What is claimed is:

1. An isolated antibody or immunologically functional fragment thereof, which specifically binds to Dickkopf 1 (Dkk-1) polypeptide comprising (a) a heavy chain variable region (VH) complementary determining region one (CDR1) comprising the amino acid sequence shown in SEQ ID NO: 30, 49 or 50, a VH CDR2 comprising the amino acid sequence shown in SEQ ID NO: 32 or 51, and VH CDR3 comprising the amino acid sequence shown in SEQ ID NO: 34 or 52, or a variant thereof comprising one or more conservative amino acid substitutions in VH CDR1, VH CDR2, and/or VH CDR3; and (b) a light chain variable region (VL) CDR1 comprising the amino acid sequence shown in SEQ ID NO: 22, a VL CDR2 comprising the amino acid sequence shown in SEQ ID NO: 24, and a VL CDR3 comprising the amino acid sequence shown in SEQ ID NO: 26, or a variant thereof comprising one or more conservative amino acid substitutions in VL CDR1, VL CDR2, and/or VL CDR3; wherein the antibody or immunologically functional fragment thereof binds to human, mouse and/or rat Dkk-1 with a k_d of less than 100 pM.

2. The antibody or immunologically functional fragment thereof of claim 1, wherein the heavy chain variable region comprises the amino acid sequence shown in SEQ ID NO: 28 and the light chain variable region comprises the amino acid sequence shown in SEQ ID NO: 20.

3. The antibody or immunologically functional fragment thereof of claim 2, wherein said antibody comprises a light chain comprising the amino acid sequence shown in SEQ ID NO: 42 or 38 and a heavy chain comprising the amino acid sequence shown in SEQ ID NO: 40 or 36, with or without the C-terminal lysine of SEQ ID NO: 40 or 36.

4. A nucleic acid comprising a sequence that encodes the antibody or immunologically functional fragment of claim 1.

5. An expression vector comprising the nucleic acid of claim 4.

6. An isolated cell comprising the expression vector of claim 5.

7. A method of producing an antibody or an immunologically functional fragment thereof comprising the step of culturing a cell according to claim 6.

8. A composition comprising the antibody or fragment of any one of claims 1-3 and a pharmaceutically acceptable excipient, diluent or carrier.

9. An antibody or fragment of any one of claims 1-3 for use in treating or preventing a loss of bone mass in a patient.

10. The antibody or fragment of claim 9, wherein said patient is selected from patients who suffer from cancer that metastasizes to bone, multiple myeloma,

osteoporosis, osteopenia, Paget's Disease, periodontitis, rheumatoid arthritis, and bone loss due to immobilization.

11. An antibody or fragment of any one of claims 1-3, for use in inducing increased bone mass in a patient.

12. An antibody or fragment of claim of any one of claims 1-3, for use in inducing Wnt activity in a patient.

13. The antibody or fragment of claim 11 or 12, wherein said patient is selected from patients who suffer from cancer that metastasizes to bone, multiple myeloma, osteoporosis, osteopenia, Paget's Disease, periodontitis, rheumatoid arthritis, and bone loss due to immobilization.

What is claimed is:

1. An isolated antibody or immunologically functional fragment thereof, which specifically binds to Dickkopf 1 (Dkk-1) polypeptide comprising (a) a heavy chain variable region (VH) complementary determining region one (CDR1) comprising the amino acid sequence shown in SEQ ID NO: 30, 49 or 50, a VH CDR2 comprising the amino acid sequence shown in SEQ ID NO: 32 or 51, and VH CDR3 comprising the amino acid sequence shown in SEQ ID NO: 34 or 52; and (b) a light chain variable region (VL) CDR1 comprising the amino acid sequence shown in SEQ ID NO: 22, a VL CDR2 comprising the amino acid sequence shown in SEQ ID NO: 24, and a VL CDR3 comprising the amino acid sequence shown in SEQ ID NO: 26; wherein the antibody or immunologically functional fragment thereof binds to human, mouse and rat Dkk-1 with a k_d of less than 100 pM.

2. The antibody or immunologically functional fragment thereof of claim 1, wherein the heavy chain variable region comprises the amino acid sequence shown in SEQ ID NO: 28 and the light chain variable region comprises the amino acid sequence shown in SEQ ID NO: 20.

3. The antibody or immunologically functional fragment thereof of claim 2, wherein said antibody comprises a light chain comprising the amino acid sequence shown in SEQ ID NO: 42 or 38 and a heavy chain comprising the amino acid sequence shown in SEQ ID NO: 40 or 36, with or without the C-terminal lysine of SEQ ID NO: 40 or 36.

4. A nucleic acid comprising a sequence that encodes the antibody or immunologically functional fragment of claim 1.

5. An expression vector comprising the nucleic acid of claim 4.

6. An isolated cell comprising the expression vector of claim 5.

7. A method of producing an antibody or an immunologically functional fragment thereof comprising the step of culturing a cell according to claim 6.

8. A composition comprising the antibody or fragment of any one of claims 1-3 and a pharmaceutically acceptable excipient, diluent or carrier.

9. An antibody or fragment of any one of claims 1-3 for use in treating or preventing a loss of bone mass in a patient.

10. The antibody or fragment of claim 9, wherein said patient is selected from patients who suffer from cancer that metastasizes to bone, multiple myeloma, osteoporosis, osteopenia, Paget's Disease, periodontitis, rheumatoid arthritis, and bone loss due to immobilization.

11. An antibody or fragment of any one of claims 1-3, for use in inducing increased bone mass in a patient.

12. An antibody or fragment of claim of any one of claims 1-3, for use in inducing Wnt activity in a patient.

13. The antibody or fragment of claim 11 or 12, wherein said patient is selected from patients who suffer from cancer that metastasizes to bone, multiple myeloma, osteoporosis, osteopenia, Paget's Disease, periodontitis, rheumatoid arthritis, and bone loss due to immobilization.