1. Use of a protein or its encoding nucleic acid in the preparation of a medicament for treating Parkinson's disease, visual impairment due to RGC death, or the degeneration or death of photoreceptor cells, the protein comprises a REST variant, wherein the REST variant comprises the DNA binding domain of REST but lacks the N-terminal and C-terminal repression domain of REST, the amino acid sequence of the DNA binding domain is shown in SEQ ID NO:1.

2. The use of claim 1, wherein the protein or its encoding nucleic acid is administered locally to glial cells in one or more of the following locations in the subject: 1) glial cells in the striatum; ii) glial cells in the substantia nigra of the brain; iii) glial cells in the retina; iv) glial cells in the inner ear; v) glial cells in the spinal cord; vi) glial cells in the prefrontal cortex; vii) glial cells in motor cortex ; viii) glial cells in the hypothalamus; and ix) glial cells in the ventral tegmental area (VTA).

3. The use of claim 1, wherein the protein comprises the amino acid sequence of SEQ ID NO: 3, 5 or 9.

4. The use of claim 1, wherein the encoding nucleic acid comprises the sequence of SEQ ID NO: 2 or 15.

5. The use of claim 1, wherein the encoding nucleic acid comprises the sequence of SEQ ID NO: 4, 6, or 10.

6. The use of claim 1, wherein said REST variant also comprises an activation domain.

7. The use of claim 6, the activation domain comprises an epigenetic modification protein or a gene activation regulatory element.

8. The use of claim 7, the activation domain comprises VP64, P65-HSF1, VP16, RTA, Suntag, P300, CBP or any combination thereof.

9. The use of claim 1, wherein the REST variant is fused to one or more nuclear localization signal sequences.

10. The use of claim 1, wherein the protein or its encoding nucleic acid comprises activation domain and nuclear localization signal sequence.

11. The use of claim 9 or 10, wherein the nuclear localization signal sequence

comprises the amino acid sequence selected from SEQ ID NOs: 13, 41-58.

12. The use of claim 10, the activation domain comprises an epigenetic modification protein or a gene activation regulatory element.

13. The use of claim 12, the activation domain comprises VP64, P65-HSF1, VP16, RTA, Suntag, P300, CBP or any combination thereof.

14. A REST variant comprising the DNA binding domain of REST but lacking the N-terminal and C-terminal repression domain of REST, the amino acid sequence of DNA binding domain is shown in SEQ ID NO: 1, the amino acid sequence of N-terminal repression domain of REST is shown in SEQ ID NO: 16, the amino acid sequence of C-terminal repression domain of REST is shown in SEQ ID NO: 18.

15. The REST variant of claim 14, the REST variant also comprises an activation domain.

16. The REST variant of claim 15, the activation domain comprises an epigenetic modification protein or a gene activation regulatory element.

17. The REST variant of claim 16, the activation domain comprises VP64, P65-HSF1, VP16, RTA, Suntag, P300, CBP or any combination thereof.

18. The REST variant of any one of claims 14-17, the REST variant is fused to one or more nuclear localization signal sequences.

19. The REST variant of claim 18, wherein the nuclear localization signal sequence comprises the amino acid sequence shown in SEQ ID NO:13, 41-58.

20. The REST variant of claim 14, the amino acid sequence of REST variant is shown in SEQ ID NO: 1, 3, 5 or 9.

21. A polynucleotide comprising a nucleic acid sequence encoding the REST variant according to any one of claims 14-20.

22. The polynucleotide of claim 21, the polynucleotide comprises the nucleotide sequence of SEQ ID NO: 2, 4, 6, 10, or 15.

23. An expression vector comprising the polynucleotide of claim 21 or 22 and a promoter operably linked to the polynucleotide.

24. The expression vector of claim 23, the promoter is a glial cell-specific promoter.

25. A pharmaceutical composition comprising the REST variant of any one of claims 14-20, or the polynucleotide of claim 21, or the expression vector of claim 23, and pharmaceutically acceptable carrier.