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(54) **Title:** INTRODUCING SILENCING ACTIVITY TO DYSFUNCTIONAL RNA MOLECULES AND MODIFYING THEIR SPECIFICITY AGAINST A GENE OF INTEREST

(57) **Abstract:** A method of generating an RNA molecule having a silencing activity in a cell is provided, comprising: (a) identifying nucleic acid sequences encoding RNA molecules exhibiting predetermined sequence homology range, not including complete identity, with respect to nucleic acid sequences encoding RNA molecules engaged with RISC, (b) determining transcription of nucleic acid sequences encoding RNA molecules so as to select transcribable nucleic acid sequences encoding RNA molecules; (c) determining processability into small RNAs of transcripts of transcribable nucleic acid sequences encoding RNA molecules exhibiting predetermined sequence homology range so as to select transcribable nucleic acid sequences encoding aberrantly processed RNA molecules exhibiting predetermined sequence homology range; (d) modifying a nucleic acid sequence of aberrantly processed, transcribable nucleic acid sequences so as to impart processability into small RNAs that are engaged with RISC and are complementary to a first target RNA or to a target RNA of interest.

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