CLAIMS

~~1. An anti-sclerostin antibody for use in treating osteogenesis imperfecta (OI) in a human patient, wherein a therapeutically effective amount of the anti-sclerostin antibody is to be administered to the human patient, and wherein the antisclerostin antibody comprises:~~

~~(a) a heavy chain variable region CDR1 comprising an amino acid sequence set forth in SEQ ID NO:4;~~

~~(b) a heavy chain variable region CDR2 comprising an amino acid sequence set forth in SEQ ID NO: 15;~~

~~(c) a heavy chain variable region CDR3 comprising an amino acid sequence set forth in SEQ ID NO:26;~~

~~(d) a light chain variable region CDR1 comprising an amino acid sequence set forth in SEQ ID NO:37;~~

~~(e) a light chain variable region CDR2 comprising an amino acid sequence set forth in SEQ ID NO:48; and~~

~~(f) a light chain variable region CDR3 comprising an amino acid sequence set forth in SEQ ID NO:59.~~

~~2.~~1. Use of an anti-sclerostin antibody in the manufacture of a medicament for the treatment of osteogenesis imperfecta (OI) in a human patient, wherein a therapeutically effective amount of the anti-sclerostin antibody is to be administered to the human patient, wherein the OI is type I OI, type III OI or type IV OI, wherein the human patient has one or more mutations in the COL1A1 and/ or COL1A2 genes, wherein the anti-sclerostin antibody is to be administered at a dose of 1-50 mg per kg body weight of the human patient on a monthly, bi-monthly or quarterly basis, and wherein the antisclerostin antibody comprises:

(a) a heavy chain variable region CDR1 comprising an amino acid sequence set forth in SEQ ID NO:4;

(b) a heavy chain variable region CDR2 comprising an amino acid sequence set forth in SEQ ID NO: 15;

(c) a heavy chain variable region CDR3 comprising an amino acid sequence set forth in SEQ ID NO:26;

(d) a light chain variable region CDR1 comprising an amino acid sequence set forth in SEQ ID NO:37;

(e) a light chain variable region CDR2 comprising an amino acid sequence set forth in SEQ ID NO:48; and

(f) a light chain variable region CDR3 comprising an amino acid sequence set forth in SEQ ID NO:59.

~~3. The anti-sclerostin antibody for use according to claim 1 or the use according to claim 2, wherein the OI is type I OI, type III OI or type IV OI.~~

~~4. The anti-sclerostin antibody for use according to claim 1 or 3, or the use according to claim 2 or 3, wherein the human patient has one or more mutations in the COL1A1 and/ or COL1A2 genes.~~

~~5.~~2. The ~~anti-sclerostin antibody for use according to any one of claims 1, 3 or 4, or the~~ use according to ~~any one of claims 2-4~~ claim 1, wherein the anti-sclerostin antibody comprises:

a) a VH polypeptide sequence having at least 90 percent sequence identity to the amino acid sequences set forth as SEQ ID NO:70; and/ or

b) a VL polypeptide sequence having at least 90 percent sequence identity to the amino acid sequences set forth as SEQ ID NO:81.

~~6.~~3. The ~~anti-sclerostin antibody for use according to any one of claims 1, 3, 4 or 5, or the~~ use according to ~~any one of claims 2-5~~ claim 1 or 2, wherein the anti-sclerostin antibody comprises:

a) a full length heavy chain amino acid sequence having at least 90 percent sequence identity to the amino acid sequence set forth as SEQ ID NO: 172; and/ or

b) a full length light chain amino acid sequence having at least 90 percent sequence identity to the amino acid sequence set forth as SEQ ID NO: 173.

~~7.~~4. The ~~anti-sclerostin antibody for use according to any one of claims 1, 3-5 or 6, or the~~ use according to any one of claims ~~2-6~~ 1-3, wherein the anti-sclerostin antibody comprises a VL polypeptide sequence comprising the amino acid sequence set forth as SEQ ID NO:81 and a VH polypeptide sequence comprising the amino acid sequence set forth as SEQ ID NO:70.

~~8.~~5. The ~~anti-sclerostin antibody for use according to any one of claims 1, 3-6 or 7, or the~~ use according to any one of claims ~~2-7~~ 1-4, wherein the anti-sclerostin antibody comprises a full length light chain amino acid sequence comprising the amino acid sequence set forth as SEQ ID NO: 173 and a full length heavy chain amino acid sequence comprising the amino acid sequence set forth as SEQ ID NO: 172.

~~9. The anti-sclerostin antibody for use according to any one of claims 1, 3-7 or 8, or the use according to any one of claims 2-8, wherein the anti-sclerostin antibody is to be administered at a dose of 1-50 mg per kg body weight of the human patient.~~

~~10. The anti-sclerostin antibody for use according to any one of claims 1, 3-8 or 9, or the use according to any one of claims 2-9, wherein the anti-sclerostin antibody is to be administered:~~

~~(a) at a dose of 1-30 mg per kg body weight of the human patient, for example at a dose of 1-20 mg per kg of body weight of the human patient; or~~

~~(b) at a dose of 10-30 mg per kg body weight of the human patient; and/or~~

~~(c) at a dose of 10-5000 mg, for example at a dose of 100-3000 mg; and/or~~

~~(d) to the human patient on a daily, weekly, bi-weekly, monthly, bi-monthly or quarterly basis.~~

6. The use according to any one of claims 1-5, wherein the anti-sclerostin antibody is to be administered at a dose of 2-45 mg per kg body weight of the human patient.

7. The use according to any one of claims 1-5, wherein the anti-sclerostin antibody is to be administered at a dose of 8-45 mg per kg body weight of the human patient.

8. The use according to any one of claims 1-5, wherein the anti-sclerostin antibody is to be administered at a dose of 10-40 mg per kg body weight of the human patient.

9. The use according to any one of claims 1-5, wherein the anti-sclerostin antibody is to be administered at a dose of 8-25 mg per kg body weight of the human patient.

10. The use according to any one of claims 1-5, wherein the anti-sclerostin antibody is to be administered at a dose of 5-20 mg per kg body weight of the human patient.

11. The use according to any one of claims 1-10, wherein the anti-sclerostin antibody is to be administered to the human patient on a monthly basis.

12. The use according to any one of claims 1-10, wherein the anti-sclerostin antibody is to be administered to the human patient on a quarterly basis

~~11.~~13. The ~~anti-sclerostin antibody for use according to any one of claims 1, 3-9 or 10, or the~~ use according to any one of claims ~~2-10~~ 1-12, wherein the treatment regimen comprises a first dosing regimen optionally followed by a second dosing regimen.

~~12.~~14. The ~~anti-sclerostin antibody for use according to claim 11, or the~~ use according to claim ~~11~~13, wherein:

(a) the first dosing regimen is 1-50 mg per kg body weight of the human patient ~~is~~ to be administered on a monthly basis~~, for example the first dosing regimen is 20 mg per kg body weight of the human patient is to be administered on a monthly basis~~;

(b) the second dosing regimen is 1-50 mg per kg body weight of the human patient ~~is~~ to be administered on a bi-monthly or quarterly basis~~, for example the second dosing~~

~~regimen is 20 mg per kg body weight of the human patient is to be administered on a bi-monthly or quarterly basis~~; and/or

(c) the first dosing regimen is 20 mg per kg body weight of the human patient ~~is~~ to be administered on a monthly basis and the second dosing regimen is 20 mg per kg body weight of the human patient ~~is~~ to be administered on a bi-monthly or quarterly basis~~, for example the first dosing regimen is 20 mg per kg body weight of the human patient is to be administered on a monthly basis for a period of 1 year, and the second dosing regimen is 20 mg per kg body weight of the human patient is to be administered on a bi-monthly or quarterly basis for a period of at least 1 year~~.

~~13. The anti-sclerostin antibody for use according to claim 11, or the use according to claim 11, wherein:~~

~~(a) the first dosing regimen is 10-5000 mg is to be administered on a monthly basis;~~

~~(b) the second dosing regimen is 10-5000 mg is to be administered on a bi-monthly or quarterly basis; and/or~~

~~(c) the first dosing regimen is 10-5000 mg is to be administered on a monthly basis and the second dosing regimen is 10-5000 mg is to be administered on a bi-monthly or quarterly basis, for example the first dosing regimen is 10-5000 mg is to be administered on a monthly basis for a period of 1 year, and the second dosing regimen is 10-5000 mg is to be administered on a bi-monthly or quarterly basis for a period of at least 1 year.~~

~~14.~~15. The ~~anti-sclerostin antibody for use according to any one of claims 1, 3-12 or 13, or the~~ use according to any one of claims ~~2-13~~ 1-14, wherein the anti-sclerostin antibody is to be administered intravenously or subcutaneously.

~~15.~~16. The ~~anti-sclerostin antibody for use according to any one of claims 1, 3-13 or 14, or the~~ use according to any one of claims ~~2-14~~ 1-15, wherein a further therapeutic agent, such as bisphosphonate, parathyroid hormone, calcilytics, calcimimetics (e.g., cinacalcet), statins,

anabolic steroids, lanthanum and strontium salts, and/or sodium fluoride is to be administered.

17. The use according to any one of claims 1-16, wherein the patient is an adult patient.

18. The use according to any one of claims 1-16, wherein the patient is a pediatric patient.

~~16.~~19. The ~~anti-sclerostin antibody for use according to any one of claims 1, 3-14 or 15, or the~~ use according to any one of claims ~~2-15~~ 1-18, wherein the antibody is formulated in a pharmaceutical composition.