We Claim:

1. An antibody, comprising a heavy chain and a light chain, wherein the heavy chain comprises the variable region and the constant region of SEQ ID NO: 2 having one but not more than one amino acid deletion, addition, or substitution; wherein the light chain comprises in the variable region and the constant region of SEQ ID NO: 4; and wherein the antibody binds to an osteoprotegerin ligand (OPGL) and inhibits binding of OPGL to an osteoclast differentiation and activation receptor (ODAR) wherein an excess of antibody reduces the binding by at least 20% as measured in an *in vitro* competitive binding assay.

2. The antibody of claim 1, wherein the heavy chain comprises the variable region and the constant region of SEQ ID NO:2 having one, but not more than one carboxy-terminal amino acid deletion.

3. The antibody of claim 1 or 2, wherein the heavy chain comprises the amino acid sequence of SEQ ID NO: 13; and wherein the light chain comprises the amino acid sequence of SEQ ID NO: 14.

4. The antibody of any one of claims 1 to 3 which is obtainable by expression in a host cell comprising a first polynucleotide and a second polynucleotide, wherein the first polynucleotide encodes the antibody heavy chain, and the second polynucleotide encodes the antibody light chain.

5. The antibody of claim 4, wherein the host cell is a mammalian host cell.

6. The antibody of claim 5, wherein the host cell is selected from the group of mammalian host cells consisting of a Chinese hamster ovary cell, a HeLa cell, a baby hamster kidney cell, a monkey kidney cell, and a human hepatocellular carcinoma cell.

7. A composition comprising a first polynucleotide and a second polynucleotide, wherein;
(a) the first polynucleotide encodes a heavy chain comprising the variable region and the constant region of SEQ ID NO:2 having one, but not more than one amino acid deletion, addition or substitution; and
(b) the second polynucleotide encodes a light chain comprising the variable region and the constant region of SEQ ID NO:4; and
wherein an antibody comprising the heavy chain and the light chain binds to an osteoprotegerin ligand (OPGL) and inhibits binding of OPGL to an osteoclast differentiation

and activation receptor (ODAR) wherein an excess of antibody reduces the binding by at least 20% as measured in an in vitro competitive binding assay.

8. The composition of claim 7, wherein the heavy chain comprises the variable region and the constant region of SEQ ID NO:2 having one, but not more than one carboxy-terminal amino acid deletion.

9. A host cell comprising the composition of claim 7 or claim 8.

10. The host cell of claim 9, which is a mammalian host cell.

11. The host cell of claim 10, wherein the host cell is selected from a Chinese hamster ovary cell, a HeLa cell, a baby hamster kidney cell, a monkey kidney cell, and a human hepatocellular carcinoma cell.

12. An antibody comprising a heavy chain and a light chain, wherein said antibody binds to an osteoprotegerin ligand (OPGL) and inhibits binding of OPGL to an osteoclast differentiation and activation receptor (ODAR), wherein an excess of antibody reduces the binding by at least 20% as measured in an in vitro competitive binding assay, and wherein the antibody is obtainable by expressing in a host cell the first polynucleotide and the second polynucleotide of the composition according to claim 7 or claim 8.

13. The antibody according to claim 12, wherein the host cell is the host cell of any one of claims 9 to 11.

14. The antibody of any one of claims 1 to 6, 12 and 13, which is a monoclonal antibody of the IgG2 isotype.

15. The antibody of claim 14, wherein said antibody comprises
i) a human IgG2 heavy chain comprising SEQ ID NO:13, and
ii) a human kappa light chain comprising SEQ ID NO:14.

16. The antibody of claim 15, which is expressed from a mammalian host cell comprising a first host cell polynucleotide and a second host cell polynucleotide, wherein the first host cell polynucleotide encodes a heavy chain comprising a human IgG2 heavy chain comprising SEQ

ID NO:13 and the second host cell polynucleotide encodes a light chain comprising a human kappa light chain comprising SEQ ID NO:14.

17. The antibody of claim 15, which is expressed from a mammalian host cell comprising a first host cell polynucleotide and a second host cell polynucleotide, wherein the first host cell polynucleotide encodes a heavy chain comprising the variable region and the constant region of amino acid sequence of SEQ ID NO:2 and the second host cell polynucleotide encodes a light chain comprising the variable region and the constant region of amino acid sequence of SEQ ID NO:4.

18. The antibody of any one of claims 1 to 6 and 12 to 17, which is fully human.

19. A pharmaceutical composition comprising an antibody of any one of claims 1 to 6 or 12 to 18.

20. The antibody of any one of claims 1 to 6 and 12 to 18, or the pharmaceutical composition of claim 19, for use in therapy.

21. Use of an antibody of any one of claims 1 to 6 and 12 to 18 or of a pharmaceutical composition of claim 19, for the manufacture of a medicament for administration with at least one therapeutic antibody selected from anti-Her2 antibody, an anti-CDC20 antibody, an antibody that binds to EGFR present on tumor cells, an antibody that binds to cell surface protein CDC 33, an antibody that binds to cell surface protein mucin-like glycoprotein, trastuzumab, rituximab, ibritumomab tiuxetan, epratuzumab, IMC-C225, iodine 131 tositumomab, and alemtuzumab.

22. An antibody of any one of claims 1 to 6 and 12 to 18 or a pharmaceutical composition of claim 19, for use in treating bone loss.

23. The antibody for use or the pharmaceutical composition for use according to claim 22 wherein the bone loss is associated with at least one condition selected from osteoporosis, Paget’s disease, osteomyelitis, hypercalcemia, osteopenia, osteonecrosis, an inflammatory condition, an autoimmune condition, rheumatoid arthritis, and cancer.

24. Use of an antibody of any one of claims 1 to 6 and 12 to 18 or of a pharmaceutical composition of claim 19 for the manufacture of a medicament for treating bone loss.

25. The use of claim 24, wherein the bone loss is associated with at least one condition selected from osteoporosis, Paget's disease, osteomyelitis, hypercalcemia, osteopenia, osteonecrosis, an inflammatory condition, an autoimmune condition, rheumatoid arthritis, and cancer.

26. Use of an antibody of any one of claims 1 to 6 and 12 to 18 or of a pharmaceutical composition of claim 19 for the manufacture of a medicament for administration with at least one therapeutic agent selected from a bone morphogenic factor, a transforming growth factor-β (TGF-β), a parathyroid hormone, an analog of a parathyroid hormone, a parathyroid hormone related protein, an analog of a parathyroid hormone related protein, a prostaglandin, a bisphosphonate, an alendronate, fluoride, calcium, and a fibroblast growth factor (FGF), for treating bone loss.

27. Use of an antibody of any one of claims 1 to 6 and 12 to 18 or of a pharmaceutical composition of claim 19 for the manufacture of a medicament for administration with at least one therapeutic agent selected from an interleukin-1 (IL-1) inhibitor, IL-1ra, anakinra, a TNFα inhibitor, a soluble TNFα receptor, etanercept, an anti-TNFa antibody, infliximab, a D2E7 antibody, a non-steroidal anti-inflammatory drug (NSAID), a COX-2 inhibitor, celecoxib, rofecoxib, and leflunomide, for treating bone loss associated with an inflammatory condition.

28. Use of an antibody of any one of claims 1 to 6 and 12 to 18 or of a pharmaceutical composition of claim 19 for the manufacture of a medicament for administration with at least one therapeutic agent selected from an interleukin-1 (IL-1) inhibitor, IL-1ra, anakinra, a TNFα inhibitor, a soluble TNFα receptor, etanercept, an anti-TNFa antibody, infliximab, a D2E7 antibody, methotrexate, a soluble form of CTLA4, and a modulator of glucocorticoid receptor, for treating bone loss associated with an autoimmune condition.

29. Use of an antibody of any one of claims 1 to 6 and 12 to 18 or of a pharmaceutical composition of claim 19 for the manufacture of a medicament for administration with at least one therapeutic agent selected from an interleukin-1 (IL-1) inhibitor, IL-1ra, anakinra, a TNFα inhibitor, a soluble TNFα receptor, etanercept, an anti-TNFa antibody, infliximab, a D2E7 antibody, a non-steroidal anti-inflammatory drug (NSAID), a COX-2 inhibitor, celecoxib, rofecoxib, leflunomide, methotrexate, a soluble form of CTLA4, and a modulator of glucocorticoid receptor, for treating bone loss associated with rheumatoid arthritis.

30. Use of an antibody of any one of claims 1 to 6 and 12 to 18 or of a pharmaceutical composition of claim 19 for the manufacture of a medicament, for administration with at least one of radiation therapy and chemotherapy, for treating bone loss associated with cancer.

31. An antibody of any one of claims 1 to 6 and 12 to 18 or a pharmaceutical composition of claim 19 for use in treating bone loss by administration with at least one therapeutic agent selected from a bone morphogenic factor, a transforming growth factor-β (TGF-β), a parathyroid hormone, an analog of a parathyroid hormone, a parathyroid hormone related protein, an analog of a parathyroid hormone related protein, a prostaglandin, a bisphosphonate, an alendronate, fluoride, calcium, and a fibroblast growth factor (FGF).

32. An antibody of any one of claims 1 to 6 and 12 to 18 or a pharmaceutical composition of claim 19 for use in treating bone loss associated with an inflammatory condition by administration with at least one therapeutic agent selected from an interleukin-1 (IL-1) inhibitor, IL-1ra, anakinra, a TNFα inhibitor, a soluble TNFα receptor, etanercept, an anti-TNFa antibody, infliximab, a D2E7 antibody, a non-steroidal anti-inflammatory drug (NSAID), a COX-2 inhibitor, celecoxib, rofecoxib, and leflunomide.

33. An antibody of any one of claims 1 to 6 and 12 to 18 or a pharmaceutical composition of claim 19 for use in treating bone loss associated with an autoimmune condition by administration with at least one therapeutic agent selected from an interleukin-1 (IL-1) inhibitor, IL-1ra, anakinra, a TNFα inhibitor, a soluble TNFα receptor, etanercept, an anti-TNFa antibody, infliximab, a D2E7 antibody, methotrexate, a soluble form of CTLA4, and a modulator of glucocorticoid receptor.

34. An antibody of any one of claims 1 to 6 and 12 to 18 or a pharmaceutical composition of claim 19 for use in treating bone loss associated with rheumatoid arthritis by administration with at least one therapeutic agent selected from an interleukin-1 (IL-1) inhibitor, IL-1ra, anakinra, a TNFα inhibitor, a soluble TNFα receptor, etanercept, an anti- TNFa antibody, infliximab, a D2E7 antibody, a non-steroidal anti-inflammatory drug (NSAID), a COX-2 inhibitor, celecoxib, rofecoxib, leflunomide, methotrexate, a soluble form of CTLA4, and a modulator of glucocorticoid receptor.

35. An antibody of any one of claims 1 to 6 and 12 to 18 or a pharmaceutical composition of claim 19 for use in treating bone loss associated with cancer by administration with at least one of radiation therapy and chemotherapy.

36. The use of claim 30, wherein the cancer is selected from breast, prostate, thyroid, kidney, lung, esophogeal, rectal, bladder, cervical, ovarian, liver, gastrointestinal, multiple myeloma, lymphoma, and Hodgkin's Disease.

37. The antibody for use or the pharmaceutical composition for use according to claim 35, wherein the cancer is selected from breast, prostate, thyroid, kidney, lung, esophogeal, rectal, bladder, cervical, ovarian, liver, gastrointestinal, multiple myeloma, lymphoma, and Hodgkin's Disease.

38. The use of claim 30, wherein the chemotherapy involves treatment with at least one agent selected from an anthracycline, taxol, tamoxifene, doxorubicin, 5-fluorouracil, and a luteinizing hormone-releasing hormone (LHRH) antagonist.

39. The antibody for use or the pharmaceutical composition for use according to claim 35, wherein the chemotherapy involves treatment with at least one agent selected from an anthracycline, taxol, tamoxifene, doxorubicin, 5-fluorouracil, and a luteinizing hormone-releasing hormone (LHRH) antagonist.

40. Use of an antibody of any of claims 1 to 6 and 12 to 18 or of a pharmaceutical composition of claim 19 for the manufacture of a medicament for administration with TRAIL.

41. A method of producing an antibody that interacts with osteoprotegerin ligand (OPGL) comprising culturing a host cell of any one of claims 9 to 11.