CLAIMS

1. Use of a vector comprising a nucleic acid encoding a gene product that is light-sensitive and/or that modulates endogenous light-sensitive signalling in a photoreceptor cell in the manufacture of a medicament for improving vision in a patient with cone photoreceptor dysfunction and/or degeneration, wherein the nucleic acid is to be introduced into healthy rod photoreceptors in the retina of the patient to allow expression of said gene product therein, such that the range of light intensities to which the rod photoreceptor responds is extended and/or the speed at which the rod photoreceptor responds to light is increased, wherein the gene product is ArchT, Jaws (cruxhalorhodopsin), iC1C2, or R9AP.

2. The use according to claim 1, wherein the vector is a viral vector.

3. The use according to claim 1 or claim 2, wherein the patient suffers from macular degeneration, achromatopsia or Leber congenital amaurosis.

4. The use according to claim 3, wherein the macular degeneration is age-related macular degeneration (AMD), an inherited macular degeneration condition or an inherited cone dystrophy.

5. The use according to claim 4, wherein the AMD is wet or neovascular AMD or geographic atrophy.

6. The use according to any of the preceding claims, wherein rod photoreceptor signalling is extended into the mesopic and/or photopic illumination range.

7. The use according to any of the preceding claims, wherein the rods exhibit improved modulation strength and/or faster activation/inactivation kinetics.

8. The use according to any of the preceding claims, wherein the vector is introduced into rod photoreceptors in vitro, to be followed by transplantation into the retina.

9. The use according to any of the preceding claims, wherein the mesopic and/or photopic vision of the patient is improved.

10. The use according to any of the preceding claims, wherein the nucleic acid is expressed under the control of a photoreceptor-specific or photoreceptor-preferred promoter.

11. An expression cassette comprising a nucleic acid as defined in claim 1, operably linked to a rod-specific or rod-preferred promoter.

12. The expression cassette according to claim 11, wherein the rod-specific or rod-preferred promoter is a Rhodopsin (Rho), Neural retina-specific leucine zipper protein (NRL) or Phosphodiesterase 6B (PDE6B) promoter.

13. A vector comprising an expression cassette according to claim 11 or claim 12.

14. A vector comprising a nucleic acid encoding a gene product that is light-sensitive and/or that modulates endogenous light-sensitive signalling in a photoreceptor cell, such that the range of light intensities to which the rod photoreceptor responds is extended and/or the speed at which the rod photoreceptor responds to light is increased,

wherein the gene product is ArchT, Jaws (cruxhalorhodopsin), iC1C2, or R9AP, and wherein the nucleic acid is operably linked to a rod photoreceptor-specific or rod photoreceptor-preferred promoter.

15. A vector according to claim 13 or 14, wherein the vector is a viral vector as defined in claim 2.

16. A vector according to any one of claims 13 to 15, wherein the rod photoreceptor-specific or rod photoreceptor-preferred promoter is Rhodopsin (Rho), Neural retina-specific leucine zipper protein (NRL) or Phosphodiesterase 6B (PDE6B) promoter.

17. A host cell comprising a vector according to any one of claims 13 to 16.

18. The use according to any one of claims 1 to 10 wherein the vector is to be used in combination with another therapy for the use as referred to in anyone of claims 1 to 10.