

WHAT IS CLAIMED IS:

1. A recombinant polynucleotide encoding a fragment of a human dysferlin (hDYSF) protein, wherein the recombinant polynucleotide comprises a first nucleotide sequence, wherein the first nucleotide sequence consists of:
 - (a) the nucleotide sequence of SEQ ID NO: 1, 6, or 18;
 - (b) a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of SEQ ID NO: 1, SEQ ID NO: 6, or SEQ ID NO: 18 across its respective full length of SEQ ID NO: 1, 6, or 18;
 - (c) the nucleotide sequence of SEQ ID NO: 13 or 15;
 - (d) a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of SEQ ID NO: 13 or 15 across its respective full length of SEQ ID NO: 13 or 15;
 - (e) a nucleotide sequence encoding the fragment of the hDYSF protein, wherein the fragment consists of the amino acid sequence of SEQ ID NO: 9; or
 - (f) a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of (e) across the full length of the nucleotide sequence of (e).
2. The recombinant polynucleotide of claim 1, further comprising one or more additional nucleotide sequences selected from an inverted terminal repeat (ITR), a promoter, an intron, a selection marker, or an origin of replication (ORI).
3. The recombinant polynucleotide of claim 2, wherein the ITR is an AAV ITR.
4. The recombinant polynucleotide of claim 3, wherein the AAV ITR is an AAV2 ITR or an AAV3 ITR.
5. The recombinant polynucleotide of any one of claims 2-4, wherein the recombinant polynucleotide comprises two ITRs.
6. The recombinant polynucleotide of any one of claims 2-5, wherein the ITR comprises the nucleotide sequence of SEQ ID NO: 3 or SEQ ID NO: 17.
7. The recombinant polynucleotide of claims 2-6, wherein the promoter comprises a muscle-specific promoter.

8. The recombinant polynucleotide of claim 7, wherein the muscle-specific promoter is selected from a human skeletal actin gene element, a cardiac actin gene element, a desmin promoter, a skeletal alpha-actin (ASKA) promoter, a troponin I (TNNI2) promoter, a myocytespecific enhancer binding factor mef binding element, a muscle creatine kinase (MCK) promoter, a truncated MCK (tMCK) promoter, a myosin heavy chain (MHC) promoter, a hybrid a-myosin heavy chain enhancer-/MCK enhancer-promoter (MHCK7) promoter, a C5-12 promoter, a murine creatine kinase enhancer element, a skeletal fast-twitch troponin c gene element, a slow-twitch cardiac troponin c gene element, a slow-twitch troponin i gene element, hypoxia- inducible nuclear factor.
9. The recombinant polynucleotide of claim 7, wherein the muscle-specific promoter comprises a MHCK7 promoter.
10. The recombinant polynucleotide of any one of claims 2-6, wherein the promoter comprises a recombinant promoter.
11. The recombinant polynucleotide of claim 10 wherein the recombinant promoter comprises a recombinant muscle-specific promoter.
12. The recombinant polynucleotide of any one of claims 2-11, wherein the promoter comprises the nucleotide sequence of SEQ ID NO: 4.
13. The recombinant polynucleotide of any one of claims 2-12, wherein the intron comprises a 5' donor site, branch point, and/or 3' splice site.
14. The recombinant polynucleotide of any one of claims 2-13, wherein the intron comprises a chimeric intron.
15. The recombinant polynucleotide of any one of claims 2-14, wherein the intron comprises a 5' donor site from a human β -globin gene.
16. The recombinant polynucleotide of any one of claims 2-15, wherein the intron comprises a branch point from an immunoglobulin G (IgG) heavy chain.
17. The recombinant polynucleotide of any one of claims 2-16, wherein the intron comprises a 3' splice acceptor site from an immunoglobulin G (IgG) heavy chain.

18. The recombinant polynucleotide of any one of claims 2-17, wherein the intron comprises the nucleotide sequence of SEQ ID NO: 5.
19. The recombinant polynucleotide of any one of claims 2-18, wherein the selection marker is an antibiotic resistance gene.
20. The recombinant polynucleotide of claim 19, wherein the antibiotic resistance gene is a β -lactamase gene or kanamycin resistance gene.
21. The recombinant polynucleotide of claim 1, wherein the recombinant polynucleotide comprises the nucleotide sequence of SEQ ID NO: 6 or SEQ ID NO: 18.
22. The recombinant polynucleotide of any one of claims 1-21, wherein the recombinant nucleotide does not further comprise a second polynucleotide sequence encoding a second fragment of the hDYSF protein.
23. The recombinant polynucleotide of any one of claims 1-22, wherein the recombinant nucleotide does not comprise an AAV sequence other than one or more ITRs.
24. The recombinant polynucleotide of any one of claims 1-22, wherein the recombinant nucleotide does not comprise a viral sequence other than one or more ITRs.
25. A recombinant polynucleotide sequence encoding a fragment of a human dysferlin protein, wherein the recombinant polynucleotide comprises a second nucleotide sequence, wherein the second nucleotide sequence consists of:
 - (a) the nucleotide sequence of SEQ ID NO: 2, 8 or 19;
 - (b) a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of SEQ ID NO: 2, 8 or 19 across its respective full length of SEQ ID NO: 2, 8 or 19;
 - (c) the nucleotide sequence of SEQ ID NO: 14 or 16;
 - (d) a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of SEQ ID NO: 14 or 16 across its respective full length of SEQ ID NO: 14 or 16;
 - (e) a polynucleotide sequence encoding the fragment of the hDYSF protein, wherein the fragment of the hDYSF protein consists of the amino acid sequence of SEQ ID NO: 10; or

- (f) a polynucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the polynucleotide sequence of (e) across the full length of the nucleotide sequence of (d).

26. The recombinant polynucleotide of claim 25, further comprising one or more additional nucleotides comprising an inverted terminal repeat (ITR), a selection marker, an origin of replication (ORI), an untranslated region (UTR), or a polyadenylation (polyA) signal.
27. The recombinant polynucleotide of claim 26, wherein the ITR is an AAV ITR.
28. The recombinant polynucleotide of claim 27, wherein the AAV ITR is an AAV2 ITR or an AAV3 ITR.
29. The recombinant nucleotide of any one of claims 25, 27 or 28, wherein the recombinant nucleotide further comprises two ITRs.
30. The recombinant polynucleotide of any one of claims 26-29, wherein the ITR comprises the nucleotide sequence of SEQ ID NO: 3 or 17.
31. The recombinant polynucleotide of any one of claims 26-30, wherein the polyA signal is an artificial polyA signal.
32. The recombinant polynucleotide of any one of claims 26-31, wherein the polyA signal comprises the nucleotide sequence of SEQ ID NO: 7.
33. The recombinant polynucleotide of any one of claims 26-32, wherein the selection marker comprises an antibiotic resistance gene.
34. The recombinant polynucleotide of claim 33, wherein the antibiotic resistance gene comprises a β -lactamase gene or kanamycin resistance gene.
35. The recombinant polynucleotide of claim 25, wherein the recombinant polynucleotide comprises the nucleotide sequence of SEQ ID NO: 8 or SEQ ID NO: 19.
36. The recombinant polynucleotide of any one of claims 25-35, wherein the recombinant nucleotide does not further comprise a first polynucleotide sequence encoding a first fragment of the hDYSF protein.

37. The recombinant polynucleotide of any one of claims 25-36, wherein the recombinant nucleotide does not comprise an AAV sequence other than one or more ITRs.
38. The recombinant polynucleotide of any one of claims 25-36, wherein the recombinant nucleotide does not comprise a viral sequence other than one or more ITRs.
39. A dual adeno-associated viral (AAV) vector system comprising:
- (a) a first AAV vector, wherein the first AAV vector comprises the recombinant polynucleotide of any one of claims 1-24; and
 - (b) a second AAV vector, wherein the second AAV vector comprises the recombinant polynucleotide of any one of claims 25-38.
40. An adeno-associated viral (AAV) vector comprising the recombinant polynucleotide of any one of claims 1-24.
41. The AAV vector of claim 40, wherein the AAV vector is AAV-1, AAV-2, AAV-3, AAV-4, AAV-5, AAV-6, AAV-7, AAV-8, AAV-9, AAV-10, AAV-11, AAV-12, AAV-13, AAVrh.10, AAVrh.20, or AAVrh.74.
42. The AAV vector of claim 40, wherein the AAV vector is AAVrh.74.
43. An adeno-associated viral (AAV) vector comprising the recombinant polynucleotide of any one of claims 25-38.
44. The AAV vector of claim 43, wherein the AAV vector is AAV-1, AAV-2, AAV-3, AAV-4, AAV-5, AAV-6, AAV-7, AAV-8, AAV-9, AAV-10, AAV-11, AAV-12, AAV-13, AAVrh.10, AAVrh.20, or AAVrh.74.
45. The AAV vector of claim 43, wherein the AAV vector is AAVrh.74.
46. A composition comprising the recombinant polynucleotide of any one of claims 1-38 or the AAV vector of any one of claims 40-45.
47. A composition comprising:
- (a) a first recombinant adeno-associated viral (rAAV) vector, wherein the first rAAV vector comprises the AAV vector according to any one of claims 40-42; and

- (b) a second rAAV vector, wherein the second rAAV vector comprises the AAV vector according to any of claims 43-45.

48. The composition of claim 47, wherein the molar ratio of first and second rAAV vectors is between about 100:1-1:100, about 10:1-1:10, about 2:1-1:2, or about 1:1.

49. An adeno-associated viral (AAV) vector comprising:

- (a) a first inverted terminal repeat (ITR);
 - (b) a polynucleotide encoding a fragment of a human dysferlin (hDYSF) protein, wherein the polynucleotide consists of:
 - i. the nucleotide sequence of SEQ ID NO: 1 or 6;
 - ii. a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of SEQ ID NO: 1 or 6 across the full length of SEQ ID NO: 1 or 6;
 - iii. the nucleotide sequence of SEQ ID NO: 13 or 15;
 - iv. a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of SEQ ID NO: 13 or 15 across the full length of SEQ ID NO: 13 or 15;
 - v. a nucleotide sequence encoding the fragment of the hDYSF protein, wherein the fragment of the hDYSF protein consists of the amino acid sequence of SEQ ID NO: 9; or
 - vi. a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of (v) across the full length of the nucleotide sequence of (v); and
 - (c) a second ITR,
- wherein the polynucleotide is flanked by the first and second ITRs.

50. The AAV vector according to claim 49, further comprising one or more additional polynucleotides selected from a promoter, an intron, a selection marker, or an origin of replication (ORI).

51. The AAV vector according to claims 49 or 50, wherein the ITR is an AAV ITR.

52. The AAV vector according to claim 51, wherein the AAV ITR is an AAV2 ITR or an AAV3 ITR.

53. The AAV vector according to any one of claims 49-52, wherein the first and/or second ITR comprise the nucleotide sequence of SEQ ID NO: 3 or 17.
54. The AAV vector according to any one of claims 50-53, wherein the promoter is a muscle-specific promoter.
55. The AAV vector of claim 54, wherein the muscle-specific promoter is a myosin heavy chain complex—E box muscle creatine kinase fusion enhancer/promoter.
56. The AAV vector according to any one of claims 50-53, wherein the promoter is a recombinant promoter.
57. The AAV vector according to claim 56, wherein the recombinant promoter is a recombinant muscle-specific promoter.
58. The AAV vector according to claim 57, wherein the recombinant-muscle specific promoter is a MHCK7 promoter.
59. The AAV vector according to any one of claims 50-58, wherein the promoter comprises the nucleotide sequence of SEQ ID NO: 4.
60. The AAV vector according to any one of claims 50-59, wherein the intron comprises a 5' donor site, branch point, and/or 3' splice site.
61. The AAV vector according to any one of claims 50-60, wherein the intron is a chimeric intron.
62. The AAV vector according to any one of claims 50-61, wherein the intron comprises a 5' donor site from a human β -globin gene.
63. The AAV vector according to any one of claims 50-62, wherein the intron comprises a branch point from an immunoglobulin G (IgG) heavy chain.
64. The AAV vector according to any one of claims 50-63, wherein the intron comprises a 3' splice acceptor site from an immunoglobulin G (IgG) heavy chain.
65. The AAV vector according to any one of claims 50-64, wherein the intron comprises the nucleotide sequence of SEQ ID NO: 5.

66. The AAV vector according to any one of claims 50-65, wherein the selection marker is an antibiotic resistance gene.
67. The AAV vector of claim 66, wherein the antibiotic resistance gene is a β -lactamase gene or kanamycin resistance gene.
68. The AAV vector according to any one of claims 49-67, wherein the AAV vector comprises the nucleotide sequence of SEQ ID NO: 6 or SEQ ID NO: 15.
69. The AAV vector according to any one of claims 49-68, wherein the AAV vector does not further comprise a second polynucleotide sequence encoding a second fragment of the hDYSF protein.
70. The AAV vector according to any one of claims 49-69, wherein the AAV vector does not comprise an AAV sequence other than one or more ITRs.
71. The AAV vector according to any one of claims 49-69, wherein the AAV vector does not comprise a viral sequence other than one or more ITRs.
72. An adeno-associated viral (AAV) vector comprising:
- (a) a first inverted terminal repeat (ITR);
 - (b) a polynucleotide encoding a fragment of a human dysferlin protein, wherein the polynucleotide consists of:
 - i. the nucleotide sequence of SEQ ID NO: 2 or 8;
 - ii. a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of SEQ ID NO: 2 or 8 across the full length of SEQ ID NO: 2 or 8;
 - iii. the nucleotide sequence of SEQ ID NO: 14 or 16;
 - iv. a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of SEQ ID NO: 14 or 16 across the full length of SEQ ID NO: 14 or 16 ;
 - v. a polynucleotide encoding the fragment of the hDYSF protein, wherein the fragment of the hDYSF protein consists of the amino acid sequence of SEQ ID NO: 10; or

- vi. a polynucleotide that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the polynucleotide sequence of (v) across the full length of the nucleotide sequence of (v); and
 - (c) a second ITR,
- wherein the polynucleotide is flanked by the first and second ITRs.

73. The AAV vector according to claim 72, further comprising one or more polynucleotides selected from a selection marker, an origin of replication (ORI), an untranslated region (UTR), or a polyadenylation (polyA) signal.
74. The AAV vector according to claims 72 or 73, wherein the ITR is an AAV ITR.
75. The AAV vector according to claim 74, wherein the AAV ITR is an AAV2 ITR or an AAV3 ITR.
76. The AAV vector according to any one of claims 72-75, wherein the ITR comprises the nucleotide sequence of SEQ ID NO: 3 or 17.
77. The AAV vector according to any one of claims 73-76, wherein the polyA signal is an artificial polyA signal.
78. The AAV vector according to any one of claims 73-77, wherein the polyA signal comprises the nucleotide sequence of SEQ ID NO: 7.
79. The AAV vector according to any one of claims 73-78, wherein the selection marker is an antibiotic resistance gene.
80. The AAV vector according to claim 79, wherein the antibiotic resistance gene is a β -lactamase gene or kanamycin resistance gene.
81. The AAV vector according to any one of claims 72-80, wherein the AAV vector comprises the nucleotide sequence of SEQ ID NO: 8 or SEQ ID NO: 16.
82. The AAV vector according to any one of claims 72-81, wherein the AAV vector does not further comprise a second polynucleotide sequence encoding a second fragment of the hDYSF protein.

83. The AAV vector according to any one of claims 72-82, wherein the AAV vector does not comprise an AAV sequence other than one or more ITRs.
84. The AAV vector according to any one of claims 72-82, wherein the AAV vector does not comprise a viral sequence other than one or more ITRs.
85. A dual adeno-associated viral (AAV) vector system comprising:
- (a) a first AAV vector, wherein the first AAV vector comprises the AAV vector according to any one of claims 40-42 and 49-71; and
 - (b) a second AAV vector, wherein the second AAV vector comprises the AAV vector according to any one of claims 43-45 and 72-84.
86. The dual adeno-associated viral (AAV) vector system of claim 85, wherein the AAV vector is AAV-1, AAV-2, AAV-3, AAV-4, AAV-5, AAV-6, AAV-7, AAV-8, AAV-9, AAV-10, AAV-11, AAV-12, AAV-13, AAVrh.10, AAVrh.20, or AAVrh.74.
87. The dual adeno-associated viral (AAV) vector system of claim 85, the AAV vector is AAVrh.74.
88. An adeno-associated viral (AAV) packaging system comprising:
- (a) a plasmid comprising the recombinant polynucleotide of any one of claims 1-38;
 - (b) an adenovirus helper plasmid; and
 - (c) a rep-cap plasmid.
89. An adeno-associated viral packaging system comprising:
- (a) a plasmid comprising the recombinant polynucleotide of any one of claims 1-38; and
 - (b) an adenovirus helper plasmid.
90. The adeno-associated viral packaging system of claim 88 or 89, wherein the adenovirus helper plasmid comprises pHELP plasmid.
91. A method for producing an adeno-associated viral (AAV) vector, comprising contacting a cell with the plasmid comprising the recombinant polynucleotide of any one of claims 1-38, or the AAV packaging system of claim 88.

92. The method of claim 91, wherein the cell is a host cell, optionally a mammalian host cell, further optionally HEK293.
93. A method for producing an adeno-associated viral (AAV) vector, comprising transducing a packaging cell line with the plasmid comprising the recombinant polynucleotide of any one of claims 1-38, wherein the packaging cell line expresses an adeno-associated viral rep and cap genes.
94. The method of claim 93, wherein the AAV rep gene is Rep78.
95. The method of claim 93, wherein the AAV cap gene is Rh74 *cap* gene.
96. A cell comprising the recombinant polynucleotide of any one of claims 1-38.
97. A cell comprising a plasmid that comprising the recombinant polynucleotide of any one of claims 1-38.
98. The AAV packaging system of any one of claims 88-90, the method of any one of claims 91-95, or the cell of claim 96 or 97, wherein the plasmid comprising a polynucleotide that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to SEQ ID NO: 18 or 19.
99. The AAV packaging system of any one of claims 88-90, the method of any one of claims 91-95, or the cell of claim 96 or 97, wherein the plasmid comprising a polynucleotide of SEQ ID NO: 18 or 19.
100. A method of treating a dysferlinopathy, comprising administering to a subject in need thereof:
 - (a) an effective amount of a first polynucleotide, wherein the first polynucleotide is the recombinant polynucleotide of any one of claims 1-24; and
 - (b) an effective amount of a second polynucleotide, wherein the second polynucleotide is the recombinant polynucleotide of any one of claims 25-38.
101. The method of claim 100, wherein the first polynucleotide and/or second polynucleotide is administered intramuscularly or intravenously.
102. The method of claim 100 or 101, wherein the first and second polynucleotides are administered simultaneously or sequentially.

103. A method of treating a dysferlinopathy, comprising administering to a subject in need thereof:
- (a) an effective amount of a first adeno-associated viral (AAV) vector, wherein the first AAV vector is the AAV vector of any one of claims 40-42 and 49-71; and
 - (b) an effective amount of a second AAV vector, wherein the second AAV vector is the AAV vector of any one of claims 43-45 and 72-84.
104. The method of claim 103, wherein the first AAV vector and/or second AAV vector is administered intramuscularly or intravenously.
105. The method of claim 103 or 104, wherein the first and second AAV vectors are administered simultaneously or sequentially.
106. A method of treating a dysferlinopathy, comprising administering to a subject in need thereof an effective amount of the AAV dual vector system of any one of claim 39 or 85-87.
107. The method of claim 106, wherein the AAV dual vector system is administered intramuscularly or intravenously.
108. A method of treating a dysferlinopathy, comprising administering to a subject in need thereof an effective amount of the composition of any one of claims 46-48.
109. The method of claim 108, wherein the composition is administered intramuscularly or intravenously.
110. The method of any one of claims 100-109, wherein the dysferlinopathy is limb girdle muscular dystrophy type 2B (LGMD2B) or Miyoshi myopathy.
111. Use of a composition in the manufacture of a medicament to treat a dysferlinopathy in a subject in need thereof, wherein the composition comprises:
- (a) a first polynucleotide, wherein the first polynucleotide is the recombinant polynucleotide of any one of claims 1-24; and
 - (b) a second polynucleotide, wherein the second polynucleotide is the recombinant polynucleotide of any one of claims 25-38.

112. Use of a composition in the manufacture of a medicament to treat a dysferlinopathy in a subject in need thereof, wherein the composition comprises:
- (a) an effective amount of a first adeno-associated viral (AAV) vector, wherein the first AAV vector is the AAV vector of any one of claims 40-42 and 49-71; and
 - (b) an effective amount of a second adeno-associated viral (AAV) vector, wherein the second AAV vector is the AAV vector of any one of claims 43-45 and 72-84.
113. Use of a composition in the manufacture of a medicament to treat a dysferlinopathy in a subject in need thereof, wherein the composition comprises the AAV dual vector system of claim 39 or 85-87.
114. Use of a composition according to any one of claims 46-48 in the manufacture of a medicament to treat a dysferlinopathy in a subject in need thereof.
115. The use of any one of claims 111-114, wherein the composition is administered intramuscularly or intravenously.
116. The use of any one of claims 111-114, wherein the dysferlinopathy is limb girdle muscular dystrophy type 2B (LGMD2B) or Miyoshi myopathy.
117. The method of any one of claims 100-110, wherein the effective amount of the first AAV vector is between about 1×10^6 - 1×10^{16} vg/kg, about 1×10^8 - 1×10^{15} vg/kg, or about 1×10^{10} - 1×10^{14} vg/kg, wherein the dosage is measured by a supercoiled PCR quantification standard.
118. The method of claim 117, wherein the effective amount of the first AAV vector is 1.2×10^{13} vg/kg, wherein the dosage is measured by a supercoiled PCR quantification standard.
119. The method of any of claims 100-110 and 117, wherein the effective amount of the second AAV vector is between about 1×10^6 - 1×10^{16} vg/kg, about 1×10^8 - 1×10^{15} vg/kg, or about 1×10^{10} - 1×10^{14} vg/kg, wherein the dosage is measured by a supercoiled PCR standard.

120. The method of claim 119, wherein the effective amount of the second AAV vector is 1.2×10^{13} vg/kg, wherein the dosage is measured by a supercoiled PCR quantification standard.
121. The method of any one of claims 117-120, wherein the total AAV vector dosage is 2.4×10^{13} vg/kg, wherein the dosage is measured by a supercoiled PCR standard.
122. A recombinant polynucleotide encoding a human dysferlin (hDYSF) protein, wherein the recombinant polynucleotide sequence comprising a nucleotide sequence of SEQ ID NO: 20 or a nucleotide sequence that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the nucleotide sequence of SEQ ID NO: 20.
123. The recombinant polynucleotide of claim 122, wherein the recombinant polynucleotide sequence comprising a nucleotide sequence of SEQ ID NO: 20.
124. A method of making the recombinant polynucleotide of claim 122, comprising contacting a cell with or expressing in a cell the recombinant polynucleotide of any one of claims 1-24 and the recombinant polynucleotide of any one of claims 25-38.
125. A method of making the recombinant polynucleotide of claim 122, comprising contacting a cell with the dual AAV vector system of any one of 39 and 85-87.
126. A method of making the recombinant polynucleotide of claim 124 or 125, wherein the cell is a eukaryotic cell.
127. A method of making the recombinant polynucleotide of claim 124 or 125, wherein the cell is a muscle cell, a heart cell, a stem cell, a satellite cell, and/or a liver cell.
128. A method of making the recombinant polynucleotide of claim 122, comprising administering to a subject with the recombinant polynucleotide of any one of claims 1-24 and the recombinant polynucleotide of any one of claims 25-38.
129. A method of making the recombinant polynucleotide of claim 122, comprising administering to a subject with the dual AAV vector system of any one of claims 39 and 85-87 or the composition of claim 47 or 48.
130. A method of treating muscular dystrophy of a subject, comprising expression of the recombinant polynucleotide of claim 122 in the subject.

131. The method of claim 130, comprising administering to a subject with the recombinant polynucleotide of any one of claims 1-24 and the recombinant polynucleotide of any one of claims 25-38 or the composition of claim 47 or 48.
132. The method of claim 130, comprising administering to a subject with the dual AAV vector system of any one of claims 39 and 85-87.
133. The method of any one of claims 128-132, wherein the subject is a mammal selected from human, a non-human primate, a canine, an ovine, a horse, a porcine, a murine, a rat, a rabbit, a bovine, or a feline.
134. The method of any one of claims 128-133, wherein the subject suffers from dysferlinopathy.
135. The method of claim 134, wherein dysferlinopathy is limb girdle muscular dystrophy type 2B (LGMD2B) or Miyoshi myopathy.