CLAIMS

1. A recombinant AAV9 vector containing a CAG promoter SEQ ID NO: 4 linked to a nucleotide sequence coding for N-acetylglucosaminidase, alpha,

   SEQ ID NO: 1, wherein the nucleotide sequence coding for N-acetylglucosaminidase, alpha, SEQ ID NO: 1 is sequence SEQ ID NO: 3, sequence SEQ ID NO: 19 or SEQ ID NO: 22.

2. A plasmid containing a CAG promoter linked to a nucleotide sequence coding for N-acetylglucosaminidase, alpha, SEQ ID NO: 1, wherein the CAG promoter and the nucleotide sequence are flanked by AAV2 ITRs, and wherein said plasmid is pAAV-CAG-cohNaglu with accession number DSM 26626, containing the nucleotide sequence SEQ ID NO: 3 coding for N-acetylglucosaminidase, alpha, SEQ ID NO: 1, pAAV-CAG-cohNaglu-

   version2 with accession number DSM 32042, containing the nucleotide sequence SEQ ID NO: 19 coding for N-acetylglucosaminidase, alpha, SEQ ID NO: 1 or pAAV-CAG-cohNag1u-version3 with accession number DSM 32043, containing the nucleotide sequence SEQ ID NO: 22 coding for N-acetylglucosaminidase, alpha, SEQ ID NO: 1.

3. The recombinant AAV9 vector according to claim 1 or the plasmid according to claim 2 for use as a medicament.

4. The recombinant AAV9 vector according to claim 1 or the plasmid according to claim 2 for use in the treatment of mucopolysaccharidosis wherein said AAV9 vector or said plasmid increases the N-

   acetylglucosaminidase, alpha activity in the body.

5. The recombinant AAV9 vector according to claim 1 or the plasmid according to claim 2 for use in the treatment of mucopolysaccharidosis, preferably mucopolysaccharidosis type IIIB.

6. A method of producing the vector of claim 1 comprising the steps of:

   i) providing a first vector comprising the CAG promoter operably linked to the nucleotide sequence coding for N-acetylglucosaminidase, alpha, interposed between a first AAV terminal repeat and a second AAV terminal repeat; a second vector comprising an AAV *rep* gene and an AAV *cap* gene from serotype 9; and a third vector comprising the adenovirus helper function gene;

   ii) co-transfecting competent cells with the vectors of step i);

   iii) culturing the transfected cells of step ii); and

   iv) purifying the expression vectors from the culture of step iii).

7. An isolated cell comprising the recombinant AAV9 vector according to claim 1.