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(54) Title: ANALYZING EXPRESSION OF PROTEIN-CODING VARIANTS IN CELLS

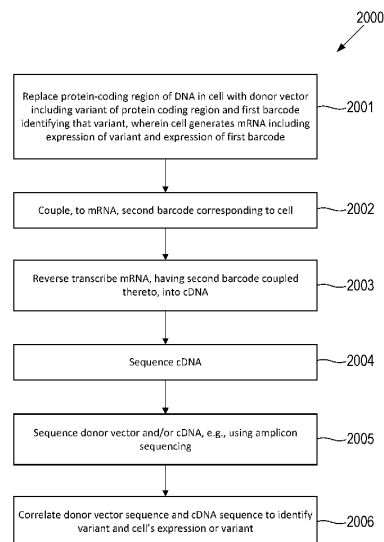


FIG. 2

(57) Abstract: Analyzing expression of protein-coding variants in cells is provided herein. A method may include replacing a protein coding-region of the DNA in a cell with a donor vector including a variant of the protein-coding region and a first barcode identifying that variant. The cell may generate mRNA including an expression of the variant and an expression of the first barcode. A second barcode corresponding to the cell may be coupled to the mRNA. The mRNA, having the second barcode coupled thereto, may be reverse transcribed into complementary cDNA. The cDNA may be sequenced. The donor vector or cDNA may be sequenced using amplicon sequencing. The donor vector sequence and the cDNA sequence may be correlated to identify the variant and the cell's expression of the variant.

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