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(71) Applicant: **LIFEEDIT THERAPEUTICS, INC.**
[US/US]; 104 T.W. Alexander Drive, Building 20, Research
triangle park, North Carolina 27709 (US).

(72) Inventors: **BOWEN, Tyson D.**; 137 Waltons Creek
Road, Morrisville, North Carolina 27560 (US). **COYLE,
Michael**; 304 Copperline Drive, Apt. Q, Chapel Hill, North
Carolina 27516 (US). **CRAWLEY, Alexandra Briner**;
2216 Brisbane Woods Way, Cary, North Carolina 27518
(US). **ELICH, Tedd D.**; 5 Alumwood Place, Durham,
North Carolina 27705 (US).

(74) Agent: **BUCK, B. Logan**; Womble Bond Dickinson (US)
LLP, P.O. Box 7037, Atlanta, Georgia 30357-0037 (US).

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(54) Title: RNA-GUIDED NUCLEASES AND ACTIVE FRAGMENTS AND VARIANTS THEREOF AND METHODS OF USE

(57) Abstract: Compositions and methods for binding to a target sequence of interest are provided. The compositions find use in cleaving or modifying a target sequence of interest, visualization of a target sequence of interest, and modifying the expression of a sequence of interest. Compositions comprise RNA-guided nuclease (RGN) polypeptides, CRISPR RNAs, trans-activating CRISPR RNAs, guide RNAs, and nucleic acid molecules encoding the same. Vectors and host cells comprising the nucleic acid molecules are also provided. Further provided are RGN systems for binding a target sequence of interest, wherein the RGN system comprises an RNA-guided nuclease polypeptide and one or more guide RNAs.



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