

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
15 February 2007 (15.02.2007)

PCT

(10) International Publication Number
WO 2007/019064 A2

(51) International Patent Classification:
C07K 16/24 (2006.01) **A61K 39/395** (2006.01)

(21) International Application Number:
PCT/US2006/029114

(22) International Filing Date: 27 July 2006 (27.07.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/705,427 4 August 2005 (04.08.2005) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ANTI-TNF α ANTIBODIES AND METHODS OF USE

C7 V_H
EVQLVESGGGLVQPGGSLRLSCAASGFI FSNHWMNWVRQAPGKGLEWIGEIRSKSINSAT
Infliximab V_H --K-E-----MK---V-----S-E-----VA-----

C7 V_H
HYAESVKGRFTIISRDDNKNSLYLEMNLSLKTEDTAEYYCARNYYGSTYDYWGQGTLLVTVS
Infliximab V_H -----T-----S-SAV--Q-TD-R----GV---S-----
TL---

(57) Abstract: Novel TNF α antibody polypeptides and nucleic acids are disclosed. Methods of utilizing the polypeptides to treat TNF α -related diseases are also disclosed.



WO 2007/019064 A2

Anti-TNF α Antibodies and Methods of UseField of the Invention

5 The present invention relates to anti-TNF α antibodies and their use as therapeutics.

Background of the Invention

 Efficacy of a therapeutic protein can be limited by an unwanted immune reaction to the therapeutic protein. For
10 monoclonal antibodies, a number of techniques have been developed in attempts to reduce the human anti-murine antibody (HAMA) response. In general, these approaches aim to reduce the mouse genetic information in the final antibody construct while increasing the human genetic information.
15 Examples of such approaches are chimeric, humanized and fully human monoclonal antibodies (mAbs).

 Chimeric antibodies contain regions derived from different animal species, such as a murine immunoglobulin (Ig) variable region and a human Ig constant region.
20 Infliximab (sold under the brand name REMICADE®) is a chimeric IgG1k monoclonal antibody that specifically binds human tumor necrosis factor- α (TNF α). Infliximab has human constant regions and murine variable regions. The heavy chain variable region (V_H) of infliximab has 119 amino acids;
25 the light chain variable region (V_L) has 107 amino acids. See, U.S. Pat. Nos. 6,277,969, 6,284,471, 6,790,444, and 6,835,823, all of which are incorporated herein by reference.

 TNF α can be produced by a wide variety of cells, but activated macrophages constitute the most abundant source of
30 this factor (Vassalli, Ann. Rev. Immunol. 10: 411-452 (1992)).

 TNF α is a soluble homotrimer of 17kD protein subunits (Smith, et al., J. Biol. Chem. 262: 6951-6954 (1987)). A membrane-bound 26kD precursor form of TNF α also exists (Kriegler, et al., Cell 53: 45-53 (1988)).

35 TNF α causes pro-inflammatory actions which result in tissue injury, such as inducing procoagulant activity on

vascular endothelial cells increasing the adherence of neutrophils and lymphocytes, and stimulating the release of platelet activating factor from macrophages, neutrophils and vascular endothelial cells (Pober, et al., J. Immunol. 136: 1680-1687 (1986); Pober, et al., J. Immunol. 138: 3319-3324 (1987); Camussi, et al., J. Exp. Med. 166: 1390-1404 (1987)).

The numerous biological effects of TNF α and the closely related cytokine, TNF β (also known as lymphotoxin), are mediated by two TNF transmembrane receptors, the p55 and p75 receptors (Hohmann, et al., J. Biol. Chem. 264: 14927-14934 (1989); Engelmann, et al., J. Biol. Chem. 265: 1531-1536 (1990)). Extracellular domains of TNF receptors derived by proteolytic cleavage inhibit TNF functions (Kohno, et al., Proc. Natl. Acad. Sci. U.S.A. 87: 8331-8335 (1990)). TNF α is associated with infections, immune disorders, neoplastic pathologies, autoimmune pathologies and graft-versus host pathologies (Cerami, et al., Immunol. Today 9: 28-31 (1988); Oliff, et al., Cell 50: 555-563 (1987); Piguet, et al., J. Exp. Med. 166: 1280-1289 (1987)). Dysregulation and, in particular, overproduction of TNF α has been implicated in a variety of human diseases including sepsis, cerebral malaria, and autoimmune diseases such as multiple sclerosis, rheumatoid arthritis (RA), systemic lupus erythematosus, and Crohn's disease, as well as cancer (reviewed in Zhang and Tracey, The Cytokine Handbook, Thomson AW (ed). pp 517-548 (1998)). TNF α can mediate cachexia in cancer, infectious pathology, and other catabolic states (reviewed in Tracey, et al., Ann. N. Y. Acad. Sci. 587: 325-331 (1990)).

Neutralizing anti-TNF α antibodies that inhibit TNF α activities are useful in treating and/or diagnosing TNF α -mediated diseases. Infliximab has been approved in the United States for treatment of ankylosing spondylitis, Crohn's disease, psoriatic arthritis and rheumatoid arthritis. It can also effectively treat other disorders or symptoms of various immune and autoimmune pathologies as well as inflammatory diseases, such as systemic lupus erythematosus, thyroidosis, graft versus host disease,

scleroderma, diabetes mellitus, Grave's disease, sarcoidosis, chronic inflammatory bowel disease, ulcerative colitis, disseminated intravascular coagulation, atherosclerosis and Kawasaki's pathology. See, U.S. Pat. Nos. 5,656,272,
 5 5,698,195, and 5,919,452, all of which are incorporated herein by reference.

It has been reported that antibodies to infliximab have been observed in some treated patients (Targan et al., *N. Engl. J. Med.* 337: 1029-1035 (1997); Maini et al., *Arthritis Rheum.* 41: 1552-1563 (1998)). Accordingly, in order to
 10 potentially diminish the incidence of anti-infliximab antibodies in treated patients, it is desirable to reduce the amount of murine amino sequences present in the molecule.

Brief Description of the Drawings

15 Fig. 1 shows the alignment of V_H regions of the TNF α antibody C7 (SEQ ID NO: 3) and infliximab (SEQ ID NO: 1). Identical amino acids are denoted by a "-." Conservative amino acid changes are shown in bold.

Fig. 2 shows the alignment of V_L regions of C7 (SEQ ID
 20 NO: 380) and infliximab (SEQ ID NO: 379). Identical amino acids are denoted by a "-." Conservative amino acid changes are shown in bold.

Fig. 3 shows the ELISA titration curves for C7 and infliximab.

Summary of the Invention

25 One aspect of the invention is a polypeptide comprising a polypeptide having the sequence shown in SEQ ID NO: 2.

Another aspect of the invention is a polypeptide comprising a polypeptide having the sequence shown in SEQ ID
 30 NOs: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77,
 35 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105,

106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117,
118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129,
130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141,
142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153,
5 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165,
166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177,
178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189 or
190.

Another aspect of the invention is a polynucleotide
10 comprising a polynucleotide having the sequence shown in SEQ
ID NOs: 191, 192, 193, 194, 195, 196, 197, 198, 199, 200,
201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212,
213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224,
225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236,
15 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248,
249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260,
261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272,
273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284,
285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296,
20 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308,
309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320,
321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332,
333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344,
345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356,
25 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368,
369, 370, 371, 372, 373, 374, 375, 376, 377 or 378 or a
complementary sequence.

Another aspect of the invention is a polynucleotide
comprising a polynucleotide encoding the amino acid sequence
30 shown in SEQ ID NOs: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14,
15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29,
30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44,
45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59,
60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74,
35 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89,
90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103,
104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115,

116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127,
128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139,
140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151,
152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163,
5 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175,
176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187,
188, 189 or 190.

Detailed Description of the Invention

10 All publications, including but not limited to patents
and patent applications, cited in this specification are
herein incorporated by reference as though fully set forth.
Single letter amino acid codes are used herein as understood
by those skilled in the art.

15 The term "immunoglobulin" as used herein refers to a
protein consisting of one or more polypeptides substantially
encoded by immunoglobulin genes. The term "antibody" as used
herein refers to a protein of the immunoglobulin family that
is capable of interacting or otherwise associating with an
20 antigen, as well as biologically active fragments, regions or
derivatives thereof, provided by any known technique, such
as, but not limited to enzymatic cleavage (e.g., by papain or
pepsin digestion), peptide synthesis or recombinant
techniques. Examples of biologically active fragments
25 regions of antibodies include, but are not limited to, Fab,
Fab', F(ab')₂ and Fv. These fragments lack the Fc fragment of
an intact antibody, clear more rapidly from the circulation,
and can have less non-specific tissue binding than an intact
antibody. The term "derivatives" includes modified
30 antibodies that functionally resemble immunoglobulin
molecules. An exemplary modification can be the addition of
a cytotoxic protein such as a bacterial toxin.

The term "antigen" as used herein refers to a substance
that is capable of interacting with the antibody and in the
35 context of the present invention is meant to be TNF α . The
TNF α may be soluble TNF α or membrane associated TNF α . The

term "TNF α antibodies" as used herein includes antibodies capable of binding portions of TNF and inhibiting the binding of TNF α to TNF receptors.

The present invention provides TNF α antibodies that bind to TNF α and have fewer murine-derived amino acid residues than infliximab. The invention also provides nucleic acids encoding the TNF α antibodies, vectors containing these nucleic acids, host cells, compositions and methods of making and using the TNF α antibodies.

TNF α antibody polypeptides and compositions

The present invention generally relates to a TNF α antibody comprising a polypeptide having the sequence shown in Formula I (SEQ ID NO: 2):

EVQLX₅ESGGG LVQPGGSLRL SCX₂₃ASX₂₆X₂₇X₂₈FS NHX₃₃MNWVRQA
PGKGLEWIGE IRKSX₅₆X₅₇X₅₈AT X₆₁YAESVKGRF IISRD₇₆NX₇₈X₇₉X₈₀
LX₈₂LEMNSLKT EDTAEYYCAX₁₀₀ NYYGSTX₁₀₇DYW GQGT₁₀₇TVTS

(I)

wherein,

X₅ is V or T; X₂₃ is A or R; X₂₆ is G or Q; X₂₇ is F or S; X₂₈ is I or T; X₃₃ is W or Y; X₅₆ is I or S; X₅₇ is N or Y; X₅₈ is S or G; X₆₁ is H or S; X₇₆ is D or G; X₇₈ is K or G; X₇₉ is N or T; X₈₀ is S or D; X₈₂ is Y or T; X₁₀₀ is R or Q; and X₁₀₇ is Y or P.

More particularly, the present invention relates to antibodies against TNF α that are less likely to generate anti-infliximab antibodies in humans.

The variable regions of the TNF α antibodies have significant identities with human immunoglobulin sequences or human immunoglobulin germline sequences in the framework regions. Human immunoglobulin sequences can be found in databases such as that of NCBI (<http://ncbi.nlm.nih.gov/>). Human immunoglobulin germline sequences can be found at, for example, <http://vbase.mrc-cpe.cam.ac.uk/>. Exemplary heavy chain variable region amino acid sequences are shown in SEQ ID NOs: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17,

18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32,
33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47,
48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62,
63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77,
5 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92,
93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105,
106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117,
118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129,
130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141,
10 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153,
154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165,
166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177,
178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189 or
190. An exemplary light chain variable region sequence is
15 shown in SEQ ID NO: 380.

The heavy chain constant region can be derived from any
of the known classes or isotypes of human heavy chains,
including IgA, IgD, IgE, IgG, IgM and subtypes thereof, such
as G1, G2, G3 and G4. Since the heavy chain isotype is
20 responsible for the various effector functions of an
antibody, the choice of the heavy chain constant region will
be guided by the desired effector functions, such as
complement fixation, or antibody-dependent cellular
cytotoxicity (ADCC). An exemplary heavy chain constant
25 region amino acid sequence is shown in SEQ ID NO: 382. The
light chain constant region can be derived from either human
light chain isotype kappa or lambda. An exemplary light
chain constant region amino acid sequence is shown in SEQ ID
NO: 383.

30 The TNF α antibodies of the present invention can bind
TNF α with a wide range of affinities. Exemplary TNF α
antibodies bind TNF α with affinity similar to or higher than
that of infliximab. The affinity of TNF α antibodies for TNF α
can be determined experimentally using any suitable method,
35 e.g., methods using Biacore or KinExA instrumentation, ELISA
and competitive binding assays.

The TNF α antibodies of the present invention are capable of blocking or reducing interactions between TNF α and TNF receptors. These TNF α antibodies neutralize TNF α activity in a range of *in vitro* assays, such as cell cytotoxicity, mitogenesis, cytokine induction and induction of adhesion molecules.

The TNF α antibodies of the present invention are useful for treating disorders or symptoms of various immune and autoimmune pathologies as well as inflammatory diseases. TNF related pathologies and diseases include, but are not limited to, the following:

(A) acute and chronic immune and autoimmune pathologies, such as systemic lupus erythematosus, rheumatoid arthritis, thyroidosis, graft versus host disease, scleroderma, diabetes mellitus, Graves' disease, and the like;

(B) infections, including, but not limited to, sepsis syndrome, cachexia, circulatory collapse and shock resulting from acute or chronic bacterial infection, acute and chronic parasitic and/or bacterial, viral or fungal infectious diseases, such as AIDS (including sequelae such as cachexia, autoimmune disorders, AIDS dementia complex and infections);

(C) inflammatory diseases, such as chronic inflammatory pathologies and vascular inflammatory pathologies, including chronic inflammatory pathologies such as sarcoidosis, chronic inflammatory bowel disease, ulcerative colitis, and Crohn's pathology and vascular inflammatory pathologies, such as, but not limited to, disseminated intravascular coagulation, atherosclerosis, and Kawasaki's pathology;

(D) neurodegenerative diseases, including, but are not limited to, demyelinating diseases, such as multiple sclerosis and acute transverse myelitis; extrapyramidal and cerebellar disorders' such as lesions of the corticospinal system; disorders of the basal ganglia or cerebellar disorders; hyperkinetic movement disorders such as Huntington's Chorea and senile chorea; drug-induced movement disorders, such as those induced by drugs which block CNS

dopamine receptors; hypokinetic movement disorders, such as Parkinson's disease; Progressive supranucleo palsy; Cerebellar and Spinocerebellar Disorders, such as astructural lesions of the cerebellum; spinocerebellar degenerations
5 (spinal ataxia, Friedreich's ataxia, cerebellar cortical degenerations, multiple systems degenerations (Mencel, Dejerine-Thomas, Shi-Drager, and Machado-Joseph); and systemic disorders (Refsum's disease, abetalipoproteinemia, ataxia, telangiectasia, and mitochondrial multi.system
10 disorder); demyelinating core disorders, such as multiple sclerosis, acute transverse myelitis; disorders of the motor unit, such as neurogenic muscular atrophies (anterior horn cell degeneration, such as amyotrophic lateral sclerosis, infantile spinal muscular atrophy and juvenile spinal
15 muscular atrophy); Alzheimer's disease; Down's Syndrome in middle age; Diffuse Lewy body disease; Senile Dementia of Lewy body type; Wernicke-Korsakoff syndrome; chronic alcoholism; Creutzfeldt-Jakob disease; subacute sclerosing panencephalitis, Hallerorden-Spatz disease; and Dementia
20 pugilistica, or any subset thereof;
(E) malignant pathologies involving TNF-secreting tumors or other malignancies involving TNF, such as, but not limited to leukemias (acute, chronic myelocytic, chronic lymphocytic and/or myelodysplastic syndrome); lymphomas (Hodgkin's and
25 non-Hodgkin's lymphomas, such as malignant lymphomas (Burkitt's lymphoma or Mycosis fungoides)); and
(F) alcohol-induced hepatitis.

Accordingly, another aspect of the present invention is pharmaceutical compositions comprising at least one TNF α
30 antibody and a pharmaceutically acceptable carrier or diluent known in the art. The carrier or diluent can be a solution, suspension, emulsion, colloid or powder.

A TNF α antibody of the invention is formulated as a pharmaceutical composition in a therapeutically or
35 prophylactically effective amount. The term "effective amount" generally refers to the quantities of antibody necessary for effective therapy, i.e., the partial or

complete alleviation of the symptom or disorder for which treatment was sought. Included within the definition of effective therapy are prophylactic treatments intended to reduce the likelihood of onset of the above-described symptoms or disorders.

The composition can optionally comprise at least one further compound, protein or composition useful for treating a TNF-related pathology or disease. For example, combination with anti-rheumatic drugs, anti-inflammatory agents, anti-neoplastic agents, radiotherapeutics, immunosuppressives, and cytotoxic drugs to treat various diseases and conditions are contemplated. In this regard, anti-rheumatic drugs can be at least one of auranofin, azathioprine, chloroquine, D-penicillamine, gold sodium thiomalate hydroxychloroquine, Myocrisin and sulfasalazine methotrexate. Anti-inflammatory agents can be at least one of pentasa, mesalazine, asacol, codeine phosphate, benorylate, fenbufen, naprosyn, diclofenac, etodolac and indomethacin, aspirin and ibuprofen.

Nucleic acids, vectors and cell lines

Another aspect of the present invention is isolated nucleic acid molecules comprising, complementary to or having significant identity with a polynucleotide encoding at least one TNF α antibody. Other aspects of the present invention include recombinant vectors comprising at least one isolated TNF α antibody encoding nucleic acid molecule and cell lines and organisms that are capable of expressing proteins from the nucleic acid molecules. The nucleic acids, expression vectors and cell lines may generally be used to produce the TNF α antibodies of the invention.

In one embodiment, the nucleic acid compositions of the invention comprise polynucleotides encoding polypeptides having amino acid sequences shown in SEQ ID NOs: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67,

68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82,
 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97,
 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109,
 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121,
 5 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133,
 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145,
 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157,
 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169,
 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181,
 10 182, 183, 184, 185, 186, 187, 188, 189 or 190. Exemplary
 nucleic acid sequences comprise polynucleotides shown in SEQ
 ID NOs: 191, 192, 193, 194, 195, 196, 197, 198, 199, 200,
 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212,
 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224,
 15 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236,
 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248,
 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260,
 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272,
 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284,
 20 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296,
 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308,
 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320,
 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332,
 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344,
 25 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356,
 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368,
 369, 370, 371, 372, 373, 374, 375, 376, 377 or 378.

Typically, the nucleic acids of the present invention
 are used in expression vectors for the preparation of the
 30 TNF α antibody polypeptides of the invention. Vectors within
 the scope of the invention provide necessary elements for
 eukaryotic expression, including viral promoter driven
 vectors, such as CMV promoter driven vectors, e.g., pCDNA3.1,
 pCEP4 and their derivatives, Baculovirus expression vectors,
 35 Drosophila expression vectors and expression vectors that are
 driven by mammalian gene promoters, such as human
 immunoglobulin gene promoters. Other examples include

prokaryotic expression vectors, such as T7 promoter driven vectors, e.g., pET41, lactose promoter driven vectors and arabinose gene promoter driven vectors.

The present invention also relates to cell lines

5 expressing TNF α antibodies. The host cells can be prokaryotic or eukaryotic cells. Exemplary eukaryotic cells are mammalian cells, such as but not limited to, COS-1, COS-7, HEK293, BHK21, CHO, BSC-1, HepG2, 653, SP2/0, NS0, 293, HeLa, myeloma, lymphoma cells, or any derivative thereof.

10 Most preferably, the host cells are HEK293, NS0, SP2/0 or CHO cells. The cell lines of the present invention may stably express at least one TNF α antibody. The cell lines may be generated by stable or transient transfection procedures that are well known in the art.

15 The present invention further provides methods for expressing at least one TNF α antibody comprising culturing the cell lines under conditions wherein the TNF α antibody is expressed in detectable or recoverable amounts. The present invention also provides methods for generating at least one
20 TNF α antibody comprising translating the TNF α antibody encoding nucleic acids under conditions *in vitro* or *in situ*, such that the TNF α antibody is expressed in detectable or recoverable amounts. The present invention also encompasses TNF α antibody produced by the above methods.

25 A TNF α antibody can be recovered and purified by well-known methods including, but not limited to, protein A purification, ammonium sulfate or ethanol precipitation, acid extraction, anion or cation exchange chromatography, phosphocellulose chromatography, hydrophobic interaction
30 chromatography, affinity chromatography, hydroxylapatite chromatography and lectin chromatography. High performance liquid chromatography (HPLC) can also be employed for purification.

35

Methods of use

The TNF α antibodies are useful as, *inter alia*, research reagents and therapeutic agents. In one aspect, the present invention relates to a method of decreasing or inhibiting the interactions between TNF α and TNF receptors comprising providing at least one TNF α antibody to a mammal in need thereof. The TNF α antibodies neutralize the biological activities of TNF α and therefore function as antagonists of TNF α . The term "antagonist" is used in the broadest sense and includes a molecule that is capable of, directly or indirectly, partially or fully counteracting, reducing or inhibiting one or more biological activities of TNF α .

The present invention further provides methods for reducing the symptoms of, or treating at least one TNF-related condition or disease comprising administering a therapeutically effective amount of at least one TNF α antibody pharmaceutical composition to a patient in need thereof. As described above, such composition comprises an effective amount of at least one TNF α antibody and a pharmaceutically acceptable carrier or diluent. The effective amount for a given therapy, whether curative or preventative, will generally depend upon many different factors, including means of administration, target site and other medicants administered. Thus, treatment doses will need to be titrated to optimize safety and efficacy.

The conditions and diseases suitable for treatment using the methods of the present invention include but are not limited to, various immune disorders, autoimmune pathologies and inflammatory diseases as listed in detail above. These methods can optionally further comprise co-administration or combination therapies with any standard therapy used to treat the diseases.

The mode of administration can be any suitable route to deliver the pharmaceutically effective amount of TNF α antibody of the present invention to a host. For example,

the TNF α antibody can be delivered via parenteral administration, such as subcutaneous, intramuscular, intradermal, intravenous or intranasal administration, or any other means known in the art.

5

The present invention is further described with reference to the following examples. These examples are merely to illustrate aspects of the present invention and are not intended as limitations of this invention.

10

Example 1

Generation of TNF α Antibodies

Fab libraries were designed based on a combination of infliximab sequence and structure-based criteria. The design goal was molecules with TNF α binding activity at least equal to that of infliximab with high similarity to human immunoglobulin sequences. For example, one criterion of selection for library members was sequence identity or similarity in framework and complementarity determining regions (CDRs) for both heavy and light chains with homologous human counterparts. The human immunoglobulin database at NCBI (ncbi.nlm.nih.gov) and the human germline immunoglobulin database (vbase.mrc-cpe.cam.ac.uk) were employed. Based on these criteria, V_H polypeptides were designed with substitutions at one or a combination of 17 sites. These V_H combinations were combined with one substituted V_L polypeptide having an amino acid sequence shown in SEQ ID NO: 380 (encoding nucleic acid sequence shown in SEQ ID NO: 381). Synthetic Fab DNA libraries were generated according to the method described in U.S. Pat. No. 6,521,427.

The Fab libraries were cloned into pTrcHis2A (Cat. No. V365-20, Invitrogen, Carlsbad, CA). Proteins were expressed in *E. coli* and solid-phase ELISA was used to assess Fab binding to human TNF α . Briefly, 96-well plates were coated overnight at 4°C with 1 μ g/ml of rHuTNF- α (Biosource, Camarillo, CA) in Carbonate-bicarbonate buffer, pH9.4. After

washing in PBS with 0.05% (w/v) Tween-20, the wells were blocked with 1%(w/v) BSA in PBS for 1 hour at room temperature. After washing, plates were incubated with transformed *E. coli* cell lysate diluted in the assay buffer (1% BSA and 0.05% Tween-20 in 10mM PBS) for 2 hours at room temperature. Various concentrations of infliximab (0.5, 1 and 2 ng/ml) were used as positive anti-Human Kappa Light Chain Biotin/anti-penta-His Biotin control. Plates were washed and incubated with ImmunoPure Goat Anti-Human Kappa Chain, Biotin Conjugated (Cat. No. 31780, Pierce Biotechnology, Rockford, IL) and Penta-His Biotin Conjugate (Cat. No. 34440, QIAGEN, Valencia, CA) diluted 1:2000 in the assay buffer for 1 hour at room temperature. Following another washing step, plates were probed for 1 hour at room temperature with 100 μ L/well of Streptavidin POD (Cat. No. 1089153, Roche Applied Science, Indianapolis, IN) diluted 1:4000 in the assay buffer. Plates were further washed and then incubated with 3,3',5,5'-tetramethylbenzidine (TMB, Cat. No. 34028, Pierce Biotechnology) for 30 minutes. Substrate development was stopped by addition of 100 μ L/well TMB Stop Solution (Cat. No. 50-85-05, KPL, Gaithersburg, MD) and the absorbance was measured at 450nm via an automated plate spectrophotometer.

188 clones with optical density values of at least twice the background value were further characterized. The V_H amino acid sequences of these clones are shown in SEQ ID NOs: 3 to 190 respectively. The V_L amino acid sequence is shown in SEQ ID NO: 380. Briefly, protein concentration was determined and a titration curve in TNF α ELISA was generated for each clone. A serial dilution curve was generated by eight points titration in duplicate, starting at 50ng/ml. Clones were ranked according to their EC50. The variable regions of selected Fab clones were subcloned into a mammalian construct with infliximab constant region.

Example 2

Sequence Analysis of a TNF α Antibody

The framework portion of the V_H region of one of the novel TNF α antibodies selected as described in Example 1 (C7) (SEQ ID NO: 3) is identical to human germline sequence (VH3 3-72 and JH4). As shown in Fig. 1, when compared to infliximab, 61 out of the 83 amino acids in the framework regions are identical. Of the 23 positions that are different, 14 of them (shown in bold) are conservative amino acid changes.

Similarly, the framework portion of C7 V_L region is identical to human germline sequence (Vk1 A10 and Jk3). As shown in Fig. 2, when compared to infliximab, 63 out of the 80 amino acids in the framework regions are identical. Of the 17 positions that are different, 13 of them (shown in bold) are conservative amino acid changes.

Example 3

Binding of Antibody C7 to TNF α

The full-length antibodies were used in a solid-phase ELISA binding assay as described in Example 1 to confirm the TNF α binding. Fig. 3 shows that the ELISA titration curve for C7 is comparable to that of infliximab.

C7 was also used in a Biacore assay to compare the binding constants of C7 and infliximab to TNF α . The results (not shown) indicated that the binding affinity of C7 to TNF α (K_D = 70 pM) is more than 2-fold higher than that of infliximab (K_D = 170 pM).

The present invention now being fully described, it will be apparent to one of ordinary skill in the art that many changes and modifications can be made thereto without departing from the spirit or scope of the appended claims.

CLAIMS

1. A polypeptide comprising a polypeptide having the sequence shown in SEQ ID NO: 2.
2. A polypeptide comprising a polypeptide having the sequence shown in SEQ ID NOS: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189 or 190.
3. A polynucleotide comprising a polynucleotide encoding the polypeptide of claim 2.
4. A polynucleotide comprising a polynucleotide having the sequence shown in SEQ ID NOS: 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352,

353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377 or 378 or a complementary sequence.

5. A polypeptide comprising a polypeptide having the sequence shown in SEQ ID NO: 380.

6. A polynucleotide comprising a polynucleotide encoding the polypeptide of claim 5.

7. A polynucleotide comprising a polynucleotide having the sequence shown in SEQ ID NO: 381 or a complementary sequence.

8. A vector comprising the polynucleotide of claims 2, 3, 4, 6 or 7.

9. A cell line expressing the polypeptide of claim 2 or 5.

10. A cell line comprising the vector of claim 8.

11. The cell line of claim 9 or 10 wherein the cell line is HEK293, NSO, SP2/0 or CHO cell line.

12. A pharmaceutical composition comprising an effective amount of at least one polypeptide of claim 2 or 5 and a pharmaceutically acceptable carrier or diluent.

C7 V_H
EVQLVESGGGLVQPGGSLRLSCAASGFI~~F~~SNHWMNWVRQAPGKGLEWIGEIRSKSINSAT
Infliximab V_H --K-E-----MK---V-----S-E-----VA-----

C7 V_H
HYAESVKGRFIISRDDNKNSLYLE~~M~~NSLKTEDTAEYYCARNYYGSTYDYWGQGT~~L~~VTVS
Infliximab V_H -----T-----S-SAV--Q-TD-R-----GV---S-----
TL---

Figure 1

C7 V_L
EIVLTQSPDFQSVTPKEKVTITCRASQFVGSSIHVYQQKPDQSPKLLIKYASESMSGVPS
Infliximab V_L D-L-----AIL--S-G-R-SFS-----RTNG--R-----
I--

C7 V_L RFSGSGSGTDFTFTISSLEAEDAATYYCQSHSWPFTFGPGTKVDIK
Infliximab V_L -----LS-NTV-S--I-D-----S--NLEV-

Figure 2

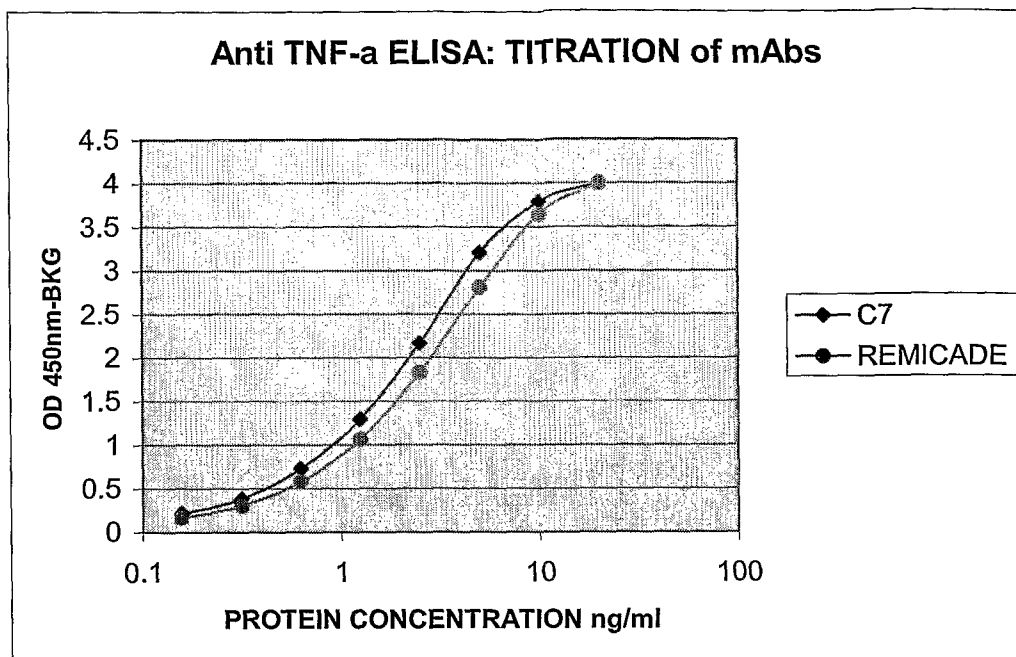


Figure 3

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<151> 2005-08-04

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 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Xaa Xaa Xaa Ala Thr Xaa Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Xaa Asn Xaa Xaa Xaa
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 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
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          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
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Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
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          100          105          110
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  65          70          75          80
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          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
          65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
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          100          105          110
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          35          40          45
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Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
          65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
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35 40 45
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50 55 60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
65 70 75 80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
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           35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
           50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asn Lys Thr Ser
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
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           100          105          110
Gly Thr Leu Val Thr Val Ser
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           35           40           45
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           50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
           85           90           95
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Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
      65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
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      100      105      110
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Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
      65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

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Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
      65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95

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<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 18

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Thr Phe Ser Asn His
           20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
           35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
           50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
           85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
           100          105          110
Gly Thr Leu Val Thr Val Ser
           115

```

<210> 19

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 19

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Thr Phe Ser Asn His
           20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
           35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
           50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Ser
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
           85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
           100          105          110
Gly Thr Leu Val Thr Val Ser
           115

```

<210> 20

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 20

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15

```

```

Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Thr Phe Ser Asn His
      20      25
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
      65      70      75      80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 21

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 21

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
  1      5      10      15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
      20      25      30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
      65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 22

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 22

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
  1      5      10      15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Thr Phe Ser Asn His
      20      25      30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
      65      70      75      80

```

Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 23

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 23

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 24

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 24

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 25

<211> 119
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Infliximab VH variant

<400> 25
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 26
 <211> 119
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Infliximab VH variant

<400> 26
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 27
 <211> 119
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Infliximab VH variant

<400> 27

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr His Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 28

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 28

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 29

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 29

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Ile Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
          50           55           60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 30
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 30
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 31
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 31
Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 32
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 32
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 33
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 33
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 34
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 34

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 35

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 35

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 36

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 36

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr Ser Tyr Ala Glu
          50          55          60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100        105        110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 37
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 37
Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100        105        110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 38
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 38
Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100        105        110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 39
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant
 <400> 39
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 40
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant
 <400> 40
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 41
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant
 <400> 41

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
 50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Asp
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 42

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 42

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr Ser Tyr Ala Glu
 50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 43

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 43

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
 50           55           60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
65                               70                               75                               80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
                               85                               90                               95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
                               100                              105                              110
Gly Thr Leu Val Thr Val Ser
                               115

```

<210> 44

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 44

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1                               5                               10                               15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn His
                               20                               25                               30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
                               35                               40                               45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr His Tyr Ala Glu
                               50                               55                               60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
65                               70                               75                               80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
                               85                               90                               95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
                               100                              105                              110
Gly Thr Leu Val Thr Val Ser
                               115

```

<210> 45

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 45

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1                               5                               10                               15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
                               20                               25                               30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
                               35                               40                               45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
                               50                               55                               60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
65                               70                               75                               80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
                               85                               90                               95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
                               100                              105                              110
Gly Thr Leu Val Thr Val Ser
                               115

```

<210> 46
 <211> 119
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Infliximab VH variant

<400> 46
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 47
 <211> 119
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Infliximab VH variant

<400> 47
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 48
 <211> 119
 <212> PRT
 <213> Artificial Sequence
 <220>

<223> Infliximab VH variant

<400> 48

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
           20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
           35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
           50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
           85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
           100          105          110
Gly Thr Leu Val Thr Val Ser
           115

```

<210> 49

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 49

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
           20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
           35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr His Tyr Ala Glu
           50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
           85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
           100          105          110
Gly Thr Leu Val Thr Val Ser
           115

```

<210> 50

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 50

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
           20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
           35           40           45

```

Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 51
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 51
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 52
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 52
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110

Gly Thr Leu Val Thr Val Ser
115

<210> 53

<211> 119

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Infliximab VH variant

<400> 53

Glu 1	Val	Gln	Leu	Thr 5	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly
Ser	Leu	Arg	Leu 20	Ser	Cys	Arg	Ala	Ser 25	Gln	Ser	Thr	Phe	Ser 30	Asn	His
Trp	Met	Asn 35	Trp	Val	Arg	Gln	Ala 40	Pro	Gly	Lys	Gly	Leu 45	Glu	Trp	Ile
Gly	Glu 50	Ile	Arg	Ser	Lys 55	Ser	Tyr	Gly	Ala	Thr 60	His	Tyr	Ala	Glu	
Ser 65	Val	Lys	Gly	Arg	Phe 70	Ile	Ile	Ser	Arg	Asp 75	Asp	Asn	Gly	Thr	Asp 80
Leu	Thr	Leu	Glu	Met 85	Asn	Ser	Leu	Lys	Thr 90	Glu	Asp	Thr	Ala	Glu	Tyr
Tyr	Cys	Ala	Arg 100	Asn	Tyr	Tyr	Gly	Ser 105	Thr	Tyr	Asp	Tyr	Trp 110	Gly	Gln
Gly	Thr	Leu 115	Val	Thr	Val	Ser									

<210> 54

<211> 119

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Infliximab VH variant

<400> 54

Glu 1	Val	Gln	Leu	Thr 5	Glu	Ser	Gly	Gly	Gly 10	Leu	Val	Gln	Pro	Gly 15	Gly
Ser	Leu	Arg	Leu 20	Ser	Cys	Ala	Ala	Ser 25	Gly	Ser	Ile	Phe	Ser 30	Asn	His
Tyr	Met	Asn 35	Trp	Val	Arg	Gln	Ala 40	Pro	Gly	Lys	Gly	Leu 45	Glu	Trp	Ile
Gly	Glu 50	Ile	Arg	Ser	Lys 55	Ser	Ile	Tyr	Gly	Ala	Thr 60	Ser	Tyr	Ala	Glu
Ser 65	Val	Lys	Gly	Arg	Phe 70	Ile	Ile	Ser	Arg	Asp 75	Gly	Asn	Gly	Asn	Ser 80
Leu	Tyr	Leu	Glu	Met 85	Asn	Ser	Leu	Lys	Thr 90	Glu	Asp	Thr	Ala	Glu 95	Tyr
Tyr	Cys	Ala	Gln 100	Asn	Tyr	Tyr	Gly	Ser 105	Thr	Pro	Asp	Tyr	Trp 110	Gly	Gln
Gly	Thr	Leu 115	Val	Thr	Val	Ser									

<210> 55

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 55

Glu	Val	Gln	Leu	Thr	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly
1				5					10					15	
Ser	Leu	Arg	Leu	Ser	Cys	Arg	Ala	Ser	Gly	Ser	Ile	Phe	Ser	Asn	His
			20					25					30		
Tyr	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile
		35				40						45			
Gly	Glu	Ile	Arg	Ser	Lys	Ser	Ser	Tyr	Gly	Ala	Thr	His	Tyr	Ala	Glu
	50				55					60					
Ser	Val	Lys	Gly	Arg	Phe	Ile	Ile	Ser	Arg	Asp	Gly	Asn	Gly	Thr	Asp
65				70					75					80	
Leu	Thr	Leu	Glu	Met	Asn	Ser	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Glu	Tyr
				85				90					95		
Tyr	Cys	Ala	Gln	Asn	Tyr	Tyr	Gly	Ser	Thr	Tyr	Asp	Tyr	Trp	Gly	Gln
			100					105					110		
Gly	Thr	Leu	Val	Thr	Val	Ser									
			115												

<210> 56

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 56

Glu	Val	Gln	Leu	Thr	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly
1				5					10					15	
Ser	Leu	Arg	Leu	Ser	Cys	Arg	Ala	Ser	Gly	Ser	Ile	Phe	Ser	Asn	His
			20					25					30		
Tyr	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile
		35				40						45			
Gly	Glu	Ile	Arg	Ser	Lys	Ser	Ser	Tyr	Gly	Ala	Thr	His	Tyr	Ala	Glu
	50				55					60					
Ser	Val	Lys	Gly	Arg	Phe	Ile	Ile	Ser	Arg	Asp	Gly	Asn	Gly	Thr	Asp
65				70					75					80	
Leu	Thr	Leu	Glu	Met	Asn	Ser	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Glu	Tyr
				85				90					95		
Tyr	Cys	Ala	Gln	Asn	Tyr	Tyr	Gly	Ser	Thr	Tyr	Asp	Tyr	Trp	Gly	Gln
			100					105					110		
Gly	Thr	Leu	Val	Thr	Val	Ser									
			115												

<210> 57

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 57

Glu	Val	Gln	Leu	Thr	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly
1				5					10					15	
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Ile	Phe	Ser	Asn	His
			20					25					30		

```

Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
      65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 58

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 58

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
  1      5      10      15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
      20      25      30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
      65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 59

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 59

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
  1      5      10      15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Ile Phe Ser Asn His
      20      25      30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
      65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95

```

Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 60
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 60
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 61
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 61
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 62
 <211> 119
 <212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 62

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Ser
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 63

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 63

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Thr Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr Ser Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 64

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 64

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15

```

```

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
      20      25      30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Ser
      65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 65

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 65

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1      5      10      15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
      20      25      30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
      65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 66

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 66

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1      5      10      15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Thr Phe Ser Asn His
      20      25      30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
      65      70      75      80

```

Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 67

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 67

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 68

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 68

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 69

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 69

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Thr Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 70

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 70

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Ile Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 71

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 71

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1      5      10
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Thr Phe Ser Asn His
      20      25      30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr Ser Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Ser
65      70      75      80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 72

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 72

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1      5      10      15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
      20      25      30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 73

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 73

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1      5      10      15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
      20      25      30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
65      70      75      80

```

```

Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 74
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 74
Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1      5      10      15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser Asn His
      20      25      30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr Ser Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
65      70      75      80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 75
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 75
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1      5      10      15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Thr Phe Ser Asn His
      20      25      30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
      50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
65      70      75      80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85      90      95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 76

<211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 76
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 77
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 77
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 78
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 78

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1      5      10      15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
20      25      30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
35      40      45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
65      70      75      80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
85      90      95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
100     105     110
Gly Thr Leu Val Thr Val Ser
115

```

<210> 79

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 79

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1      5      10      15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
20      25      30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
50      55      60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
65      70      75      80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
85      90      95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
100     105     110
Gly Thr Leu Val Thr Val Ser
115

```

<210> 80

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 80

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1      5      10      15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
20      25      30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
35      40      45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
50      55      60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 81

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 81

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 82

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 82

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 83
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 83
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 84
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 84
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 85
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 85

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 86

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 86

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 87

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 87

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
 50          55          60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 88

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 88

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 89

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 89

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 90
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 90
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asn Gly Thr Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 91
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 91
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 92
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 92

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 93

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 93

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 94

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 94

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
          50          55          60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
100        105        110
Gly Thr Leu Val Thr Val Ser
115

```

<210> 95
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 95
Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Thr Phe Ser Asn His
20        25        30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
35        40        45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
50        55        60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
100        105        110
Gly Thr Leu Val Thr Val Ser
115

```

<210> 96
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 96
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Ile Phe Ser Asn His
20        25        30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
35        40        45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
50        55        60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
100        105        110
Gly Thr Leu Val Thr Val Ser
115

```

<210> 97
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 97
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 98
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 98
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 99
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 99

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 100

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 100

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 101

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 101

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
          50          55          60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100        105        110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 102

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 102

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100        105        110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 103

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 103

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100        105        110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 104
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 104
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 105
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 105
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 106
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 106

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 107

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 107

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 108

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 108

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr Ser Tyr Ala Glu
 50          55          60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 109

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 109

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
      20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 110

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 110

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Phe Ser Asn His
      20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 111
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 111
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 112
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 112
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 113
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 113

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 114

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 114

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 115

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 115

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50          55          60

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 116

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 116

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 117

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 117

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 118
 <211> 119
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Infliximab VH variant

<400> 118
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 119
 <211> 119
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Infliximab VH variant

<400> 119
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 120
 <211> 119
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Infliximab VH variant

<400> 120

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr His Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 121

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 121

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 122

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 122

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
 50          55          60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 123

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 123

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 124

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 124

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 125
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 125
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 126
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 126
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 127
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 127

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 128

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 128

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 129

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 129

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr His Tyr Ala Glu
          50          55          60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 130

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 130

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 131

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 131

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100         105         110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 132
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 132
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 133
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 133
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 134
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 134

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
 50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 135

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 135

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
 50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 136

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 136

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50           55           60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100        105        110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 137

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 137

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100        105        110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 138

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 138

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100        105        110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 139
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 139
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 140
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 140
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 141
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 141

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr Ser Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 142

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 142

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr Ser Tyr Ala Glu
 50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 143

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 143

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
          20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
 50          55          60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 144

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 144

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
      20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 145

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 145

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
      20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 146
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 146
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 147
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 147
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 148
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 148

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr Ser Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 149

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 149

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr His Tyr Ala Glu
          50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 150

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 150

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
          20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
          50          55          60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 151

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 151

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
      20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 152

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 152

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
      20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 153
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 153
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 154
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 154
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 155
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 155

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
           20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
           35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr Ser Tyr Ala Glu
           50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
           85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
           100          105          110
Gly Thr Leu Val Thr Val Ser
           115

```

<210> 156

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 156

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
           20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
           35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
           50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
           85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
           100          105          110
Gly Thr Leu Val Thr Val Ser
           115

```

<210> 157

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 157

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Ile Phe Ser Asn His
           20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
           35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr Ser Tyr Ala Glu
           50           55           60

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 158

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 158

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 159

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 159

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 160
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 160
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 161
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 161
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 162
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 162

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr His Tyr Ala Glu
 50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 163

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 163

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 164

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 164

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50           55           60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 165
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 165
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
      20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr His Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 166
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

```

<400> 166
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
      20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
65          70          75          80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 167
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 167
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 168
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 168
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Ser
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 169
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 169

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr Ser Tyr Ala Glu
 50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Asp
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 170

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 170

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
 50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 171

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 171

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr Ser Tyr Ala Glu
 50           55           60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
65              70              75              80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
            85              90              95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
            100             105             110
Gly Thr Leu Val Thr Val Ser
            115

```

<210> 172

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 172

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1              5              10              15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn His
            20              25              30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
            35              40              45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr His Tyr Ala Glu
            50              55              60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Asn Asp
65              70              75              80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
            85              90              95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
            100             105             110
Gly Thr Leu Val Thr Val Ser
            115

```

<210> 173

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 173

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1              5              10              15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
            20              25              30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
            35              40              45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr Ser Tyr Ala Glu
            50              55              60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
65              70              75              80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
            85              90              95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
            100             105             110
Gly Thr Leu Val Thr Val Ser
            115

```

<210> 174
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 174
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 175
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 175
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Gly Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 176
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 176

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 177

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 177

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr Ser Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
65           70           75           80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 178

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 178

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
          50           55           60

```

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 179

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 179

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
      20          25          30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Gly Ala Thr His Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 180

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 180

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
      20          25          30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Glu Ile Arg Ser Lys Ser Ser Asn Ser Ala Thr His Tyr Ala Glu
      50          55          60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Thr Ser
65          70          75          80
Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
      85          90          95
Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
      100        105        110
Gly Thr Leu Val Thr Val Ser
      115

```

<210> 181
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 181
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 182
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 182
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 183
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 183

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ser Thr Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Ser
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 184

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 184

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Ile Phe Ser Asn His
          20           25           30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu
          50           55           60
Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
65           70           75           80
Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
          85           90           95
Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
          100          105          110
Gly Thr Leu Val Thr Val Ser
          115

```

<210> 185

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 185

```

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Arg Ala Ser Gln Ser Thr Phe Ser Asn His
          20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr Ser Tyr Ala Glu
          50           55           60

```

Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 186

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 186

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Asn Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 187

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 187

Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ser Tyr Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Gly Thr Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 188
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 188
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Gly Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Lys Asn Asp
 65 70 75 80
 Leu Tyr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Gln Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 189
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 189
 Glu Val Gln Leu Thr Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Phe Thr Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Tyr Ser Ala Thr His Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asp Asn Gly Thr Ser
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Pro Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 190
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 190

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Arg Ala Ser Gly Phe Ile Phe Ser Asn His
 20 25 30
 Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Ile Arg Ser Lys Ser Ile Asn Ser Ala Thr Ser Tyr Ala Glu
 50 55 60
 Ser Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Gly Asn Lys Thr Asp
 65 70 75 80
 Leu Thr Leu Glu Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Glu Tyr
 85 90 95
 Tyr Cys Ala Arg Asn Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser
 115

<210> 191

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 191

gaggtgcagc tgggtggagag cggaggagga ctggtgcagc ctggaggaag cctgagactg 60
 agctgcgccg ccagcggctt catcttcagc aaccactgga tgaactgggt gagacaggct 120
 cctggcaagg gcctggagtg gatcggcgag atccggagca agagcatcaa cagcgccacc 180
 cactacgccg agagcgtgaa gggccggttc atcatcagcc gggacgacaa caagaacagc 240
 ctgtacctgg agatgaacag cctgaagacc gaggacaccg ccgagtacta ctgcgcccgg 300
 aactactacg gcagcaccta cgactactgg ggccagggaa ccctggtgac cgtgagc 357

<210> 192

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 192

gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctggttt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaacctct 240
 ctgtacctgg aatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggtta ccctggttac cgttttct 357

<210> 193

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 193

gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccggg cgtctcagtt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180

```
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgttttct 357
```

<210> 194

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 194

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gaagttcagt tggttgaatc tgggtggtggg ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccggt cgtctcagtt caccctctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatcttctta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggtta ccctgggttac cgttttct 357
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<210> 195

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 195

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tcttgccggt cgtctcagtt caccctctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatcttctaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgttttct 357
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<210> 196

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 196

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tcttgccgtg cgtctgggtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcaa cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgttttct 357
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<210> 197

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 197

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tcttgccgtg cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
```

```

ccgggttaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa cggtaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

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<210> 198

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 198

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gaagttcagc tgaccgaatc tgggtggtggg ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctggttt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggttaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa caaaaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 199

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 199

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gaagttcagc tgaccgaatc tgggtggtggg ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctggttt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggttaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa caaaaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 200

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 200

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gaagttcagc tgaccgaatc tgggtggtggg ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctcagtc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggttaaag gtctggaatg gatcgggtgaa atccggttcta aatcttctaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacggtaa caaaaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 201

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 201

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gaagttcagc tgaccgaatc tgggtggtggg ctgggttcagc cgggtgggttc tctgcgtctg 60

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tcttgccgcg cgtctgggttc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aattactacg gttctaccta cgactactgg ggtcagggtg ccctgggttac cgtttct 357

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<210> 202

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 202

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gaagttcagc tgaccgaatc tgggtgggtg ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgcg cgtctcagtt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggtg ccctgggttac tgtttct 357

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<210> 203

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 203

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gaagttcagc tgaccgaatc tgggtgggtg ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccggt cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggtg ccctgggttac cgtttct 357

```

<210> 204

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 204

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gaagttcagc tgaccgaatc tgggtgggtg ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgcg cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
ctgacctggg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggtg ccctgggttac cgtttct 357

```

<210> 205

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 205

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tcttgccgtg cgtctggttt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357

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<210> 206

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 206

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gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctcagtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggttaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

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<210> 207

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 207

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gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctcagtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaacctct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357

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<210> 208

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 208

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gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctggttt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357

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<210> 209

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 209
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tcttgccgcg cgtctcagtt caccctctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 210

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 210
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tcttgccgtg cgtctgggttc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatcttctaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctc 240
ctgacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 211

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 211
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tcttgccgcg cgtctgggttc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 212

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 212
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tcttgccgcg cgtctgggttc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctc 240
ctgacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 213

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 213
 gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttt atcatctctc gtgacggtaa caaaacctct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 214
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 214
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 tcttgccgtg cgtctcagtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacctt cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 215
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 215
 gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgcgg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cgggtgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 216
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 216
 gaagttcagt tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgcgg cgtctgggtt taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cgggtgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaactct 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 217
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 217

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tcttgccgtg cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccaggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacctc cgactactgg ggtcagggta ccctggttac cgtttct 357
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<210> 218

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 218

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tcttgccgtg cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaacctct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357
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<210> 219

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 219

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tcttgccgtg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacctc cgactactgg ggtcagggta ccctggttac cgtttct 357
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<210> 220

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 220

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tcttgccgtg cgtctcagtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacctc cgactactgg ggtcagggta ccctggttac cgtttct 357
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<210> 221

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 221

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gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtgggttc tctgcgtctg 60
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ccgggtaaaag gtctggaatg gatcgggtgaa atccggtcta aatcttctaa cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaactct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctggttac cgtttct 357

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<210> 222

<211> 357

<212> DNA

<213> Artificial Sequence

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<223> Infliximab VH variant

<400> 222

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tcttgccgtg cgtctcagtc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggtcta aatctatcaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacctct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctggttac cgtttct 357

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<210> 223

<211> 357

<212> DNA

<213> Artificial Sequence

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<223> Infliximab VH variant

<400> 223

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tcttgccgtg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggtcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctggttac cgtttct 357

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<210> 224

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 224

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gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctcagtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggtcta aatctatcta cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctggttac cgtttct 357

```

<210> 225

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 225

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gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtttg 60
tcttgccgtg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatcttctaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 226

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 226

```

gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatcttctta cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaactct 240
ctgacctggg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 227

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 227

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gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaacgac 240
ctgacctggg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 228

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 228

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gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccgcgg cgtctgggttc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 229

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 229

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gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgtttcta aatcttctaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa cggtaaccgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357
```

<210> 230

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 230

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tcttgccggc cgtctgggtt cacttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgtttcta aatcttctta ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa caaaaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357
```

<210> 231

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 231

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tcttgccgtg cgtctgggtt tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgtttcta aatctatcaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa cggtaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357
```

<210> 232

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 232

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gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccggc cgtctgggtt cacttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgtttcta aatcttctta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa caaaaccgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357
```

<210> 233

<211> 357

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 233
 gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtcagggtt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
 ctgacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccttggttac cgtttct 357

<210> 234
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 234
 gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctgggtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cggtagcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccttggttac cgtttct 357

<210> 235
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 235
 gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctcagtc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtagctct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccttggttac cgtttct 357

<210> 236
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 236
 gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cggtagcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccttggttac cgtttct 357

<210> 237

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 237

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gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgcg cgtctcagtt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaactct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 238

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 238

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gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgcg cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 239

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 239

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gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgctg cgtctgggtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacctt cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 240

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 240

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gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgctg cgtctgggtt tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacctt cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 241
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 241
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cggcgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtagcgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

<210> 242
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 242
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccggc cgtctgggtc tatcttctct aaccactaca tgaattgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cggcgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaactct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357

<210> 243
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 243
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctgggtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cggcgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtagcgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

<210> 244
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 244
 gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cggcgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaactct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

<210> 245
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 245
 gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgcg cgtctggttt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcgggtgaa atccgttcta aatcttctta ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggtta ccctggttac cgtttct 357

<210> 246
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 246
 gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgcg cgtctcagtt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcgggtgaa atccgttcta aatcttctaa ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggtta ccctggttac cgtttct 357

<210> 247
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 247
 gaagttcagc tgggttgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
 tcttgccggtg cgtctcagtc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcaa ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggtta ccctggttac cgtttct 357

<210> 248
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 248
 gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
 tcttgccggtg cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcaa cggtgccgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300

aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgttttct 357

<210> 249

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 249

gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctggttt catctttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcggttc atcatctctc gtgacggtaa cggtaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgttttct 357

<210> 250

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 250

gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccggc cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatcttctaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcggttc atcatctctc gtgacggtaa caaaaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgttttct 357

<210> 251

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 251

gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctggttt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcta cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcggttc atcatctctc gtgacggtaa cggtaaccgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgttttct 357

<210> 252

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 252

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tcttgccggc cgtctcagtt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcggttc atcatctctc gtgacgacaa caaaacctct 240

ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacccc ggaetactgg ggtcagggta ccctggttac cgttttct 357

<210> 253

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 253

gaagttcagc tgggtgaatc tgggtggtggc ctgggttcagc cgggtgggttc tctgcgtctg 60
 tcttgccgtg cgtctgggtt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cgggtgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaactct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgttttct 357

<210> 254

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 254

gaagttcagc tgaccgaatc tgggtggtggc ctgggttcagc cgggtgggttc tctgcgtctg 60
 tcttgccgtg cgtctgggtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgttttct 357

<210> 255

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 255

gaagttcagc tgaccgaatc tgggtggtggc ctgggttcagc cgggtgggttc tctgcgtctg 60
 tcttgccgtg cgtctgggtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgttttct 357

<210> 256

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 256

gaagttcagc tgaccgaatc tgggtggtggc ctgggttcagc cgggtgggttc tctgcgtctg 60
 tcttgccgtg cgtctcagtt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240

```
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgttttct 357
```

<210> 257

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 257

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gaagttcagc tgggtgaatc tgggtggtggg ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctcagtt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacg 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaactct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgttttct 357
```

<210> 258

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 258

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gaagttcagc tgaccgaatc tgggtggtggg ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctcagtc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa cggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgttttct 357
```

<210> 259

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 259

```
gaagttcagc tgaccgaatc tgggtggtggg ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctgggtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaacctct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgttttct 357
```

<210> 260

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 260

```
gaagttcagc tgaccgaatc tgggtggtggg ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctgggtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtacctct 240
```

ctgtacctgg aaatgaactc ttgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggtg ccctgggttac cgtttct 357

<210> 261

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 261

gaagttcagc tggttgaatc tgggtggtggg ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctgggtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatcttctta cggtcgcgacc 180
tcttacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa caaaaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggtg ccctgggttac cgtttct 357

<210> 262

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 262

gaagttcagc tgaccgaatc tgggtggtggg ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccggtg cgtctgggtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatcttctta ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa caaaaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggtg ccctgggttac cgtttct 357

<210> 263

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 263

gaagttcagc tggttgaatc tgggtggtggg ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctgggtt cacttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcggtttc atcatctctc gtgacgacaa caaaaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggtg ccctgggttac cgtttct 357

<210> 264

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 264

gaagttcagc tgaccgaatc tgggtggtggg ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctgggtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcaa cggtcgcgacc 180

cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 265

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 265

gaagttcagc tggttgaatc tgggtggtggc ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgcg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcta ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aattactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 266

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 266

gaagttcagc tgaccgaatc tgggtggtggc ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgctg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatcttctta cgggtgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 267

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 267

gaagttcagc tggttgaatc tgggtggtggc ctggttcagc cgggtggttc tctgcgtcta 60
 tcttgccgcg cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcgggtgaa atccggttcta aatctatcta cgggtgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaacgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 268

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 268

gaagttcagc tggttgaatc tgggtggtggc ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgctg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120

```

ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatccatcaa cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtagccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 269

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 269

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gaagttcagc tggttgaatc tgggtggtggc ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctgggtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtagccgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 270

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 270

```

gaagttcagc tggttgaatc tgggtggtggc ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 271

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 271

```

gaagttcagc tgaccgaatc tgggtggtggc ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctgggtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 272

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 272

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gaagttcagc tggttgaatc tgggtggtggc ctggttcagc cgggtgggttc tctgcgtctg 60

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```

tcttgccgcgg cgtcacagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctactta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 273

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 273

```

gaagttcagc tgaccgaatc tgggtgggtggt ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgtg cgtctggttt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cggtgccgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtagctct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 274

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 274

```

gaagttcagc tgaccgaatc tgggtgggtggt ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgcgg cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cggtgccgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtagcgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 275

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 275

```

gaagttcagc tgggtgaatc tgggtgggtggt ctggttcagc cgggtgggttc tctgcgtctg 60
tcttgccgcgg cgtctggttt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactattacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 276

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 276

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gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgcg cgtctcagtt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcggttc atcatctctc gtgacggtaa caaaaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

```

<210> 277

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 277

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gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccggt cgtctcagtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcggttc atcatctctc gtgacgacaa cgggtaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

```

<210> 278

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 278

```

gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccggt cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcaa cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcggttc atcatctctc gtgacgacaa cgggtaccgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357

```

<210> 279

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 279

```

gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccggt cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcggttc atcatctctc gtgacggtaa caaaaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357

```

<210> 280

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

```

<400> 280
gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgcg cgtctggttc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcggttc atcatctctc gtgacggtaa caaaaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 281

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

```

<400> 281
gaagttcagc tgaccgaatc tgggtggtggt ctggtacagc cgggtggttc tctgcgtctg 60
tcttgctcgtg cgtctggttt cacttctctc aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcggttc atcatctctc gtgacgacaa cggtagccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 282

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

```

<400> 282
gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtcta 60
tcttgccgtg cgtctggttc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcggttc atcatctctc gtgacgacaa cggtagcctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgtttct 357

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<210> 283

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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<400> 283
gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctggttc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcggttc atcatctctc gtgacgacaa caaaaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aattactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgtttct 357

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<210> 284

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 284
 gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgctctg 60
 tcttgccgtg cgtctcagtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
 ctgaccctgg aaatgaactc tctaaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 285

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 285
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgctctg 60
 tcttgccgtg cgtctgggtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cgggtgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtagcgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 286

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 286
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgctctg 60
 tcttgccgtg cgtctgggtt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cgggtgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 287

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 287
 gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgctctg 60
 tcttgccgcg cgtctgggtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cgggtgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaactct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 288

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 288

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gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa cggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 289

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 289

```

gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctggttt cacttctctc aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 290

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 290

```

gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctggttt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa cggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 291

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 291

```

gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
tcttgccgcg cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa cggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 292

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 292

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gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 293

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 293

```

gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccggtg cgtctgggtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
ctgaccttgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 294

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 294

```

gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccggtg cgtctcagtt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
ctgaccttgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacctta cgactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 295

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 295

```

gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgtctg 60
tcttgccgtg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
ctgaccttgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggtta ccctgggttac cgtttct 357

```

<210> 296

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 296

```

gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgctctg 60
tcttgccgctg cgtctcagtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactatg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 297

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 297

```

gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgctctg 60
tcttgccgctg cgtctgggttc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 298

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 298

```

gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgctctg 60
tcttgccgctg cgtctgggttc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 299

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 299

```

gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgctctg 60
tcttgccgctg cgtctgggttc catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 300

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 300

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gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtgggtc tctgcgtctg 60
tcttgctcgtg cgtctgggtt caocttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357
```

<210> 301

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 301

```
gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtgggtc tctgcgtctg 60
tcttgccgtg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cgggtaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357
```

<210> 302

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 302

```
gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtgggtc tctgcgtctg 60
tcttgccgtg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaactct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357
```

<210> 303

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 303

```
gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtgggtc tctgcgtctg 60
tcttgccgtg cgtctgggtc tatcttctct aaccactaca tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cgggtacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357
```

<210> 304

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 304

```

gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtgggttc tctgcgctctg 60
tcttgccgcg cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa cggtgccgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 305

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 305

```

gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtgggttc tctgcgctctg 60
tcttgccgcg cgtctcagtt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaacctct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 306

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 306

```

gaagttcagc tgggtgaatc tgggtggtggt ctggttcagc cgggtgggttc tctgcgctctg 60
tcttgccgcg cgtctcagtt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaactct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctactcc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 307

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 307

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gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtgggttc tctgcgctctg 60
tcttgccgtg cgtctcagtc tatcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta tggtgccgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

```

<210> 308

<211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 308
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaactct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357

<210> 309
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 309
 gaagttcagc tggttgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccggtg cgtctcagtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

<210> 310
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 310
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

<210> 311
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 311
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtggttc tctgcgtctg 60
 tcttgccgtg cgtctcagtt caccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccaggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cgggtgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

<210> 312
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 312
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 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cagtgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaacgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
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<220>
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 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cgtacctct 240
 ctgacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 314
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

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 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaactct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 315
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

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 ctgacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

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 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

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 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
 ctgtacctgg aaatgaactc tttgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

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 <212> DNA
 <213> Artificial Sequence

<220>
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 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cggtcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacctt 240
 ctgacctg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

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 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 319
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
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 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacctt 240
 ctgacctg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300

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<210> 320

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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ccgggtaaaag gtctggaatg gatcggtgaa atccggttcta aatctatcta cggtgccgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgttttct 357

<210> 321

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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ccgggtaaaag gtctggaatg gatcggtgaa atccggttcta aatcttctta cggtgccgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgttttct 357

<210> 322

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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ccgggtaaaag gtctggaatg gatcggtgaa atccggttcta aatctatcaa cggtgccgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtagcctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgttttct 357

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<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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ccgggtaaaag gtctggaatg gatcggtgaa atccggttcta aatcttctaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240

ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggtg ccctgggttac cgttttct 357

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<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 324

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cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctct 240
ctgtacctag aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggtg ccctgggttac cgttttct 357

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<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatcttctta cggtgcgacc 180

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tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaactct 240
ctgacctggg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357
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aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357
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tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtagctct 240
ctgacctggg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357
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<210> 331

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ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcaa ctctgcgacc 180
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<210> 333

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<212> DNA

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<223> Infliximab VH variant

<400> 333

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<212> DNA

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<223> Infliximab VH variant

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<210> 335

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tctttgcgcgg cgtctcagtc tatctttctct aaccactgga tgaactgggt tcgtcaggcg 120
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<213> Artificial Sequence

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<223> Infliximab VH variant

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ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcta cgggtgcgacc 180
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<212> DNA

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<223> Infliximab VH variant

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<211> 357

<212> DNA

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<223> Infliximab VH variant

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<223> Infliximab VH variant

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<210> 342

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 342

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgtttct 357

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<210> 343

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaactct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 344

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 344
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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
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<210> 345

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 345
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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cgggtacctct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 346

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 346
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tcttgccgtg cgtctcagtt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 347

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 347
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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacctct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 348

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaacgac 240
ctgtacctgg aaatgaattc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 349

<211> 357

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<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
ctgtacctgg aaatgaactc tttgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 350

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 351

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 351

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ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
ctgacctgga aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactattacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357
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<210> 352

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 352

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ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtagcgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357
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<210> 353

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 353

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ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatcttctta cggtagcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357
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<210> 354

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 354

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ccgggtaaaag gtctggaatg gatcgggtgaa atccgttcta aatctatcaa ctctgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357
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<210> 355

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 355

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ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatcttctta cgggtgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

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<210> 356

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 356

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ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357

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<210> 357

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 357

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ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcaa cgggtgcgacc 180
tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacgac 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctggttac cgtttct 357

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<210> 358

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 358

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ccgggtaaag gtctggaatg gatcggtgaa atccggttcta aatctatcaa ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaacctct 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctggttac cgtttct 357

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<210> 359

<211> 357

<212> DNA

<213> Artificial Sequence

<220>
 <223> Infliximab VH variant

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 tcttgccgcg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
 ctgtaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 360
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 360
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 tcttgccgcg cgtctggttt caccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cggcgcgacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaacgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 361
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 361
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 tcttgccgtg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 362
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 362
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 tcttgccgtg cgtctggttc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaccgac 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
 aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

<210> 363
 <211> 357
 <212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 363

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa cggcgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaacctct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac cgtttct 357
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<210> 364

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 364

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactatg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357
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<210> 365

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 365

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cggcgcgacc 180
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ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctaccta cgactactgg ggtcagggta ccctgggttac ggtttct 357
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<210> 366

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 366

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ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcgt 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357
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<210> 367

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 367

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctaa cggtgcgacc 180
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aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

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<210> 368

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 368

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cactacgcgg aatctgttaa aggtcggttc atcatctctc gtgacgacaa caaaacctct 240
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aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

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<210> 369

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 369

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta ctctgcgacc 180
cactacgcgg aatctgttaa aggtcggttc atcatctctc gtgacgacaa caaaaactct 240
ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
aactactacg gttctacccc ggactactgg ggtcagggta ccctgggttac cgtttct 357

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<210> 370

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Infliximab VH variant

<400> 370

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ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
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ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcag 300
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<210> 371

<211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

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 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtgggtc tctgcgctctg 60
 tcttgccgcg cgtctcagtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cggcgcgacc 180
 tcttacgagg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtagctct 240
 ctgtacttgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcg 300
 aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgttttct 357

<210> 372
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 372
 gaagttcagc tgggtgaatc tggcggtggt ctggttcagc cgggtgggtc tctgcgctctg 60
 tcttgccgcg cgtctcagtt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ctctgcgacc 180
 cactacgagg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtagcgac 240
 ctgtacttgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcg 300
 aactactacg gttctaccta cgactactgg ggtcagggtta ccctgggttac cgttttct 357

<210> 373
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 373
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtgggtc tctgcgctctg 60
 tcttgccggt cgtctcagtc taccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
 tcttacgagg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtaacgac 240
 ctgtacttgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcg 300
 aactactacg gttctacccc ggactactgg ggtcagggtta ccctgggttac cgttttct 357

<210> 374
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 374
 gaagttcagc tgaccgaatc tgggtggtggt ctggttcagc cgggtgggtc tctgcgctctg 60
 tcttgccgcg cgtctgggtc taccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcgacc 180
 tcttacgagg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtaactct 240
 ctgaccctgg aaatgaactc tctgaaaacc gaagacaccg cggaatacta ctgcgcgcg 300
 aactactacg gttctacccc ggactactgg ggtcagggtta ccctgggttac cgttttct 357

<210> 375
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 375
 gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgctctg 60
 tcttgccgagg cgtctggttt cacccttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatcttctta cggtgccgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa cggtagcgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcccgcag 300
 aactactacg gttctaccta cgactactgg ggtaggggta ccctgggttac cgtttct 357

<210> 376
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 376
 gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgctctg 60
 tcttgccgagg cgtctggttt catcttctct aaccactaca tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta cggtgccgacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa caaaaacgac 240
 ctgtacctgg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcccgcag 300
 aactactacg gttctaccta cgactactgg ggtaggggta ccctgggttac cgtttct 357

<210> 377
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 377
 gaagttcagc tgaccgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgctctg 60
 tcttgccgagg cgtctcagtt cacccttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcta ctctgcccacc 180
 cactacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacgacaa cggtagcctct 240
 ctgacctctg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcccgcgt 300
 aactactacg gttctacccc ggactactgg ggtaggggta ccctgggttac cgtttct 357

<210> 378
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VH variant

<400> 378
 gaagttcagc tgggtgaatc tgggtggtggt ctgggttcagc cgggtggttc tctgcgctctg 60
 tcttgccggtg cgtctggttt catcttctct aaccactgga tgaactgggt tcgtcaggcg 120
 ccgggtaaaag gtctggaatg gatcggtgaa atccgttcta aatctatcaa ttctgcccacc 180
 tcttacgcgg aatctgttaa aggtcgtttc atcatctctc gtgacggtaa caaaaccgac 240
 ctgacctctg aaatgaactc tctgaaaacc gaagacaccg cgggaatacta ctgcccgcgt 300
 aactactacg gttctaccta cgactactgg ggtaggggta ccctgggttac cgtttct 357

<210> 379
 <211> 107
 <212> PRT
 <213> Mus musculus

<400> 379
 Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly
 1 5 10 15
 Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Phe Val Gly Ser Ser
 20 25 30
 Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile
 35 40 45
 Lys Tyr Ala Ser Glu Ser Met Ser Gly Ile Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Thr Val Glu Ser
 65 70 75 80
 Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ser His Ser Trp Pro Phe
 85 90 95
 Thr Phe Gly Ser Gly Thr Asn Leu Glu Val Lys
 100 105

<210> 380
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Infliximab VL variant

<400> 380
 Glu Ile Val Leu Thr Gln Ser Pro Asp Phe Gln Ser Val Thr Pro Lys
 1 5 10 15
 Glu Lys Val Thr Ile Thr Cys Arg Ala Ser Gln Phe Val Gly Ser Ser
 20 25 30
 Ile His Trp Tyr Gln Gln Lys Pro Asp Gln Ser Pro Lys Leu Leu Ile
 35 40 45
 Lys Tyr Ala Ser Glu Ser Met Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Glu Ala
 65 70 75 80
 Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Ser His Ser Trp Pro Phe
 85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 381
 <211> 321
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Infliximab VL variant

<400> 381
 gaaatcggtc tgaccagtc tccggacttc cagtctgtta ccccgaaaga aaaagttacc 60
 atcacctgcc gtgcgtctca gttcgttggg tcttctatcc actggtacca gcagaaaccg 120
 gaccagtctc cgaaactgct gatcaaatac gcgtctgaat ctatgtctgg tgttccgtct 180
 cgtttctctg gttctgggtc tggtaaccgac ttcaacctca ccatctcttc tctggaagcg 240
 gaagacgcgg cgacctacta ctgccagcag tctcaactctt ggccggtcac cttcgggtccg 300
 ggtaccaaag ttgacatcaa a 321

<210> 382
 <211> 112
 <212> PRT
 <213> Homo sapiens

<400> 382
 Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser
 1 5 10 15
 Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp
 20 25 30
 Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr
 35 40 45
 Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr
 50 55 60
 Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln
 65 70 75 80
 Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp
 85 90 95
 Lys Lys Ala Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro
 100 105 110

<210> 383
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 383
 Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
 1 5 10 15
 Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
 20 25 30
 Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
 35 40 45
 Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
 50 55 60
 Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
 65 70 75 80
 Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
 85 90 95
 Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 100 105