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(54) Title: NUCLEIC ACID MOLECULES AND USES THEREOF

(57) Abstract: The present disclosure provides nucleic acid molecules comprising a first inverted terminal repeat (ITR), a second ITR, and a genetic cassette encoding a miRNA and/or a therapeutic protein. In certain embodiments, the therapeutic protein comprises a clotting factor, e.g., a FVIII polypeptide, a FIX polypeptide, or a fragment thereof. In some embodiments, the first ITR and/or the second ITR is an ITR of a non-adenovirus-associated virus (AAV). The present disclosure also provides methods of treating bleeding disorders such as hemophilia comprising administering to the subject the nucleic acid molecule or a polypeptide encoded thereby.

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