CLAIMS

1. An adeno-associated virus (AAV) vector comprising a capsid being an AAV-DJ capsid or being derived from an AAV-DJ capsid, wherein the AAV vector comprises a polynucleotide comprising (i) a nucleic acid sequence encoding a connexin 26 protein (CX26) operably linked to a promoter and (ii) at least one copy of a miRNA target site of the miR183 family comprising a sequence as set forth in SEQ ID NO: 3, SEQ ID NO: 16, or SEQ ID NO: 31, or a sequence having at least 90% identity with any one of SEQ ID NO: 3, SEQ ID NO: 16, or SEQ ID NO: 31.

2. The AAV vector according to claim **1**, comprising two to six copies of the miRNA target site of the miR183 family comprising a sequence as set forth in SEQ ID NO: 3, SEQ ID NO: 16, or SEQ ID NO: 31, or a sequence having at least 90% identity with any one of SEQ ID NO: 3, SEQ ID NO: 16, or SEQ ID NO: 31.

3. The AAV vector according to claim **1** or **2**, comprising three copies of the miRNA target site of the miR183 family comprising a sequence as set forth in SEQ ID NO: 3, SEQ ID NO: 16, or SEQ ID NO: 31, or a sequence having at least 90% identity with any one of SEQ ID NO: 3, SEQ ID NO: 16, or SEQ ID NO: 31

4. The AAV vector according to any one of claims **1** to **3**, wherein the promoter is a smCBA promoter.

5. The AAV vector according to any one of claims **1** to **4**, wherein the connexin 26 protein is human CX26.

6. The AAV vector according to any one of claims **1** to **5**, wherein the polynucleotide further comprises a 5' and a 3' inverted terminal repeats (ITRs).

7. The AAV vector according to any one of claims **1** to **6**, wherein the polynucleotide further comprises at least one copy of another miRNA target site selected from the miR183 family.

8. A pharmaceutical composition comprising the AAV vector according to any one of claims **1** to **7**, and at least one pharmaceutically acceptable excipient or carrier.

9. A medicament comprising the AAV vector according to any one of claims **1** to **7**.

10. Use of the AAV vector according to any one of claims **1** to **7**, or the pharmaceutical composition according to claim **8,** for the manufacture of a medicament for the treatment of genetic hearing loss in a subject in need thereof.

11. The use according to claim **10**, wherein the genetic hearing loss is non-syndromic hearing loss and deafness (DFNB1).

12. The use according to claim **10** or **11**, wherein the genetic hearing loss is profound genetic hearing loss.

13. The use according to claim **10** or **11**, wherein the genetic hearing loss is severe genetic hearing loss.

14. The use according to claim **10** or **11**, wherein the genetic hearing loss is progressive genetic hearing loss.

15. The use according to any one of claims **10** to **14**, wherein the subject is an adult.

16. The use according to any one of claims **10** to **14**, wherein the subject is an infant or a child.