CLAIMS

1. A transcriptional control unit (TCU) of up to 2500 nucleotides in length comprising in a 5' to 3' direction:

(a) a Locus Control Region (LCR) comprising

(i) SEQ ID NO 1; or

(ii) a sequence having at least 90% sequence identity to said sequence (a)(i); and

(b) a promoter element comprising

(i) at least 200 nucleotides of either SEQ ID NO: 2 or SEQ ID NO: 17; or

(ii) a sequence having at least 90% sequence identity to said sequence (b)(i);

said TCU exhibiting cone photoreceptor-specific promoter activity.

2. The TCU of claim 1, wherein (b) comprises:

(i) at least the last 200 nucleotides of either SEQ ID NO: 2 or SEQ ID NO: 17, or

(ii) a sequence having at least 90% sequence identity to said sequence (i);

said TCU exhibiting cone photoreceptor-specific promoter activity.

3. The TCU of claim 2, wherein (b) comprises:

(i) at least the last 500 nucleotides of either SEQ ID NO: 2 or SEQ ID NO: 17, or

(ii) a sequence having at least 90% sequence identity to said sequence (i);

said TCU exhibiting cone photoreceptor-specific promoter activity.

4. The TCU of any one of the preceding claims, wherein (b) comprises at least 200 nucleotides of SEQ ID NO: 3.

5. The TCU of any one of the preceding claims, wherein (b) comprises a sequence of at least 10 contiguous nucleotides selected from nucleotides 1 to 35 of SEQ ID NO:3, or a sequence comprising at least 10 contiguous nucleotides selected from a sequence having at least 90% sequence identity to nucleotides 1 to 35 of SEQ ID NO:3.

6. The TCU according to any one of the preceding claims, wherein (b) comprises:

(i) SEQ ID NO: 3; or

(ii) a sequence having at least 90% sequence identity to said sequence (i);

said TCU exhibiting cone photoreceptor-specific promoter activity.

7. The TCU of claim 6, wherein nucleotides 1934 to 1939 (GGGCCG) of SEQ ID NO:2 are replaced by SEQ ID NO:16.

8. The TCU of claim 6, wherein the TCU comprises SEQ ID NO: 4 or SEQ ID NO:15.

9. The TCU of any one of claims 1 to 4, wherein the promoter element comprises SEQ ID NO: 5.

10. The TCU of claim 9, wherein the TCU comprises SEQ ID NO: 6.

11. An expression construct comprising the TCU of any one of the preceding claims, operably linked to a sequence to be expressed in a cone photoreceptor-specific manner.

12. The expression construct according to claim 11, wherein the operably linked sequence is *CNGA3, CNGB3, PDE6C, PDE6H, GNAT2, KCNV2* or *CACNA2D4*.

13. The expression construct according to claim 12, wherein the operably linked sequence comprises SEQ ID NO: 7, 8, 9, 10, 11, 12, 13 or 14, or that has at least 80% sequence identity to SEQ ID NO: 7, 8, 9, 10, 11, 12, 13 or 14 and has the ability to rescue cone photoreceptor function.

14. The expression construct according to claim 12 or 13, wherein the operably linked sequence comprises SEQ ID NO: 8, or that has at least 80% sequence identity to SEQ ID NO: 8 and has the ability to rescue cone photoreceptor function.

15. A vector comprising the TCU according to any one of claims 1 to 10 or an expression construct according to any one of claims 11 to 14.

16. The vector according to claim 15 which is a viral vector.

17. The vector according to claims 16, which is an adeno-associated virus (AAV) vector.

18. The vector according to claim 17, wherein the vector comprises an AAV genome or a derivative thereof.

19. The vector according to claim 18, wherein the vector comprises an AAV genome or a derivative thereof, and wherein the AAV capsid is derived from AAV8.

20. The vector according to claim 19, wherein the AAV capsid is derived from AAV8 and the expression construct is defined according to any one of claims 11 to 14.

21. The vector according to claim 20, wherein the operably linked sequence is *CNGA3*.

22. The vector according to any one of claims 18 to 21, wherein said derivative is a chimeric, shuffled or capsid modified derivative.

23. The vector according to any of claims 18 to 22, wherein said AAV genome is from a naturally derived serotype or isolate or clade of AAV.

24. The vector according to claim 23, wherein said AAV genome is from AAV serotype 2 (AAV2), AAV serotype 4 (AAV4), or AAV serotype 8 (AAV8) and/or wherein the capsid is derived from AAV8.

25. The vector according to claim 24, wherein the genome is derived from AAV2 and the capsid is derived from AAV8.

26. A host cell that contains a vector of any one of claims 15 to 25 or produces a viral vector of any one of claims 15 to 25.

27. The cell according to claim 26 that is a HEK293 or HEK293T cell.

28. A pharmaceutical composition comprising a vector of any one of claims 15 to 25 and a pharmaceutically acceptable carrier.

29. The vector according to any one of claims 15 to 25 for use in a method of preventing or treating retinal disorders.

30. Use of a vector according to any one of claims 15 to 25 in the manufacture of a medicament for the treatment or prevention of retinal disorders.

31. A method of treating or preventing retinal disorders in a patient in need thereof, comprising administering a therapeutically effective amount of a vector according to any one of claims 15 to 25 to said patient.

32. A vector for use according to claim 29, or a use of claim 30 or a method of claim 31, wherein the retinal disorder is Achromatopsia.

33. A vector for use according to claim 29 or 32, or a use or method of any one of claims 30 to 32, wherein the treatment or prevention is by administration of the vector according to any one of claims 15 to 25 to a patient by direct retinal, subretinal or intravitreal injection.

34. A vector for use, use or method according to claim 33, wherein said vector is administered directly into the retinal, subretinal space or intravitreal space.