What is claimed:

1. An AAV capsid sequence of any one of RHM4-1 (SEQ ID NO:5), RHM15-1 (SEQ ID NO:6), RHM15-2 (SEQ ID NO:7), RHM15-3/RHM15-5 (SEQ ID NO:8), and RHM15-6 (SEQ ID NO:10).

2. The AAV capsid sequence of claim 1, wherein the sequence comprises RHM4-1 (SEQ ID NO:5).

3. The AAV capsid sequence of claim 1, wherein the sequence comprises RHM15-1 (SEQ ID NO:6).

4. The AAV capsid sequence of claim 1, wherein the sequence comprises RHM15-2 (SEQ ID NO:7).

5. The AAV capsid sequence of claim 1, wherein the sequence comprises RHM15-3/RHM15-5 (SEQ ID NO:8).

6. The AAV capsid sequence of claim 1, wherein the sequence comprises RHM15-6 (SEQ ID NO:10).

7 A recombinant AAV particle, comprising the AAV capsid sequence of any one of claims 1 to 6, wherein the particle encapsidates a vector genome.

8. The recombinant AAV particle of claim 7, wherein the AAV vector genome comprises a heterologous polynucleotide sequence.

9. The recombinant AAV particle of claim 8, wherein the heterologous polynucleotide sequence encodes a polypeptide that can correct for an enzyme involved in a lysosomal storage disease .

10. The recombinant AAV particle of claim 9, wherein the recombinant AAV particle comprises an AAV capsid sequence of RHM4-1 (SEQ ID NO:5).

11. The recombinant AAV particle of claim 8, wherein the heterologous polynucleotide sequence is operably linked to an expression control element conferring transcription of said heterologous polynucleotide sequence.

12. Use of the recombinant AAV particle of claim 8, 10 or 11 in the manufacture of a medicament for treating a mammal deficient in an enzyme involved in a lysosomal storage disease, wherein the recombinant AAV particle comprises a heterologous polynucleotide sequence encoding a polypeptide that can correct for the enzyme involved in the lysosomal storage disease, wherein the heterologous polynucleotide sequence is operably linked to an expression control element conferring

transcription of said heterologous polynucleotide sequence, wherein the recombinant AAV particle is to be administered to the mammal wherein said polypeptide is expressed in the mammal.

13. The use of claim 12, wherein said heterologous polynucleotide sequence, or said protein, is expressed at levels having a therapeutic effect on the mammal.

14. The recombinant AAV particle of claim 8 or 11, wherein said recombinant AAV particle has increased tropism for hepatocytes compared to Rh74, AAV2 or AAV8 serotypes.

15. The use of claim 12, wherein said heterologous polynucleotide sequence or said protein is expressed in a cell, tissue or organ of said mammal.

16. The use of claim 15, wherein the cell comprises a secretory cell.

17. The use of claim 15, wherein the cell comprises an endocrine cell.

18. The use of claim 15, wherein the cell comprises hepatocyte, a neural cell, a glial cell, a retinal cell, an epithelial cell, a lung cell or a pluripotent or multipotent stem cell.

19. The use of claim 15, wherein the tissue or organ of said mammal comprises liver, brain, central nervous system, spinal cord, eye, retina or lung.

20. The use of claim 12, wherein the mammal produces an insufficient amount of the enzyme involved in the lysosomal storage disease.

21. The recombinant AAV particle of claim 8 or 11, wherein the heterologous polynucleotide sequence encodes CFTR (cystic fibrosis transmembrane regulator protein), a blood coagulation or clotting factor, Factor XIII, Factor IX, Factor X, Factor VIII, Factor VIIa, protein C, a gain of function blood coagulation factor, an antibody, retinal pigment epithelium-specific 65 kDa protein (RPE65), erythropoietin, LDL receptor, lipoprotein lipase, ornithine transcarbamylase, β-globin, α-globin, spectrin, α-antitrypsin, adenosine deaminase (ADA), a metal transporter, ATP7A, ATP7, sulfamidase, an enzyme involved in lysosomal storage disease, ARSA, hypoxanthine guanine phosphoribosyl transferase, β-25 glucocerebrosidase, sphingomyelinase, lysosomal hexosaminidase, branched-chain keto acid dehydrogenase, a hormone, a growth factor, insulin-like growth factor 1 or 2, platelet derived growth factor, epidermal growth factor, nerve growth factor, neurotrophic factor -3 and -4, brain-derived neurotrophic factor, glial derived growth factor, transforming growth factor α and β, a cytokine, α-interferon, β-interferon, interferon-γ, interleukin-2, interleukin-4, interleukin 12, granulocyte-macrophage colony stimulating factor, lymphotoxin, a suicide gene product, herpes simplex virus thymidine kinase, cytosine deaminase, diphtheria toxin, cytochrome P450, deoxycytidine kinase, tumor necrosis factor, a drug resistance protein, a tumor suppressor protein,

p53, Rb, Wt-1, NF1, Von Hippel–Lindau (VHL), adenomatous polyposis coli (APC), a peptide with immunomodulatory properties, a tolerogenic or immunogenic peptide or protein Tregitope or hCDR1, insulin, glucokinase, guanylate cyclase 2D (LCA-GUCY2D), Rab escort protein 1, LCA 5, ornithine ketoacid aminotransferase, Retinoschisin 1, USH1C, X-linked retinitis pigmentosa GTPase (XLRP), MERTK, DFNB1, ACHM 2, 3 and 4, PKD-1, PKD-2, TPP1, CLN2, a gene product implicated in lysosomal storage diseases, sulfatase, N-acetylglucosamine-1-phosphate transferase, cathepsin A, GM2-AP, NPC1, VPC2, a sphingolipid activator protein, or one or more zinc finger nucleases for genome editing, or donor sequences used as repair templates for genome editing.

22. The recombinant AAV particle of claim 8 or 11, wherein the heterologous polynucleotide sequence comprises a gene encoding a polypeptide, peptide or a protein.

23. The use of claim 12, wherein the mammal has lysosomal acid lipase deficiency, Gaucher's disease, Hurler's disease, or a metabolic defect.

24. The recombinant AAV particle of claim 11, wherein the expression control element comprises a constitutive or regulatable control element.

25. The recombinant AAV particle of claim 11, wherein the expression control element comprises a tissue-specific expression control element or promoter.

26. The use of claim 12, wherein the AAV vector is to be delivered intravenously, intraarterially, intramuscularly, subcutaneously, orally, by intubation, via catheter, dermally, intra-cranially, via inhalation, intra-cavity, or mucosally.

27. The use of claim 12, wherein the mammal is human.

28. The use of claim 12, wherein the mammal is sero-positive for an AAV serotype other than AAV-Rh74.

29. The use of claim 12, wherein the mammal is sero-positive for an AAV serotype AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10 or AAV11.

30. The use of claim 12, wherein the mammal is sero-negative or sero-positive for AAV-Rh74.

31. The use of claim 12, wherein an empty AAV capsid is to be further administered.

32. The use of claim 12, wherein an empty AAV-Rh74 capsid or an empty capsid comprising an AAV capsid sequence of any of claims 1 to 6 or RHM4-1 (SEQ ID NO:5), RHM15-1 (SEQ ID

NO:6), RHM15-2 (SEQ ID NO:7), RHM15-3/RHM15-5 (SEQ ID NO:8), RHM15-4 (SEQ ID NO:9) or RHM15-6 (SEQ ID NO:10) is to be further administered.

33. The recombinant AAV particle of claims 8 or 11 or the use of claim 12, wherein the AAV particle comprises a pharmaceutical composition.

34. The recombinant AAV particle or use of claim 33, wherein the pharmaceutical composition comprises empty AAV capsid.

35. The recombinant AAV particle or use of claim 33, wherein the pharmaceutical composition comprises empty AAV-Rh74 capsid or empty AAV capsid comprising an AAV capsid sequence of any of claims 1 to 6 or RHM4-1 (SEQ ID NO:5), RHM15-1 (SEQ ID NO:6), RHM15-2 (SEQ ID NO:7), RHM15-3/RHM15-5 (SEQ ID NO:8), RHM15-4 (SEQ ID NO:9) or RHM15-6 (SEQ ID NO:10).

36. The use of claim 12, wherein the mammal has Pompe’s disease.