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(54) **IN VIVO PRODUCTION OF SMALL INTERFERING RNAS THAT MEDIATE GENE SILENCING**

(75) Inventors: **Phillip D. Zamore**, Northborough, MA (US); **Juanita McLachlan**, Worcester, MA (US); **Gyorgy Hutvagner**, Worcester, MA (US); **Alla Grishok**, Newton, MA (US); **Craig C. Mello**, Shrewsbury, MA (US)

(73) Assignee: **University of Massachusetts**, Boston, MA (US)

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See application file for complete search history.

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Primary Examiner—Brian Whiteman
(74) *Attorney, Agent, or Firm*—Lahive & Cockfield, LLP; Debra J. Milasincic, Esq.; James H. Velema, Esq.

(57) **ABSTRACT**

The invention provides engineered RNA precursors that when expressed in a cell are processed by the cell to produce targeted small interfering RNAs (siRNAs) that selectively silence targeted genes (by cleaving specific mRNAs) using the cell's own RNA interference (RNAi) pathway. By introducing nucleic acid molecules that encode these engineered RNA precursors into cells in vivo with appropriate regulatory sequences, expression of the engineered RNA precursors can be selectively controlled both temporally and spatially, i.e., at particular times and/or in particular tissues, organs, or cells.

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FIG. 1

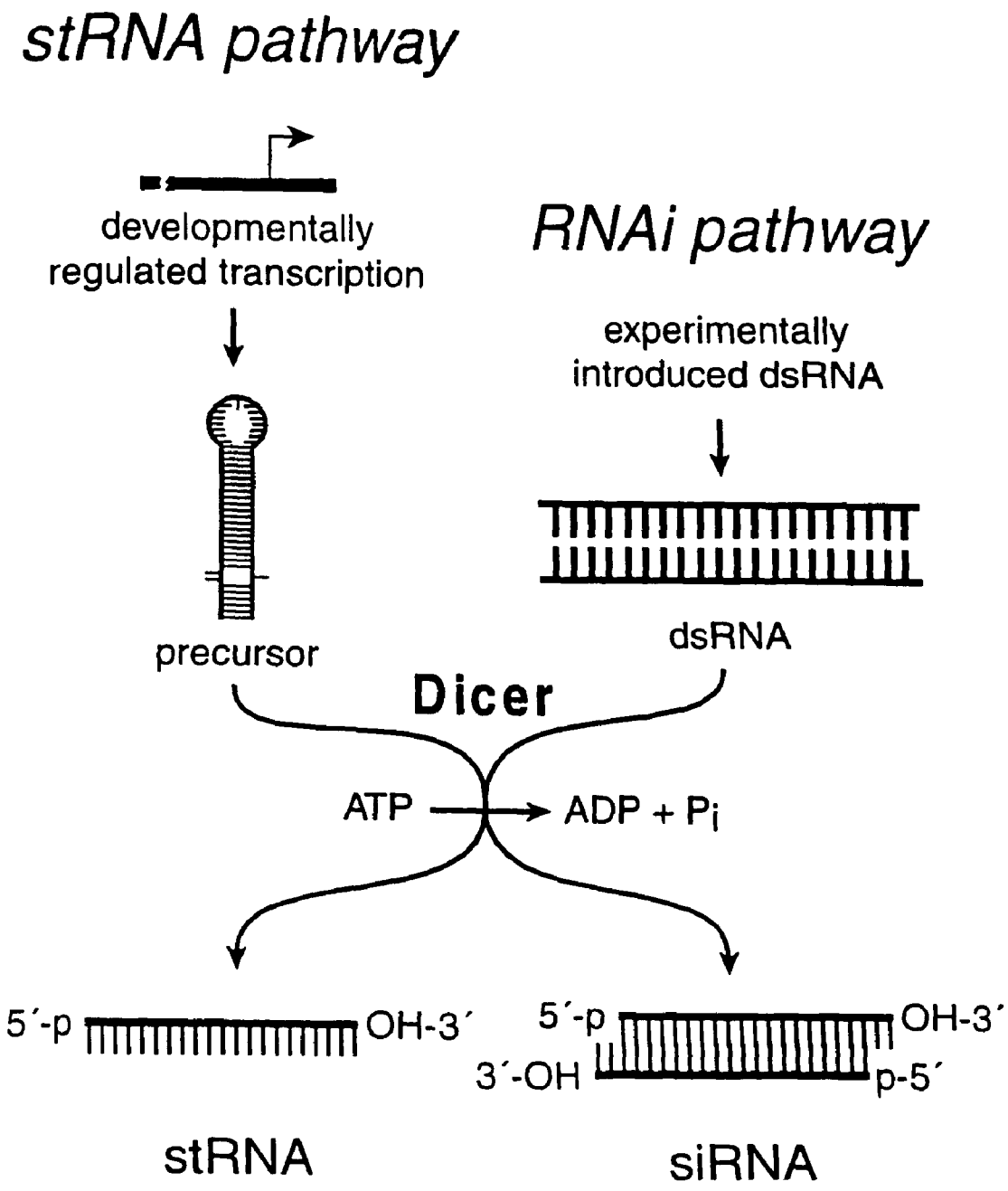

FIG. 2A

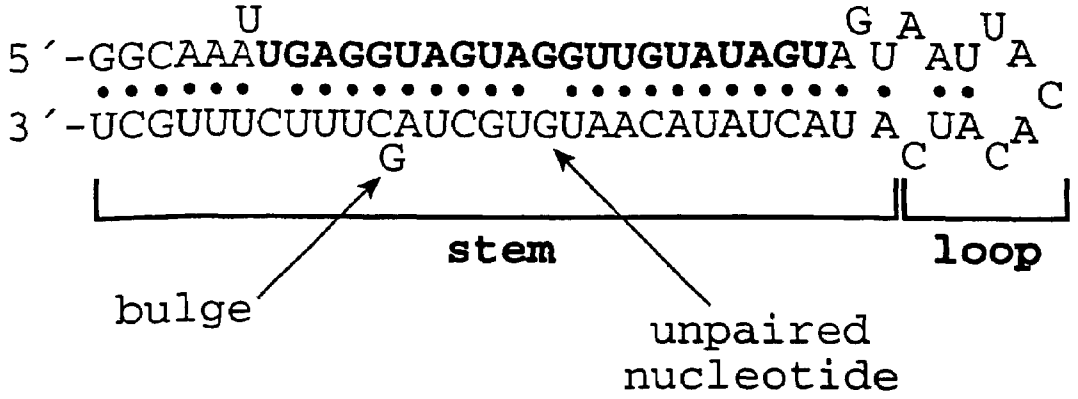

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FIG. 2B

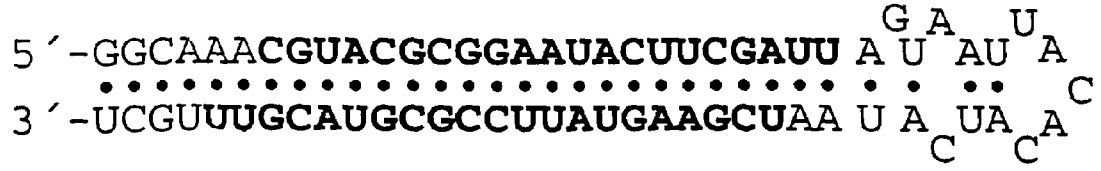

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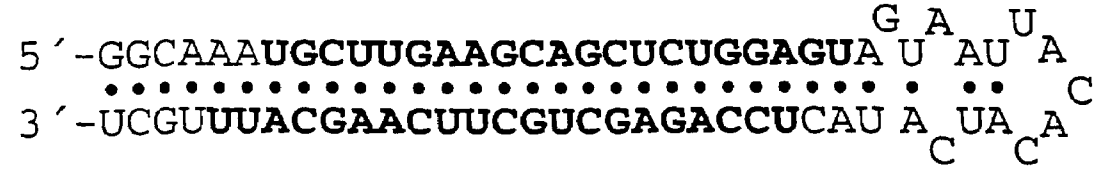
FIG. 2C



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