CLAIMS

1. A recombinant nucleic acid, comprising a nucleotide sequence that encodes a human type II mitochondrial dynein-like GTPase, and wherein the nucleotide sequence is ≥95% identical to the sequence of SEQ ID NO: 1.

2. The recombinant nucleic acid of claim 1, wherein the nucleotide sequence is ≥98% identical to the sequence of SEQ ID NO: 1.

3. The recombinant nucleic acid of claim 1, wherein the nucleotide sequence is identical to the sequence of SEQ ID NO: 1.

4. The recombinant nucleic acid of claim 1, further comprising an untranslated region (UTR) sequence, a promoter sequence, or both.

5. The recombinant nucleic acid of claim 4, wherein the UTR sequence is a 5'-UTR sequence, a 3'-UTR sequence, or both.

6. The recombinant nucleic acid of claim 5, wherein the 5'-UTR sequence is operably linked to the 5’-end of the nucleotide sequence.

7. The recombinant nucleic acid of claim 5, wherein the 3'-UTR sequence is operably linked to the 3’-end of the nucleotide sequence.

8. The recombinant nucleic acid of claim 5, comprising the 5'-UTR sequence operably linked to the 5’-end of the nucleotide sequence and the 3'-UTR sequence operably linked to the 3’-end of the nucleotide sequence.

9. The recombinant nucleic acid of claim 5, wherein the recombinant nucleic acid has a structure of formula I from the 5’-end to the 3’-end:

Z1-Z2-Z3 (I)

wherein

each "-" is independently a bond or a nucleotide linker sequence;

Z1 is null or a 5'-UTR sequence;

Z2 is the nucleotide sequence encoding the human type II mitochondrial dynein-like GTPase; and

Z3 is a 3'-UTR sequence.

10. A vector, comprising the recombinant nucleic acid of claim 1.

11. The vector of claim 10, wherein the vector is a plasmid.

12. The vector of claim 10, wherein the vector is a viral vector.

13. The vector of claim 12, wherein the viral vector is selected from a lentiviral vector, an adenovirus vector, an adeno-associated virus (AAV) vector, and a combination thereof.

14. The vector of claim 13, wherein the vector is the AAV vector.

15. The vector of claim 14, wherein the AAV vector has a serotype selected from AAV2, AAV5, AAV7, AAV8, and a combination thereof.

16. The vector of claim 14, wherein the recombinant nucleic acid is inserted into the AAV vector.

17. The vector of claim 12, wherein the vector is a DNA virus vector or a retroviral vector.

18. A host cell, comprising the recombinant nucleic acid of claim 1, and wherein the nucleotide sequence is integrated into a chromosome of the host cell.

19. The host cell of claim 18, wherein the host cell is selected from the group consisting of a 293T cell, a photoreceptor cell, a visual cell, and a nerve cell.

20. A pharmaceutical composition, comprising (a) the vector of claim 10; and (b) a pharmaceutically acceptable carrier or excipient.

21. The pharmaceutical composition of claim 20, wherein a dosage form of the pharmaceutical composition is selected from the group consisting of a lyophilized composition, and a liquid composition.

22. The pharmaceutical composition of claim 20, wherein the vector is within a virus, and wherein a concentration of the virus in the pharmaceutical composition is 1×10^{9}-1×10^{16} viruses/mL.

23. The pharmaceutical composition of claim 22, wherein the concentration is 2×10^{11}-1×10^{12} viruses/mL.

24. The pharmaceutical composition of claim 20, wherein the pharmaceutical composition is suitable for restoring vision, treating an eye disease in a subject, or both.

25. The pharmaceutical composition of claim 24, wherein the eye disease is retinal ganglion cell apoptosis.

26. The pharmaceutical composition of claim 24, wherein the eye disease is hereditary optic neuropathy.

27. The pharmaceutical composition of claim 24, wherein the eye disease is autosomal dominant optic atrophy (ADOA).

28. An ex-vivo method for increasing the expression and/or activity of a mitochondrial dynein-like GTPase in a cell, comprising: contacting the cell with a pharmaceutical composition comprising (a) a vector, comprising a recombinant nucleic acid, wherein the recombinant nucleic acid comprises a nucleotide sequence that encodes a human type II mitochondrial dynein-like GTPase, and wherein the nucleotide sequence is ≥95% identical to the sequence of SEQ ID NO: 1; and (b) a pharmaceutically acceptable carrier or excipient.

29. Use of a therapeutically acceptable amount of pharmaceutical composition in the manufacture of a medicament for the treatment of an eye disease, wherein the pharmaceutical

composition comprises (a) a vector, comprising a recombinant nucleic acid, wherein the recombinant nucleic acid comprises a nucleotide sequence that encodes a human type II mitochondrial dynein-like GTPase, wherein the nucleotide sequence is ≥95% identical to the sequence of SEQ ID NO: 1; and (b) a pharmaceutically acceptable carrier or excipient, and wherein the eye disease is autosomal dominant optic atrophy (ADOA).

30. A method for preparing a recombinant nucleic acid, comprising culturing a host cell comprising the recombinant nucleic acid, wherein the recombinant nucleic acid comprises a nucleotide sequence that encodes a human type II mitochondrial dynein-like GTPase, and wherein the nucleotide sequence is ≥95% identical to the sequence of SEQ ID NO: 1, thereby obtaining the recombinant nucleic acid.