What is claimed is:

1. A glycosylated recombinant human iduronate-2-sulfatase (IDS) precursor produced by human neuronal or human glial cells transduced with an adeno-associated virus (AAV), which: (a) is about 90 kDa as measured by polyacrylamide gel electrophoresis; (b) contains a formylglycine; (c) is α2,6-sialylated; (d) does not contain detectable NeuGc; (e) does not contain detectable α-Gal antigen; (f) contains tyrosine-sulfation; and/or (g) is mannose-6-phosphorylated, and wherein the IDS precursor is expressed from an expression cassette carried by the AAV ~~and secreted at a detectable level~~.

2. ~~A~~ The glycosylated recombinant human IDS precursor of claim 1, wherein the expression cassette comprises a CB7 promoter that controls expression of the glycosylated recombinant human IDS precursor in human neuronal or human glial cells ~~produced by human neuronal or human glial cells that carry at least one mutation in the endogenous gene encoding human IDS precursor~~.

3. The glycosylated recombinant human IDS precursor of claim 1 or 2, wherein the human neuronal or human glial cells are deficient in IDS activity.

~~3.~~ 4. ~~A~~ The glycosylated recombinant human IDS precursor of any one of claims 1-3, wherein the AAV is ~~produced by human neuronal or human glial cells transduced with an~~ a recombinant AAV (rAAV).

~~4.~~ 5. ~~A~~ The glycosylated recombinant human IDS precursor of any one of claims 1-4, which carries at least one mutation in the endogenous gene encoding human IDS precursor ~~produced by human neuronal or human glial cells, wherein the glycosylated recombinant human IDS precursor is expressed under the control of a CB7 promoter~~.

~~5.~~ 6. The glycosylated recombinant human IDS precursor of any one of claims 1-5~~4~~, which is expressed from a cDNA encoding human IDS precursor.

~~6.~~ 7. The glycosylated recombinant human IDS precursor of any one of claims 1-6~~5~~, which is about 90 kDa as measured by polyacrylamide gel electrophoresis.

~~7.~~ 8. The glycosylated recombinant human IDS precursor of any one of claims 1-7~~6~~, which contains a formylglycine.

~~8.~~ 9. The glycosylated recombinant human IDS precursor of any one of claims 1-8~~7~~, which is secreted at a detectable level~~: (a) is α2,6-sialylated; (b) does not contain detectable NeuGc; (c) does not contain detectable α-Gal antigen; (d) contains tyrosine-sulfation; and/or (e) is mannose-6-phosphorylated~~.

~~9.~~ 10. ~~A~~ The glycosylated recombinant human IDS precursor of any one of claims 1-9, ~~produced by human neuronal or human glial cells,~~ which~~: (a) is about 90 kDa as measured by polyacrylamide gel electrophoresis; (b) contains a formylglycine; (c)~~ is α2,6-sialylated~~; (d) does not contain detectable NeuGc; (e) does not contain detectable α-Gal antigen; (f) contains tyrosine-sulfation; and/or (g) is mannose-6-phosphorylated~~.

11. The glycosylated recombinant human IDS precursor of any one of claims 1-10, which does not contain detectable NeuGc.

12. The glycosylated recombinant human IDS precursor of any one of claims 1-11, which does not contain detectable α-Gal antigen.

13. The glycosylated recombinant human IDS precursor of any one of claims 1-12, which contains tyrosine sulfation.

14. The glycosylated recombinant human IDS precursor of any one of claims 1-13, which is mannose-6-phosphorylated.

15. The glycosylated recombinant human IDS precursor of any one of claims 1-14, which: (a) is α2,6-sialylated; (b) does not contain detectable NeuGc; (c) does not contain detectable α-Gal antigen; (d) contains tyrosine-sulfation; and (e) is mannose-6-phosphorylated.

~~10.~~ 16. The glycosylated recombinant human IDS precursor of any one of claims 1-15~~9~~, which comprises the amino acid sequence of SEQ ID NO. 1.

~~11.~~ 17. The glycosylated recombinant human IDS precursor of any one of claims 1-16~~10~~, ~~which is expressed from~~ wherein the AAV is an AAV9, rAAV9, or AAVrh10 vector.

~~12.~~ 18. Use of the glycosylated recombinant human IDS precursor of any one of claims 1-17~~11~~ in the manufacture of a medicament for the treatment of a human subject diagnosed with mucopolysaccharidosis type II (MPS II), wherein the medicament is suitable for delivery to the cerebrospinal fluid (CSF) of the brain of the human subject.

19. The use of claim 18, wherein the medicament is suitable for a single dose administration.

20. The use of claim 18 or 19, wherein the medicament is suitable for intracisternal (IC) injection or intracerebroventricular (ICV) injection.