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IL-4 and IL-9 blockade have been shown to improve asthma symptoms in mice (Generoso *et al.*, Prospects for Monoclonal Antibody Therapy in Pediatric Asthma, *Curr Allergy Asthma Rep*. 18(9):45 (2018); Tashkin & Wechsler, Role of eosinophils in airway inflammation of chronic obstructive pulmonary disease, *Int J Chron Obstruct Pulmon Dis*. 13:335-349 (2018); Buzney *et al.*, Asthma and Atopic Dermatitis: A Review of Targeted Inhibition of Interleukin-4 and Interleukin-13 As Therapy for Atopic Disease, *J Drugs Dermatol*. 15(2):165-71 (2016); Lloyd & Harker, Epigenetic Control of Interleukin-9 in Asthma, *N Engl J Med*. 379(1):87-89 (2018); Neurath & Finotto, IL-9 signaling as key driver of chronic inflammation in mucosal immunity, *Cytokine Growth Factor Rev*. 29:93-9 (2016)).

IL-21 is connected with various inflammatory disorders including Crohn's disease and rheumatoid arthritis. (Holm *et al.*, Evaluating IL-21 as a Potential Therapeutic Target in Crohn's Disease, *Gastroenterol Res Pract*. 2018:5962624 (2018); Dinesh & Rasool Multifaceted role of IL-21 in rheumatoid arthritis: Current understanding and future perspectives, *J Cell Physiol*. 233(5):3918-3928 (2018)).

SUMMARY

The present disclosure provides isolated antigen-binding proteins (*e.g.*, antibodies or antigen-binding fragments thereof, for example, which are monospecific or multispecific) characterized by one or more of the following: Binds to human IL2R γ at 25°C with a K_D of about 2.75×10^{-9} M to about 3.36×10^{-7} M; Binds to human IL2R γ at 37°C with a K_D of about 6.42×10^{-9} M to about 3.53×10^{-7} M; or binds with a K_D of less than about 3.53×10^{-7} M; Binds to *Macaca fascicularis* IL-2R γ at 25°C with a K_D of about 3.18×10^{-9} M to about 2.38×10^{-7} M; Binds to *Macaca fascicularis* IL-2R γ at 37°C with a K_D of about 8.29×10^{-9} M to about 3.20×10^{-7} M; or binds with a K_D of less than about 3.20×10^{-7} M; Binds to human

IL2R γ at 25°C with a K_D of about 2.45×10^{-9} M to about 1.20×10^{-8} M; or binds with a K_D of less than about 1.20×10^{-8} M; Binds to human IL2R γ at 37°C with a K_D of about 1.86×10^{-11} M to about 3.00×10^{-8} M; or binds with a K_D of less than about 3.00×10^{-8} M; Binds to mouse IL2R γ at 25°C with a K_D of about 1.84×10^{-8} M, 3.76×10^{-9} M, 1.08×10^{-7} M, 2.17×10^{-8} M, 6.02×10^{-9} M or 7.93×10^{-8} M; or does not bind detectably; Binds to mouse IL2R γ at 37°C with a K_D of about 5.59×10^{-8} M, 6.11×10^{-9} M, 3.87×10^{-7} M, 5.16×10^{-8} M, 8.70×10^{-9} M or 2.15×10^{-7} M; or does not bind detectably; Binds to human IL2R γ domain 1 at 25°C with a K_D of about 3.32×10^{-9} M to about 1.97×10^{-7} M; or does not bind detectably; Binds to human IL2R γ domain 1 at 37°C with a K_D of about 4.13×10^{-9} M to about 2.25×10^{-7} M; or does not bind detectably; Binds to human IL2R γ domain 2 at 25°C with a K_D of about 2.91×10^{-7} M to about 5.35×10^{-10} ; or does not bind detectably; Binds to human IL2R γ domain 2 at 37°C with a K_D of about 1.14×10^{-8} or about 1.27×10^{-8} ; or does not bind detectably; 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 immune cells which were injected into a mouse; Reduces the levels of serum human cytokines and/or mouse serum cytokines in mice having human immune cells; Does not bind detectably to mouse or rat IL2R γ ; 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; and/or reduces the number of CD45+ cells, B-cells, T-cells and/or NK cells (but, optionally, not, for example, neutrophils) in the blood or serum of a subject. Antibodies and antigen-binding fragments that bind specifically to IL2R γ , which are variants of any of the antibodies or fragments whose sequences are specifically set forth herein, and which are characterized by one or more of the traits set forth above, form part of the present disclosure.

The present disclosure also provides an isolated antigen-binding protein, *e.g.*, which is an antibody or antigen-binding fragment thereof, that (i) specifically binds to the same epitope on IL2R γ as a reference antibody or antigen-binding fragment thereof; or (ii) competes for binding to IL2R γ polypeptide with a reference antibody or antigen-binding fragment thereof, wherein the reference antibody or antigen-binding fragment thereof comprises: (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 and/or 376; or a variant thereof; and/or (b) a light chain immunoglobulin or variable region thereof that
5 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 and/or 378; or a variant thereof. In an example of the disclosure, the reference antibody or fragment is pre-bound to the IL2Rg antigen
10 before the antigen-binding protein is added and evaluated for binding. In an example of the disclosure, antigen-binding protein is pre-bound to the antigen before the reference antibody or fragment is added and evaluated for binding.

The present disclosure also provides an isolated antigen-binding protein (*e.g.*, antibody or antigen-binding fragment thereof) comprising: (a) a heavy chain immunoglobulin or
15 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 and/or 376; or a variant thereof; and/or (b) a
20 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 and/or 378; or a variant thereof. In one aspect, the present disclosure refers to an
25 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-
30 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.

In an example of the disclosure comprises (a) a heavy chain immunoglobulin or variable region thereof comprising an amino acid sequence having at least 90% amino acid

5 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 and/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
10 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. For example, in an example of the disclosure, the antigen-binding protein comprises (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 and/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 and/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 and/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 and/or 378.

In an example of the disclosure, the antigen-binding protein comprises:

(i) the heavy chain set of CDRs: 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

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: 184; 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.

In an example of the disclosure, the antigen-binding protein of the present disclosure comprises the heavy chain set of CDRs and the light chain set of CDRs as follows:

(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: 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.

Complexes including an antigen-binding protein of the present disclosure bound to an IL2R γ polypeptide or antigenic fragment thereof are also part of the present disclosure. In one aspect, the present disclosure refers to a complex comprising the antigen-binding protein as disclosed herein or antigen-binding fragment thereof bound to an IL2R γ polypeptide. In another aspect, the present disclosure refers to a method for making the antigen-binding protein as disclosed herein or antigen-binding fragment thereof, comprising (a) introducing one or more polynucleotides encoding the HCVR and/or the LCVR of 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 from the host cell and/or medium in which the host cell is grown.

5 In yet another aspect, the present disclosure refers to a polynucleotide encoding the antigen-binding protein as disclosed herein or antigen-binding fragment thereof. In one aspect, the present disclosure refers to a vector comprising the polynucleotide as disclosed herein. In another aspect, the present disclosure refers to a host cell comprising the antigen-binding protein as disclosed herein or antigen-binding fragment thereof. In yet another aspect, the present disclosure refers to a composition comprising the antigen-
10 binding protein as disclosed herein or antigen-binding fragment thereof, optionally in combination with a further therapeutic agent. In one aspect, the present disclosure refers to a pharmaceutical formulation comprising the antigen-binding protein as disclosed herein or antigen-binding fragment thereof and a pharmaceutically acceptable carrier or excipient and, optionally, a further therapeutic agent. In another aspect, the present disclosure refers
15 to a vessel or injection device comprising the antigen-binding protein or composition or pharmaceutical formulation as disclosed herein.

The present disclosure also provides a method for making an antigen-binding protein (e.g., antibody or antigen-binding fragment thereof) or an immunoglobulin chain thereof (e.g., V_H, V_L, HC or LC) comprising: (a) introducing one or more polynucleotides (or a vector
20 comprising such a polynucleotide) encoding one or more immunoglobulin chains of said antigen-binding protein into a host cell (e.g., a CHO cell); (b) culturing the host cell under conditions favorable to expression of the polynucleotide; and (c) optionally, isolating the

antigen-binding protein or immunoglobulin chain from the host cell and/or medium in which the host cell is grown. An antigen-binding protein or immunoglobulin chain which is a product of such a method also forms part of the present disclosure.

The present disclosure also provides 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: 1-378, or a variant thereof. The present disclosure also provides a polynucleotide encoding one or more of such polypeptides or a vector comprising such a polynucleotide (*e.g.*, a plasmid).

The present disclosure also provides a host cell (*e.g.*, a CHO cell) comprising the antigen-binding protein (*e.g.*, antibody or antigen-binding fragment thereof) or immunoglobulin chain (*e.g.*, V_H, V_L, HC or LC) or polypeptide or polynucleotide or vector set forth herein.

The present disclosure also provides a composition or kit comprising one or more of the antigen-binding proteins set forth herein (*e.g.*, antibody or antigen-binding fragment thereof) optionally in association with a further therapeutic agent (*e.g.*, anti-inflammatory agent, an anti-TNF α antibody or binding protein, infliximab, adalimumab, etanercept, golimumab, a corticoid, prednisolone, methylprednisolone, antithymocyte globulin, alemtuzumab, dacluzimab, extracorporeal photophoresis, mycophenolate mofetil, sirolimus, pentostatin, mesenchyman stem cells, inolimomab, denileukin or basiliximab).

The present disclosure further provides a pharmaceutical formulation comprising the antigen-binding protein set forth herein (*e.g.*, antibody or antigen-binding fragment thereof) and a pharmaceutically acceptable carrier and, optionally, a further therapeutic agent (*e.g.*, anti-inflammatory agent, an anti-TNF α antibody or binding protein, infliximab, adalimumab, etanercept, golimumab, a corticoid, prednisolone, methylprednisolone, antithymocyte

globulin, alemtuzumab, daclizumab, extracorporeal photophoresis, mycophenolate mofetil, tacrolimus, cyclosporine, sirolimus, pentostatin, mesenchymal stem cells, inolimomab, denileukin or basiliximab).

The present disclosure also provides a vessel or injection device (*e.g.*, a vial, syringe, pre-filled syringe or autoinjector) comprising the antigen-binding protein or composition (*e.g.*, pharmaceutical formulation) set forth herein.

The present disclosure also provides a method for administering antigen-binding protein or composition set forth herein to a subject (*e.g.*, a human) comprising introducing, *e.g.*, injecting (*e.g.*, subcutaneously, intravenously or intramuscularly), said antigen-binding protein or composition into the body of the subject. The present disclosure also provides a method for treating or preventing an IL2R γ -mediated disease or condition (*e.g.*, graft versus host disease, organ transplant 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, and/or myasthenia gravis), in a subject in need thereof, comprising administering, *e.g.*, injecting, an effective amount of antigen-binding protein or composition set forth herein.

The present disclosure also provides a method for: blocking STAT phosphorylation in an peripheral blood mononuclear cell (*e.g.*, a T-cell) induced by a cytokine (*e.g.*, IL-2, IL-4, IL-7, IL-15 and/or IL-21); blocking STAT (*e.g.*, STAT3) phosphorylation in a mast cell induced by a cytokine (*e.g.*, IL-9); reducing serum levels of interferon-gamma, tumor necrosis factor-alpha, IL-6, IL-8, IL-10 and/or mKC/GRO (*e.g.*, in a subject that has received a transplant); blocking JAK-STAT-mediated (*e.g.*, STAT3) intracellular signaling (*e.g.*, in an NK cell), induced by a cytokine in the IL2R γ family (*e.g.*, IL-2, IL-4, IL-7, IL-9, IL-15 and/or IL-21); and/or reducing the serum levels of CD45⁺ immune cells, NK cells, T-cells and/or B-cells (*e.g.*, excluding neutrophils), in a subject, comprising administering, to the subject, an effective amount of anti-IL2R γ antigen-binding protein set forth herein or composition thereof or formulation thereof. In an example of the disclosure, the subject suffers from an IL2R γ -mediated disease or condition, *e.g.*, 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,

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.
2. The antigen-binding protein or antigen-binding fragment thereof of claim 1, which is an antibody.
3. The antigen-binding protein or antigen-binding fragment thereof of claim 2, wherein the antibody is a human antibody.
4. The antigen-binding protein or antigen-binding fragment thereof of claim 1, which is an antigen-binding fragment of an antibody.
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.
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.
11. The antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-10 which is multispecific.
12. A complex comprising the antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11 bound to an IL2R γ polypeptide.
13. A method for making the antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11, comprising:
 - (a) introducing one or more polynucleotides encoding the HCVR and/or the LCVR of 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 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. A polynucleotide encoding the antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11.
16. A vector comprising the polynucleotide of claim 15.

17. A host cell comprising the antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11.
18. A composition comprising the antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11, optionally in combination with a further therapeutic agent.
19. A pharmaceutical formulation comprising the antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11 and a pharmaceutically acceptable carrier or excipient and, optionally, a further therapeutic agent.
20. The composition or pharmaceutical formulation of any one of claims 18-19 in combination with a further therapeutic agent which is an anti-inflammatory agent.
21. The composition or pharmaceutical formulation of any one of claims 18-19 in combination 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, mycophenolate mofetil, sirolimus, pentostatin, mesenchymal stem cells, inolimomab, denileukin and basiliximab.
22. A vessel or injection device comprising the antigen-binding protein or composition or pharmaceutical formulation of any one of claims 1-11 and 18-21.
23. Use of the antigen-binding protein or antigen-binding fragment thereof of any one of claims 1-11 or the composition or pharmaceutical formulation of any one of claims 18-21 in the manufacture of a medicament for treating 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).

24. The use of claim 23, wherein the medicament is to be administered by injection into the body of the subject.

25. The use of claim 24, wherein the medicament is to be administered to the subject subcutaneously, intravenously or intramuscularly.

26. The use of any one of claims 23-25, wherein the medicament

- blocks STAT phosphorylation in a peripheral blood mononuclear cell induced by a cytokine;
- blocks STAT phosphorylation in a mast cell induced by a cytokine;
- reduces serum levels of interferon-gamma, tumor necrosis factor-alpha, IL-6, IL-8, IL-10 and/or mKC/GRO;
- blocks JAK-STAT-mediated intracellular signaling induced by a cytokine in the ILR γ family; and/or
- reduces serum levels of CD45+ immune cells, NK cells, T-cells and/or B-cells, in the subject.