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(54) Title: ADENO-ASSOCIATED VIRUS VECTOR VARIANTS FOR HIGH EFFICIENCY GENOME EDITING AND METHODS THEREOF

(57) Abstract: Adeno-associated virus (AAV) Clade F vectors or AAV vector variants (relative to AAV9) for precise editing of the genome of a cell and methods and kits thereof are provided. Targeted genome editing using the AAV Clade F vectors or AAV vector variants provided herein occurred at frequencies that were shown to be 1,000 to 100,000 fold more efficient than has previously been reported. Also provided are methods of treating a disease or disorder in a subject by editing the genome of a cell of the subject via transducing the cell with an AAV Clade F vector or AAV vector variant as described herein and further transplanting the transduced cell into the subject to treat the disease or disorder of the subject. Also provided herein are methods of treating a disease or disorder in a subject by in vivo genome editing by directly administering the AAV Clade F vector or AAV vector variant as described herein to the subject.