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(54) **PROTEIN HAVING NUCLEASE ACTIVITY,
FUSION PROTEINS AND USES THEREOF**

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(58) **Field of Classification Search**

None
See application file for complete search history.

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(57) **ABSTRACT**

The present invention relates to a nucleic acid molecule encoding (I) a polypeptide having the activity of an endonuclease, which is (a) a nucleic acid molecule encoding a polypeptide comprising or consisting of the amino acid sequence of SEQ ID NO: 1; (b) a nucleic acid molecule comprising or consisting of the nucleotide sequence of SEQ ID NO: 2; (c) a nucleic acid molecule encoding an endonuclease, the amino acid sequence of which is at least 70% identical to the amino acid sequence of SEQ ID NO: 1; (d) a nucleic acid molecule comprising or consisting of a nucleotide sequence which is at least 50% identical to the nucleotide sequence of SEQ ID NO: 2; (e) a nucleic acid molecule which is degenerate with respect to the nucleic acid molecule of (d); or (f) a nucleic acid molecule corresponding to the nucleic acid molecule of any one of (a) to (e) wherein T is replaced by U; (II) a fragment of the polypeptide of (I) having the activity of an endonuclease. Also, the present invention relates to a vector comprising the nucleic acid molecule and a protein encoded by said nucleic acid molecule. Further, the invention relates to a method of modifying the genome of a eukaryotic cell and a method of producing a non-human vertebrate or mammal.

12 Claims, 14 Drawing Sheets