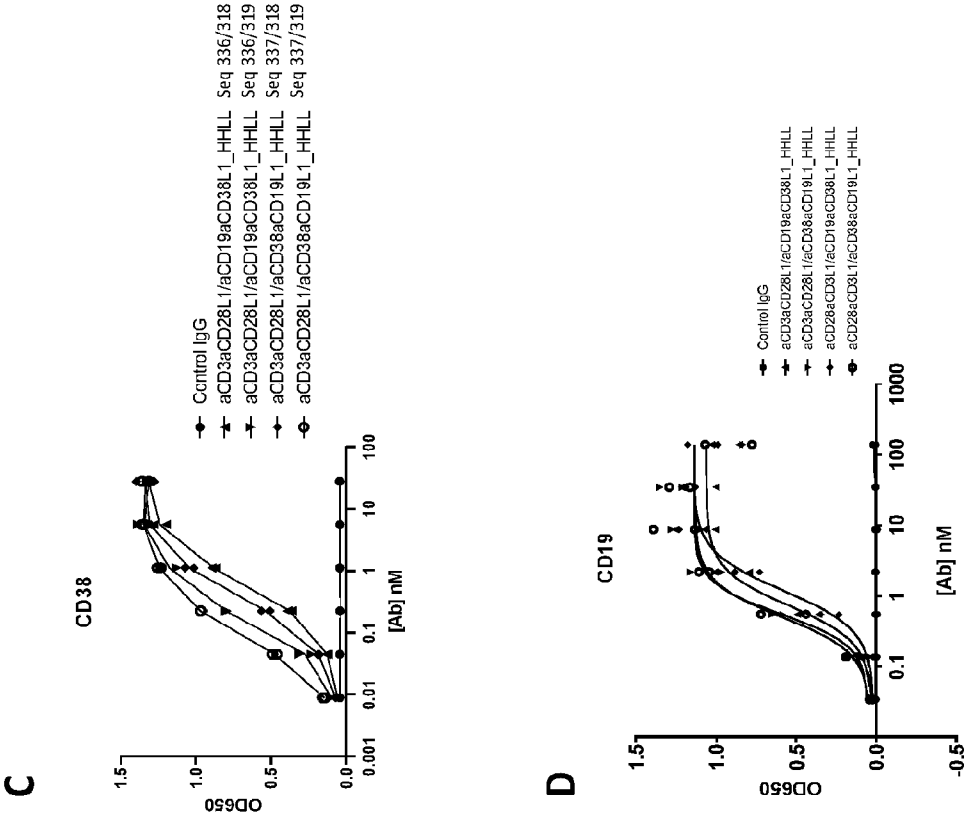


FIG. 26

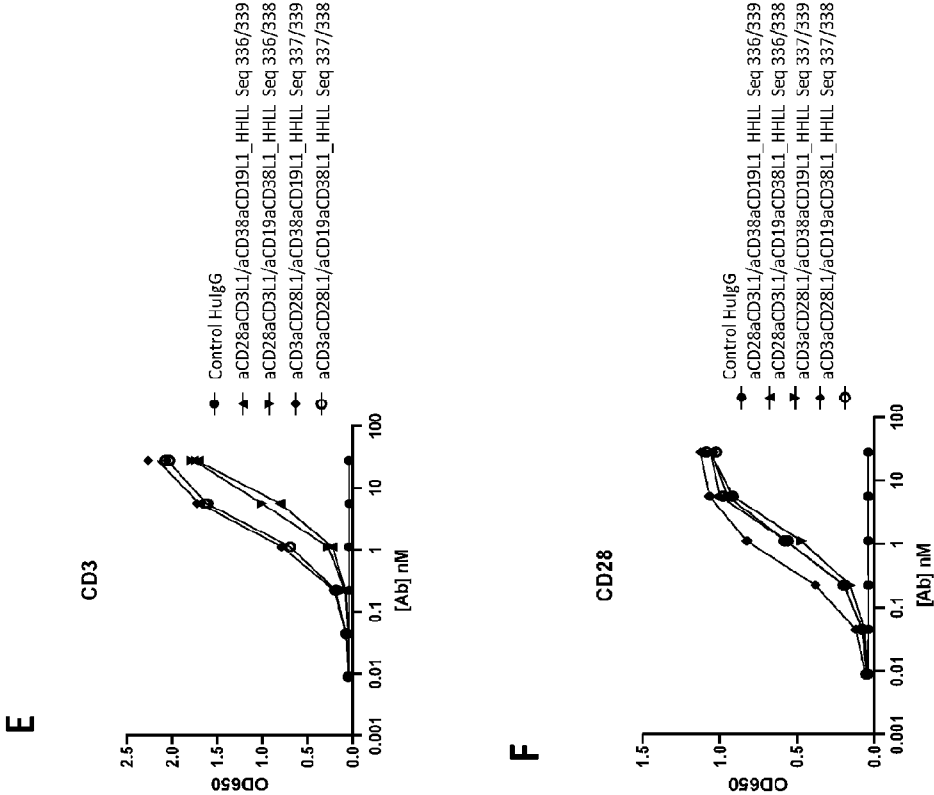


FIG. 26

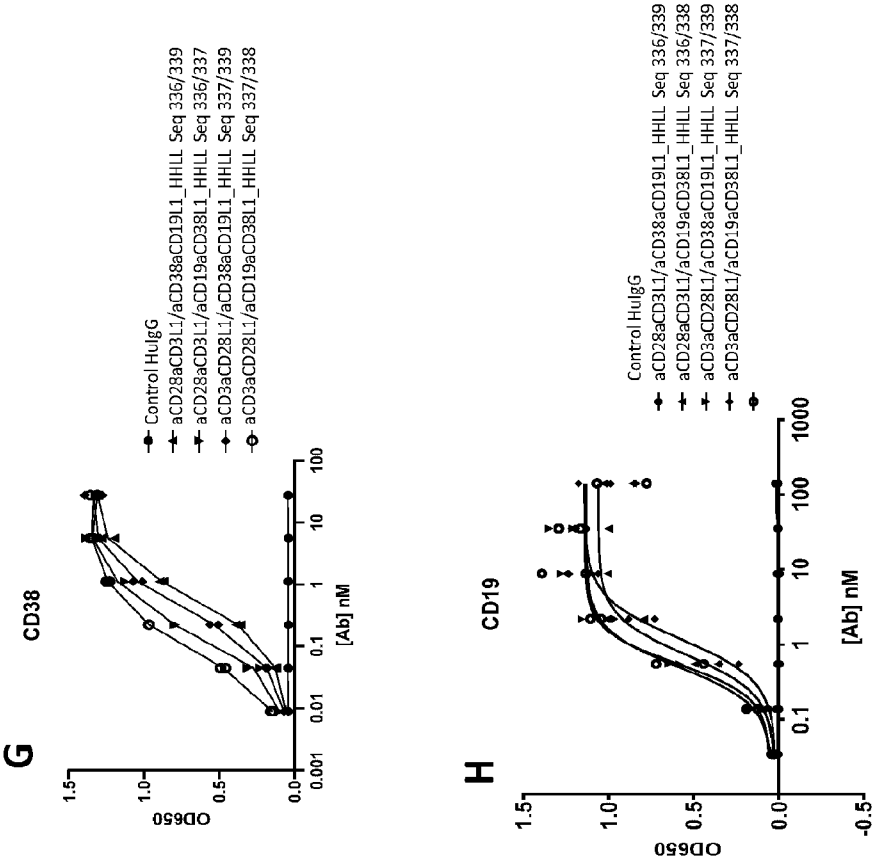


FIG. 27

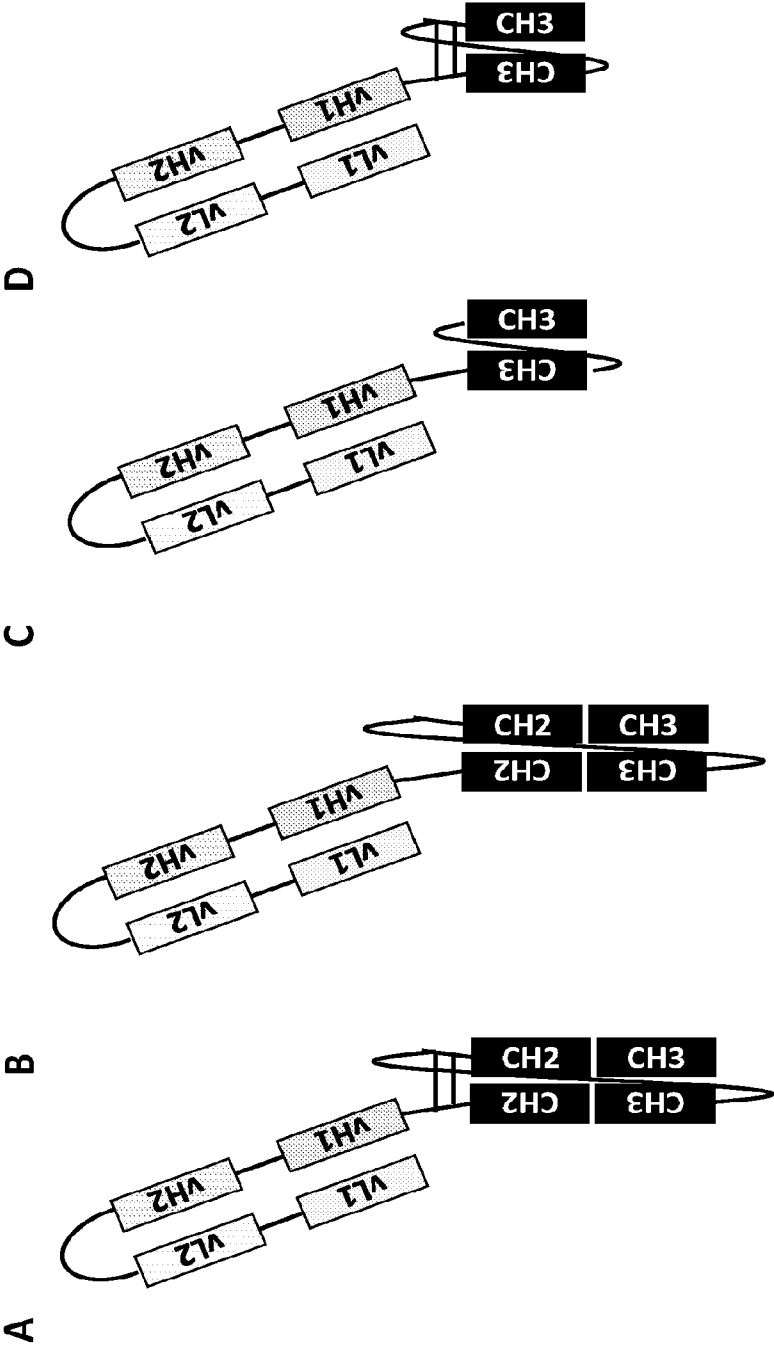
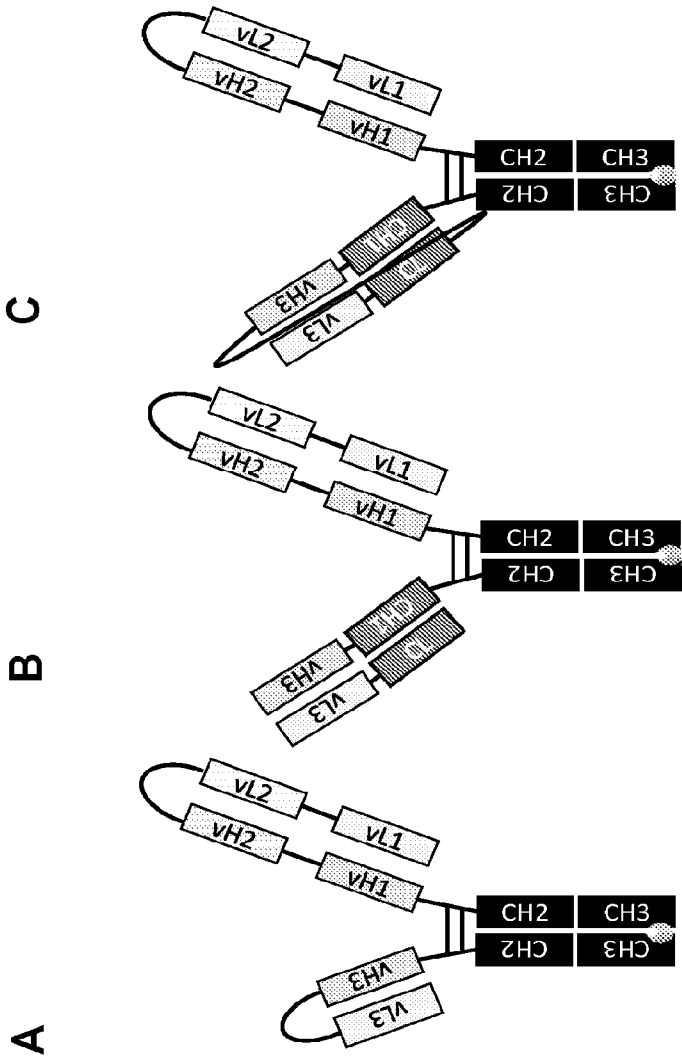


FIG. 28



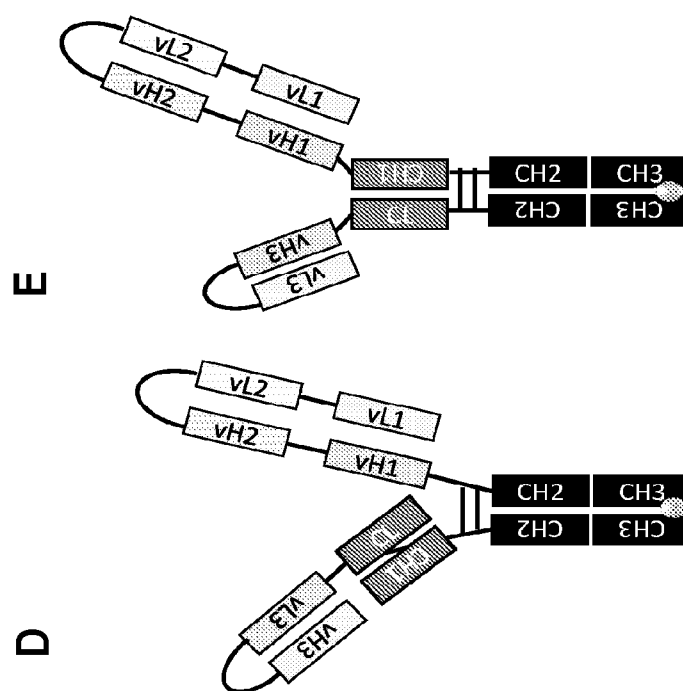


FIG. 29A

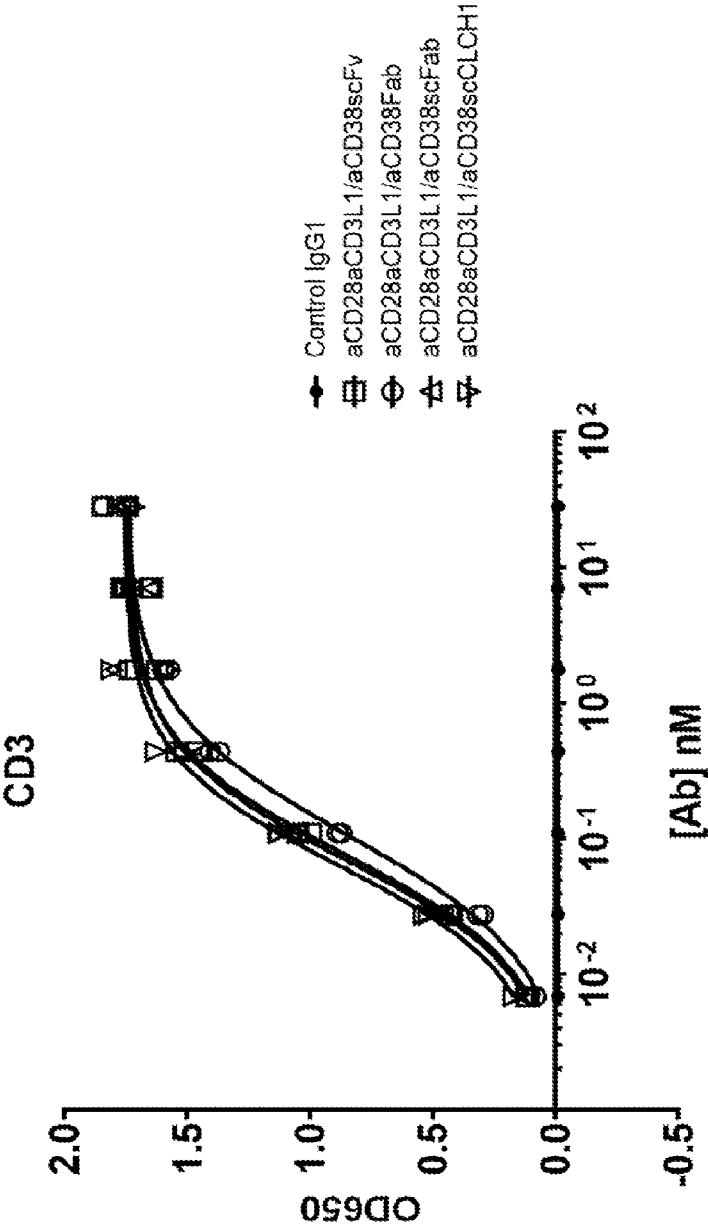


FIG. 29B

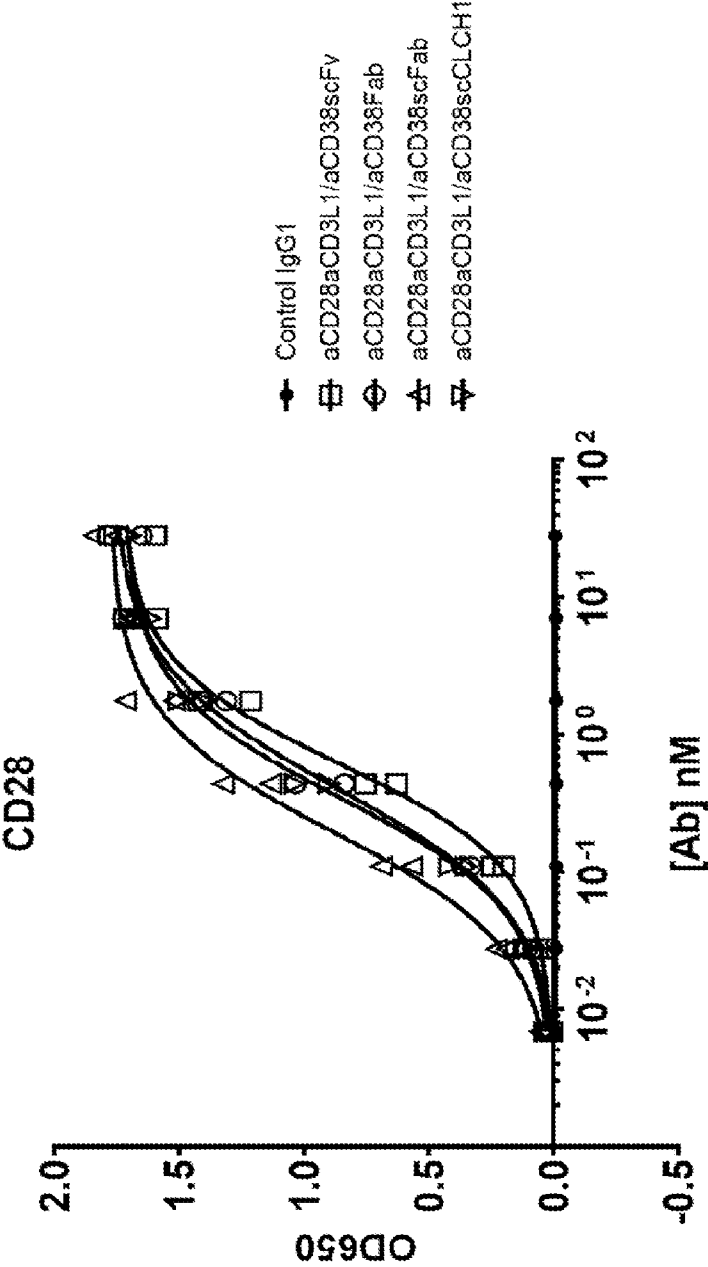


FIG. 29C

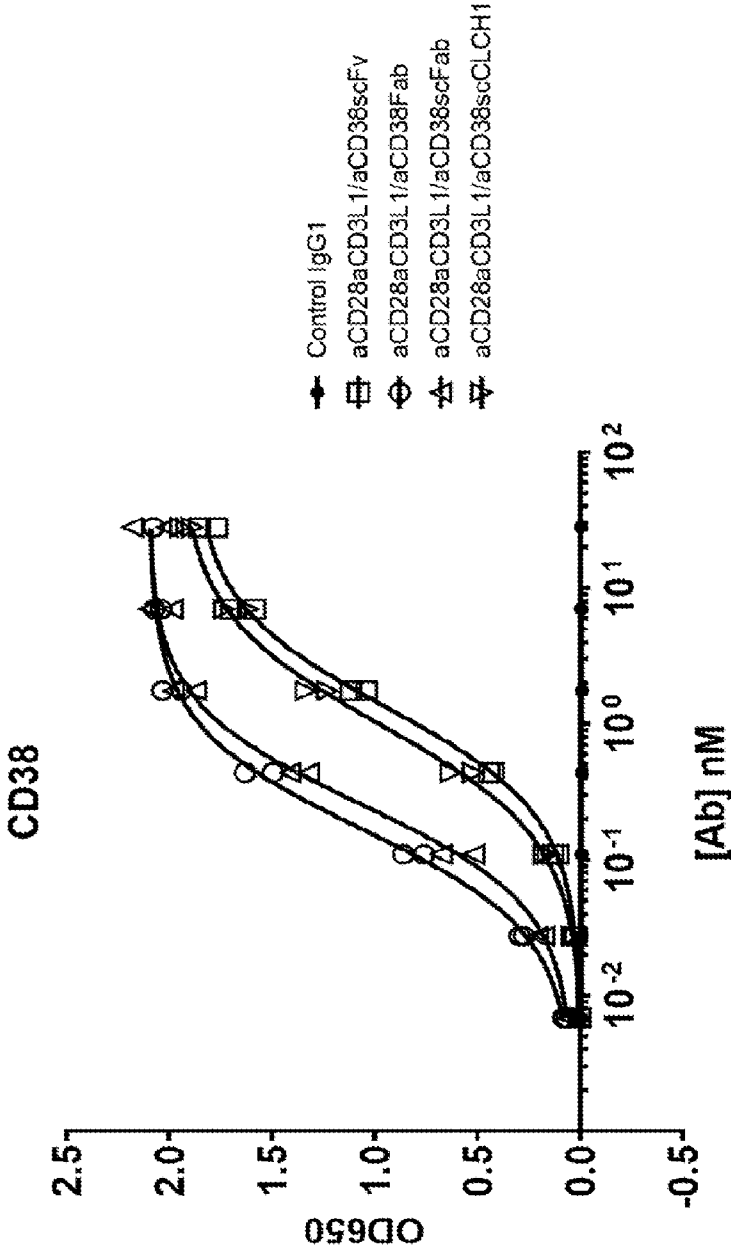


FIG. 30

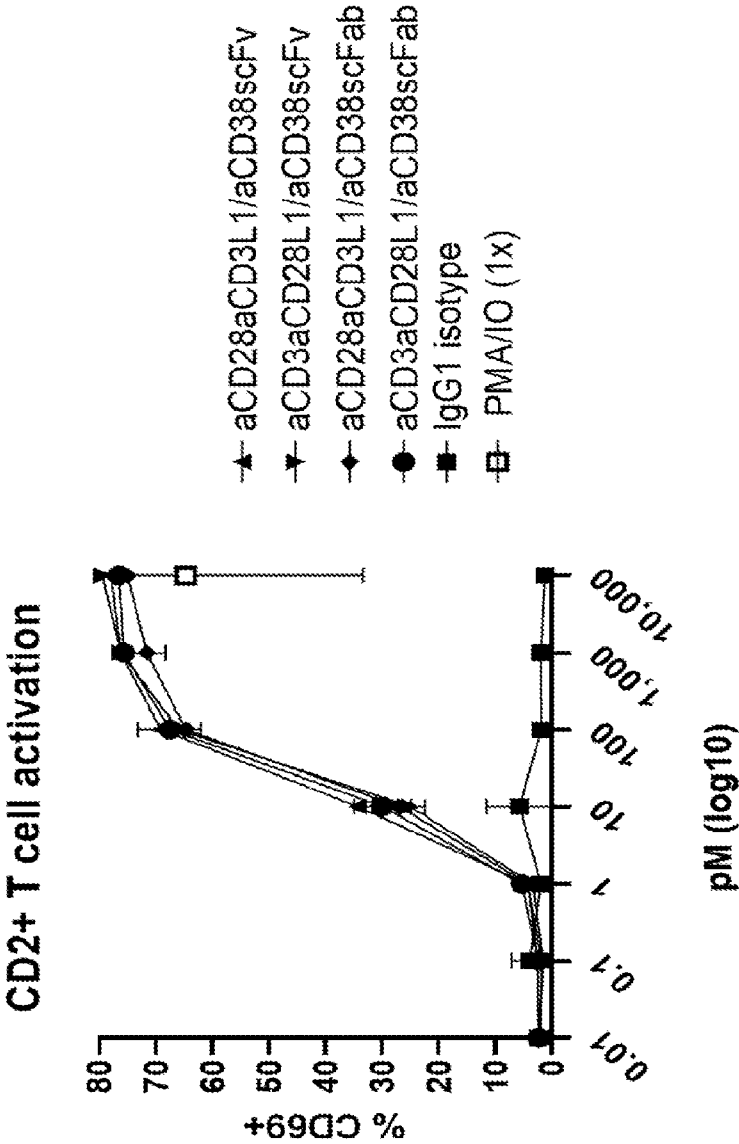


FIG. 31

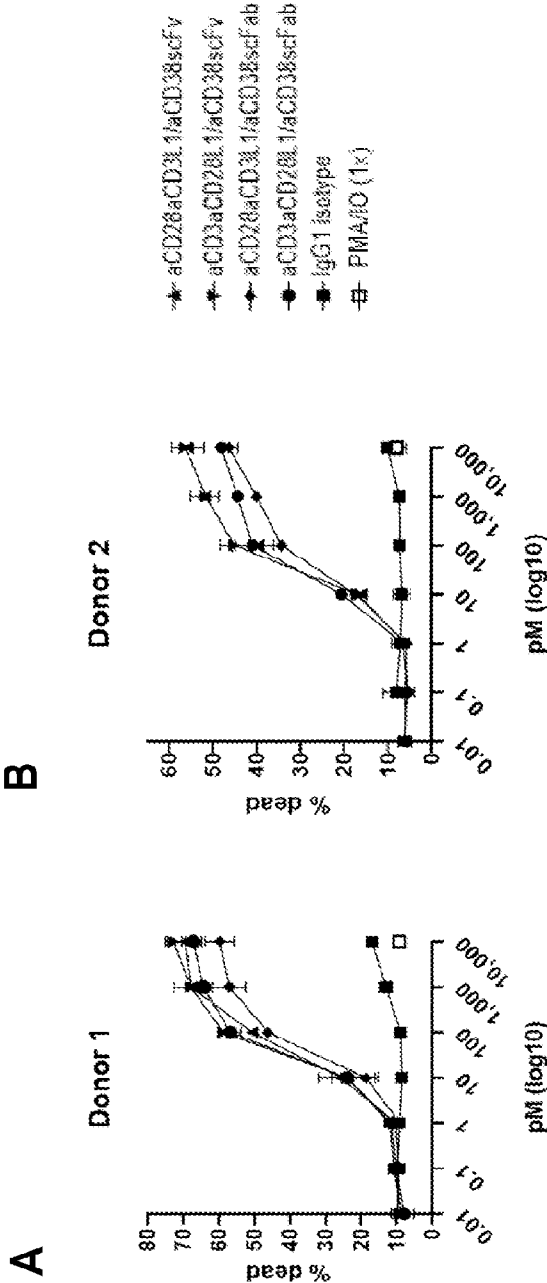
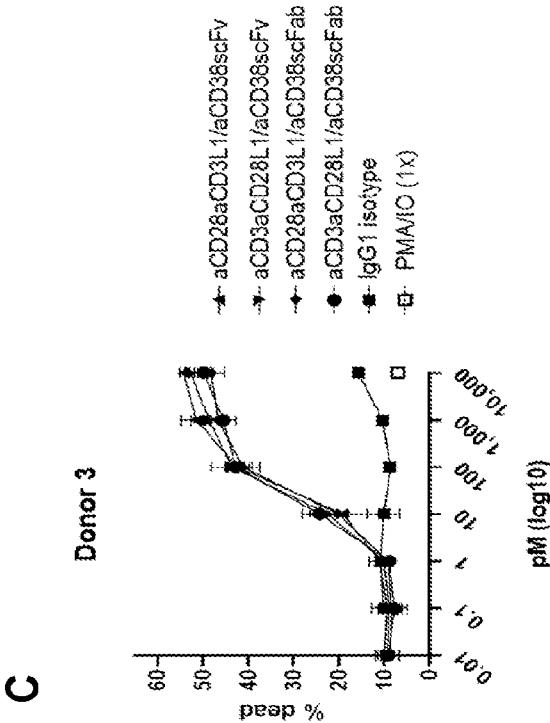


FIG. 31



10:1 ET ratio

FIG. 32A

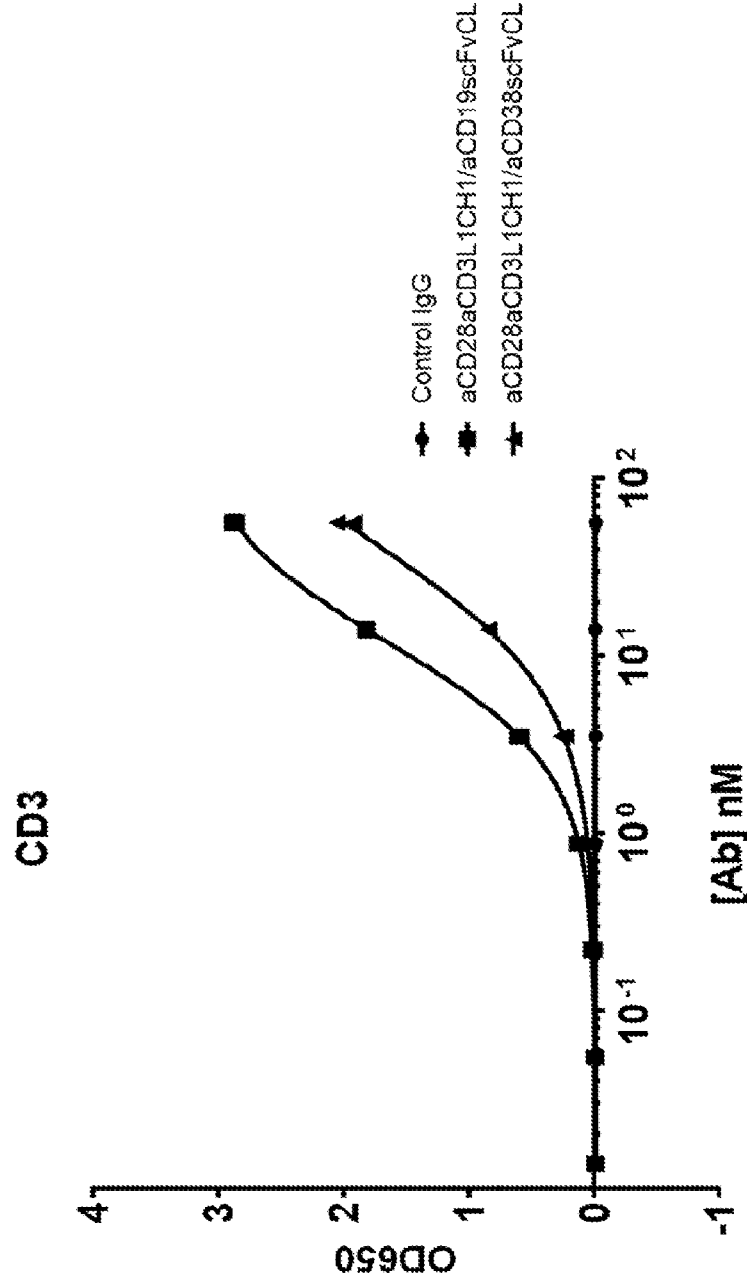


FIG. 32B

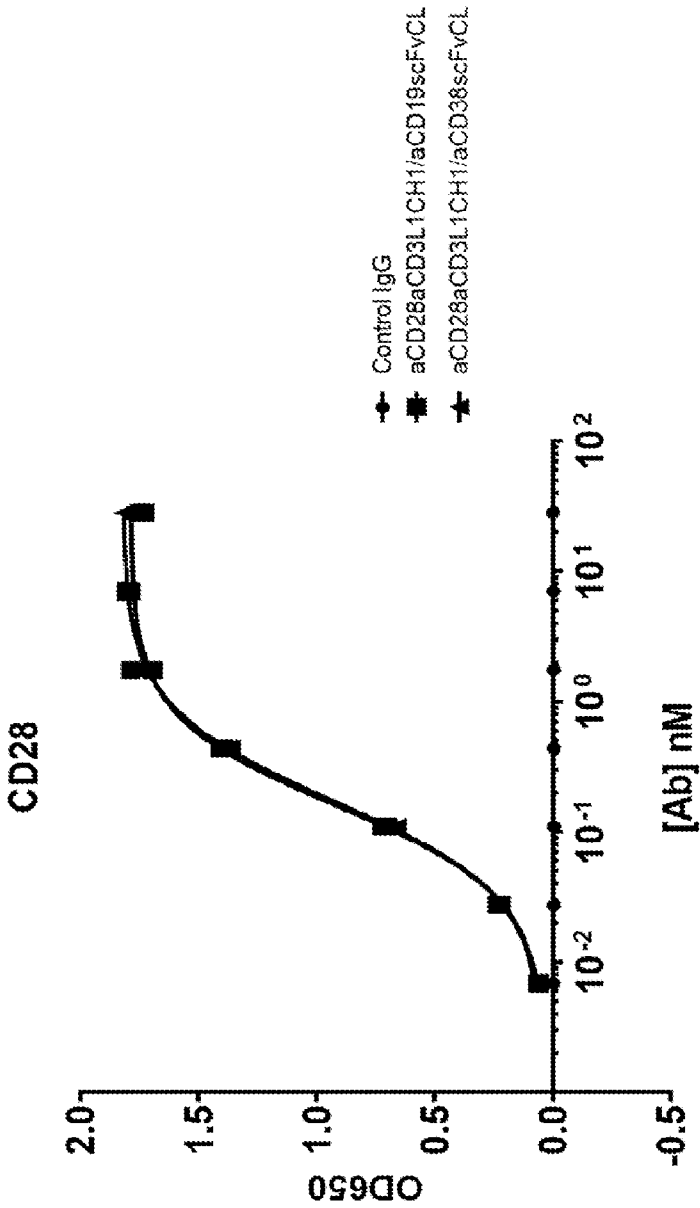


FIG. 32C

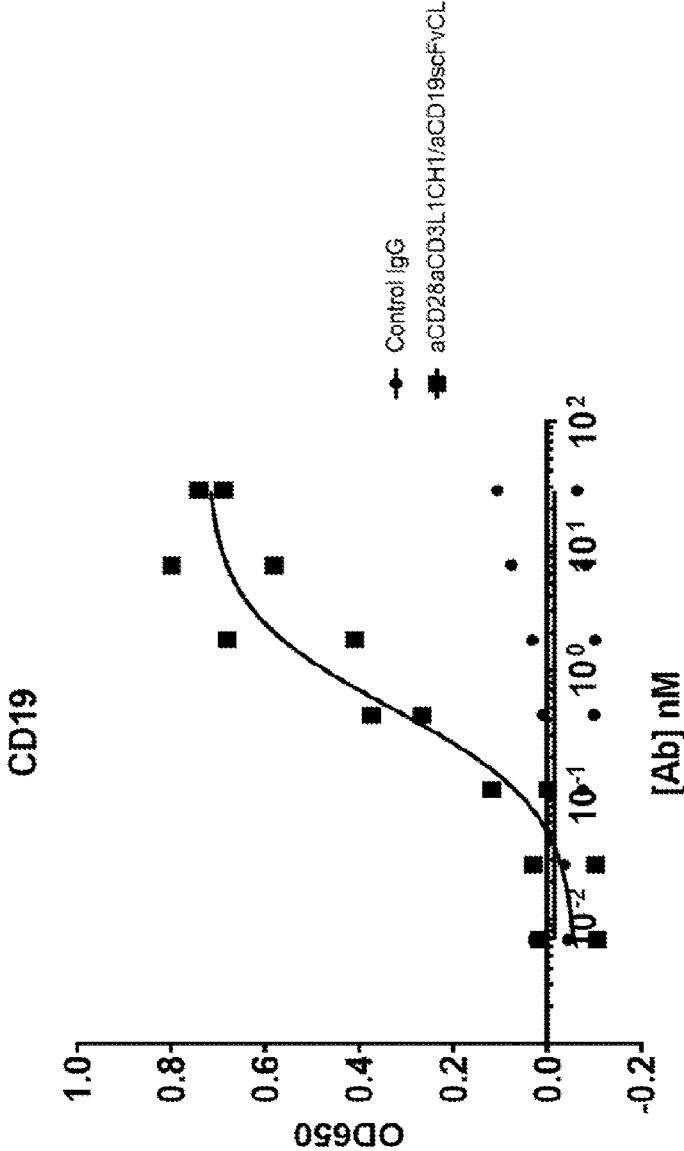
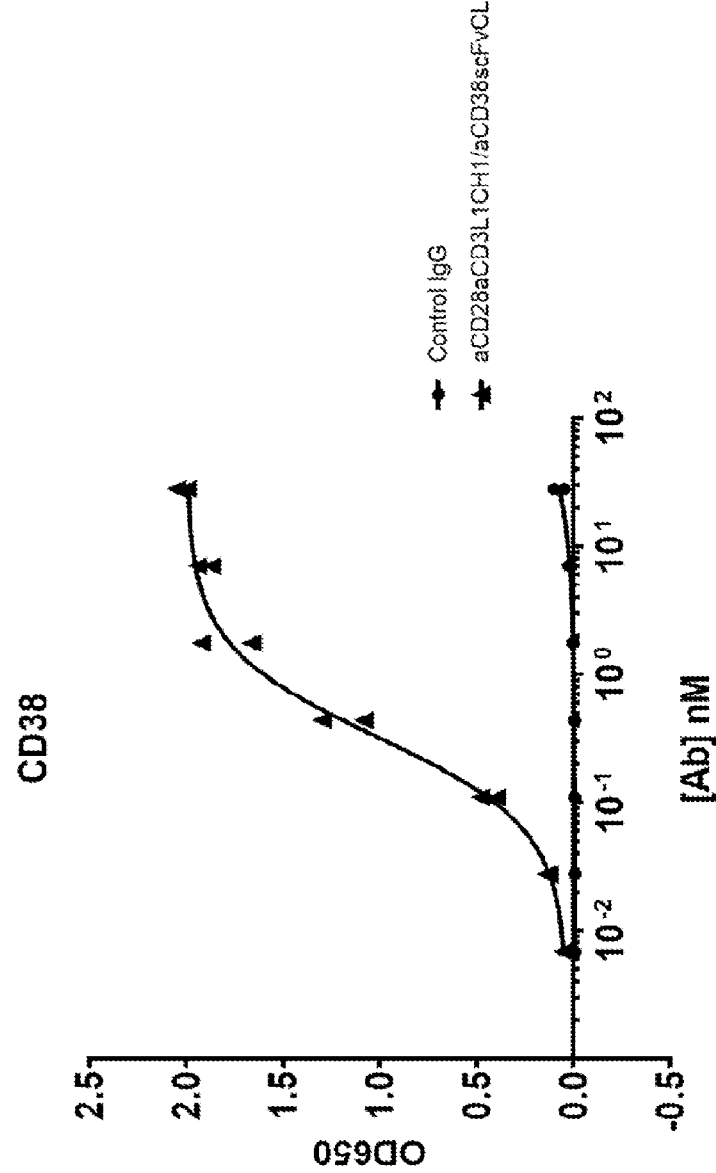
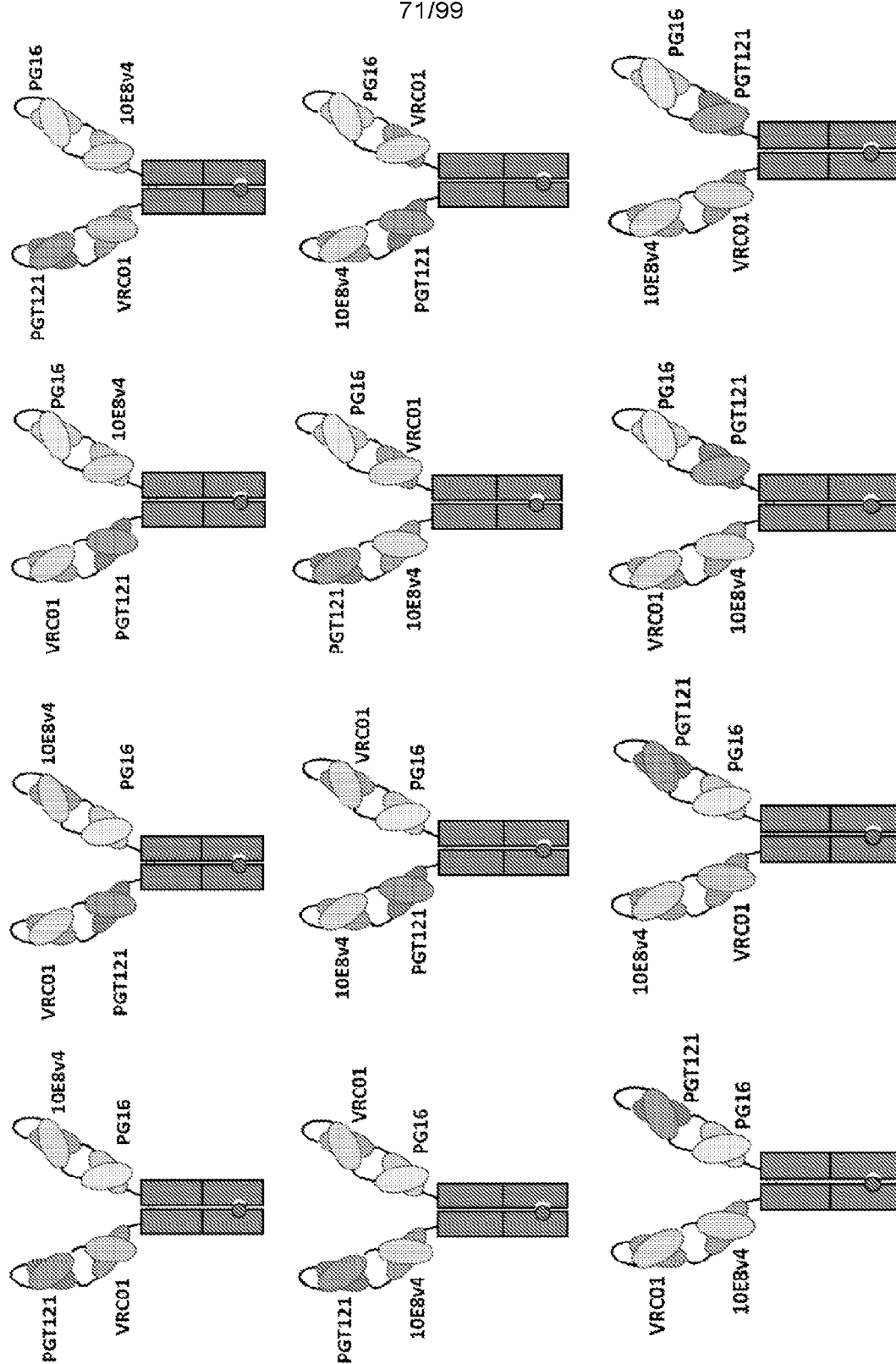


FIG. 32D



71/99

FIG. 33



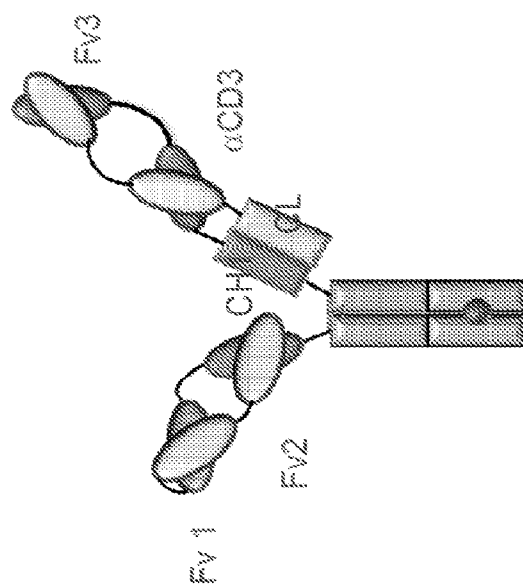


FIG. 34

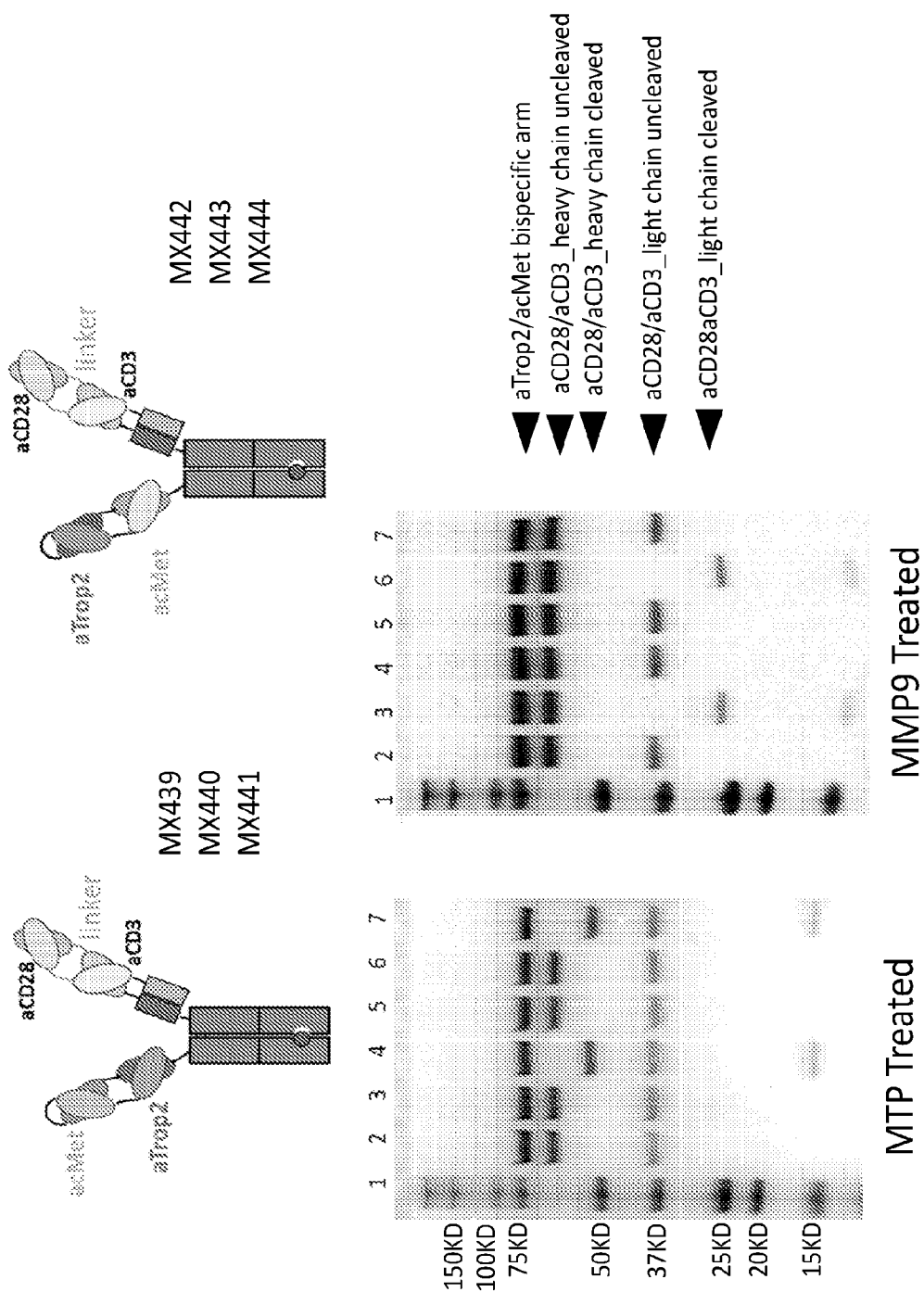


FIG. 35

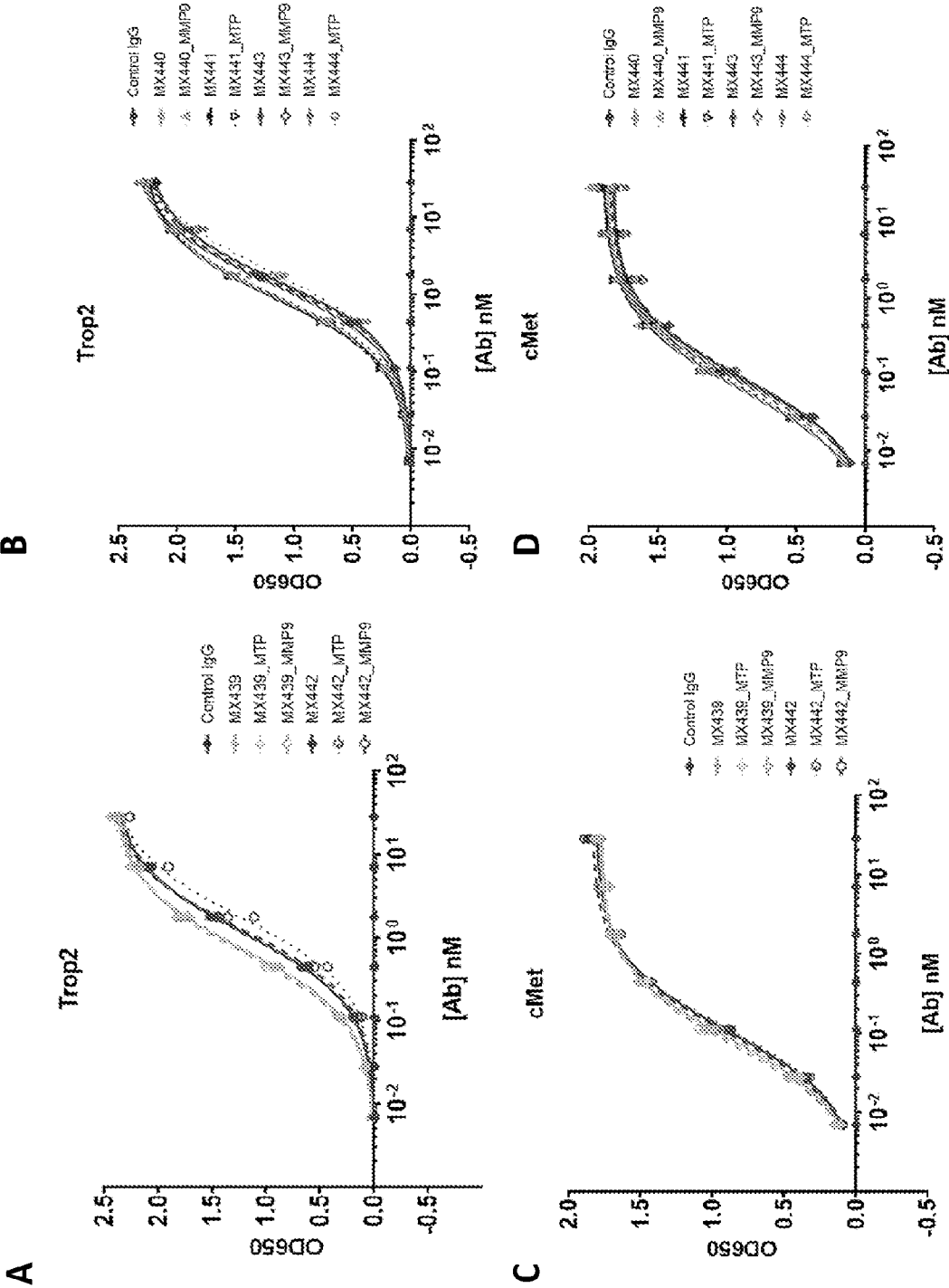


FIG. 36

FIG. 37

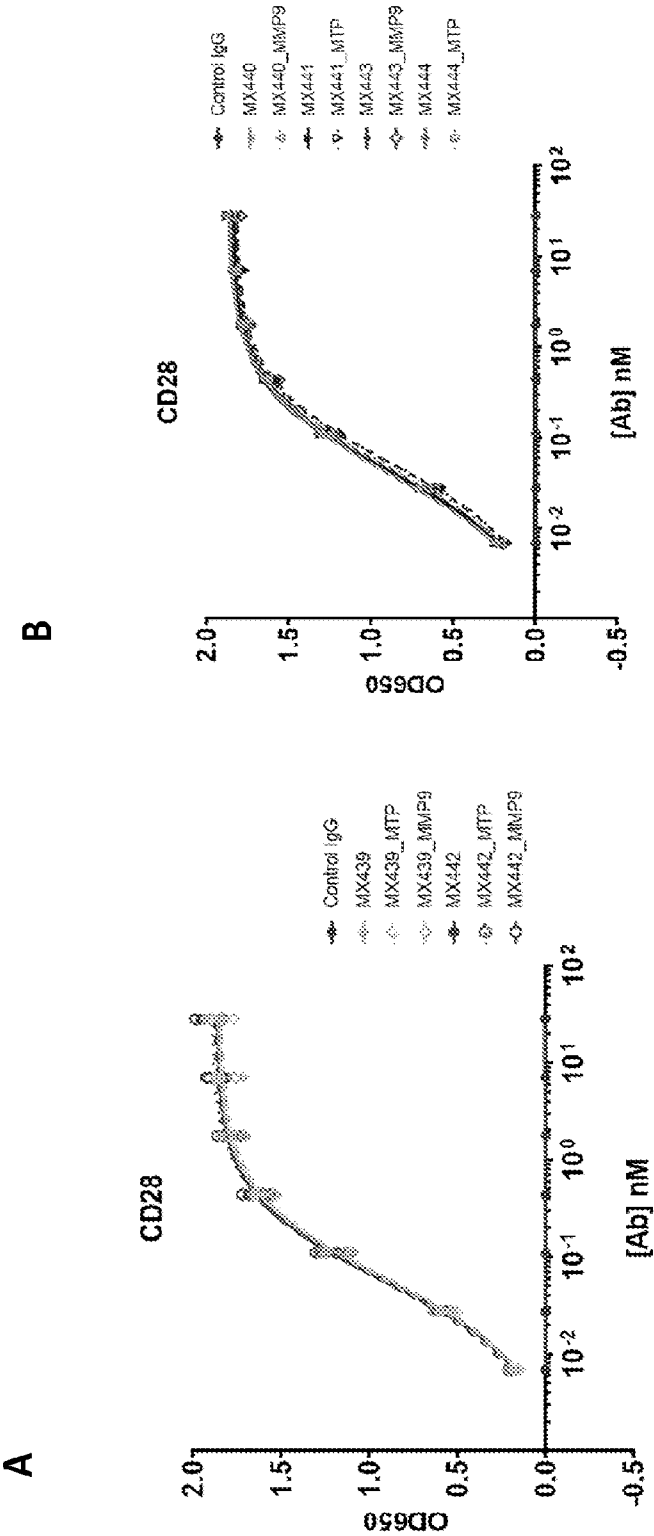
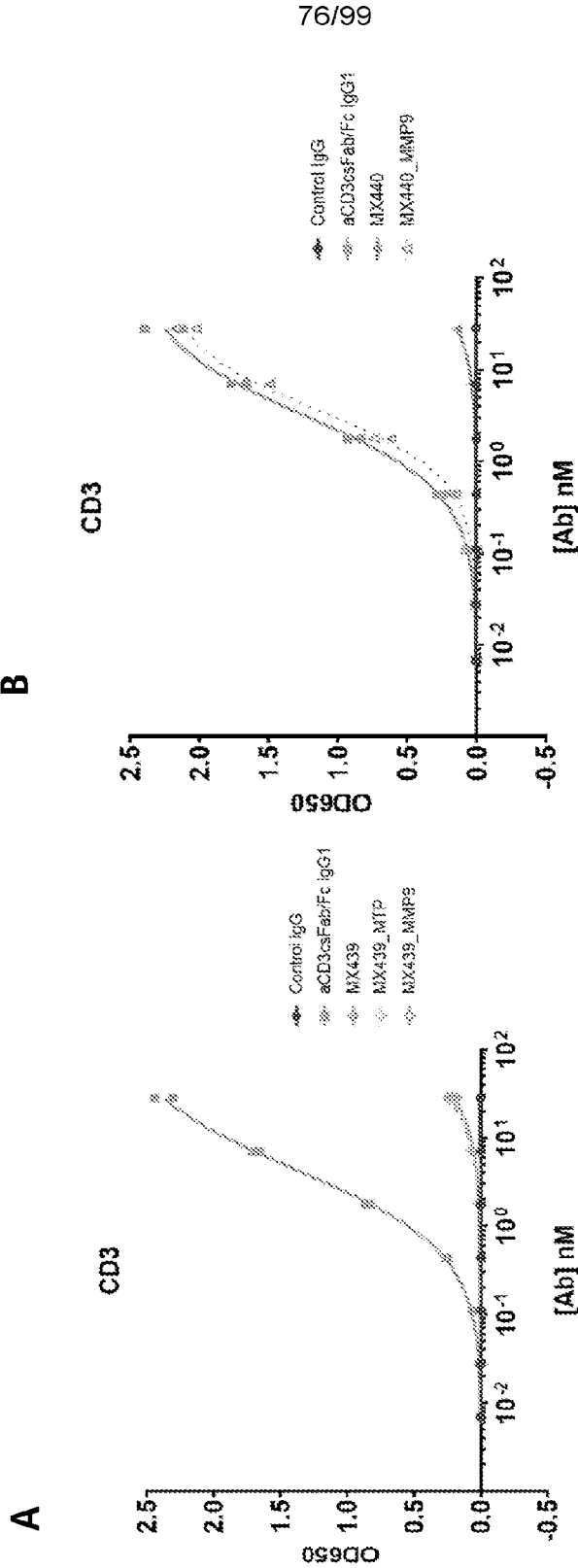


FIG. 38



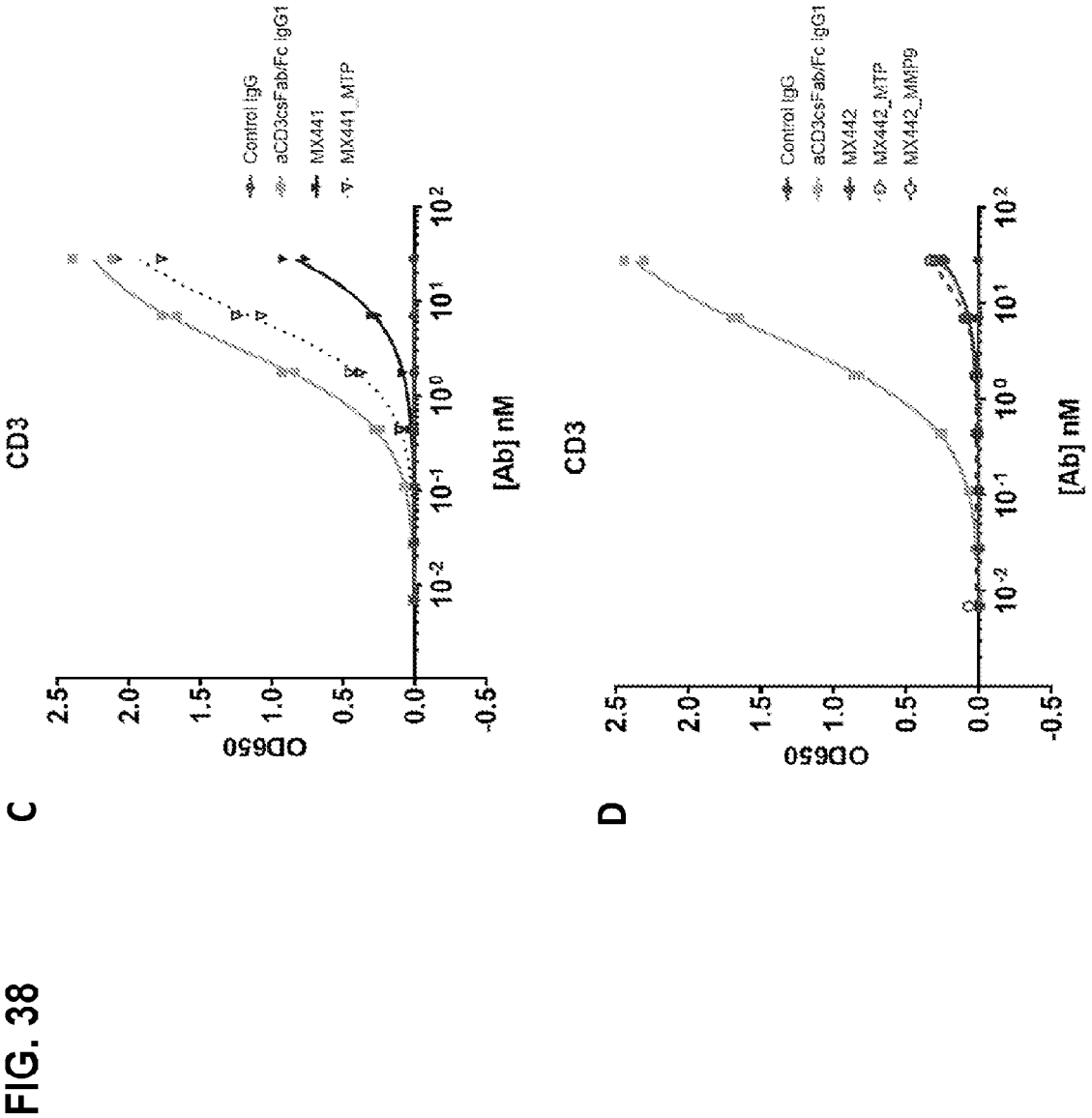
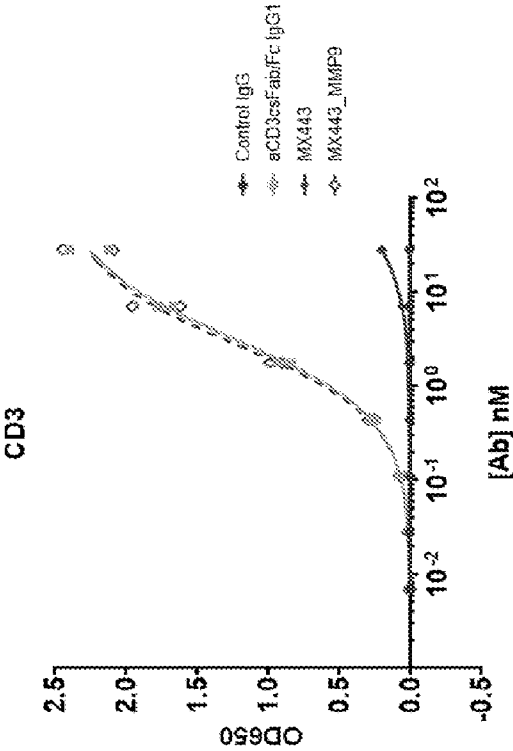
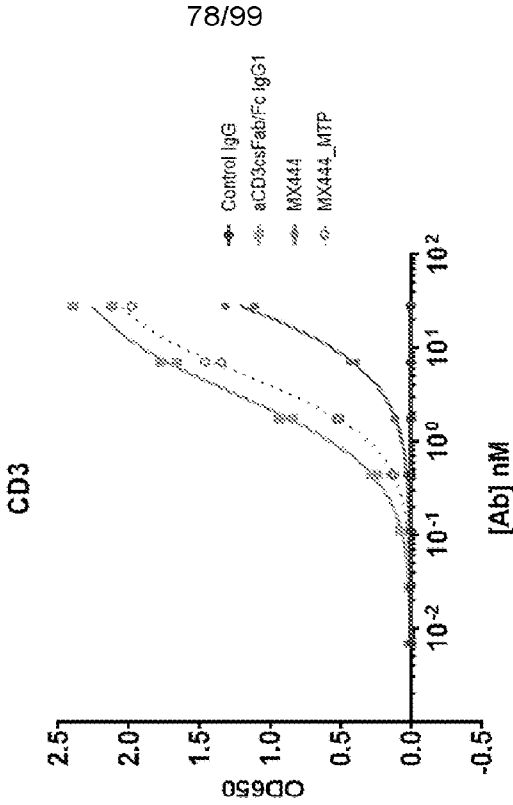


FIG. 38

E

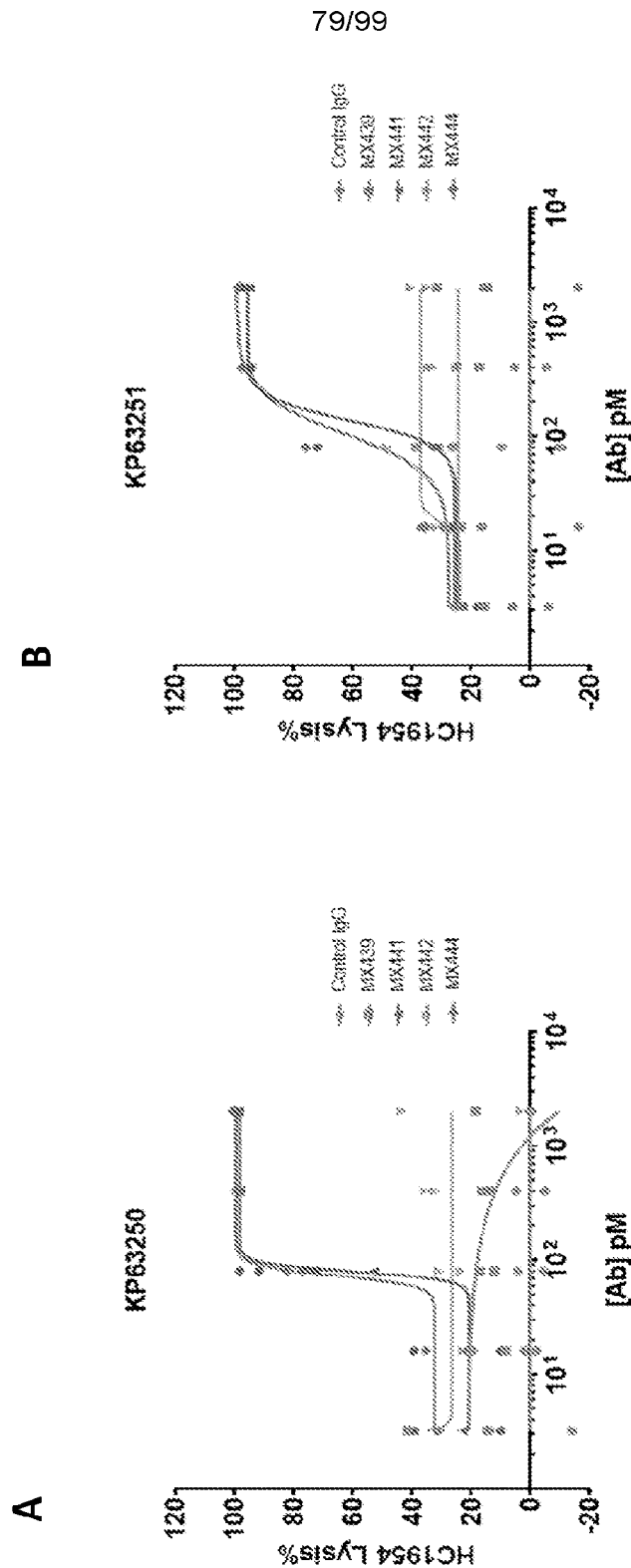


F



78/99

FIG. 39



80/99

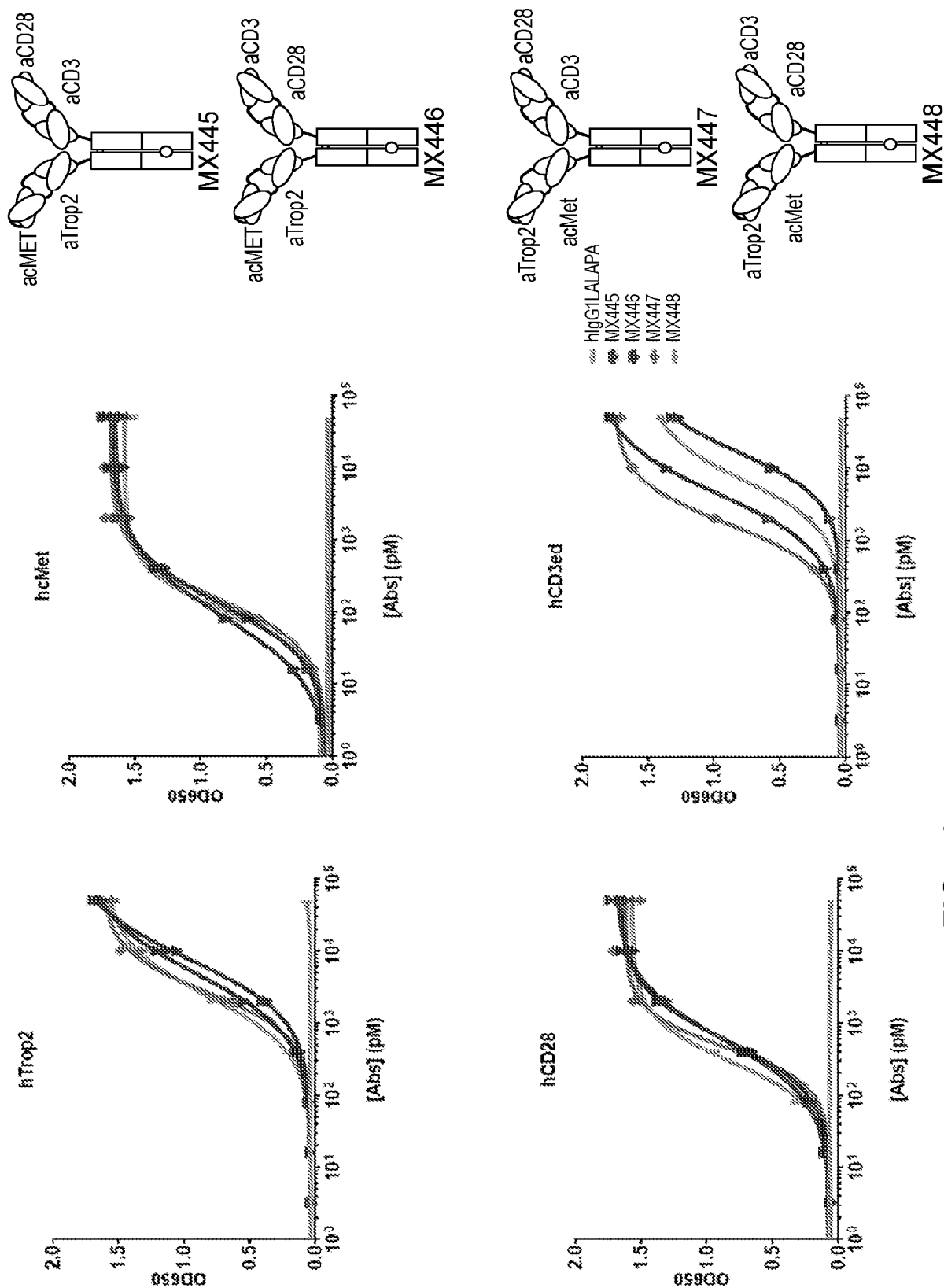


FIG. 40

FIG. 41

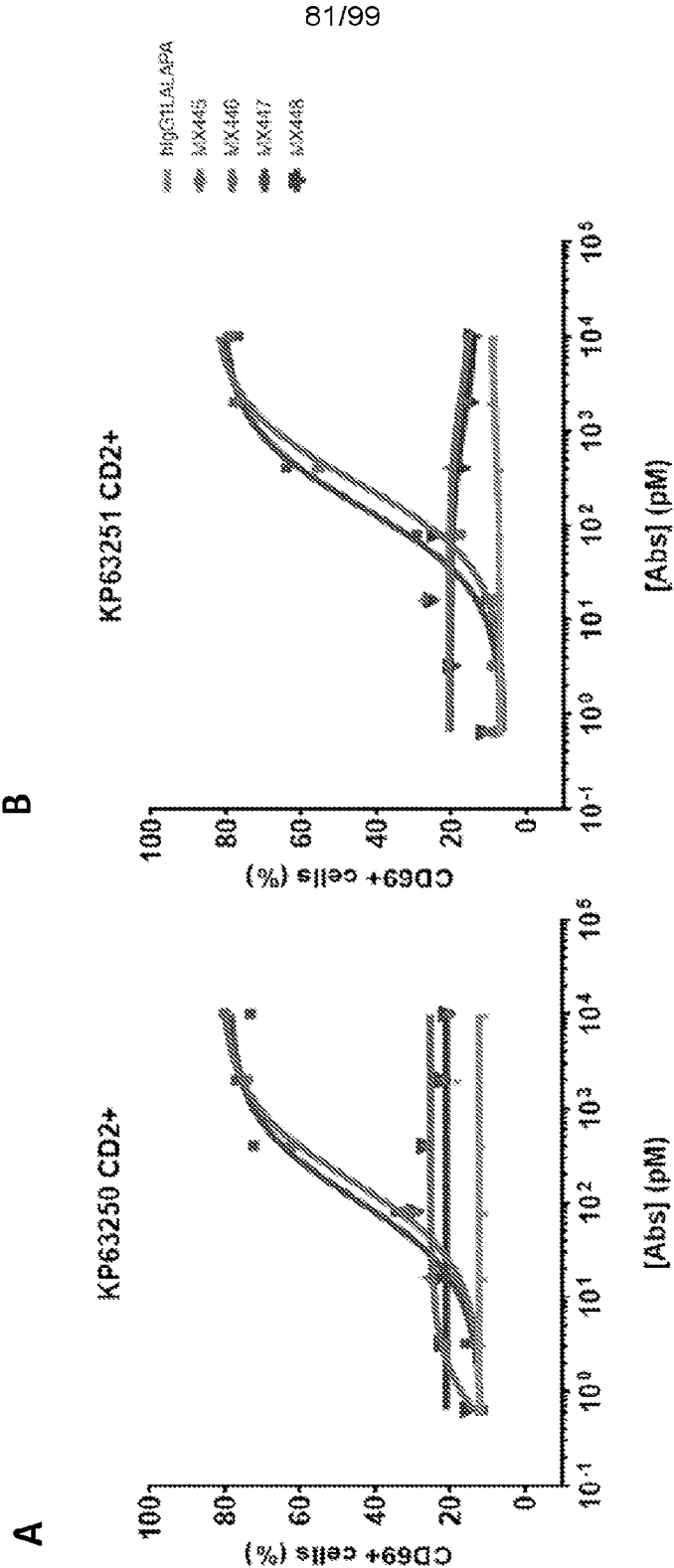


FIG. 42

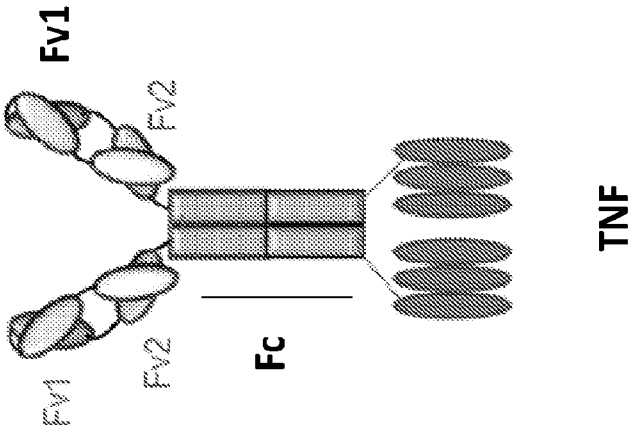


FIG. 43

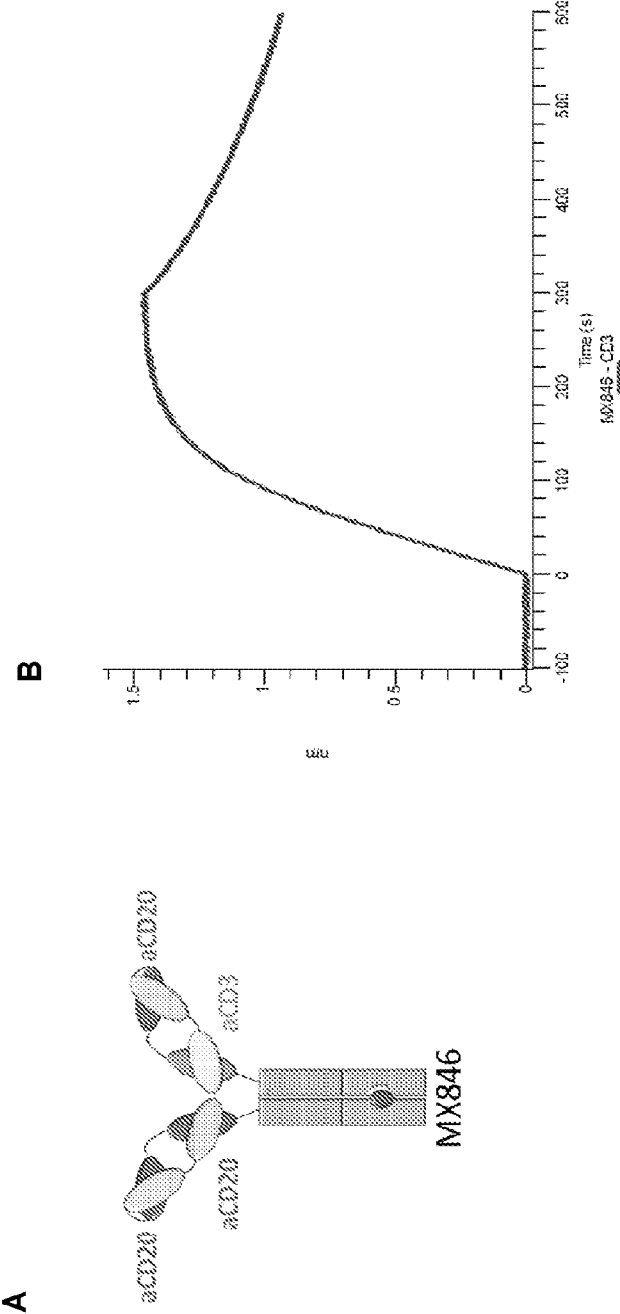


FIG. 43
C

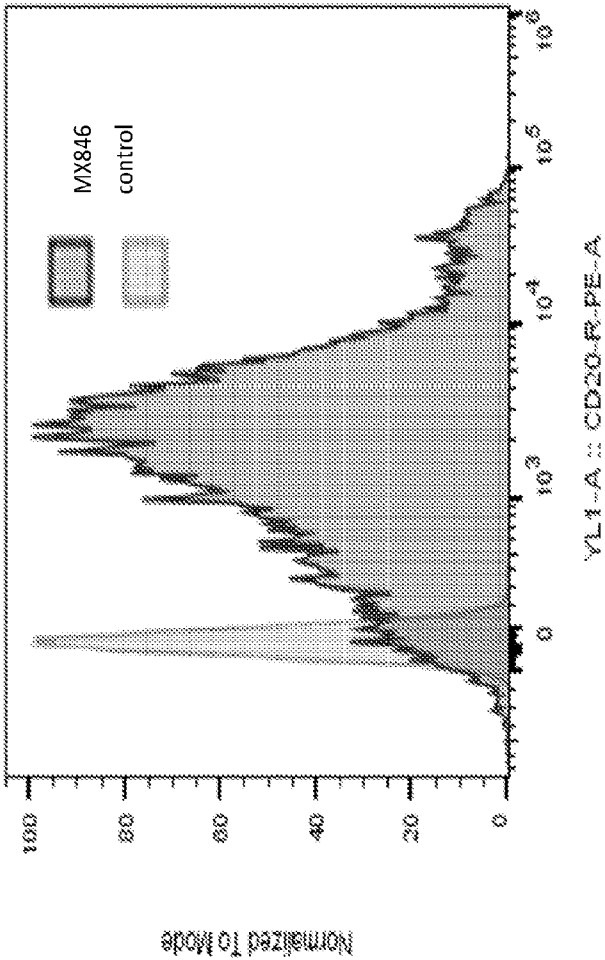
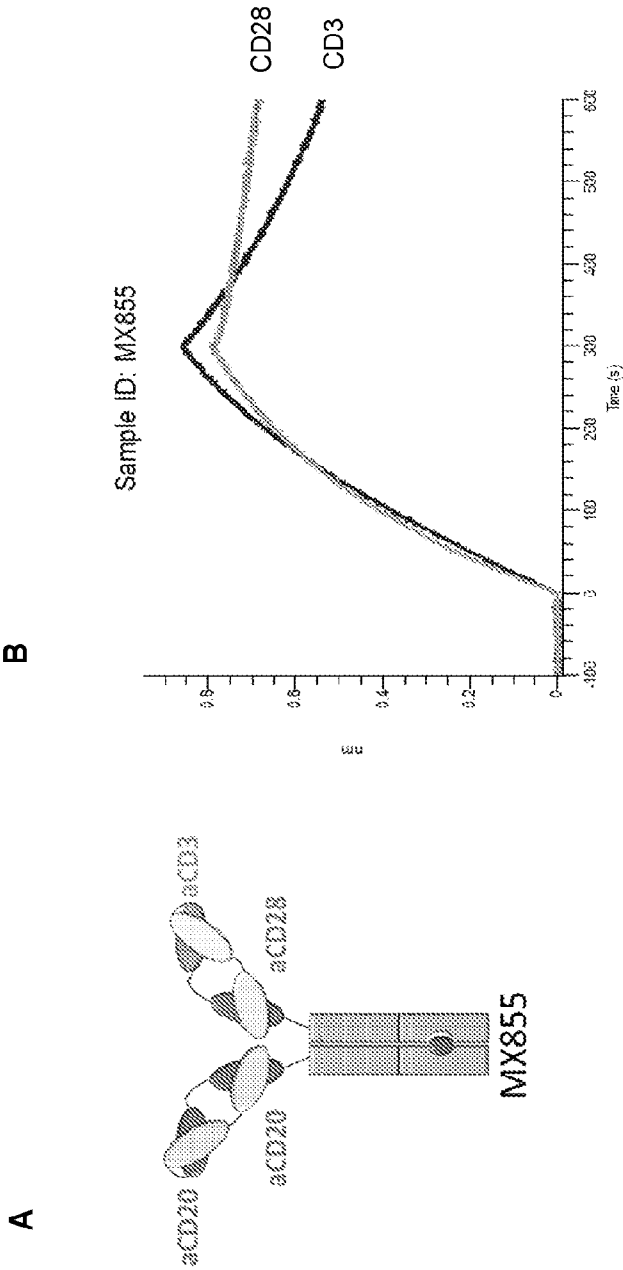


FIG. 44



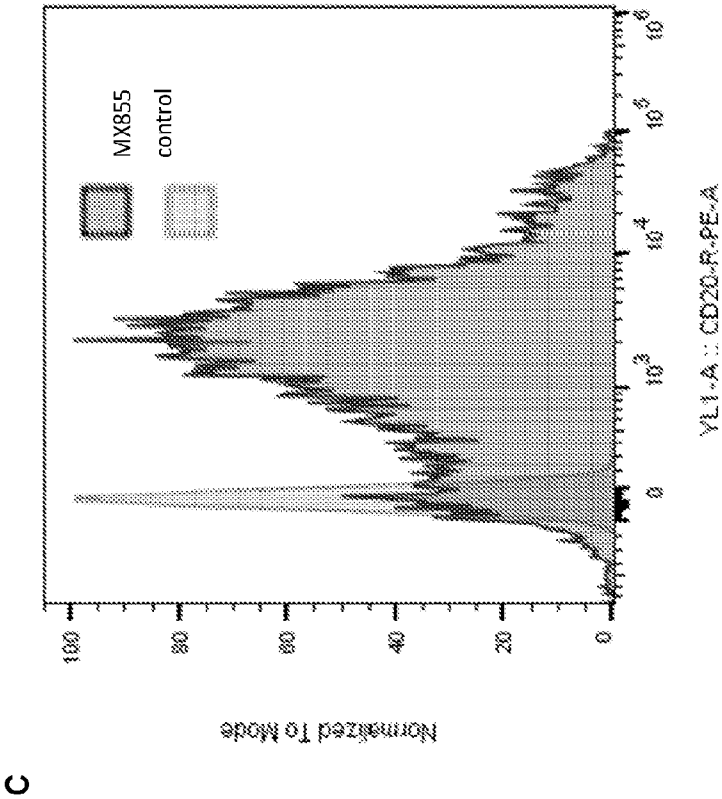
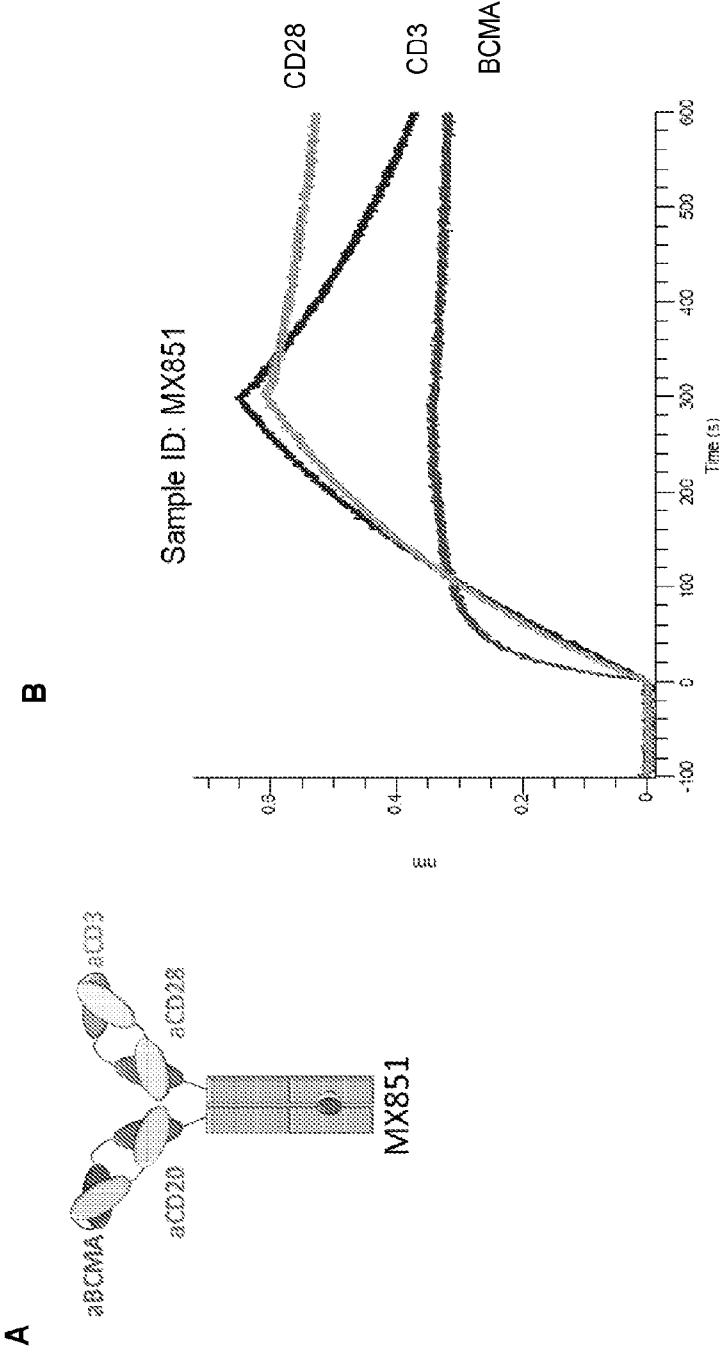


FIG. 44

FIG. 45



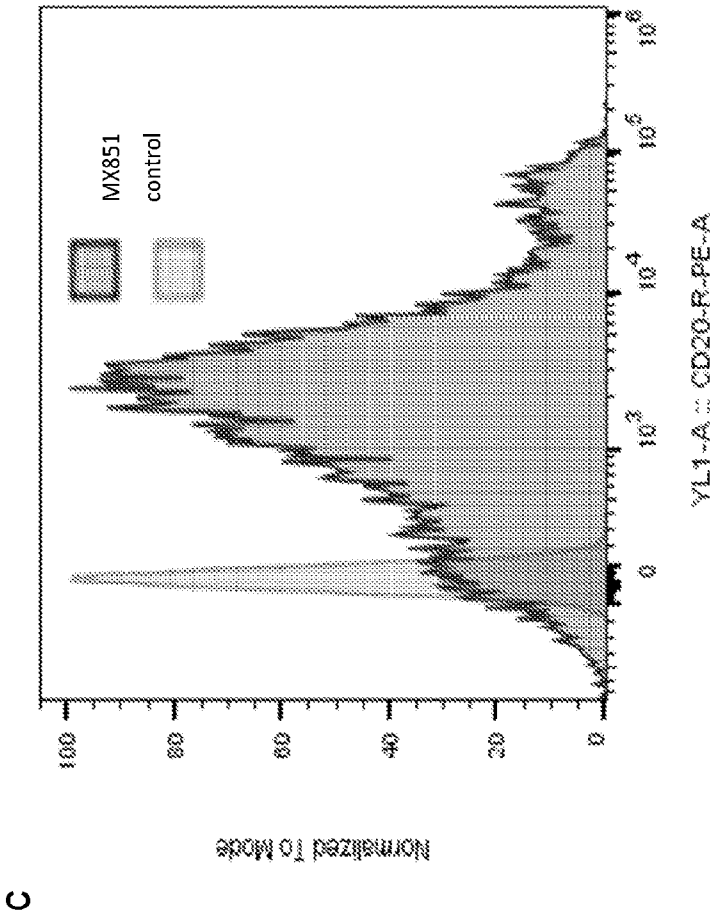


FIG. 45

FIG. 46

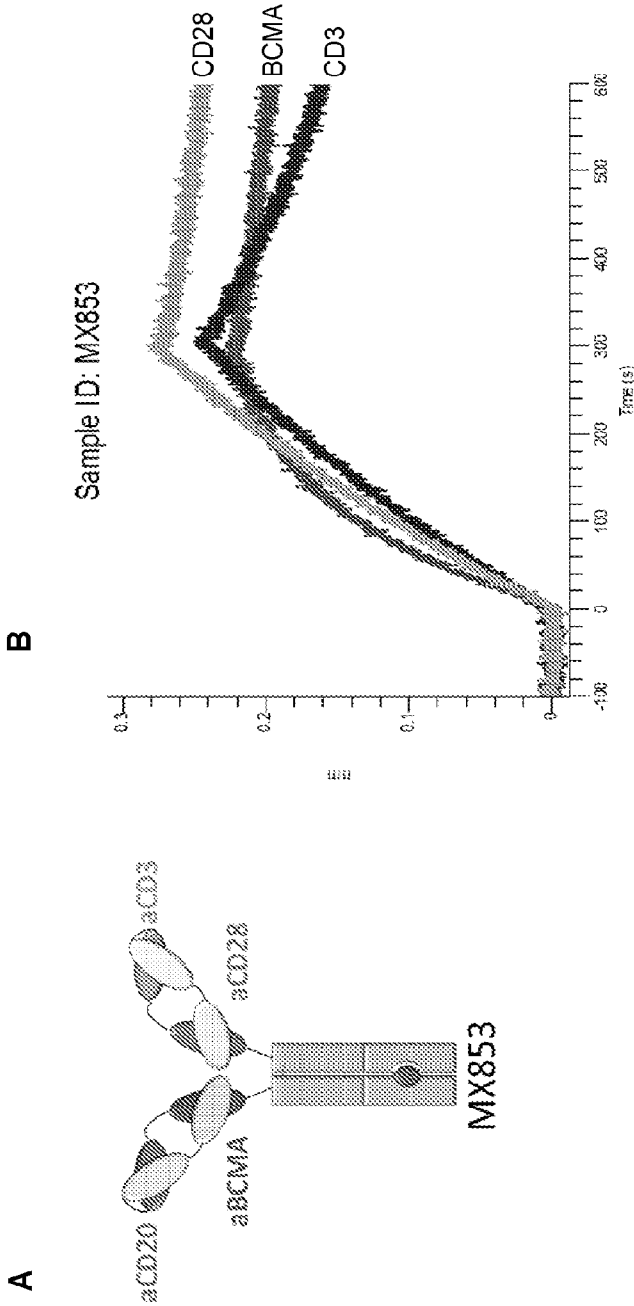


FIG. 46

C

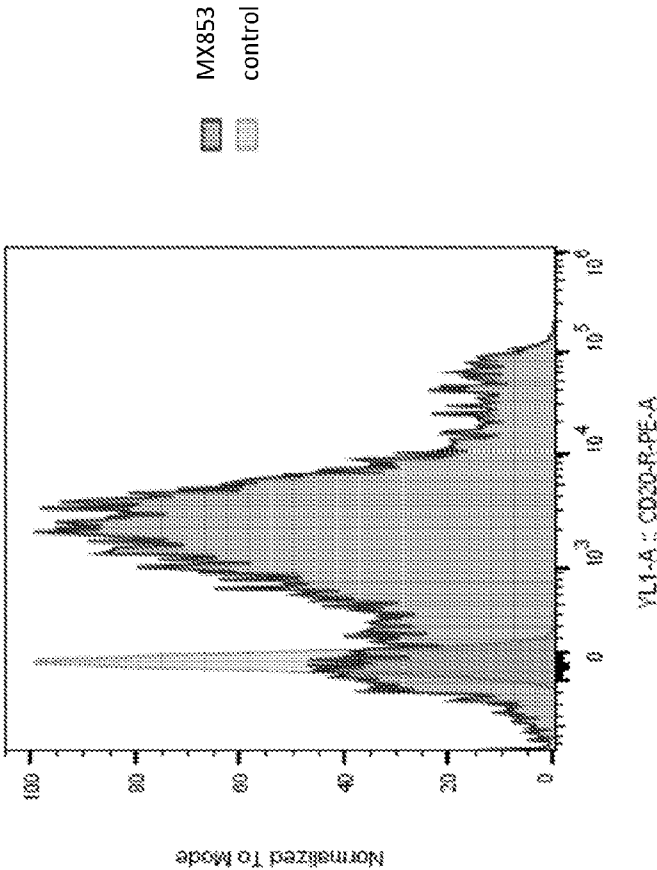
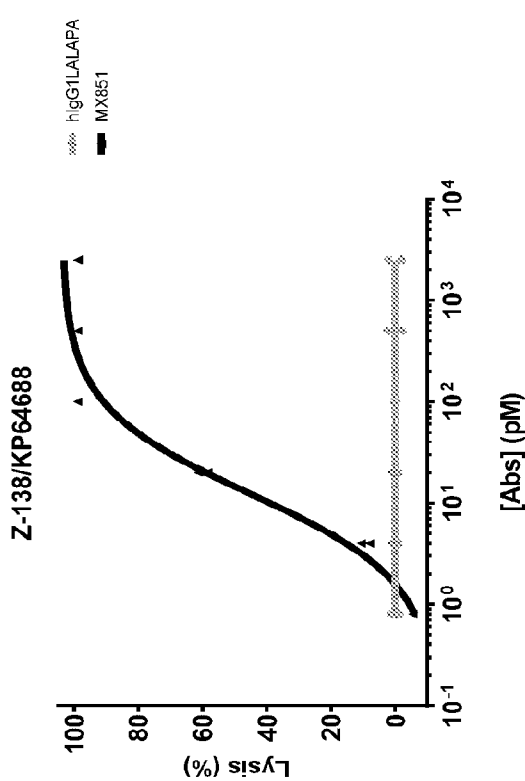


FIG. 47

A



B

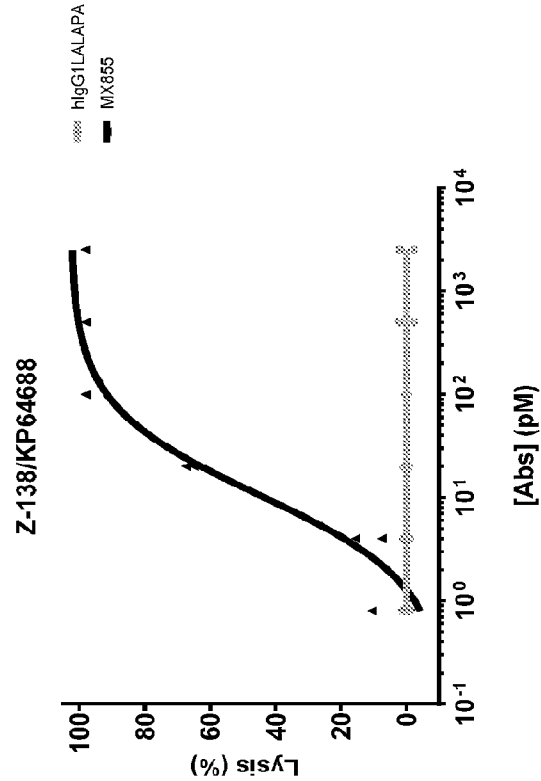


FIG. 48

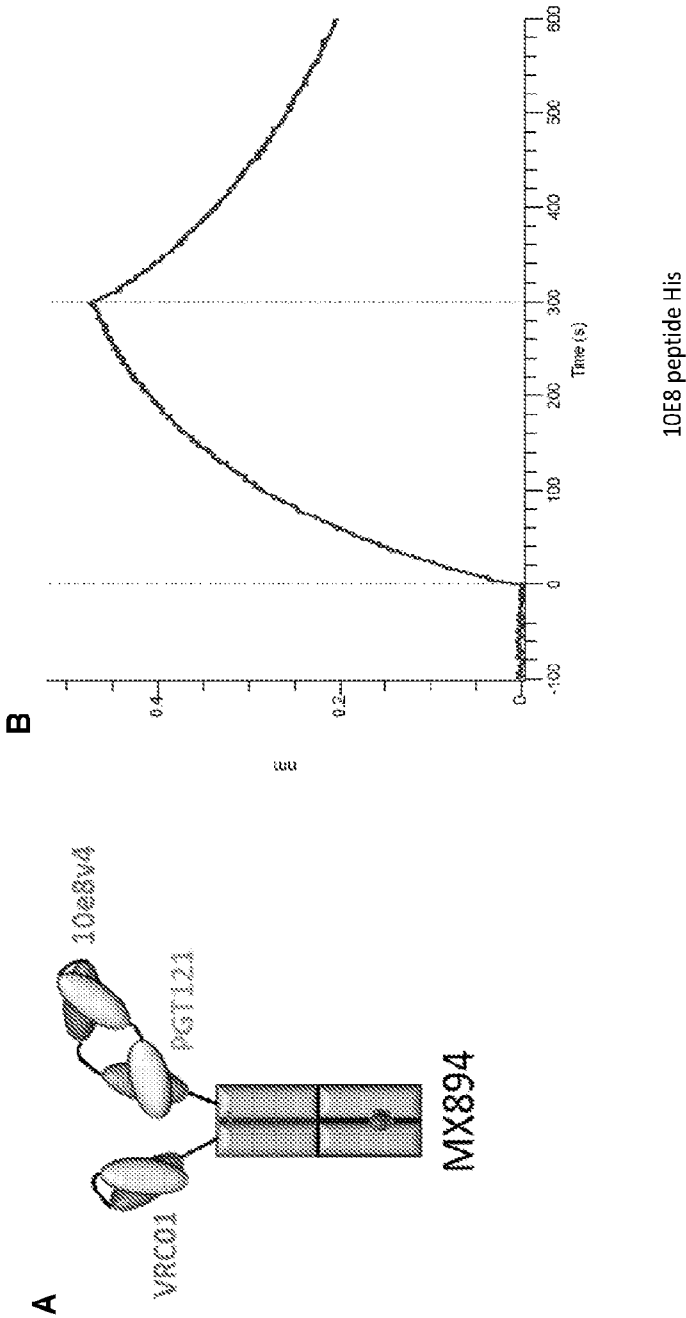
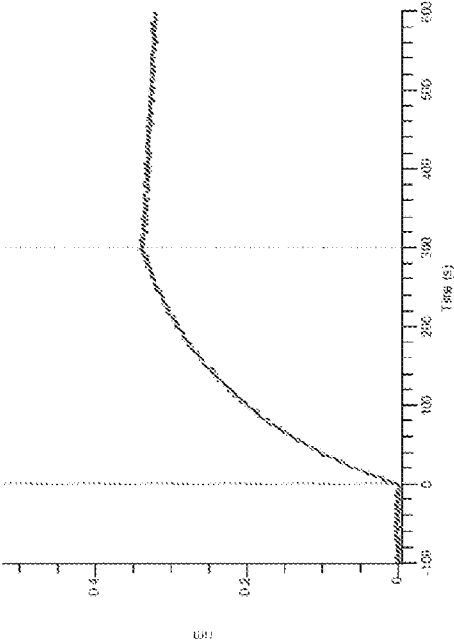


FIG. 48

C



D

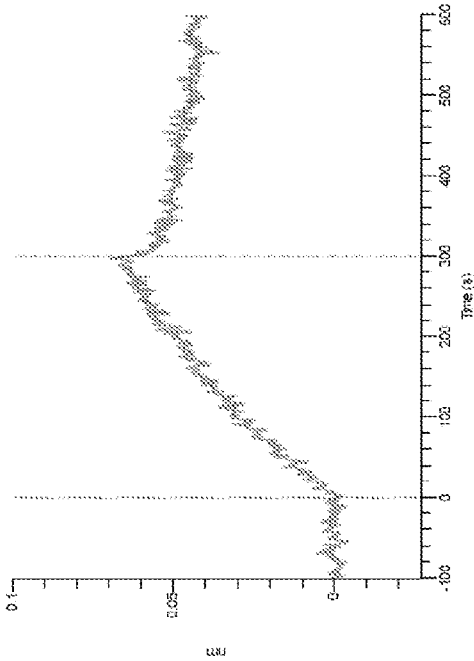


FIG. 49

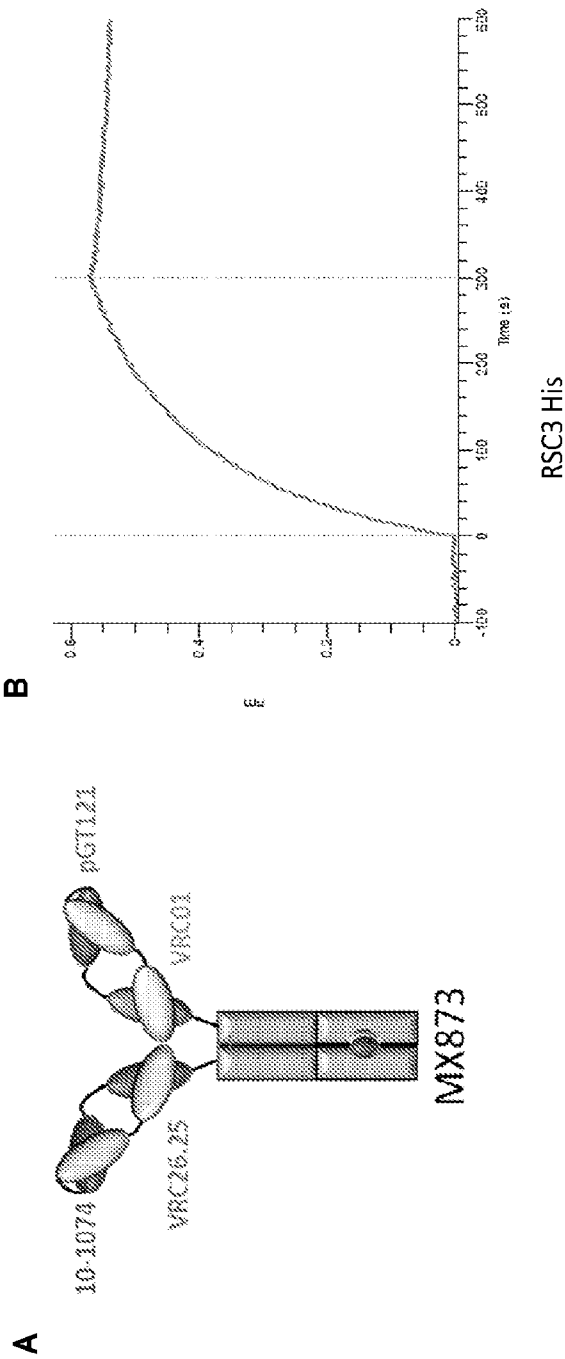


FIG. 49

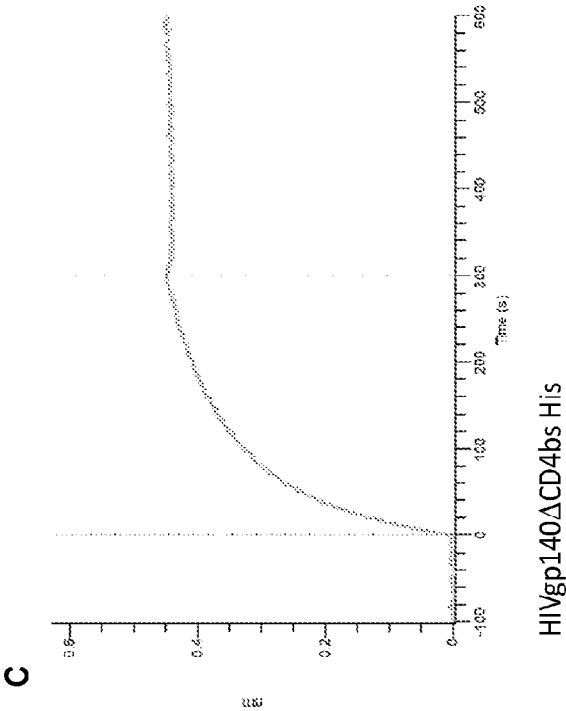


FIG. 50

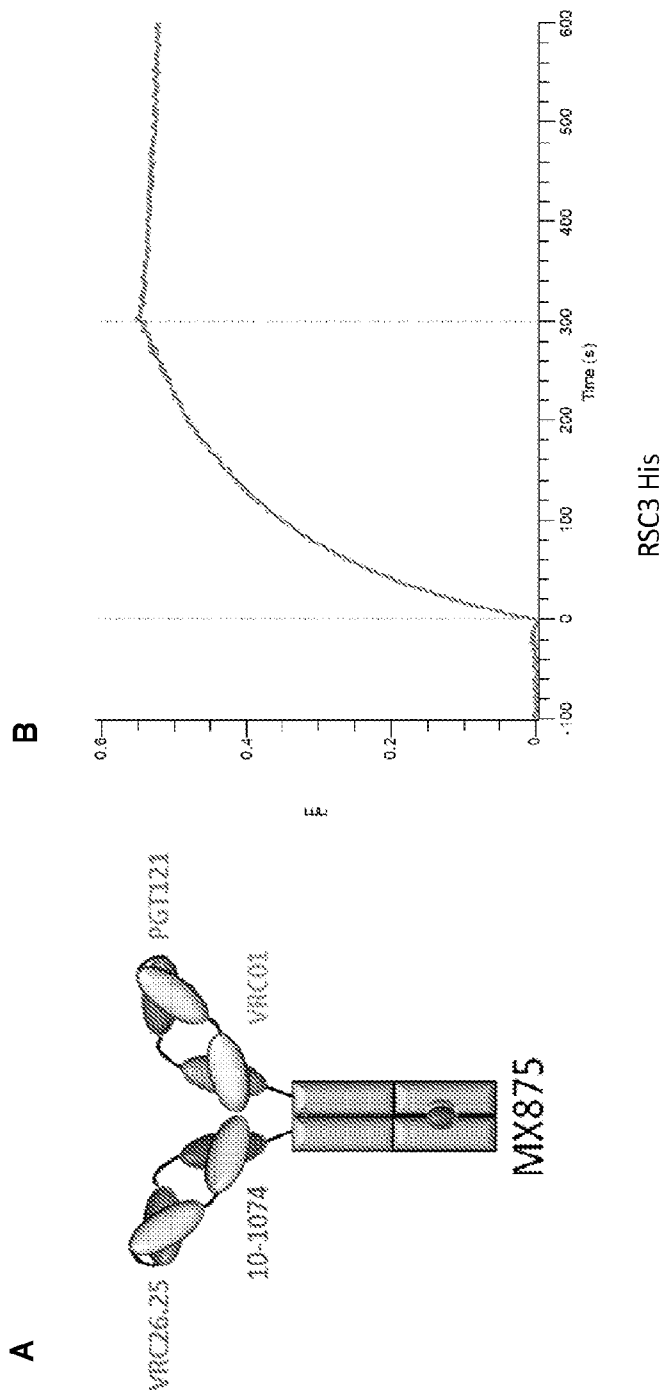


FIG. 50

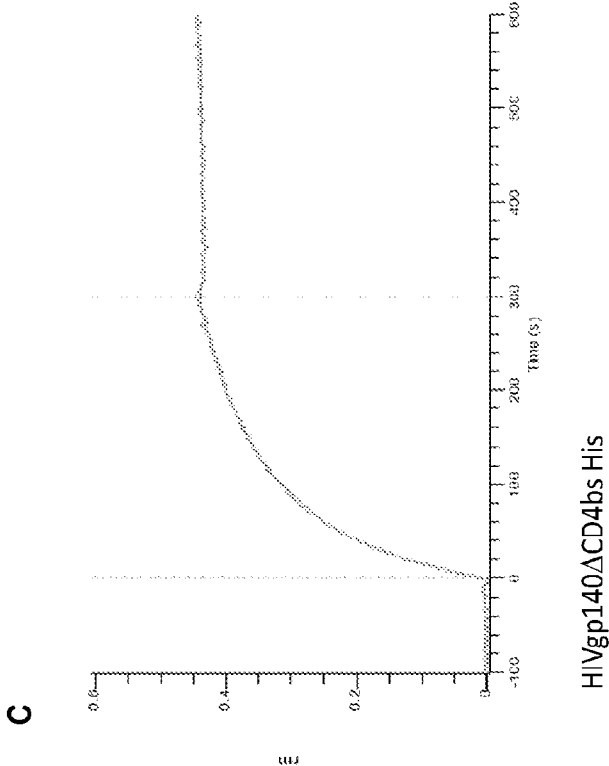


FIG. 51

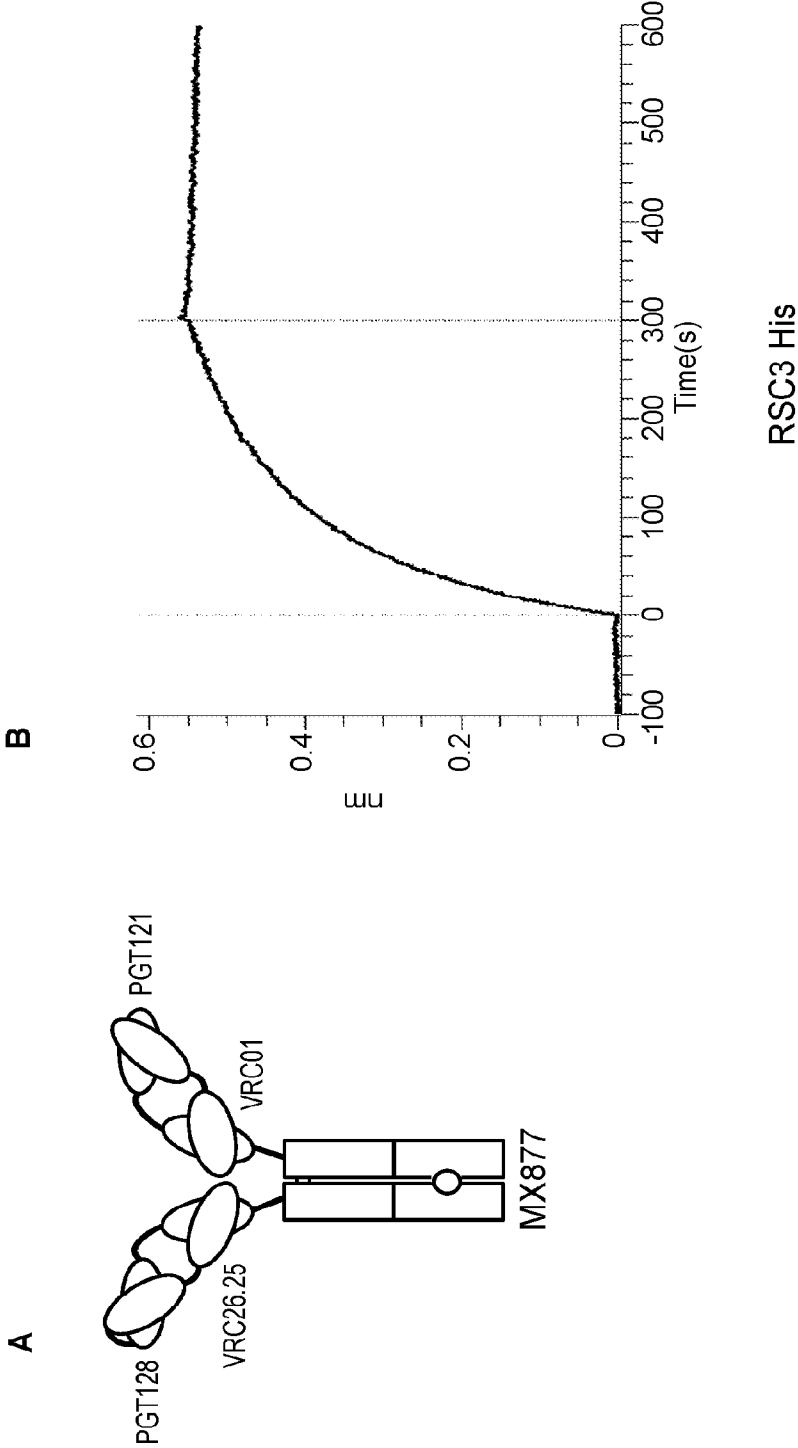
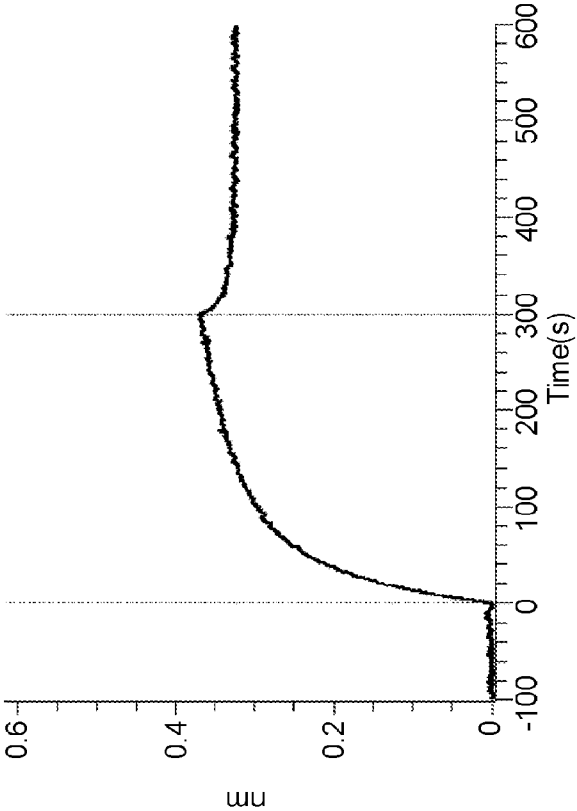


FIG. 51

C



HIVgp140ΔCD4bs His