

We claim:

1. An isolated antigen-binding protein or antigen-binding fragment thereof that specifically binds to interleukin-2 receptor gamma (IL2R γ), wherein the antigen-binding protein or antigen-binding fragment thereof comprises a heavy chain variable region (HCVR) comprising three heavy chain complementarity determining regions (CDR-H1, CDR-H2, and CDR-H3) and a light chain variable region (LCVR) comprising three light chain complementarity determining regions (CDR-L1, CDR-L2, and CDR-L3), wherein CDR-H1 comprises the amino acid sequence of SEQ ID NO: 347, CDR-H2 comprises the amino acid sequence of SEQ ID NO: 349, CDR-H3 comprises the amino acid sequence of SEQ ID NO: 351, CDR-L1 comprises the amino acid sequence set forth in SEQ ID NO: 72, CDR-L2 comprises the amino acid sequence of SEQ ID NO: 54, and CDR-L3 comprises the amino acid sequence of SEQ ID NO: 355, or an antigenic fragment thereof that is characterized by one or more of the following:

- ~~Binds to human IL2R γ extracellular domain at 25°C with a K_D of about 2.75 X 10⁻⁹ M to about 3.36 X 10⁻⁷ M; about 2.45 X 10⁻⁹ M to about 1.20 X 10⁻⁸ M; or of less than about 1.20 X 10⁻⁸ M;~~
- ~~Binds to human IL2R γ extracellular domain at 37°C with a K_D of about 6.42 X 10⁻⁹ M to about 3.53 X 10⁻⁷ M; about 1.86 X 10⁻¹¹ M to about 3.00 X 10⁻⁸ M; of less than about 3.00 X 10⁻⁸ M, or of less than about 3.53 X 10⁻⁷ M;~~
- ~~Binds to *Macaca fascicularis* IL-2R γ extracellular domain at 25°C with a K_D of about 3.18 X 10⁻⁹ M to about 2.38 X 10⁻⁷ M;~~
- ~~Binds to *Macaca fascicularis* IL-2R γ extracellular domain at 37°C with a K_D of about 8.29 X 10⁻⁹ M to about 3.20 X 10⁻⁷ M; or binds with a K_D of less than about 3.20 X 10⁻⁷ M;~~
- ~~Binds to mouse IL2R γ extracellular domain at 25°C with a K_D of about 1.84 X 10⁻⁸ M, 3.76 X 10⁻⁹ M, 1.08 X 10⁻⁷ M, 2.17 X 10⁻⁸ M, 6.02 X 10⁻⁹ M or 7.93 X 10⁻⁸ M; or does not bind detectably;~~
- ~~Binds to mouse IL2R γ extracellular domain at 37°C with a K_D of about 5.59 X 10⁻⁸ M, 6.11 X 10⁻⁹ M, 3.87 X 10⁻⁷ M, 5.16 X 10⁻⁸ M, 8.70 X 10⁻⁹ M or 2.15 X 10⁻⁷ M; or does not bind detectably;~~
- ~~Binds to human IL2R γ domain 1 at 25°C with a K_D of about 3.32 X 10⁻⁹ M to about 1.97 X 10⁻⁷ M; or does not bind detectably;~~
- ~~Binds to human IL2R γ domain 1 at 37°C with a K_D of about 4.13 X 10⁻⁹ M to about 2.25 X 10⁻⁷ M; or does not bind detectably;~~
- ~~Binds to human IL2R γ domain 2 at 25°C with a K_D of about 2.91 X 10⁻⁷ M to about 5.35 X 10⁻¹⁰; or does not bind detectably;~~

- ~~Binds to human IL2R γ domain 2 at 37°C with a K_D of about 1.14 X 10⁻⁸ or about 1.27 X 10⁻⁸; or does not bind detectably;~~
- ~~Does not bind detectably to mouse or rat IL2R γ~~
- ~~Blocks STAT phosphorylation in T-cells which is induced by IL-2, IL-4, IL7, IL-15 and/or IL-21;~~
- ~~Blocks STAT phosphorylation in mast cells which is induced by IL-9;~~
- ~~Reduces the number of human peripheral blood mononuclear cells (PBMCs) and/or human cytokines in the blood or serum of an immunodeficient mouse injected with such cells;~~
- ~~Protects mice from weight loss and/or death due to GvHD in a GvHD mouse model;~~
- ~~Blocks binding of a hybrid receptor comprising IL2R γ complexed with a cytokine-specific receptor subunit from binding to IL-2, IL-4, IL-7, IL-9, IL-15 and/or IL-21;~~
- ~~Inhibits IL2R γ intracellular signaling through the JAK-STAT pathway which is induced by IL2, IL4, IL7, IL9, IL15 and/or IL21;~~
- ~~Specifically binds to the same epitope on IL2R γ as a reference antibody or antigen-binding fragment thereof wherein the reference antibody or antigen-binding fragment thereof is H4H12857P; H4H12858P; H4H12859P; H4H12863P; H4H12874P; H4H12871P; H4H12884P; H4H12886P; H4H12889P; H4H12890P; H4H12899P; H4H12900P; H4H12908P; H4H12913P2; H4H12922P2; H4H12924P2; H4H12926P2; H4H12927P2; H4H12934P2; H4H13538P; H4H13541P; H4H13544P2; or H4H13545P2;~~
- ~~Competes for binding to IL2R γ polypeptide or an antigenic fragment thereof with a reference antibody or antigen-binding fragment thereof, wherein the reference antibody or antigen-binding fragment thereof is H4H12857P; H4H12858P; H4H12859P; H4H12863P; H4H12874P; H4H12871P; H4H12884P; H4H12886P; H4H12889P; H4H12890P; H4H12899P; H4H12900P; H4H12908P; H4H12913P2; H4H12922P2; H4H12924P2; H4H12926P2; H4H12927P2; H4H12934P2; H4H13538P; H4H13541P; H4H13544P2; or H4H13545P2; and/or~~
- ~~Reduces CD45⁺ cells, B-cells, T-cells and/or NK cells in the blood or serum.~~

2. The antigen-binding protein or antigen-binding fragment thereof of claim 1, ~~that specifically binds to IL2R γ or an antigenic fragment thereof~~ which is an antibody ~~or antigen-binding fragment thereof~~.

3. The antigen-binding protein or antigen-binding fragment thereof of claim 2, wherein the antibody is a human antibody.

~~3.4. The antigen-binding protein or antigen-binding fragment thereof of claim 1,2 that specifically binds to IL2R γ or an antigenic fragment thereof which is an antigen-binding fragment of an antibody.~~

~~4. An isolated antigen-binding protein that specifically binds to IL2R γ or an antigenic fragment thereof comprising:~~

~~(a) a heavy chain immunoglobulin or variable region thereof that comprises CDR-H1, CDR-H2 and CDR-H3 of a heavy chain immunoglobulin or variable region thereof that comprises the amino acid sequence set forth in SEQ ID NO: 2, 18, 22, 38, 42, 58, 62, 77, 81, 97, 101, 115, 119, 134, 138, 152, 156, 170, 174, 186, 190, 198, 200, 208, 210, 216, 218, 234, 238, 254, 258, 272, 276, 284, 286, 294, 296, 311, 315, 331, 335, 343, 345, 357, 361 or 376; or a variant thereof; and/or~~

~~(b) a light chain immunoglobulin or variable region thereof that comprises CDR-L1, CDR-L2 and CDR-L3 of a light chain immunoglobulin or variable region thereof that comprises the amino acid sequence set forth in SEQ ID NO: 10, 20, 30, 40, 50, 60, 70, 79, 89, 99, 109, 117, 127, 136, 146, 154, 164, 172, 182, 188, 226, 236, 246, 256, 266, 274, 304, 313, 323, 333, 353, 359, 368 or 378; or a variant thereof.~~

~~5. The antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-4, wherein the HCVR comprises the amino acid sequence of SEQ ID NO: 345 and/or the LCVR comprises the amino acid sequence of SEQ ID NO: 353, that specifically binds to IL2R γ or an antigenic fragment thereof comprising:~~

~~(a) a heavy chain immunoglobulin or variable region thereof comprising an amino acid sequence having at least 90% amino acid sequence identity to the amino acid sequence set forth in SEQ ID NO: 2, 18, 22, 38, 42, 58, 62, 77, 81, 97, 101, 115, 119, 134, 138, 152, 156, 170, 174, 186, 190, 198, 200, 208, 210, 216, 218, 234, 238, 254, 258, 272, 276, 284, 286, 294, 296, 311, 315, 331, 335, 343, 345, 357, 361 or 376; and/or~~

~~(b) a light chain immunoglobulin or variable region thereof comprising an amino acid sequence having at least 90% amino acid sequence identity to the amino acid sequence set forth in SEQ ID NO: 10, 20, 30, 40, 50, 60, 70, 79, 89, 99, 109, 117, 127, 136, 146, 154, 164, 172, 182, 188, 226, 236, 246, 256, 266, 274, 304, 313, 323, 333, 353, 359, 368 or 378.~~

~~6. The antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-5, wherein the HCVR comprises the amino acid sequence of SEQ ID NO: 345 and the LCVR comprises the amino acid sequence of SEQ ID NO: 353.~~

7. The antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-6, comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 357; and/or a light chain comprising the amino acid sequence of SEQ ID NO: 359.

8. The antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-7, comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 357 and a light chain comprising the amino acid sequence of SEQ ID NO: 359.

9. The antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-4, wherein the HCVR comprises an amino acid sequence having at least 90% sequence identity to the amino acid sequence of SEQ ID NO: 345; and/or the LCVR comprises an amino acid sequence having at least 90% sequence identity to the amino acid sequence of SEQ ID NO: 353.

10. The antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-4, comprising a heavy chain comprising an amino acid sequence having at least 90% sequence identity to the amino acid sequence of SEQ ID NO: 357; and/or a light chain comprising an amino acid sequence having at least 90% sequence identity to the amino acid sequence of SEQ ID NO: 359.

6. ~~The antigen-binding protein of any one of claims 1-5 that specifically binds to IL2R γ or an antigenic fragment thereof comprising:~~

~~(a) a heavy chain immunoglobulin or variable region thereof comprising the CDR-H1, CDR-H2 and CDR-H3 of a heavy chain immunoglobulin or variable region thereof comprising an amino acid sequence set forth in SEQ ID NO: 2, 18, 22, 38, 42, 58, 62, 77, 81, 97, 101, 115, 119, 134, 138, 152, 156, 170, 174, 186, 190, 198, 200, 208, 210, 216, 218, 234, 238, 254, 258, 272, 276, 284, 286, 294, 296, 311, 315, 331, 335, 343, 345, 357, 361 or 376 and at least 90% amino acid sequence identity to the amino acid sequence set forth in SEQ ID NO: 2, 18, 22, 38, 42, 58, 62, 77, 81, 97, 101, 115, 119, 134, 138, 152, 156, 170, 174, 186, 190, 198, 200, 208, 210, 216, 218, 234, 238, 254, 258, 272, 276, 284, 286, 294, 296, 311, 315, 331, 335, 343, 345, 357, 361 or 376; and/or~~

~~(b) an light chain immunoglobulin or variable region thereof comprising the CDR-L1, CDR-L2 and CDR-L3 of a light chain immunoglobulin or variable region thereof comprising an amino acid sequence set forth in SEQ ID NO: 10, 20, 30, 40, 50, 60, 70, 79, 89, 99, 109, 117, 127, 136, 146, 154, 164, 172, 182, 188, 226, 236, 246, 256, 266, 274, 304, 313, 323, 333, 353, 359, 368 or 378 and at least 90% amino acid sequence identity to the amino acid sequence set forth in SEQ ID NO: 10, 20, 30, 40, 50, 60, 70, 79, 89, 99, 109, 117, 127, 136, 146, 154, 164, 172, 182, 188, 226, 236, 246, 256, 266, 274, 304, 313, 323, 333, 353, 359, 368 or 378.~~

7. ~~The antigen-binding protein of any one of claims 1-6 that specifically binds to IL2R γ or an antigenic fragment thereof comprising:~~

~~(i)~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 4;~~

~~CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 6; and~~

~~CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 8;~~

~~and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 24;~~

~~CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 26; and~~

~~CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 28;~~

~~and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 44;~~

~~CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 46; and~~

~~CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 48;~~

~~and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 64;~~

~~CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 66; and~~

~~CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 68;~~

~~and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 83;~~

~~CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 85; and~~

~~CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 87;~~

~~and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 103;~~

~~CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 105; and~~

~~CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 107;~~

~~and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 121;~~

~~CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 123; and~~

~~CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 125;~~

~~and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 140;~~

~~CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 142; and~~

~~CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 144;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 158;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 160; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 162;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 176;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 178; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 180;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 192;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 194; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 196;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 202;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 204; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 206;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 176;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 212; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 214;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 220;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 222; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 224;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 240;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 242; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 244;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 260;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 262; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 264;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 278;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 280; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 282;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 288;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 290; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 292;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 298;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 300; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 302;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 317;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 319; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 321;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 337;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 339; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 341;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 347;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 349; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 351;
and/or~~

~~CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 363;
CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 66; and
CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 366;
and/or~~

~~(ii)~~

~~CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 12;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 14; and
CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 16;
and/or~~

~~CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 32;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 34; and
CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 36;
and/or
CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 52;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 56;
and/or
CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 75;
and/or
CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 91;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 93; and
CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 95;
and/or
CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 111;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 113;
and/or
CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 129;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 132;
and/or
CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 148;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 150;
and/or
CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 166;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 14; and
CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 168;
and/or
CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;
CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and~~

~~CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 184;
and/or~~

~~CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 228;~~

~~CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 230; and~~

~~CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 232;
and/or~~

~~CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 248;~~

~~CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 250; and~~

~~CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 252;
and/or~~

~~CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 268;~~

~~CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and~~

~~CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 270;
and/or~~

~~CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 306;~~

~~CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 230; and~~

~~CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 309;
and/or~~

~~CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 325;~~

~~CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 327; and~~

~~CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 329;
and/or~~

~~CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;~~

~~CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and~~

~~CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 355;
and/or~~

~~CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 370;~~

~~CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 372; and~~

~~CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 374.~~

8. ——— The antigen-binding protein of any one of claims 1-7 that specifically binds to IL2R γ or an antigenic fragment thereof comprising one or more members selected from the group consisting of:
- (i) a heavy chain variable region comprising

- a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 4;
- a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 6; and
- a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 8; and
- a light chain variable region comprising
 - a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 12;
 - a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 14; and
 - a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 16;
- (ii) a heavy chain variable region comprising
 - a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 24;
 - a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 26; and
 - a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 28; and
 - a light chain variable region comprising
 - a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 32;
 - a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 34; and
 - a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 36;
- (iii) a heavy chain variable region comprising
 - a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 44;
 - a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 46; and
 - a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 48; and
 - a light chain variable region comprising
 - a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 52;
 - a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
 - a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 56;
- (iv) a heavy chain variable region comprising
 - a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 64;
 - a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 66; and
 - a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 68; and
 - a light chain variable region comprising
 - a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;
 - a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
 - a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 75;
- (v) a heavy chain variable region comprising
 - a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 83;
 - a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 85; and

a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 87; and
a light chain variable region comprising
a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 91;
a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 93; and
a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 95;

(vi) a heavy chain variable region comprising
a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 103;
a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 105; and
a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 107; and
a light chain variable region comprising
a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 111;
a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 113;

(vi) a heavy chain variable region comprising
a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 121;
a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 123; and
a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 125; and
a light chain variable region comprising
a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 129;
a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 132;

(vii) a heavy chain variable region comprising
a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 140;
a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 142; and
a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 144; and
a light chain variable region comprising
a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 148;
a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 150;

(viii) a heavy chain variable region comprising
a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 158;
a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 160; and
a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 162; and
a light chain variable region comprising

- ~~a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 166;~~
 - ~~a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 14; and~~
 - ~~a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 168;~~
- ~~(ix) a heavy chain variable region comprising~~
 - ~~a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 176;~~
 - ~~a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 178; and~~
 - ~~a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 180; and~~
 - ~~a light chain variable region comprising~~
 - ~~a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;~~
 - ~~a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and~~
 - ~~a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 184;~~
- ~~(x) a heavy chain variable region comprising~~
 - ~~a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 192;~~
 - ~~a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 194; and~~
 - ~~a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 196; and~~
 - ~~a light chain variable region comprising~~
 - ~~a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;~~
 - ~~a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and~~
 - ~~a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 184;~~
- ~~(xi) a heavy chain variable region comprising~~
 - ~~a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 202;~~
 - ~~a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 204; and~~
 - ~~a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 206; and~~
 - ~~a light chain variable region comprising~~
 - ~~a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;~~
 - ~~a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and~~
 - ~~a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 184;~~
- ~~(xii) a heavy chain variable region comprising~~
 - ~~a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 176;~~
 - ~~a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 212; and~~
 - ~~a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 214; and~~
 - ~~a light chain variable region comprising~~
 - ~~a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;~~

- a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 184;
- (xiii) a heavy chain variable region comprising
a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 220;
a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 222; and
a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 224; and
a light chain variable region comprising
a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 228;
a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 230; and
a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 232;
- (xiv) a heavy chain variable region comprising
a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 240;
a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 242; and
a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 244; and
a light chain variable region comprising
a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 248;
a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 250; and
a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 252;
- (xv) a heavy chain variable region comprising
a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 260;
a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 262; and
a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 264; and
a light chain variable region comprising
a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 268;
a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 270;
- (xvi) a heavy chain variable region comprising
a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 278;
a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 280; and
a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 282; and
a light chain variable region comprising
a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;
a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 184;

(xvii) a heavy chain variable region comprising

- a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 288;
- a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 290; and
- a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 292; and
- a light chain variable region comprising
- a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;
- a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
- a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 184;

(xviii) a heavy chain variable region comprising

- a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 298;
- a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 300; and
- a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 302; and
- a light chain variable region comprising
- a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 306;
- a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 230; and
- a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 309;

(xix) a heavy chain variable region comprising

- a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 317;
- a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 319; and
- a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 321; and
- a light chain variable region comprising
- a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 325;
- a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 327; and
- a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 329;

(xx) a heavy chain variable region comprising

- a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 337;
- a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 339; and
- a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 341; and
- a light chain variable region comprising
- a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;
- a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and
- a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 184;

(xxi) a heavy chain variable region comprising

~~a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 347;~~
~~a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 349; and~~
~~a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 351; and~~
~~a light chain variable region comprising~~
~~a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 72;~~
~~a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 54; and~~
~~a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 355;~~
 (xxii) ~~a heavy chain variable region comprising~~
~~a CDR-H1 comprising the amino acid sequence set forth in SEQ ID NO: 363;~~
~~a CDR-H2 comprising the amino acid sequence set forth in SEQ ID NO: 66; and~~
~~a CDR-H3 comprising the amino acid sequence set forth in SEQ ID NO: 366; and~~
~~a light chain variable region comprising~~
~~a CDR-L1 comprising the amino acid sequence set forth in SEQ ID NO: 370;~~
~~a CDR-L2 comprising the amino acid sequence set forth in SEQ ID NO: 372; and~~
~~a CDR-L3 comprising the amino acid sequence set forth in SEQ ID NO: 374.~~

9. ——— ~~An antigen-binding protein which is an antibody or antigen-binding fragment that specifically binds to IL2R γ or an antigenic fragment thereof which comprises:~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 2;~~
~~and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 10;~~
~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 22;~~
~~and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 30;~~
~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 42;~~
~~and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 50;~~
~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 62;~~
~~and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 70;~~
~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 81;~~
~~and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 89;~~
~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO:~~
~~101; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO:~~
~~109;~~
~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO:~~
~~119; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO:~~
~~127;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 138; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 146;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 156; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 164;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 174; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 182;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 190; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 182;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 200; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 182;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 210; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 182;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 218; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 226;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 238; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 246;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 258; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 266;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 276; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 182;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 286; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 182;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 296; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 304;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 315; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 323;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 335; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 182;~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 345; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 353; and/or~~

~~a heavy chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 361; and a light chain variable region that comprises the amino acid sequence set forth in SEQ ID NO: 368.~~

10. — An antigen-binding protein which is an antibody or antigen-binding fragment that specifically binds to IL2R γ or an antigenic fragment thereof which comprises

~~a heavy chain immunoglobulin that comprises the amino acid sequence:
QVQLVQSGAEVKKPGASVRVSCKASGYTFTDYDIHWVRQAPGHGLEWMGWINPNSGGTNYAQKFQ
GRVTMTRDTSISITVYMDLSRLRSDDTAVYYCARADYSSSSYYYGMDVWVGQGTITVTVSSASTKGPSV
FPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSL
GTKTYTCNVDHKPSNTKVKDRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVV
DVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPS
SIEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVL
DSDGSFFLYSRLTVDKSRWQEGNVFSGCSVMHEALHNHYTQKSLSLGLK
(SEQ ID NO: 18); and~~

~~a light chain immunoglobulin that comprises the amino acid sequence:
DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSKNKNYLSWYQQKPGQPPKLLIYWASTREFGVPDRF
SGRGS GTDFTLTISSLQAEDVAVYYCQQYYTTPYTFGQGTKLEIKRTVAAPS VFIFPPSDEQLKSGTAS
VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYLSSTLTLSKADYEKHKVYACEVTH
QGLSSPVTKSFNRGEG
(SEQ ID NO: 20);~~

~~a heavy chain immunoglobulin that comprises the amino acid sequence:~~

QVQLVESGGGVVQPGRSLRLSCTASGFTFRSYDMYWVRQAPGKGLEWVSVITYDGNNKYYADSVK
GRFTISRDN SKNTLFLQMSSLRPEDTAVYYCAKRG LIWVGESFDYWGGQGLTVTVSSASTKGPSVFPL
APCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTK
TYTCNV DHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVS
QEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIE
KTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDS
DGSFFLYSRLTVDKSRWQEGNVFSCSV MHEALHNHYTQKSLSLGLGK
(SEQ ID NO: 38); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSTLSASVGDRVTITCRASQSINSWLAWYQQKPGKAPNLLIYKASSLESQVPSRFSGSGSG
TEFTLTIS SLQPDDFATYYCQQYKSYSWTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNRGEC
(SEQ ID NO: 40);

a heavy chain immunoglobulin that comprises the amino acid sequence:

QVQLVESGGGVVQPGRSLRLSCAASGFNFRNFGMHWVRQAPGKGLEWVAGILYDGSSKYYADSVK
DRFTISRDN SKNTLFLQMNSLRAEDTAMYYCAKEEDTAMVPFDSWGPGLTVTVSSASTKGPSVFPLA
PCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTKT
YTCNV DHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVS
QEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIE
KTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDS
DGSFFLYSRLTVDKSRWQEGNVFSCSV MHEALHNHYTQKSLSLGLGK
(SEQ ID NO: 58); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQLTQSPSFLSASVGDRVTITCWASQGISSYLAWYQQKPGKAPTLIIYAAS TLQSGVPSRFSGSGSG
TEFTLTIS SLQPEDFASYCQQLKSYPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
FYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSLTLSKADYEKHKVYACEVTHQGLSSPV
TKSFNRGEC
(SEQ ID NO: 60);

a heavy chain immunoglobulin that comprises the amino acid sequence:

QVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQHPGKGLEWIGFIYYSGKTYYNPSLKS
RLTISVDTSKSKQFSLKLRSVTAADTAVYYCARLG YTN SAGWFDPWGQGLTVTVSSASTKGPSVFPLA
PCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTKT
YTCNV DHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVS

QEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIE
KTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDS
DGSFFLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLGLGK

(SEQ ID NO: 77); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPNLLIYAASSLQSGVPSRFSGSGSG
TDFLTITSLQPEDLATYYCQQSYTTPFTFGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVCLLNN
FYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYLSSTLTLSKADYEKHKVYACEVTHQGLSSPV
TKSFNRGEC

(SEQ ID NO: 79);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGGLVKPGGSLRLSCAASGFTFSTAWMSWVRQSPGRGLEWVGRMKSKTDGGTTFYAAP
VKGRFTISRDDSKNTLYLQMNSLKTEDTAVYYCTTGLVPAFYKYYGVDVWGQGTITVTVSSASTKGPS
VFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSS
LGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVV
VDVSDQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLP
SSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPV
LDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLGLGK

(SEQ ID NO: 97); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRITITCQASQDITNYLNWYQQKPGKAPNLLIYDASNLVTGVPSRFSGSGSG
TDFLTITSLQPEDIATYYCQQYDSLLTFGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVCLLNNF
YPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYLSSTLTLSKADYEKHKVYACEVTHQGLSSPV
KSFNRGEC

(SEQ ID NO: 99);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGGLVQPGGSLRLSCAASGFTFNHYAMHWVRQAPGKGLYVSSISSGGSTYYEDSVKG
RFTISRDNKNTLYLQMGSLRAEDMAVYYCARSFYGSSTYYDTFDMWGQGTMTVTVSSASTKGPSVF
PLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLG
TKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVD
VSDQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSS
IEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVL
SDGSFFLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLGLGK

(SEQ ID NO: 115); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASIGDRVITICRASQSISRYLNWYQQKPGKAPKLLIYAASSLQSGVPSRFSASGSGT
DFTLTISLQPEDFATYYCQQSYSTPFTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNF
YPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSSSTLTLSKADYEKHKVYACEVTHQGLSSPV
KSFNRGEC

(SEQ ID NO: 117);

a heavy chain immunoglobulin that comprises the amino acid sequence:

QVQLVESGGDLVKPGGSLRLSCATSGFTFSDFYMTWIRQAPGKGLEWISYISNSGSIVKYADSVKGRF
TISRDNKNSLYLQMNSLRAEDTAIYYCARFYGDRWGQGTLLTVSSASTKGPSVFPLAPCSRSTSEST
AALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKTKYTCNVDHKP
SNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVAVDVSQEDPEVQFN
WYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQP
REPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSGDSFFLYSRL
TVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLGLK

(SEQ ID NO: 134); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQLTQSPSFLSASVGDRVITICWASQGISTFLAWYQQKPGKAPKLLIYAASTLQSGVPSRFSGSGSG
TDFLTLTISLQPEDFATYHCQQLNNYPWTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLN
NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNRGEC

(SEQ ID NO: 136);

a heavy chain immunoglobulin that comprises the amino acid sequence:

QVQLVESGGGLVKPGGSLRLSCEASGFTFNDFYMTWIRQAPGKGLEWIAIYISKSGDKMRYADSVKGR
RFSTSRDNKNSLSLQMNSLRAEDTAVYYCARFYGDIWGQGTLLTVSSASTKGPSVFPLAPCSRSTS
ESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKTKYTCNVDH
KPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVAVDVSQEDPEVQ
FNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKG
QPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSGDSFFLYS
RLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLGLK

(SEQ ID NO: 152); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQLTQSPSFLSASVGDRVITICWASQDISFLVWYQQKPGKAPNLLIYAASALQSGVPSRFSGSGSG
TEFTLTISLQPEDFASYICEQLNNYPWTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLN

NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNRGEC

(SEQ ID NO: 154);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGRLVQPGGSLRLSCEASGFTFSNYGMTWVRQAPGKGLEWVSVISGSDNRKYAESVK
GRFTISRDNKNTLYLQMNSLRAEDTAVYYCAKLGYSRSSKDFYYGMDVWGQGTTVTVSSASTKGP
SVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPS
SLGKTYTCNVDPKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCV
VVDVDSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGL
PSSIEKTIKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
VLDSGDSFFLYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLGLK

(SEQ ID NO: 170); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIVMTQSPDSLAVSLGERATINCKSSQSVLYNSNNRNYLWYQQKPGQSPKLLIYWASTRESGVPDR
FSGSGSGTDFTLTISSLQAEDVAVYYCQQYYNPYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTA
SVVCLLNIFYPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSSSTLTLSKADYEKHKVYACEVT
HQGLSSPVTKSFNRGEC

(SEQ ID NO: 172);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGGVVRPVGSLRLSCAASGFTFDDYGMVSWVRQAPGKGLEWISSINRNGGSADYADSVK
GRFTISRDNKNSLFLQMSSLRAEDTALYHCASGEFRFDYWGGTLTVTVSSASTKGPSVFPLAPCSR
STSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKTYTCN
VDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVDSQEDP
EVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTIK
AKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSGDSFF
LYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLGLK

(SEQ ID NO: 186); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLIYAASSLQSGVPSRFSFGSGSG
TDFTLTISSLQPEDFATYYCQQSYSTPPITFGQGRLEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
IFYPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNRGEC

(SEQ ID NO: 188)

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGGLVQPGRSLRLSCAASGFTLEDYAMHWVRQAPGKGLEWVSGISWNRGSTGYADSVK
GRFTISRDNANKSLYLQMTSLRAEDTALYYCAKGFYSMDVWGQGTTVTVSSASTKGPSVFPLAPCSR
STSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGKTYTCN
VDHKPSNTKVKDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSQEDP
EVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISK
AKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFF
LYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLGLGK

(SEQ ID NO: 198); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLIYAASSLQSGVPSRFSGSGSG
TDFTLTISLQPEDFATYYCQQSYSTPPITFGQGTRLEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYLSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNRGEG

(SEQ ID NO: 188); and

a heavy chain immunoglobulin that comprises the amino acid sequence:

QVQLQQSGPGLVKPSQTLSTCAISGDSVSSNIAAWNWIRLSPSRGLEWLGRTFFRSTWFDYSLSV
KGRITINPDTSKNQFSLHLNSVTPEDAAYVYICARTGRRWSLDYWGQGTLLTVSSASTKGPSVFPLAP
CSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGKTY
TCNVDHKPSNTKVKDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSQ
EDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEK
TISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSD
GSFFLYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLGLGK

(SEQ ID NO: 208); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLIYAASSLQSGVPSRFSGSGSG
TDFTLTISLQPEDFATYYCQQSYSTPPITFGQGTRLEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYLSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNRGEG

(SEQ ID NO: 188);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGGVVRPGGSLRLSCATSGFTFDDYGMWVRQVPGKGLEWVSSVNRNGGTTDYADSVK
GRFTISRDNAKRSLFLQMNSLRAEDTALYHCATGELFFDYWGQGTLLTVSSASTKGPSVFPLAPCSR
STSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGKTYTCN
VDHKPSNTKVKDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSQEDP

EVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISK
AKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFF
LYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLGLGK

(SEQ ID NO: 216); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLIYAASSLQSGVPSRFSGSGSG
TDFTLTISSLQPEDFATYYCQQSYSTPPITFGQGTRLEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYLSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNRRGEG

(SEQ ID NO: 188);

a heavy chain immunoglobulin that comprises the amino acid sequence:

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGHYMHWRQAPGQGLEWMGWYIPHSHTNYAKRF
QGRVTMTRDTSITTAYMELIRLSDDTAVYYCARRSGRSWYFDLWGRGTLTVSSASTKGPSVFPLA
PCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTKT
YTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVS
QEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIE
KTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSD
GSFFFLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLGLGK

(SEQ ID NO: 234); and

a light chain immunoglobulin that comprises the amino acid sequence:

EIVLTQSPGTLSLSPGERATLSCRASQSVSSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGS
GTDFTLTISRLEPEDFAVYYCQQYGGSPWTFGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYLSSTLTLSKADYEKHKVYACEVTHQGLS
SPVTKSFNRGEG

(SEQ ID NO: 236);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGGLVQPGGSLGLSCAASGFTFSNYAMSWVRQAPGKGLEWVSAVSGGGGGTTYADSVK
GRFTISRDNKNTVLLQMNSLRAEDTAVYYCARGRTGGLDYWGPGLTVTVSSASTKGPSVFPLAPCS
RSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTKTYTC
NVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSQED
PEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTIS
KAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSF
FLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLGLGK

(SEQ ID NO: 254); and

a light chain immunoglobulin that comprises the amino acid sequence:

DVVMTQSPSLSPVIFGQPASISCRSSQSLVDSGNTYLNWLQQRPGQSPRRLIYEVSNRDSGVPDRF
SGSGSGTDFTLTISRVEAEDVGIIYCMQGTWPPTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTA
SVVCLLN NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSSTLTLSKADYEKHKVYACEVT
HQGLSSPVTKSFNRGEC

(SEQ ID NO: 256);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGGVVRPGGSLRLSCAASGFI FDDYMSWVRQPPGRGLEWVSGIDWFGGTRGYADSMK
GRFTISRDNANKNSLYLQMNSLRVEDTAFYYCARGGAIVGAVTPFDYWGGQGLTVTVSSASTKGPSVFP
LAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGT
KTYTCNV DHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVAVDV
SQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSI
EKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLD
SDGSFFLYSRLTVDKSRWQEGNVFSCSV MHEALHNHYTQKSLSLSLGK

(SEQ ID NO: 272); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGNRVTLSCRASQSINTYLSWYQQRPGKAPKLLIYAASSLQSGVPSRFSGSGA
GTDFTLTISSLQPEDFATYYCQQSYSAPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVCLL
NNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSSTLTLSKADYEKHKVYACEVTHQGLS
SPVTKSFNRGEC

(SEQ ID NO: 274);

a heavy chain immunoglobulin that comprises the amino acid sequence:

QLQLQESGPGLVKPSSETLSLTCTVSGGSISIKNYYWGWIRQPPGKGLEWIGSIYYSGTTYNPSLKS
RVTISVDTSKNQFSLKLSSVTAADTAVYHCA RHGYSYGHGWFDWPWGQGLTVTVSSASTKGPSVFPLAP
CSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLG TKTY
TCNV DHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVAVDVSQ
EDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEK
TISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSD
GSFFLYSRLTVDKSRWQEGNVFSCSV MHEALHNHYTQKSLSLSLGK

(SEQ ID NO: 284); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLIYAASSLQSGVPSRFSGSGSG
TDFTLTISSLQPEDFATYYCQQSYSTPPITFGQGTRLEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN

NFYBPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNREGC

(SEQ ID NO: 188);

a heavy chain immunoglobulin that comprises the amino acid sequence:

QVQLQQSGPGLVKPSQTLSTLTCDSGDSVSSNIATWNWIRQSPSRGLEWLGRTYYRSKWYKDYAVS
VKSRITINPDTSKNQFSLQVNSVTPEDTAVYYGARMTGPRYYFEYWGGTLTVSSASTKGPSVFPLA
PCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKT
YTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVS
QEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIE
KTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDS
DGSFFLYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLSLGK

(SEQ ID NO: 294); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLIYAASSLQSGVPSRFSGSGSG
TDFTLTISSLQPEDFATYYCQQSYSTPPITFGQGRLEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
NFYBPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNREGC

(SEQ ID NO: 188);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGGVVPRPGGSLRLSCAASGFTFDDFDMSWVRQGPQGLEWVSGINWHGSSTGYADSVK
GRFTISRDNANKNSLYLQMSSLRAEDTALYHCVRGGTIVGATTPLDYWGQGTTLTVSSASTKGPSVFPL
APCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKT
TYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVS
QEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIE
KTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDS
DGSFFLYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLSLGK

(SEQ ID NO: 311); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTMTCRASRTISSYLSWYQQKSGKVPNLLIFGASSLQSGVPSRFSASGS
GTDFTLISSLQPEDFATYYCQQSYSSPLTFGGGKVEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
NFYBPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNREGC

(SEQ ID NO: 313);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGDLVQPGGSLRLSCTASGFIFRNYAMNWVRQAPGKGLEWLSGILGSNDNTYYVDSVKG
RFTISRDNSRNTLYLQMNSLRAEDSAVYYCAKGDAGGFDYWGGTGLTVTVSSASTKGPSVFPLAPCSR
STSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTKTYTCN
VDHKPSNTKVKDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSQEDP
EVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISK
AKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPVLDSGDSFF
LYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLSLGK

(SEQ ID NO: 331); and

a light chain immunoglobulin that comprises the amino acid sequence:

DVVMTQSPSLSPVILGQPASISCRSSQSLVSSDGNTYLNWFQQRPQGSPRRLIYKVSNRDSGVPDRF
SGSGSGTDFTLKISRVEAEDVGAAYYCMQGSYWPPTFGQGKLEIKRTVAAPSVFIFPPSDEQLKSGTA
SVVCLLNIFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSSTLTLSKADYEKHKVYACEVT
HQGLSSPVTKSFNREGC

(SEQ ID NO: 333);

a heavy chain immunoglobulin that comprises the amino acid sequence:

QVQLVESGGGVVKPGGSLRLSCAASGFTFSNSGIHWVRQAPGKGLEWVALISYAGSNKYYADSVKG
RFTISRDNSKNTLSLQMNSLRAEDTAVYYCAKEVWTGTYSFDMWGRGTMVTVSSASTKGPSVFPL
APCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTK
TYTCNVVDHKPSNTKVKDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS
QEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIE
KTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPVLDS
DGSFFLYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLSLGK

(SEQ ID NO: 343); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLIYAASSLQSGVPSRFSGSGSG
TDFTLTISLQPEDFATYYCQQSYSTPPITFGQGTREIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLN
NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTKSFNREGC

(SEQ ID NO: 188);

a heavy chain immunoglobulin that comprises the amino acid sequence:

EVQLVESGGGLVQPGGSLRLSCAASGFIFSSYEMHWVRQAPGKGLEWISYISSSGTTIYYADSVKGR
FTISRDNAKNSLYLHMNSLRAEDTAVYYCTRARITGTFDVFDIWGGQTMVTVSSASTKGPSVFPLAPC
SRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTKTYT
CNVDHKPSNTKVKDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSQE

DPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTI
SKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSG
SFFLYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLGLGK

(SEQ ID NO: 357); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLIFAASNLQSGVPSRFSGSRSG
TDFLTITISLQPEDFATYYCQQNYNIPYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
FYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYLSSTLTLSKADYEKHKVYACEVTHQGLSSPV
TKSFNRGEC

(SEQ ID NO: 359); and/or

a heavy chain immunoglobulin that comprises the amino acid sequence:

QVQLQESGPGLVKPSQTLSTCTVSGGSITSGGYYWSWIRQYPGQGLEWIGYIYYSGKTYYNPSFTS
RITISVDTSKKQFSLKMSSVTAADTAVYYCARAGFTSSNGWFDPWGQGTLTVTSSASTKGPSVFPLA
PCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKT
YTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS
QEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIE
KTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDS
DGSFFLYSRLTVDKSRWQEGNVFSCSVMHREALHNHYTQKSLSLGLGK

(SEQ ID NO: 376); and

a light chain immunoglobulin that comprises the amino acid sequence:

DIQMTQSPSSLSASVGDRVTITCRASQNIIRSYLNWYQQKPGKAPKLLIYSASSLQSGVPSRFSGSGSG
TDFLTITISLQPEDFPTYYCQQTYSPPWTFGPGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLN
NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYLSSTLTLSKADYEKHKVYACEVTHQGLSS
PVTGSFNREGEC (SEQ ID NO: 378).

11. The antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-10 which is multispecific.

12. A complex comprising ~~an the~~ antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11 bound to an IL2R γ polypeptide ~~or an antigenic fragment thereof~~.

13. A method for making ~~an the~~ antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11, ~~or an immunoglobulin chain thereof~~ comprising:

(a) introducing one or more polynucleotides encoding ~~an immunoglobulin chain~~ the HCVR and/or the LCVR of ~~said the~~ antigen-binding protein or antigen-binding fragment thereof into a host cell;

(b) culturing the host cell under conditions favorable to expression of the polynucleotide; and

(c) optionally, isolating the antigen-binding protein or antigen-binding fragment thereof ~~immunoglobulin chain~~ from the host cell and/or medium in which the host cell is grown.

14. The method of claim 13 wherein the host cell is a Chinese hamster ovary cell.

15. An antigen-binding protein or antigen-binding fragment thereof ~~immunoglobulin chain~~ which is a product of the method of any one of claims 13-14.

~~16. A polypeptide comprising:~~

~~(a) CDR-H1, CDR-H2, and CDR-H3 of a heavy chain immunoglobulin or variable region thereof that comprises the amino acid sequence set forth in SEQ ID NO: 2, 18, 22, 38, 42, 58, 62, 77, 81, 97, 101, 115, 119, 134, 138, 152, 156, 170, 174, 186, 190, 198, 200, 208, 210, 216, 218, 234, 238, 254, 258, 272, 276, 284, 286, 294, 296, 311, 315, 331, 335, 343, 345, 357, 361 and/or 376, or a variant thereof; and/or~~

~~(b) CDR-L1, CDR-L2, and CDR-L3 of a light chain immunoglobulin or variable region thereof that comprises the amino acid sequence set forth in SEQ ID NO: 10, 20, 30, 40, 50, 60, 70, 79, 89, 99, 109, 117, 127, 136, 146, 154, 164, 172, 182, 188, 226, 236, 246, 256, 266, 274, 304, 313, 323, 333, 353, 359, 368 and/or 378, or a variant thereof;~~

~~or,~~

~~(c) the amino acid sequence set forth in a member selected from the group consisting of SEQ ID NO: 1-385, or a variant thereof.~~

~~17.16.~~ A polynucleotide encoding the antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11 ~~one or more polypeptides of claim 16.~~

~~18.17.~~ A vector comprising the polynucleotide of claim ~~17~~16.

~~19.18.~~ A host cell comprising the antigen-binding protein or antigen-binding fragment thereof, ~~immunoglobulin chain, polypeptide, polynucleotide and/or vector~~ of any one of claims 1-11 and 15-~~18~~.

~~20-19.~~ A composition ~~or kit~~ comprising ~~one or more of~~ the antigen-binding proteins or antigen-binding fragment thereof of any one of claims 1-11 and 15, optionally in association-combination with a further therapeutic agent.

~~21-20.~~ A pharmaceutical formulation comprising the antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11 and 15 and a pharmaceutically acceptable carrier or excipient and, optionally, a further therapeutic agent.

~~22-21.~~ The composition ~~or kit~~ or formulation of any one of claims ~~20-21~~19-20 in combination association with a further therapeutic agent which is an anti-inflammatory agent.

~~23-22.~~ The composition ~~or kit~~ or formulation of any one of claims ~~20-21~~19-20 in combination association with a further therapeutic agent which is one or more members selected from the group consisting of an anti-TNF α antibody or binding protein, infliximab, adalimumab, etanercept, golimumab, a corticoid, prednisolone, methylprednisolone, antithymocyte globulin, alemtuzumab, daclizumab, tacrolimus, cyclosporine, extracorporeal photophoresis, mycophenolate mofetil, sirolimus, pentostatin, mesenchymal stem cells, inolimomab, denileukin and basiliximab.

~~24-23.~~ A vessel or injection device comprising the antigen-binding protein or composition or formulation of any one of claims 1-11, 15, ~~20, 21, 22 or 23~~and 19-22.

~~25-24.~~ ~~A method for administering an~~ The antigen-binding protein or antigen-binding fragment thereof, ~~composition or formulation~~ of any one of claims 1-11, and 15, ~~20, 21, 22 or 23~~ to a subject comprising injecting said antigen-binding protein, or the composition or formulation of any one of claims 19-22 for

~~26.~~ ~~A method for~~ treating or preventing an IL2R γ -mediated disease or condition, in a subject in need thereof, wherein the IL2R γ -mediated disease or condition is graft versus host disease, organ transplant rejection, b-islet cell graft rejection, skin transplant rejection, heart transplant rejection, lung transplant rejection, kidney transplant rejection, liver transplant rejection, birdshot chorioretinopathy, multiple sclerosis, uveitis, an autoimmune disease, Type I diabetes, multiple sclerosis, rheumatoid arthritis, systemic lupus erythematosus, myasthenia gravis, aplastic anemia, atopic dermatitis, asthma, a mast cell activation disorder, mast cell activation syndrome (MCAS), and/or systemic mastocytosis (SM), comprising administering an effective amount of antigen-binding protein or composition or formulation of any one of claims 1-11, 15, 20, 21, 22 or 23, and said antigen-binding protein or

antigen-binding fragment thereof or the composition or formulation is to be injected into the body of the subject.

~~27. The method of claim 26 wherein the IL2R γ -mediated disease or condition is graft versus host disease, organ transplant rejection, b-islet cell graft rejection, skin transplant rejection, heart transplant rejection, lung transplant rejection, kidney transplant rejection, liver transplant rejection, birdshot chorioretinopathy, multiple sclerosis, uveitis, an autoimmune disease, Type I diabetes, multiple sclerosis, rheumatoid arthritis, systemic lupus erythematosus, myasthenia gravis, aplastic anemia, atopic dermatitis, asthma, a mast cell activation disorder, mast cell activation syndrome (MCAS), systemic mastocytosis (SM) and/or mast cell leukemia (MCL).~~

~~28-25. The method antigen-binding protein or antigen-binding fragment thereof of any one of claims 25-27~~claim 24, wherein the antigen-binding protein or antigen-binding fragment thereof is to be administered ~~administered by injection into the body of the subject~~ subcutaneously, intravenously or intramuscularly.

~~26. The antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11 and 15 or the composition or formulation of any one of claims 19-22 for use in treating or preventing an IL2R γ -mediated disease or condition, wherein the IL2R γ -mediated disease or condition is graft versus host disease, organ transplant rejection, b-islet cell graft rejection, skin transplant rejection, heart transplant rejection, lung transplant rejection, kidney transplant rejection, liver transplant rejection, birdshot chorioretinopathy, multiple sclerosis, uveitis, an autoimmune disease, Type I diabetes, multiple sclerosis, rheumatoid arthritis, systemic lupus erythematosus, myasthenia gravis, aplastic anemia, atopic dermatitis, asthma, a mast cell activation disorder, mast cell activation syndrome (MCAS), and/or systemic mastocytosis (SM).~~

~~29-27. The antigen-binding protein or antigen-binding fragment thereof of claim 26, wherein~~

- ~~Blocking~~ STAT phosphorylation is blocked in an peripheral blood mononuclear cell induced by a cytokine;
- ~~Blocking~~ STAT phosphorylation is blocked in a mast cell induced by a cytokine;
- ~~Reducing s~~Serum levels of interferon-gamma, tumor necrosis factor-alpha, IL-6, IL-8, IL-10 and/or mKC/GRO are reduced;
- ~~Blocking~~ JAK-STAT-mediated intracellular signaling is blocked, induced by a cytokine in the ILR γ family; and/or

- ~~Reducing~~ the serum levels of CD45+ immune cells, NK cells, T-cells and/or B-cells are reduced,
in the subject, ~~comprising administering, to the subject, an effective amount of antigen-binding protein or composition or formulation of any one of claims 1-11, 15, 20, 21, 22 or 23.~~

~~30. — The method of claim 29 wherein the subject suffers from an IL2R γ -mediated disease or condition.~~

~~31. — The method of claim 30 wherein the IL2R γ -mediated disease or condition is graft versus host disease, organ transplant rejection, b-islet cell graft rejection, skin transplant rejection, heart transplant rejection, lung transplant rejection, kidney transplant rejection, liver transplant rejection, birdshot chorioretinopathy, multiple sclerosis, uveitis, an autoimmune disease, Type I diabetes, multiple sclerosis, rheumatoid arthritis, systemic lupus erythematosus, myasthenia gravis, aplastic anemia, atopic dermatitis, asthma, a mast cell activation disorder, mast cell activation syndrome (MCAS), systemic mastocytosis (SM) and/or mast cell leukemia (MCL).~~