## CLAIMS

1. Use of an anti-TGFβ antibody in the manufacture of a medicament for use in a method for treating osteogenesis imperfecta (OI) in a human subject in need thereof, wherein

the antibody comprises heavy chain complementarity-determining regions (CDRs) 1-3 comprising SEQ ID NOs:4-6, respectively, light chain CDR1-3 comprising SEQ ID NOs:7-9, respectively, wherein the antibody comprises a human $IgG_4$ constant region having a proline at position 228 (Eu numbering), and

the antibody is to be administered at a therapeutic effective amount of

1 to 8 mg/kg, optionally 2, 2.5, or 5 mg/kg, bi-annually, or

0.1 to 1 mg/kg, optionally 0.35, 0.4, or 0.5 mg/kg, every 3 months (Q3M).

2. The use of claim 1, wherein the antibody comprises a heavy chain variable domain comprising SEQ ID NO:10 and a light chain variable domain comprising SEQ ID NO:11.

3. The use of claims 1 or 2, wherein the antibody comprises a human $IgG_4$ constant region and/or a human κ light chain constant region.

4. The use of claim 3, wherein the antibody comprises a heavy chain comprising SEQ ID NO:3 and a light chain comprising SEQ ID NO:2.

5. The use of any one of claims 1-4, wherein the antibody comprises a bone-targeting moiety, optionally wherein the bone-targeting moiety is a poly-arginine peptide.

6. The use of claim 5, wherein the antibody comprises one or more poly-arginine peptides.

7. The use of claim 6, wherein the antibody is fused to a poly-arginine peptide at the N-terminus, or the C-terminus, or both termini, of the heavy chain, and/or at the C-terminus of the light chain, of the antibody.

8. The use of any one of claims 5-7, wherein the poly-arginine peptide is D10 (SEQ ID NO:14).

9. The use of any one of claims 1-8, wherein the OI is moderate-to-severe OI or type IV OI.

10. The use of any one of claims 1-8, wherein the OI is type I, II, or III OI.

11. The use of any one of the preceding claims, wherein the human subject is an adult patient (≥18 years of age), or a pediatric patient (< 18 years of age).

12. The use of any one of the preceding claims, wherein the human subject has a mutation in a *COL1A1* or *COL1A2* gene, optionally wherein the mutation is a glycine substitution mutation in the *COL1A1* or *COL1A2* gene or a valine deletion in the *COL1A2* gene.

13. The use of any one of the preceding claims, wherein the administration improves a bone parameter selected from the group consisting of bone mineral density (BMD), bone volume density (BV/TV), total bone surface (BS), bone surface density (BS/BV), trabecular number (Tb.N), trabecular thickness (Tb.Th), trabecular spacing (Tb.Sp), and total volume (Dens TV).

14. The use of any one of the preceding claims, wherein the administration decreases bone turnover and/or osteocyte density, optionally wherein the decreased bone turnover is indicated by a decrease in serum CTX or an increase in serum osteocalcin (OCN).

15. The use of any of the preceding claims, wherein the antibody is to be administered at 2 mg/kg bi-annually or at 0.4 mg/kg Q3M, optionally wherein the administration leads to an increase of BMD in the subject by about 5%.

16. The use of any one of claims 1-14, wherein the antibody is to be administered at 5 mg/kg bi-annually or at 0.5 mg/kg Q3M, optionally wherein the administration leads to an increase of BV in the subject by about 5%.

17. The use of any one of claims 1-14, wherein the antibody is to be administered at 2.5 mg/kg bi-annually or at 0.35 mg/kg Q3M, optionally wherein the administration leads to a decrease of the TGF-β level in the subject to the homeostatic value.

18. The use of any one of the preceding claims, wherein the antibody is to be administered by intravenous infusion.

19. The use of any one of the preceding claims, wherein the antibody is to be administered in combination with a bisphosphonate, parathyroid hormone, calcitonin, teriparatide, or an anti-sclerostin agent.

20. The use of claim 19, wherein the bisphosphonate is selected from alendronate, pamidronate, zoledronate, and risedronate.