WHAT IS CLAIMED IS:

1. Use of a human growth hormone-XTEN (hGH-XTEN) fusion protein comprising an amino acid sequence having at least about 90% sequence identity to SEQ ID NO:1 in the manufacture of a medicament for treating human pediatric growth hormone deficiency (PGHD) in a pediatric patient, wherein the hGH-XTEN fusion protein is prepared for administering to the pediatric patient with PGHD as a therapeutically effective bodyweight adjusted bolus dose between about 0.80 mg/kg and about 6.3 mg/kg.

2. The use of claim 1, wherein the bolus dose is administered once a month, twice a month, three times a month, or four times a month.

3. The use of claim 2, wherein the bolus dose is administered monthly.

4. The use of claim 2, wherein the bolus dose is administered every two weeks or semimonthly.

5. The use of claim 1 or claim 2, wherein the bolus dose is administered subcutaneously.

6. The use of claim 2, wherein the method is effective to achieve a height velocity equivalent to 7 cm/yr to 12 cm/yr in a pediatric patient.

7. The use of claim 2, wherein the method is effective to achieve a height velocity equivalent to 8 cm/yr to 11 cm/yr in a pediatric patient.

8. The use of claims 6 or 7, wherein the height velocity is achieved after at least 3 months, at least 6 months, or at least 12 months of dosing in the pediatric patient.

9. The use of claims 6 or 7, wherein the height velocity achieved is a first year height velocity.

10. The use of claim 2, wherein the method is not inferior to achieve a height velocity in a pediatric patient compared with that achieved using daily injections of hGH not linked to XTEN over the same period.

11. The use of claim 6 or claim 7, wherein the bolus dose is selected from about 0.8 mg/kg to about 1.5 mg/kg, about 1.8 mg/kg to about 3.2 mg/kg, or about 3.5 mg/kg to about 6.3 mg/kg.

13. The use of claim 1, wherein the pediatric patient maintains an increase from baseline serum IGF-I standard deviation score (SDS) of at least 1.0 for at least about 7 days, at least about 14 days, at least about 21 days, or at least about 30 days following administration.

14. The use of claim 1, wherein the pediatric patient maintains an increase from baseline serum IGF-I standard deviation score (SDS) of at least 1.0 for at least about 14 days, or at least about 30 days following administration.

15. The use of claim 1, wherein the pediatric patient has a serum IGF-I standard deviation score (SDS) between about -2.0 and about 2.0 following administration.

16. The use of claim 15, wherein the IGF-I SDS is selected from the group consisting of greater than about -1.5 to about 2.0, greater than about -1.0 to about 2.0, greater than about -0.5 to about 2.0, greater than about 0 to about 2.0, greater than about 0.5 to about 2.0, greater than about 1.0 to about 2.0, and greater than about 1.5 to about 2.0.

17. The use of claim 15, wherein the IGF-I SDS is selected from the group consisting of greater than about -1.0 to about 2.0, greater than about 0 to about 2.0, and greater than about 1.0 to about 2.0.

18. The use of claim 15, wherein the pediatric patient exhibits said serum IGF-I SDS following administration of the bolus dose, wherein the administration is once a month, twice a month, three times a month, or four times a month.

19. The use of claim18, wherein the pediatric patient exhibits said serum IGF-I SDS following administration of the bolus dose, wherein the administration is every two weeks, semimonthly, or monthly.

20. The use of claim 19, wherein the pediatric patient exhibits said serum IGF-I SDS following administration of at least a second, or a third, or a fourth bolus dose.

21. The use of claim 15, wherein the bolus dose is effective to maintain the pediatric patient's serum IGF-I SDS between about -2.0 and about 2.0 for at least about 7 days, at least about 14 days, at least about 21 days, at least about 30 days, or at least about one month following administration.

22. The use of claim 15, wherein the bolus dose is effective to maintain the pediatric patient's serum IGF-I SDS between about -2.0 and about 2.0 for at least about 14 days, at least about 21 days, or at least about 30 days following administration.

23. The use of claim 1, wherein the hGH-XTEN fusion protein is prepared for administering to the pediatric patient with PGHD as a therapeutically effective bodyweight adjusted initial bolus dose between about 0.8 mg/kg and about 6.3 mg/kg and a plurality of subsequent bolus doses of the hGH-XTEN fusion protein between about 0.8 mg/kg and about 6.3 mg/kg.

24. The use of claim 22 or claim 23, wherein the IGF-I SDS is maintained between about -2.0 and about 2.0 following administration of a first, or a second, or a third, or a fourth bolus dose.

25. The use of claim 1, wherein the bolus dose is selected from the group consisting of about 0.8 mg/kg, about 1.0 mg/kg, about 1.2 mg/kg, about 1.4 mg/kg, about 1.6 mg/kg, about 1.8 mg/kg, about 2.0 mg/kg, about 2.2 mg/kg, about 2.4 mg/kg, about 2.6 mg/kg, about 2.7 mg/kg, about 2.8 mg/kg, about 3 mg/kg, about 3.2 mg/kg, about 3.4 mg/kg, about 3.6 mg/kg, about 3.8 mg/kg, about 4.0 mg/kg, about 4.2 mg/kg, about 4.4 mg/kg, about 4.6 mg/kg, about 4.8 mg/kg, about 5.0 mg/kg, about 5.2 mg/kg, about 5.4 mg/kg, about 5.6 mg/kg, about 5.8 mg/kg, about 6.0 mg/kg, and about 6.3 mg/kg.

26. The use of claim 1, wherein the bolus dose is about 0.8 mg/kg to about 1.5 mg/kg.

27. The use of claim 1, wherein the bolus dose is about 1.8 mg/kg to about 3.2 mg/kg.

28. The use of claim 1, wherein the bolus dose is about 3.5 mg/kg to about 6.3 mg/kg.

29. The use of claim 1, wherein the hGH-XTEN fusion protein comprises the amino acid sequence of SEQ ID NO:1.

30. The use of claims 1, wherein the hGH-XTEN fusion protein has at least about 91%, or at least about 92%, or at least about 93%, or at least about 94%, or at least about 95%, or at least about 96%, or at least about 97%, or at least about 98%, or at least about 99% sequence identity to SEQ ID NO:1.

31. Use of a human growth hormone-XTEN (hGH-XTEN) fusion protein comprising an amino acid sequence having at least about 90% sequence identity to SEQ ID NO:1 in the manufacture of a medicament for treating human pediatric growth hormone deficiency (PGHD) in a human pediatric patient, wherein the hGH-XTEN fusion protein is prepared for administering to the patient with PGHD as a therapeutically effective bodyweight adjusted bolus dose that is effective to maintain the patient's serum IGF-I standard deviation score (SDS) between about -2.0 and about 2.0 for at least 7 days after administration of the bolus dose.

32. The use of claim 31, wherein the bolus dose is between about 0.8 mg/kg and about 6.3 mg/kg.

34. The use of claim 31, wherein the bolus dose is effective to maintain the pediatric patient's serum IGF-I SDS between about -2.0 and about 2.0 for at least about 14 days, at least about 21 days, or at least about 30 days following administration.

35. The use of claim 31, wherein the bolus dose is effective to maintain the pediatric patient's serum IGF-I SDS between about 0.5 and about 2.0 for at least about 14 days, or at least about 30 days following administration.

36. A pediatric bolus dose of an hGH-XTEN fusion protein comprising an amino acid sequence having at least about 90% sequence identity to SEQ ID NO:1, wherein the bolus dose is a therapeutically effective bodyweight adjusted bolus dose comprising between about 0.8 mg/kg and about 6.3 mg/kg of hGH-XTEN fusion protein.

37. The bolus dose of an hGH-XTEN fusion protein of claim 36 for administering to a pediatric patient with human pediatric growth hormone deficiency (PGHD).

38. The bolus dose of an hGH-XTEN fusion protein of claim 36, wherein the hGH-XTEN fusion protein comprises the amino acid sequence of SEQ ID NO:1.

39. The bolus dose of an hGH-XTEN fusion protein of claim 36, which is formulated for subcutaneous administration.

40. A kit for the treatment of pediatric growth hormone deficiency (PGHD) comprising
(i) a container which holds a pharmaceutical composition comprising a human growth hormone-XTEN (hGH-XTEN) fusion protein comprising an amino acid sequence having at least about 90% sequence identity to SEQ ID NO:1, and
(ii) a package insert associated with said container, wherein the package insert indicates that said composition is for the treatment of pediatric growth hormone deficiency (PGHD) in a pediatric patient by administration of an initial dose of the hGH-XTEN fusion protein between about 0.8 mg/kg and about 6.3 mg/kg and a plurality of subsequent doses of the hGH-XTEN fusion protein between about 0.8 mg/kg and about 6.3 mg/kg, wherein the doses are administered once a month, twice a month, three times a month, or four times a month.

41. The kit of claim 40, wherein the container further comprises a pharmaceutically acceptable carrier.

42. The use of claim 31, wherein the hGH-XTEN fusion protein is prepared for administering to the pediatric patient with PGHD as a therapeutically effective bodyweight adjusted initial bolus dose between about 0.8 mg/kg and about 6.3 mg/kg and

a plurality of subsequent bolus doses of the hGH-XTEN fusion protein between about 0.8 mg/kg and about 6.3 mg/kg.

43. The use of claim 10, wherein the hGH-XTEN fusion protein administered is comparable, on a molar basis, to an equivalent amount of an hGH not linked to XTEN and administered to a pediatric patient.

44. The use of claim 2, wherein the method is effective to maintain the pediatric patient's height velocity within at least about 10%, at least about 20%, or at least about 30% of that compared to the height velocity achieved in pediatric patients administered daily injections of hGH not linked to XTEN of an equivalent amount, on a molar basis, over a comparable dose period.

45. The use of claim 1 or claim 31, wherein the bolus dose of the hGH-XTEN administered provides an area under the curve of about 5.6 Log [AUC (h ng/mL)] to about 7.6 Log [AUC (h ng/mL)].

46. The use of claim 1 or claim 31, wherein the bolus dose of the hGH-XTEN administered provides hGH-XTEN plasma concentration of at least 10 ng/ml.

47. The use of claim 46, wherein the bolus dose of the hGH-XTEN maintains said plasma concetration for at least about 7 days, at least about 14 days or at least about 30 days following administration.

WHAT IS CLAIMED IS:

1. Use of a human growth hormone-XTEN (hGH-XTEN) fusion protein comprising an amino acid sequence having at least about 90% sequence identity to SEQ ID NO:1 in the manufacture of a medicament for treating human pediatric growth hormone deficiency (PGHD) in a pediatric patient, wherein the hGH-XTEN fusion protein is prepared for administering to the pediatric patient with PGHD as a therapeutically effective bodyweight adjusted bolus dose between 1.8 mg/kg to 3.2 mg/kg, or 3.5 mg/kg to 6.3 mg/kg.

2. The use of claim 1, wherein the bolus dose is to be administered once a month, twice a month, three times a month, or four times a month.

3. The use of claim 2, wherein the bolus dose is to be administered monthly.

4. The use of claim 2, wherein the bolus dose is to be administered every two weeks or semimonthly.

5. The use of claim 1 or claim 2, wherein the bolus dose is to be administered subcutaneously.

6. The use of claim 2, wherein the use is effective to achieve a height velocity equivalent to 7 cm/yr to 12 cm/yr in a pediatric patient.

7. The use of claim 2, wherein the use is effective to achieve a height velocity equivalent to 8 cm/yr to 11 cm/yr in a pediatric patient.

8. The use of claims 6 or 7, wherein the height velocity is achieved after at least 3 months, at least 6 months, or at least 12 months of dosing in the pediatric patient.

9. The use of claims 6 or 7, wherein the height velocity achieved is a first year height velocity.

10. The use of claim 2, wherein the use is not inferior to achieve a height velocity in a pediatric patient compared with that achieved using daily injections of hGH not linked to XTEN over the same period.

11. The use of claim 1, wherein the pediatric patient maintains an increase from baseline serum IGF-I standard deviation score (SDS) of at least 1.0 for at least about 7 days, at least about 14 days, at least about 21 days, or at least about 30 days following administration.

12. The use of claim 1, wherein the pediatric patient maintains an increase from baseline serum IGF-I standard deviation score (SDS) of at least 1.0 for at least about 14 days, or at least about 30 days following administration.

13. The use of claim 1, wherein the pediatric patient has a serum IGF-I standard deviation score (SDS) between -2.0 and 2.0 following administration.

14. The use of claim 13, wherein the IGF-I SDS is selected from the group consisting of greater than -1.5 to 2.0, greater than -1.0 to 2.0, greater than -0.5 to 2.0, greater than 0 to 2.0, greater than 0.5 to 2.0, greater than 1.0 to 2.0, and greater than 1.5 to 2.0.

15. The use of claim 13, wherein the IGF-I SDS is selected from the group consisting of greater than -1.0 to 2.0, greater than 0 to 2.0, and greater than 1.0 to 2.0.

16. The use of claim 13, wherein the pediatric patient exhibits said serum IGF-I SDS following administration of the bolus dose, wherein the administration is once a month, twice a month, three times a month, or four times a month.

17. The use of claim 16, wherein the pediatric patient exhibits said serum IGF-I SDS following administration of the bolus dose, wherein the administration is every two weeks, semimonthly, or monthly.

18. The use of claim 17, wherein the pediatric patient exhibits said serum IGF-I SDS following administration of at least a second, or a third, or a fourth bolus dose.

19. The use of claim 13, wherein the bolus dose is effective to maintain the pediatric patient's serum IGF-I SDS between -2.0 and 2.0 for at least 7 days, at least about 14 days, at least about 21 days, at least 30 days, or at least one month following administration.

20. The use of claim 13, wherein the bolus dose is effective to maintain the pediatric patient's serum IGF-I SDS between -2.0 and 2.0 for at least 14 days, at least about 21 days, or at least about 30 days following administration.

21. The use of claim 1, wherein the hGH-XTEN fusion protein is prepared for administering to the pediatric patient with PGHD as a therapeutically effective bodyweight adjusted initial bolus dose between 1.8 mg/kg to 3.2 mg/kg, or 3.5 mg/kg to 6.3 mg/kg and a plurality of subsequent bolus doses of the hGH-XTEN fusion protein 1.8 mg/kg to 3.2 mg/kg, or 3.5 mg/kg to 6.3 mg/kg.

22. The use of claim 13 or claim 20, wherein the IGF-I SDS is maintained between -2.0 and 2.0 following administration of a first, or a second, or a third, or a fourth bolus dose.

23. The use of claim 1, wherein the bolus dose is selected from the group consisting of about 1.8 mg/kg, about 2.0 mg/kg, about 2.2 mg/kg, about 2.4 mg/kg, about 2.6 mg/kg, about 2.7 mg/kg, about 2.8 mg/kg, about 3 mg/kg, about 3.2 mg/kg, about 3.4 mg/kg, about 3.6 mg/kg, about 3.8 mg/kg, about 4.0 mg/kg, about 4.2 mg/kg, about 4.4 mg/kg, about 4.6 mg/kg, about 4.8 mg/kg, about 5.0 mg/kg, about 5.2 mg/kg, about 5.4 mg/kg, about 5.6 mg/kg, about 5.8 mg/kg, about 6.0 mg/kg, and about 6.3 mg/kg.

24. The use of claim 1, wherein the hGH-XTEN fusion protein comprises the amino acid sequence of SEQ ID NO:1.

25. The use of claims 1, wherein the hGH-XTEN fusion protein has at least about 91%, or at least about 92%, or at least about 93%, or at least about 94%, or at least about 95%, or at least about 96%, or at least about 97%, or at least about 98%, or at least about 99% sequence identity to SEQ ID NO:1.

26. Use of a human growth hormone-XTEN (hGH-XTEN) fusion protein comprising an amino acid sequence having at least about 90% sequence identity to SEQ ID NO:1 in the manufacture of a medicament for treating human pediatric growth hormone deficiency (PGHD) in a human pediatric patient, wherein the hGH-XTEN fusion protein is prepared for administering to the patient with PGHD as a therapeutically effective bodyweight adjusted bolus dose that is effective to maintain the patient's serum IGF-I standard deviation score (SDS) between -2.0 and 2.0 for at least 7 days after administration of the bolus dose.

27. The use of claim 26, wherein the bolus dose is between 1.8 mg/kg to 3.2 mg/kg, or 3.5 mg/kg to 6.3 mg/kg.

28. The use of claim 26, wherein the bolus dose is effective to maintain the pediatric patient's serum IGF-I SDS between -2.0 and 2.0 for at least about 14 days, at least about 21 days, or at least about 30 days following administration.

29. The use of claim 26, wherein the bolus dose is effective to maintain the pediatric patient's serum IGF-I SDS between 0.5 and 2.0 for at least about 14 days, or at least about 30 days following administration.

30. A pediatric bolus dose of an hGH-XTEN fusion protein comprising an amino acid sequence having at least about 90% sequence identity to SEQ ID NO:1, wherein the bolus dose is a therapeutically effective bodyweight adjusted bolus dose comprising between 1.8 mg/kg to 3.2 mg/kg, or 3.5 mg/kg to 6.3 mg/kg of hGH-XTEN fusion protein.

31. The bolus dose of an hGH-XTEN fusion protein of claim 30 for administering to a pediatric patient with human pediatric growth hormone deficiency (PGHD).

32. The bolus dose of an hGH-XTEN fusion protein of claim 30, wherein the hGH-XTEN fusion protein comprises the amino acid sequence of SEQ ID NO:1.

33. The bolus dose of an hGH-XTEN fusion protein of claim 30, which is formulated for subcutaneous administration.

34. A kit for the treatment of pediatric growth hormone deficiency (PGHD) comprising

(i) a container which holds a pharmaceutical composition comprising a human growth hormone-XTEN (hGH-XTEN) fusion protein comprising an amino acid sequence having at least about 90% sequence identity to SEQ ID NO:1, and
(ii) a package insert associated with said container, wherein the package insert indicates that said composition is for the treatment of pediatric growth hormone deficiency (PGHD) in a pediatric patient by administration of an initial dose of the hGH-XTEN fusion protein between 1.8 mg/kg to 3.2 mg/kg, or 3.5 mg/kg to 6.3 mg/kg and a plurality of subsequent doses of the hGH-XTEN fusion protein between 1.8 mg/kg to 3.2 mg/kg, or 3.5 mg/kg to 6.3 mg/kg, wherein the doses are to be administered once a month, twice a month, three times a month, or four times a month.

35. The kit of claim 34, wherein the container further comprises a pharmaceutically acceptable carrier.

36. The use of claim 26, wherein the hGH-XTEN fusion protein is prepared for administering to the pediatric patient with PGHD as a therapeutically effective bodyweight adjusted initial bolus dose between 1.8 mg/kg to 3.2 mg/kg, or 3.5 mg/kg to 6.3 mg/kg and a plurality of subsequent bolus doses of the hGH-XTEN fusion protein between 1.8 mg/kg to 3.2 mg/kg, or 3.5 mg/kg to 6.3 mg/kg

37. The use of claim 10, wherein the hGH-XTEN fusion protein to be administered is comparable, on a molar basis, to an equivalent amount of an hGH not linked to XTEN and administered to a pediatric patient.

38. The use of claim 2, wherein the use is effective to maintain the pediatric patient's height velocity within at least about 10%, at least about 20%, or at least about 30% of that compared to the height velocity achieved in pediatric patients administered daily injections of hGH not linked to XTEN of an equivalent amount, on a molar basis, over a comparable dose period.

39. The use of claim 1 or claim 26, wherein the bolus dose of the hGH-XTEN to be administered provides an area under the curve of 5.6 Log [AUC (h ng/mL)] to 7.6 Log [AUC (h ng/mL)].

40. The use of claim 1 or claim 26, wherein the bolus dose of the hGH-XTEN to be administered provides hGH-XTEN plasma concentration of at least 10 ng/ml.

41. The use of claim 40, wherein the bolus dose of the hGH-XTEN maintains said plasma concentration for at least about 7 days, at least about 14 days or at least about 30 days following administration.