antibodies; XOLAIR; phosphodiesterase inhibitors; PDE4 inhibitors; xanthines; anticholinergic drugs; mast cell-stabilizing agents; Cromolyn; IL-4 inhibitors; IL-5 inhibitors; eotaxin/CCR3 inhibitors; antagonists of histamine or its receptors including H1, H2, H3, and H4; antagonists of prostaglandin D or its receptors DP1 and CRTH2; TNF antagonists; a soluble fragment of a TNF receptor; ENBREL®; TNF enzyme antagonists; TNF converting enzyme (TACE) inhibitors; muscarinic receptor antagonists; TGF-beta antagonists; interferon gamma; perfenidone; chemotherapeutic agents, methotrexate; leflunomide; sirolimus (rapamycin) or an analog thereof, CCI-779; COX2 or cPLA2 inhibitors; NSAIDs; immunomodulators; p38 inhibitors; TPL-2, MK-2 and NFkB inhibitors; budenoside; epidermal growth factor; corticosteroids; cyclosporine; sulfasalazine; aminosalicylates; 6-mercaptopurine; azathioprine; metronidazole; lipoxygenase inhibitors; mesalamine; olsalazine; balsalazide; antioxidants; thromboxane inhibitors; IL-1 receptor antagonists; anti-IL-1β antibodies; anti-IL-6 antibodies; growth factors; elastase inhibitors; pyridinyl-imidazole compounds; antibodies or agonists of TNF, LT, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-14, IL-15, IL-16, IL-17, IL-18, IL-19, IL-20, IL-21, IL-22, IL-23, IL-24, IL-25, IL-26, IL-27, IL-28, IL-29, IL-30, IL-31, IL-32, IL-33, EMAP-II, GM-CSF, FGF, or PDGF; antibodies of CD2, CD3, CD4, CD8, CD25, CD28, CD30, CD40, CD45, CD69, CD90 or their ligands; FK506; rapamycin; mycophenolate mofetil; ibuprofen; prednisolone; phosphodiesterase inhibitors; adensosine agonists; antithrombotic agents; complement inhibitors; adrenergic agents; IRAK, NIK, IKK, p38, or MAP kinase inhibitors; IL-1β converting enzyme inhibitors; TNF-α converting enzyme inhibitors; T-cell signaling inhibitors; metalloproteinase inhibitors; 6-mercaptopurines; angiotensin converting enzyme inhibitors; soluble cytokine receptors; soluble p55 TNF receptor; soluble p75 TNF receptor; sIL-1RI; sIL-1RII; sIL-6R; anti-inflammatory cytokines; IL-4; IL-10; IL-11; SOST; or TGF-β.

In one aspect, there is provided use of an effective amount of the protein as described herein, in the manufacture of a medicament for treating a mammal.

In one aspect, there is provided use of the binding protein as described herein, in the manufacture of a medicament for reducing human sclerostin activity.

In one aspect, there is provided use of the binding protein as described herein, in the manufacture of a medicament for reducing human sclerostin activity in a human subject suffering from a disorder in which sclerostin activity is detrimental.

In one aspect, there is provided use of the binding protein as described herein, in the manufacture of a medicament for treating a subject for a disease or a disorder in which sclerostin activity is detrimental.

In one aspect, there is provided use of the binding protein as described herein, in the manufacture of a medicament for treating a patient suffering from a disorder in which sclerostin is detrimental before, concurrent, or after the administration of a second agent, wherein the second agent is selected from the group consisting of an inhaled steroid; a beta-agonist; a short-acting or long-acting beta-agonist; an antagonist of leukotrienes or leukotriene receptors; ADVAIR; an IgE inhibitor; an anti-IgE antibody; XOLAIR; a phosphodiesterase inhibitor; a PDE4 inhibitor; a xanthine; an anticholinergic drug; a mast cell-stabilizing agent; Cromolyn; an IL-4 inhibitor; an IL-5 inhibitor; an eotaxin/CCR3 inhibitor; an antagonist of histamine or its receptors including H1, H2, H3, and H4; an antagonist of prostaglandin D or its receptors DP1 and CRTH2; a TNF antagonist; a soluble fragment of a TNF receptor; ENBREL; a TNF enzyme antagonist; a TNF converting enzyme (TACE) inhibitor; a muscarinic receptor antagonist; a TGF-beta antagonist; an interferon gamma; perfenidone; a chemotherapeutic agent, methotrexate; leflunomide; sirolimus (rapamycin) or an analog thereof, CCI-779; a COX2 or cPLA2 inhibitors; an NSAIDs; an immunomodulator; a p38 inhibitor; TPL-2, MK-2 and NFkB inhibitors; budenoside; epidermal growth factor; a corticosteroid; cyclosporine; sulfasalazine; an aminosalicylate; 6-mercaptopurine; azathioprine; metronidazole; a lipoxygenase inhibitor; mesalamine; olsalazine; balsalazide; an antioxidant; a thromboxane inhibitor; an IL-1 receptor antagonist; an anti-IL-1β antibody; an anti-IL-6 antibody; a growth factor; an elastase inhibitor; a pyridinyl-imidazole compound; an antibody or agonists of TNF, LT, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-14, IL-15, IL-16, IL-17, IL-18, IL-19, IL-20, IL-21, IL-22, IL-23, IL-24, IL-25, IL-26, IL-27, IL-28, IL-29, IL-30, IL-31, IL-32, IL-33, EMAP-II, GM-CSF, FGF, or PDGF; an antibody of CD2, CD3, CD4, CD8, CD25, CD28, CD30, CD40, CD45, CD69, CD90 or their ligands; FK506; rapamycin; mycophenolate mofetil; ibuprofen; prednisolone; a phosphodiesterase inhibitor; an adensosine agonist; an antithrombotic agent; a complement inhibitor; an adrenergic agent; IRAK, NIK, IKK, p38, or a MAP kinase inhibitor; an IL-1β converting enzyme inhibitor; a TNF-α converting enzyme inhibitor; a T-cell signaling inhibitor; a metalloproteinase inhibitor; a 6-mercaptopurine; an angiotensin converting enzyme inhibitor; a soluble cytokine receptor; a soluble p55 TNF receptor; a soluble p75 TNF receptor; sIL-1RI; sIL-1RII; sIL-6R; an anti-inflammatory cytokine; IL-4; IL-10; IL-11; SOST; and TGF-β.

In one aspect, there is provided use of an effective amount of the composition as described herein, in the manufacture of a medicament for treating a mammal.

In one aspect, there is provided use of the binding protein as described herein, in the manufacture of a medicament for reducing human sclerostin activity

In one aspect, there is provided use of the binding protein as described herein, in the manufacture of a medicament for reducing human sclerostin activity.

In one aspect, there is provided use of the binding protein as described herein, in the manufacture of a medicament for treating a subject for a disease or a disorder in which sclerostin activity is detrimental.

In one aspect, there is provided use of the binding protein as described herein, in the manufacture of a medicament for treating a patient suffering from a disorder in which sclerostin is detrimental before, concurrent, or after the administration of a second agent, wherein the second agent is selected from the group consisting of an inhaled steroid; a beta-agonist; a short-acting or long-acting beta-agonist; an antagonist of leukotrienes or leukotriene receptors; ADVAIR; an IgE inhibitor; an anti-IgE antibody; XOLAIR; a phosphodiesterase inhibitor; a PDE4 inhibitor; a xanthine; an anticholinergic drug; a mast cell-stabilizing agent; Cromolyn; an IL-4 inhibitor; an IL-5 inhibitor; an eotaxin/CCR3 inhibitor; an antagonist of histamine or its receptors including H1, H2, H3, and H4; an antagonist of prostaglandin D or its receptors DP1 and CRTH2; a TNF antagonist; a soluble fragment of a TNF receptor; ENBREL; a TNF enzyme antagonist; a TNF converting enzyme (TACE) inhibitor; a muscarinic receptor antagonist; a TGF-beta antagonist; an interferon gamma; perfenidone; a chemotherapeutic agent, methotrexate; leflunomide; sirolimus (rapamycin) or an analog thereof, CCI-779; a COX2 or cPLA2 inhibitors; an NSAIDs; an immunomodulator; a p38 inhibitor; TPL-2, MK-2 and NFkB inhibitors; budenoside; epidermal growth factor; a corticosteroid; cyclosporine; sulfasalazine; an aminosalicylate; 6-mercaptopurine; azathioprine; metronidazole; a lipoxygenase inhibitor; mesalamine; olsalazine; balsalazide; an antioxidant; a thromboxane inhibitor; an IL-1 receptor antagonist; an anti-IL-1β antibody; an anti-IL-6 antibody; a growth factor; an elastase inhibitor; a pyridinyl-imidazole compound; an antibody or agonists of TNF, LT, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-14, IL-15, IL-16, IL-17, IL-18, IL-19, IL-20, IL-21, IL-22, IL-23, IL-24, IL-25, IL-26, IL-27, IL-28, IL-29, IL-30, IL-31, IL-32, IL-33, EMAP-II, GM-CSF, FGF, or PDGF; an antibody of CD2, CD3, CD4, CD8, CD25, CD28, CD30, CD40, CD45, CD69, CD90 or their ligands; FK506; rapamycin; mycophenolate mofetil; ibuprofen; prednisolone; a phosphodiesterase inhibitor; an adensosine agonist; an antithrombotic agent; a complement inhibitor; an adrenergic agent; IRAK, NIK, IKK, p38, or a MAP kinase inhibitor; an IL-1β converting enzyme inhibitor; a TNF-α converting enzyme inhibitor; a T-cell signaling inhibitor; a metalloproteinase inhibitor; a 6-mercaptopurine; an angiotensin converting enzyme inhibitor; a soluble cytokine receptor; a soluble p55 TNF receptor; a soluble p75 TNF receptor; sIL-1RI; sIL-1RII; sIL-6R; an anti-inflammatory cytokine; IL-4; IL-10; IL-11; SOST; and TGF-β.

16. A method of producing a protein capable of binding sclerostin, comprising culturing the host cell of claim 16 in culture medium under conditions sufficient to produce a binding protein capable of binding sclerostin.

17. A protein produced by the method of claim 16.

18. ~~A method for treating a mammal comprising the step of administering to the mammal~~ Use of an effective amount of the protein of claim 17, in the manufacture of a medicament for treating a mammal.

19. A pharmaceutical composition comprising the binding protein of claim 1, and a pharmaceutically acceptable carrier.

20. The pharmaceutical composition of claim 19, further comprising at least one additional therapeutic agent for treating a disorder in which sclerostin activity is detrimental.

21. The pharmaceutical composition of claim 20, wherein the additional agent is selected from the group consisting of a therapeutic agent, imaging agent, cytotoxic agent, angiogenesis inhibitors; kinase inhibitors; co-stimulation molecule blockers; adhesion molecule blockers; anti-cytokine antibody or functional fragment thereof; methotrexate; cyclosporin; rapamycin; FK506; detectable label or reporter; a TNF antagonist; an anti-rheumatic; a muscle relaxant, a narcotic, a non-steroid anti-inflammatory drug (NSAID), an analgesic, an anesthetic, a sedative, a local anesthetic, a neuromuscular blocker, an antimicrobial, an antipsoriatic, a corticosteroid, an anabolic steroid, an erythropoietin, an immunization, an immunoglobulin, an immunosuppressive, a growth hormone, a hormone replacement drug, a radiopharmaceutical, an antidepressant, an antipsychotic, a stimulant, an asthma medication, a beta agonist, an inhaled steroid, an oral steroid, an epinephrine or analog, a cytokine, and a cytokine antagonist.

~~22. A method for reducing human sclerostin activity comprising contacting human sclerostin with~~ Use of the binding protein of claim 1 , in the manufacture of a medicament for reducing human sclerostin activity~~such that human sclerostin activity is reduced~~.

~~23. A method for reducing human sclerostin activity in a human subject suffering from a disorder in which sclerostin activity is detrimental, comprising administering to the human subject~~ Use of the binding protein of claim 1, in the manufacture of a medicament for reducing human sclerostin activity in a human subject suffering from a disorder in which sclerostin activity is detrimental ~~such that human sclerostin activity in the human subject is reduced~~.

24. ~~A method for treating a subject for a disease or a disorder in which sclerostin activity is detrimental by administering to the subject~~ Use of the binding protein of claim 1, in the manufacture of a medicament for treating a subject for a disease or a disorder in which sclerostin activity is detrimental ~~such that treatment is achieved~~.

25. The ~~method~~ use of claim 24, wherein the disorder is selected from the group consisting of a respiratory disorder; asthma; allergic and nonallergic asthma; asthma due to infection; asthma due to infection with respiratory syncytial virus (RSV); chronic obstructive pulmonary disease (COPD); a condition involving airway inflammation; eosinophilia; fibrosis and /or excess mucus production; cystic fibrosis; pulmonary fibrosis; an atopic disorder; atopic dermatitis; urticaria; eczema; allergic rhinitis; allergic enterogastritis; an inflammatory and/or autoimmune condition of the skin; an inflammatory and/or autoimmune condition of gastrointestinal organs; inflammatory bowel disease (IBD); ulcerative colitis; Crohn's disease; an inflammatory and/or autoimmune condition of the liver; liver cirrhosis; liver fibrosis; liver fibrosis caused by hepatitis B and/or C virus; scleroderma; a tumors; a cancer; hepatocellular carcinoma; glioblastoma; lymphoma; Hodgkin's lymphoma; a viral infection; HTLV-1 infection (e.g., from HTLV-1); a suppression of expression of protective type 1 immune response, and a suppression of expression of protective type 1 immune responses during vaccination.

26. ~~A method of treating a patient suffering from a disorder in which sclerostin is detrimental comprising the step of administering~~ Use of the binding protein of claim 1 in the manufacture of a medicament for treating a patient suffering from a disorder in which sclerostin is detrimental before, concurrent, or after the administration of a second agent, wherein the second agent is selected from the group consisting of an inhaled steroid; a beta-agonist; a short-acting or long-acting beta-agonist; an antagonist of leukotrienes or leukotriene receptors; ADVAIR; an IgE inhibitor; an anti-IgE antibody; XOLAIR; a phosphodiesterase inhibitor; a PDE4 inhibitor; a xanthine; an anticholinergic drug; a mast cell-stabilizing agent; Cromolyn; an IL-4 inhibitor; an IL-5 inhibitor; an eotaxin/CCR3 inhibitor; an antagonist of histamine or its receptors including H1, H2, H3, and H4; an antagonist of prostaglandin D or its receptors DP1 and CRTH2; a TNF antagonist; a soluble fragment of a TNF receptor; ENBREL; a TNF enzyme antagonist; a TNF converting enzyme (TACE) inhibitor; a muscarinic receptor antagonist; a TGF-beta antagonist; an interferon gamma; perfenidone; a chemotherapeutic agent, methotrexate; leflunomide; sirolimus (rapamycin) or an analog thereof, CCI-779; a COX2 or cPLA2 inhibitors; an NSAIDs; an immunomodulator; a p38 inhibitor; TPL-2, MK-2 and NFkB inhibitors; budenoside; epidermal growth factor; a corticosteroid; cyclosporine; sulfasalazine; an

55. A protein produced by the method of claim 54.

56. A pharmaceutical composition comprising the binding protein of claim 27, 29, 32, or 41, and a pharmaceutically acceptable carrier.

57. ~~A method for treating a mammal comprising the step of administering to the mammal~~ Use of an effective amount of the composition of claim 56, in the manufacture of a medicament for treating a mammal.

58. The pharmaceutical composition of claim 56, further comprising at least one additional therapeutic agent for treating a disorder in which sclerostin activity is detrimental.

59. The pharmaceutical composition of claim 58, wherein the additional agent is selected from the group consisting of a therapeutic agent, imaging agent, cytotoxic agent, angiogenesis inhibitors; kinase inhibitors; co-stimulation molecule blockers; adhesion molecule blockers; anti-cytokine antibody or functional fragment thereof; methotrexate; cyclosporin; rapamycin; FK506; detectable label or reporter; a TNF antagonist; an anti-rheumatic; a muscle relaxant, a narcotic, a non-steroid anti-inflammatory drug (NSAID), an analgesic, an anesthetic, a sedative, a local anesthetic, a neuromuscular blocker, an antimicrobial, an antipsoriatic, a corticosteroid, an anabolic steroid, an erythropoietin, an immunization, an immunoglobulin, an immunosuppressive, a growth hormone, a hormone replacement drug, a radiopharmaceutical, an antidepressant, an antipsychotic, a stimulant, an asthma medication, a beta agonist, an inhaled steroid, an oral steroid, an epinephrine or analog, a cytokine, and a cytokine antagonist.

60. ~~A method for reducing human sclerostin activity comprising contacting human sclerostin with~~ Use of the binding protein of claim 27, 29, 32, or 41 in the manufacture of a medicament for reducing human sclerostin activity~~such that human sclerostin activity is reduced~~.

61. ~~A method for reducing human sclerostin activity in a human subject suffering from a disorder in which sclerostin activity is detrimental, comprising administering to the human subject~~ Use of the binding protein of claim 27, 29, 32, or 41 in the manufacture of a medicament for reducing human sclerostin activity~~such that human sclerostin activity in the human subject is reduced~~.

62. ~~A method for treating a subject for a disease or a disorder in which sclerostin activity is detrimental by administering to the subject~~ Use of the binding protein of claim 27, 29, 32, or 41, in the manufacture of a medicament for treating a subject for a disease or a disorder in which sclerostin activity is detrimental ~~such that treatment is achieved~~.

63. The method of claim 62, wherein the disorder is selected from the group consisting of a respiratory disorder; asthma; allergic and nonallergic asthma; asthma due to infection; asthma due to infection with respiratory syncytial virus (RSV); chronic obstructive pulmonary disease (COPD); a condition involving airway inflammation; eosinophilia; fibrosis and /or excess mucus production; cystic fibrosis; pulmonary fibrosis; an atopic disorder; atopic dermatitis; urticaria; eczema; allergic rhinitis; allergic enterogastritis; an inflammatory and/or autoimmune condition of the skin; an inflammatory and/or autoimmune condition of gastrointestinal organs; inflammatory bowel disease (IBD); ulcerative colitis; Crohn's disease; an inflammatory and/or autoimmune condition of the liver; liver cirrhosis; liver fibrosis; liver fibrosis caused by hepatitis B and/or C virus; scleroderma; a tumors; a cancer; hepatocellular carcinoma; glioblastoma; lymphoma; Hodgkin's lymphoma; a viral infection; HTLV-1 infection (e.g., from HTLV-1); a suppression of expression of protective type 1 immune response, and a suppression of expression of protective type 1 immune responses during vaccination.

64. ~~A method of treating a patient suffering from a disorder in which sclerostin is detrimental comprising the step of administering~~ Use of the binding protein of claim 27, 29, 32, or 41 in the manufacture of a medicament for treating a patient suffering from a disorder in which sclerostin is detrimental before, concurrent, or after the administration of a second agent, wherein the second agent is selected from the group consisting of an inhaled steroid; a beta-agonist; a short-acting or long-acting beta-agonist; an antagonist of leukotrienes or leukotriene receptors; ADVAIR; an IgE inhibitor; an anti-IgE antibody; XOLAIR; a phosphodiesterase inhibitor; a PDE4 inhibitor; a xanthine; an anticholinergic drug; a mast cell-stabilizing agent; Cromolyn; an IL-4 inhibitor; an IL-5 inhibitor; an eotaxin/CCR3 inhibitor; an antagonist of histamine or its receptors including H1, H2, H3, and H4; an antagonist of prostaglandin D or its receptors DP1 and CRTH2; a TNF antagonist; a soluble fragment of a TNF receptor; ENBREL; a TNF enzyme antagonist; a TNF converting enzyme (TACE) inhibitor; a muscarinic receptor antagonist; a TGF-beta antagonist; an interferon gamma; perfenidone; a chemotherapeutic agent, methotrexate; leflunomide; sirolimus (rapamycin) or an analog thereof, CCI-779; a COX2 or cPLA2 inhibitors; an NSAIDs; an immunomodulator; a p38 inhibitor; TPL-2, MK-2 and NFkB inhibitors; budenoside; epidermal growth factor; a corticosteroid; cyclosporine; sulfasalazine; an aminosalicylate; 6-mercaptopurine; azathioprine;