CLAIMS

1. Use of an anti-TGFβ antibody in the manufacture of a medicament 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, and 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 an amount of

1 to 8 mg/kg bi-annually, or

0.1 to 1 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 claim 1 or 2, wherein the antibody comprises 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-aspartate peptide.

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

7. The use of claim 6, wherein the antibody is fused to a poly-aspartate peptide at the N-terminus, 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-aspartate 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 claims 1-10, wherein the human subject is an adult patient (≥18 years of age).

12. The use of any one of claims 1-10, wherein the human subject is a pediatric patient (< 18 years of age).

13. 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.

14. 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).

15. 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).

16. The use of any one 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%.

17. The use of any one of claims 1-15, 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%.

18. The use of any one of claims 1-15, 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.

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

20. 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.

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