WHAT IS CLAIMED:

1. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, wherein the activin receptor type II (ActRII) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days.

2. A method for treating transfusion-dependent beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, wherein the activin receptor type II (ActRII) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days.

3. A method for treating non-transfusion-dependent beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, wherein the activin receptor type II (ActRII) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days.

4. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, wherein the activin receptor type II (ActRII) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days, wherein the genotype of the subject is selected from the group consisting of β^0/β^0, β^+/β^+, β^0/β^+, β^0/HbE, and β^+/HbE.

5. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, wherein the activin receptor type II (ActRII) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the

subject every 21 days, wherein the genotype of the subject comprises coinheritance of two severe hemoglobin beta chain mutations, and wherein the subject has alpha-thalassemia.

6. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, wherein the activin receptor type II (ActRII) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject, wherein the genotype of the subject comprises coinheritance of two severe hemoglobin beta chain mutations, and wherein the subject has hereditary persistence of fetal hemoglobin.

7. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, and subsequently administering the ActRII signaling inhibitor to the subject one or more times at 21 day intervals, such that the beta-thalassemia is treated, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh of the subject.

8. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, and subsequently administering the ActRII signaling inhibitor to the subject one or more times at 21 day intervals, such that the beta-thalassemia is treated, wherein said administering comprises administering subcutaneously in the upper arm, abdomen,or thigh of the subject, and wherein the genotype of the subject is selected from the group consisting of β^0/β^0, β^+/β^+, β^0/β^+, β^0/HbE, and β^+/HbE.

9. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, and subsequently administering the ActRII signaling inhibitor one or more times at 21 day intervals, such that the beta-thalassemia is treated, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh of the subject, and wherein the subject has hereditary persistence of fetal hemoglobin.

10. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type II (ActRII) signaling inhibitor, and subsequently administering the ActRII signaling inhibitor to the subject one or more times at 21 day intervals, such that the beta-thalassemia is treated, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh of the subject, and wherein said administering is sufficient to detectably reduce GDF-11 levels in serum from said subject between administrations.

11. The method of any of claims 6-10, wherein the beta-thalassemia is transfusion-dependent beta-thalassemia.

12. The method of any of claims 6-10, wherein the beta-thalassemia is non-transfusion-dependent beta-thalassemia.

13. The method of any of claims 1-12, further comprising taking a first measurement of hemoglobin concentration in the subject; after a first period of time taking a second measurement of hemoglobin concentration in the subject; and administering a subsequent dose of the ActRII signaling inhibitor based on the difference between the second measurement of hemoglobin concentration and the first measurement of hemoglobin concentration, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh or the subject.

14. The method of any of claims 1-12, further comprising taking a first measurement of hematocrit in the subject; after a first period of time taking a second measurement of hematocrit in the subject; and administering a subsequent dose of the ActRII signaling inhibitor based on the difference between the second measurement of hematocrit and the first measurement of hematocrit, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh or the subject.

15. The method of any of claims 1-12, further comprising taking a first measurement of fetal hemoglobin in the subject; after a first period of time taking a second measurement of fetal hemoglobin concentration in the subject; and administering a subsequent dose of the ActRII

signaling inhibitor based on the difference between the second measurement of fetal hemoglobin concentration and the first measurement of fetal hemoglobin concentration, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh or the subject.

16. The method of any of claims 1-12, further comprising

(a) taking a first measurement of hemoglobin concentration, hematocrit, or fetal hemoglobin concentration in the subject

(b) after a first period of time taking a second measurement of hemoglobin concentration, hematocrit, or fetal hemoglobin concentration in the subject;

(c) after a second period of time, discontinuing administration of the initial dose and administering to the subject a subsequent dose of the ActRII signaling inhibitor, wherein the subsequent dose is administered via subcutaneous injection in the upper arm, abdomen or thigh of the subject.

17. The method of any of claims 11-16, wherein the first measurement of hemoglobin concentration, hematocrit, or fetal hemoglobin concentration is taken prior to administering to the subject the initial dose the ActRII signaling inhibitor.

18. The method of any of claims 11-17, wherein the first measurement of hemoglobin concentration, hematocrit, or fetal hemoglobin concentration is immediately after the initial dose the ActRII signaling inhibitor is administered to the subject or within at most 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, or 1 week thereof.

19. The method of any one of claims 11-18, wherein the second measurement of hemoglobin, hematocrit, or fetal hemoglobin concentration is taken approximately 3 weeks, 1 month, 2 months, 3 months, 4 months, 5 months, 6 months, 7 months, 8 months, 9 months, 10 months, 11 months, or 12 months after the initial dose the ActRII signaling inhibitor is administered to the subject .

20. The method of any one of claims 11-19, wherein the second period of time is within 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 1 week, 2 weeks, 3 weeks, 4 weeks, 5

weeks, 6 weeks, 7 weeks, 8 weeks, 9 weeks, 10 weeks, 11 weeks, or 12 weeks of the when the second measurement is taken.

21. The method of any one of claims 11-20, wherein the subsequent dose of the ActRII signaling inhibitor is about 0.3 mg/kg, about 0.45 mg/kg, about 0.6 mg/kg, about 1.0 mg/kg, or about 1.25 mg/kg.

22. The method of any one of claims 11-21, wherein the method further comprises taking a third measurement of hemoglobin concentration, hematocrit, or fetal hemoglobin concentration in the subject.

23. The method of any one of claims 16-20, wherein

(a) the second measurement of hemoglobin concentration is less than or equal to 12.5 g/dL;

(b) the second measurement of hemoglobin concentration is less than or equal to 1.5 g/dL greater than the first measurement of hemoglobin concentration; and

(c) the subsequent dose is equal to the initial dose.

24. The method of any one of claims 16-20, wherein

(a) the second measurement of hemoglobin concentration is less than or equal to 12.5 g/dL;

(b) the second measurement of hemoglobin concentration is greater than 1.5 g/dL greater than the first measurement of hemoglobin concentration; and

(c) the subsequent dose is approximately 25% less than the initial dose.

25. The method of any one of claims 16-20, wherein

(a) the second measurement of hemoglobin concentration is (i) greater than 12.5 g/dL and less than or equal to 14 g/dL; and (ii) less than or equal to 1.5 g/dL greater than the first measurement of hemoglobin concentration;

(b) the subsequent dose is equal to the initial dose; and

(c) the second period of time consists of a dose delay of up to twelve weeks until a third measurement of hemoglobin concentration is less than or equal to 12.5 g/dL.

26. The method of any one of claims 16-20, wherein

(a) the second measurement of hemoglobin concentration is (i) greater than 12.5 g/dL and less than or equal to 14 g/dL, and (ii) greater than 1.5 g/dL greater than the first measurement of hemoglobin concentration;

(b) the subsequent dose is approximately 25% less than the initial dose; and

(c) the second period of time consists of a dose delay of up to twelve weeks until a third measurement of hemoglobin concentration is determined to be (i) less than or equal to 12.5 g/dL, and (ii) the change between the first measurement of hemoglobin concentration and the third measurement of hemoglobin concentration is less than or equal to 1.5 g/dL.

27. The method of any one of claims 16-20, wherein

(a) the second measurement of hemoglobin concentration is greater than 14 g/dL;

(b) the subsequent dose is approximately 25% less than the initial dose; and

(c) the second period of time consists of a dose delay of up to twelve weeks until a third measurement of hemoglobin concentration is less than 12.5 g/dL.

28. The method of any of claims 1-27, wherein the initial dose is administered once every 21 days.

29. The method of any of claims 11-28, wherein the subsequent dose is administered once every 21 days.

30. The method of any one of the preceding claims, wherein the method further comprises decreasing GDF11 levels in the subject.

31. The method of any of the preceding claims, wherein the method further comprises increasing fetal hemoglobin levels in the subject.

32. The method of any of claims 1-31, wherein the ActRII signaling inhibitor is an inhibitor of ActRIIA signaling.

33. The method of any of claims 1-31, wherein the ActRII signaling inhibitor is a humanized fusion-protein consisting of the extracellular domain of ActRIIA and the human IgG1 Fc domain.

34. The method of claim 32, wherein the ActRIIA signaling inhibitor is a polypeptide comprising an amino acid sequence selected from the group consisting of:

(a) 90% identical to SEQ ID NO:2;
(b) 95% identical to SEQ ID NO:2;
(c) 98% identical to SEQ ID NO:2;
(d) SEQ ID NO:2;
(e) 90% identical to SEQ ID NO:3;
(f) 95% identical to SEQ ID NO:3;
(g) 98% identical to SEQ ID NO:3;
(h) SEQ ID NO:3;
(i) 90% identical to SEQ ID NO:6;
(j) 95% identical to SEQ ID NO:6;
(k) 98% identical to SEQ ID NO:6;
(l) SEQ ID NO:6;
(m) 90% identical to SEQ ID NO:7;
(n) 95% identical to SEQ ID NO:7;
(o) 98% identical to SEQ ID NO:7; and
(p) SEQ ID NO:7.

35. The method of claim 32, wherein the ActRII signaling inhibitor is a polypeptide comprising the amino acid sequence of SEQ ID NO:7.

36. The method of any of claims 1-31, wherein the ActRII signaling inhibitor is an inhibitor of ActRIIB signaling.

37. The method of any of claims 1-31, wherein the ActRII signaling inhibitor is a humanized fusion-protein consisting of the extracellular domain of ActRIIB and the human IgG1 Fc domain.

38. The method of claim 36, wherein the ActRIIB inhibitor is a polypeptide comprising an amino acid sequence selected from the group consisting of:

(a) 90% identical to SEQ ID NO:17;
(b) 95% identical to SEQ ID NO:17;
(c) 98% identical to SEQ ID NO:17;
(d) SEQ ID NO:17;
(e) 90% identical to SEQ ID NO:20;
(f) 95% identical to SEQ ID NO:20;
(g) 98% identical to SEQ ID NO:20;
(h) SEQ ID NO:20;
(i) 90% identical to SEQ ID NO:21;
(j) 95% identical to SEQ ID NO:21;
(k) 98% identical to SEQ ID NO:21;
(l) SEQ ID NO:21;
(m) 90% identical to SEQ ID NO:25;
(n) 95% identical to SEQ ID NO:25;
(o) 98% identical to SEQ ID NO:25; and
(p) SEQ ID NO:25.

39. The method of claim 36, wherein the ActRIIB signaling inhibitor is a polypeptide comprising the amino acid sequence of SEQ ID NO:25.

40. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, wherein the activin receptor type IIB (ActRIIB) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days, and wherein the ActRIIB signaling inhibitor comprises the amino acid sequence of SEQ ID NO:25.

41. A method for treating transfusion-dependent beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, wherein the activin receptor

type II (ActRIIB) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days, and wherein the ActRIIB signaling inhibitor comprises the amino acid sequence of SEQ ID NO:25.

42. A method for treating non-transfusion-dependent beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, wherein the activin receptor type IIB (ActRIIB) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days, and wherein the ActRIIB signaling inhibitor comprises the amino acid sequence of SEQ ID NO:25.

43. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, wherein the activin receptor type IIB (ActRIIB) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days, wherein the genotype of the subject is selected from the group consisting of β^0/β^0, β^+/β^+, β^0/β^+, β^0/HbE, and β^+/HbE, and wherein the ActRIIB signaling inhibitor comprises the amino acid sequence of SEQ ID NO:25.

44. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, wherein the activin receptor type IIB (ActRIIB) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days, wherein the genotype of the subject comprises coinheritance of two severe hemoglobin beta chain mutations, wherein the subject has alpha-thalassemia, and wherein the ActRIIB signaling inhibitor comprises the amino acid sequence of SEQ ID NO:25.]

45. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, wherein the activin receptor type IIB (ActRIIB) signaling inhibitor is administered subcutaneously in the upper arm, abdomen, or thigh of the subject every 21 days, wherein the genotype of the subject comprises coinheritance of two severe

hemoglobin beta chain mutations, wherein the subject has hereditary persistence of fetal hemoglobin, and wherein the ActRIIB signaling inhibitor comprises the amino acid sequence of SEQ ID NO:25.

46. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, and subsequently administering the ActRIIB signaling inhibitor to the subject one or more times at 21 day intervals, such that the beta-thalassemia is treated, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh of the subject.

47. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, and subsequently administering the ActRIIB signaling inhibitor to the subject one or more times at 21 day intervals, such that the beta-thalassemia is treated, wherein said administering comprises administering subcutaneously in the upper arm, abdomen,or thigh of the subject, and wherein the genotype of the subject is selected from the group consisting of β^0/β^0, β^+/β^+, β^0/β^+, β^0/HbE, and β^+/HbE.

48. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, and subsequently administering the ActRIIB signaling inhibitor one or more times at 21 day intervals, such that the beta-thalassemia is treated, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh of the subject, and wherein the subject has hereditary persistence of fetal hemoglobin.

49. A method for treating beta-thalassemia in a subject in need thereof, comprising administering to the subject an initial dose of about 0.8 mg/kg or about 1.0 mg/kg of an activin receptor type IIB (ActRIIB) signaling inhibitor, and subsequently administering the ActRIIB signaling inhibitor to the subject one or more times at 21 day intervals, such that the beta-thalassemia is treated, wherein said administering comprises administering subcutaneously in the

upper arm, abdomen, or thigh of the subject, and wherein said administering is sufficient to detectably reduce GDF-11 levels in serum from said subject between administrations.

50. The method of any of claims 46-49, wherein the beta-thalassemia is transfusion-dependent beta-thalassemia.

51. The method of any of claims 46-49, wherein the beta-thalassemia is non-transfusion-dependent beta-thalassemia.

52. The method of any of claims 40-51, further comprising taking a first measurement of hemoglobin concentration in the subject; after a first period of time taking a second measurement of hemoglobin concentration in the subject; and administering a subsequent dose of the ActRIIB signaling inhibitor based on the difference between the second measurement of hemoglobin concentration and the first measurement of hemoglobin concentration, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh or the subject.

53. The method of any of claims 40-51, further comprising taking a first measurement of hematocrit in the subject; after a first period of time taking a second measurement of hematocrit in the subject; and administering a subsequent dose of the ActRIIB signaling inhibitor based on the difference between the second measurement of hematocrit and the first measurement of hematocrit, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh or the subject.

54. The method of any of claims 40-51, further comprising taking a first measurement of fetal hemoglobin concentration in the subject; after a first period of time taking a second measurement of fetal hemoglobin concentration in the subject; and administering a subsequent dose of the ActRIIB signaling inhibitor based on the difference between the second measurement of fetal hemoglobin concentration and the first measurement of fetal hemoglobin concentration, wherein said administering comprises administering subcutaneously in the upper arm, abdomen, or thigh or the subject.

55. The method of any of claims 40-51, further comprising

(a) taking a first measurement of hemoglobin concentration in the subject

(b) after a first period of time taking a second measurement of hemoglobin concentration in the subject;

(c) after a second period of time, discontinuing administration of the initial dose and administering to the subject a subsequent dose of the ActRIIB signaling inhibitor, wherein the subsequent dose is administered via subcutaneous injection in the upper arm, abdomen or thigh of the subject.

56. The method of any of claims 52-55, wherein the first measurement of hemoglobin concentration, hematocrit, or fetal hemoglobin concentration is taken prior to administering to the subject the initial dose the ActRIIB signaling inhibitor.

57. The method of any of claims 52-56, wherein the first measurement of hemoglobin concentration, hematocrit, or fetal hemoglobin concentration is immediately after the initial dose the ActRIIB signaling inhibitor is administered to the subject or within at most 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, or 1 week thereof.

58. The method of any one of claims 52-57, wherein the second measurement of hemoglobin concentration, hematocrit, or fetal hemoglobin concentration is taken approximately 3 weeks, 1 month, 2 months, 3 months, 4 months, 5 months, 6 months, 7 months, 8 months, 9 months, 10 months, 11 months, or 12 months after the initial dose the ActRIIB signaling inhibitor is administered to the subject .

59. The method of any one of claims 52-58, wherein the second period of time is within 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 1 week, 2 weeks, 3 weeks, 4 weeks, 5 weeks, 6 weeks, 7 weeks, 8 weeks, 9 weeks, 10 weeks, 11 weeks, or 12 weeks of the when the second measurement is taken.

60. The method of any one of claims 52-59, wherein the subsequent dose of the ActRIIB signaling inhibitor is about 0.3 mg/kg, about 0.45 mg/kg, about 0.6 mg/kg, about 1.0 mg/kg, or about 1.25 mg/kg.

61. The method of any one of claims 52-60, wherein the method further comprises taking a third measurement of hemoglobin concentration, hematocrit, or fetal hemoglobin concentration in the subject.

62. The method of any one of claims 52-59, wherein

(a) the second measurement of hemoglobin concentration is less than or equal to 12.5 g/dL;

(b) the second measurement of hemoglobin concentration is less than or equal to 1.5 g/dL greater than the first measurement of hemoglobin concentration; and

(c) the subsequent dose is equal to the initial dose.

63. The method of any one of claims 52-59, wherein

(a) the second measurement of hemoglobin concentration is less than or equal to 12.5 g/dL;

(b) the second measurement of hemoglobin concentration is greater than 1.5 g/dL greater than the first measurement of hemoglobin concentration; and

(c) the subsequent dose is approximately 25% less than the initial dose.

64. The method of any one of claims 52-59, wherein

(a) the second measurement of hemoglobin concentration is (i) greater than 12.5 g/dL and less than or equal to 14 g/dL; and (ii) less than or equal to 1.5 g/dL greater than the first measurement of hemoglobin concentration;

(b) the subsequent dose is equal to the initial dose; and

(c) the second period of time consists of a dose delay of up to twelve weeks until a third measurement of hemoglobin concentration is less than or equal to 12.5 g/dL.

65. The method of any one of claims 52-59, wherein

(a) the second measurement of hemoglobin concentration is (i) greater than 12.5 g/dL and less than or equal to 14 g/dL, and (ii) greater than 1.5 g/dL greater than the first measurement of hemoglobin concentration;

(b) the subsequent dose is approximately 25% less than the initial dose; and

(c) the second period of time consists of a dose delay of up to twelve weeks until a third measurement of hemoglobin concentration is determined to be (i) less than or equal to 12.5 g/dL, and (ii) the change between the first measurement of hemoglobin concentration and the third measurement of hemoglobin concentration is less than or equal to 1.5 g/dL.

66. The method of any one of claims 52-59, wherein

(a) the second measurement of hemoglobin concentration is greater than 14 g/dL;

(b) the subsequent dose is approximately 25% less than the initial dose; and

(c) the second period of time consists of a dose delay of up to twelve weeks until a third measurement of hemoglobin concentration is less than 12.5 g/dL.

67. The method of any of claims 40-66, wherein the initial dose is administered once every 21 days.

68. The method of any of claims 52-67, wherein the subsequent dose is administered once every 21 days.

69. The method of any one of claims 40-68, wherein the method further comprises decreasing GDF11 levels in the subject.

70. The method of any one of claims 40-69, wherein the method further comprises increasing fetal hemoglobin levels in the subject.

71. A method of increasing fetal hemoglobin levels in a subject comprising administering an ActRIIB signaling inhibitor to the subject.

72. The method of any of the preceding claims, wherein the subject expresses hemoglobin E.

73. The method of any of the preceding claims, wherein the subject does not express hemoglobin S.

74. The method of any of the preceding claims, wherein the erythroid response consists of (i) a greater than or equal to 33% reduction in transfusion burden for 12 weeks, and (ii) a reduction of at least 2 units of red blood cells over a 12 week period.

75. The method of any of claims 1-73, wherein the erythroid response consists of a greater than 1 g/dL increase in hemoglobin concentration as compared to a baseline hemoglobin concentration, wherein the increase in hemoglobin concentration is measured by the mean of hemoglobin concentration values over a contiguous 12-week period in the absence of transfusion.

76. The method of any one of the preceding claims, wherein the subject is a human

77. The method of any one of the preceding claims, wherein the ActRII signaling inhibitor is packaged in a container as a sterile, preservative-free lyophilized cake, stored between 2°C and 8°C prior to administration to the subject.

78. The method of claim 77, wherein the container contains 37.5 mg of the ActRII signaling inhibitor.

79. The method of claim 77, wherein the container contains 75 mg of the ActRII signaling inhibitor.