What is claimed is:

1. Use of recombinant human α-L-iduronidase (rIDUA) produced by human neuronal cells or glial cells in the preparation of a composition for treating a human subject diagnosed with mucopolysaccharidosis I (MPS I), and wherein a recombinant expression vector encoding the rIDUA is suitable for administration to the human subject at a dose that is determined by brain magnetic resonance imaging (MRI) of the human subject's brain mass.

2. Use of a recombinant expression vector encoding a recombinant human α-L-iduronidase (rIDUA) in the manufacture of a medicament for treating a human subject diagnosed with mucopolysaccharidosis I (MPS I), wherein the medicament is suitable for administration at a dose that is determined by brain magnetic resonance imaging (MRI) of the human subject's brain mass.

3. The use of claim 2, wherein the rIDUA is produced by the human subject's neuronal or glial cells after the medicament is to be administered to the human subject.

4. The use of claim 1 or 3, wherein the rIDUA produced by the neuronal or glial cells is to be delivered to the cerebrospinal fluid of the brain of the human subject.

5. The use of any one of claims 1 to 4, wherein the human subject's brain mass is converted from the human subject's brain volume by multiplying the human subject's brain volume in cm^3 by a factor of 1.046 g/cm^3, wherein the human subject's brain volume is obtained from the human subject's brain MRI.

6. The use of any one of claims 1 to 5, wherein the recombinant expression vector is suitable for administration at a dose of about 2×10^9 GC/g brain mass, about 1×10^{10} GC/g brain mass, or about 5×10^{10} GC/g brain mass.

7. The use of any one of claims 1 to 6, wherein the recombinant nucleotide expression vector is suitable for administration via intracisternal (IC) administration or intracerebroventricular (ICV) administration.

8. The use of any one of claims 1 to 7, wherein the recombinant expression vector is suitable for administration at a volume that does not exceed 10% of the total cerebrospinal fluid volume of the human subject.

9. The use of any one of claims 1 to 8, wherein an immune suppression therapy to the human subject is suitable for administration before or concurrently with the rIDUA treatment and continued by an immune suppression therapy thereafter.

10. The use of claim 9, wherein the immune suppression therapy comprises administration of a combination of (a) tacrolimus and mycophenolic acid, (b) rapamycin and mycophenolic acid, or (c) tacrolimus, rapamycin, and a corticosteroid such as prednisolone and/or methylprednisolone to the human subject before or concurrently with the rIDUA treatment and is to be continued thereafter.

11. The use of claim 9 or 10, wherein the immune suppression therapy is withdrawn after 180 days.

12. The use of any one of claims 1 to 11, wherein the rIDUA comprises the amino acid sequence of SEQ ID NO. 1.

13. The use of any one of claims 1 to 12, wherein the recombinant expression vector is suitable for administration at a dose according to the table below:

Brain Mass (in g)		Target	**Dose Levels**	
Min	Max		**Dose 1** **Total GC** (1.0×10^{10} GC/g brain mass)	**Dose 2** **Total GC** (5×10^{10} GC/g brain mass)
-	700	650	6.5×10^{12}	3.3×10^{13}
701	800	750	7.5×10^{12}	3.8×10^{13}
801	901	850	8.5×10^{12}	4.3×10^{13}
901	1050	975	9.8×10^{12}	4.9×10^{13}
1051	1200	1125	1.1×10^{13}	5.0×10^{13}
1201	-	1300	1.3×10^{13}	6.5×10^{13}

14. The use of any one of claims 1-13, wherein the recombinant expression vector is suitable for administration at a dose of about: 6.5×10^{12}, 7.5×10^{12}, 8.5×10^{12}, 9.8×10^{12}, 1.1×10^{13}, or 1.3×10^{13} total genome copies (GC).

15. The use of any one of claims 1-13, wherein the recombinant expression vector is suitable for administration at a dose of about: 3.3×10^{13}, 3.8×10^{13}, 4.3×10^{13}, 4.9×10^{13}, 5.0×10^{13}, or 6.5×10^{13} total genome copies (GC).

16. The use of any one of claims 1-15, wherein the recombinant expression vector is a recombinant adeno-associated virus (AAV).

17. The use of claim 16, wherein the recombinant AAV is a recombinant AAV9 or AAVrh10.

18. The use of any one of claims 16-17, wherein the recombinant AAV comprises a CB7 promoter.

19. The use of any one of claims 1-18, wherein the recombinant expression vector is suitable for administration as a single administration.

20. The use of any one of claims 1-19, wherein the human subject is 4 months of age or older.