CLAIMS

1. An isolated polynucleotide having between 75% to 90% identity with the nucleotide sequence as set for in SEQ ID NO: 1 wherein said polynucleotide encodes a functional human galactosamine (N-acetyl)-6-sulfatase and wherein said polynucleotide is selected from the group consisting of SEQ ID NO: 3, SEQ ID NO: 5, and SEQ ID NO: 7.

2. An expression vector comprising a polynucleotide according claim 1.

3. The expression vector according to claim 2, wherein said vector comprises a promoter sequence operatively linked to said polynucleotide said promoter being selected from a CAG promoter, hAAT promoter or CMV promoter.

4. The expression vector according to claim 3, wherein said promoter is a CAG promoter.

5. The expression vector according to any one of claims 2 to 4, wherein said vector is a recombinant AAV vector.

6. The expression vector according to claim 5, wherein said recombinant AAV vector is selected from AAV2, AAV5, AAV7, AAV8, AAV9, AAV10 and AAVrh10.

7. The vector according to any one of claims 2 to 4 wherein said vector is selected from the group consisting of the plasmid pAAV-CAG-ohGALNS-version1, with accession number DSM 32792, as set forth in SEQ ID NO: 4, the plasmid pAAV-CAG-ohGALNS-version2 with accession number DSM 32793, as set forth in SEQ ID NO: 6, and the plasmid pAAV-CAG-ohGALNS-version3 with accession number DSM 32794, as set forth in SEQ ID NO: 8.

8. A pharmaceutical composition comprising a therapeutically effective amount of the polynucleotide according to claim 1 or the vector according to any one of claims 2 to 7.

9. Pharmaceutical composition according to claim 8 characterised in that the composition is administered intravenously.

10. Pharmaceutical composition according to claim 8 or 9 characterized in that it is administered once in life time.

11. Use of the polynucleotide according to claim 1, the vector according to any of claims 2 to 7 or the pharmaceutical composition according to any one of claims 8 to 10 for the manufacture of a medicament.

12. Use of the vector according to any of claims 2 to 7 or the pharmaceutical composition according to claim 8 to 10 for the manufacture of a medicament for the treatment of mucopolysaccharidosis type IVA or Morquio A syndrome.

13. A method for obtaining the vector according to claims 5 or 6 comprising the steps of:

(i) providing a cell comprising a polynucleotide according to claim 1, AAV cap proteins, AAV rep proteins and, optionally, viral proteins upon which AAV is dependent for replication,

(ii) maintaining the cell under conditions adequate for assembly of the AAV; and

(iii) purifying the adeno-associated viral vector produced by the cell.