CLAIMS

1. A nucleic acid molecule comprising a nucleotide sequence encoding for a functional α-galactosidase A protein wherein the nucleotide sequence has at least 95% identity to the sequence of SEQ ID NO. 1.

2. The nucleic acid molecule of claim 1, wherein the nucleotide sequence has at least 98% or 99% identity to the sequence of SEQ ID NO. 1.

3. The nucleic acid molecule of claim 1 or claim 2, wherein the nucleotide sequence has the sequence of SEQ ID NO. 1.

4. A vector for expressing α-galactosidase A protein, the vector comprising the nucleic acid molecule of any of claims 1 to 3.

5. The vector of claim 4 further comprising a liver specific promoter.

6. The vector of claim 4 or claim 5, wherein the vector is an AAV vector.

7. The vector of any of claims 4-6, wherein the vector is a single stranded vector.

8. The vector of any of claims 4-7, wherein the vector comprises a nucleotide sequence having at least 90% identity to the sequence of SEQ ID NO. 3.

9. The vector of any of claims 4-8, wherein the vector comprises a nucleotide sequence having the sequence of SEQ ID NO. 3.

10. A host cell comprising the nucleic acid molecule of any one of claims 1-3 or the vector of any one of claims 4-9.

11. A transgenic animal comprising cells comprising the nucleic acid molecule of any one of claims 1-3 or the vector of any one of claims 4-9.

12. A pharmaceutical composition comprising the nucleic acid molecule of any one of claims 1-3 or the vector of any one of claims 4-9, and one or more pharmaceutically acceptable excipients.

13. Use of the vector of any one of claims 4-9 in the manufacture of a medicament for treating Fabry disease in a patient suffering from Fabry disease.

14. The nucleic acid molecule of any one of claims 1-3 or the vector of any one of claims 4-9 for use in therapy.

15. The nucleic acid molecule of any one of claims 1-3 or the vector of any one of claims 4-9 for use in the treatment of Fabry disease.

16. The use of the nucleic acid molecule of any one of claims 1-3 or the vector of any one of claims 4-9 in the manufacture of a medicament for treating Fabry disease.

17. The nucleic acid molecule of any one of claims 1-3 or the vector of any one of claims 4-9 for use in delivering of a nucleotide sequence encoding α-galactosidase A protein to a subject.