Bioengineered RNA Molecules for Cancer Therapy

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ABSTRACT

Researchers at the University of California, Davis have developed a method to use biologic RNA molecules for cancer research and therapy.

FULL DESCRIPTION

Current methods of treating various cancers include using RNA molecules that have been chemically synthesized. However, these chemically-synthesized RNAs do not always possess the required biological activities or safety profiles necessary for optimal patient treatments. In addition, the conventional, small molecule or protein therapies under development often block protein targets or the DNA itself – thus making those treatment approaches less effective.

Researchers at the University of California, Davis have developed a method to generate RNA molecules - in large quantities - for use cancer research and therapy. This method utilizes the expression of heterologous RNA produced in living cells. The RNA can be used to treat multiple types of cancers - including lung, liver and pancreatic cancer. The molecules produced by this method are better able to represent high-order structures and stabilities. In addition, this method has an improved design that allows for higher-yielding production of target molecules, regulation of cancer targets, inhibition of cell proliferation and suppression of tumor growth.

APPLICATIONS

- Targeted Cancer Treatment

FEATURES/BENEFITS

- Production and therapeutic delivery of inserted heterologous RNA sequence
- Method of treating cancer by administration of the expressed RNA molecules
- Capability to treat multiple types of cancers
- High-yield production of target molecules

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,946,049	04/02/2024	2018-637

INVENTORS

- Ho, Pui Yan
- Jilek, Joseph
- Petrek, Hannah
- Tu, Meijuan
- Yu, Aiming
- Zhang, Qianyu

OTHER INFORMATION

KEYWORDS

Cancer, Therapy, RNAi,

Bioengineered RNA, ncRNA

CATEGORIZED AS

- **Biotechnology**
  - Health
- **Medical**
  - Delivery Systems
  - Disease: Cancer
  - Therapeutics

RELATED CASES

2018-637-2

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Cost-effective Method to Quickly Produce and Purify Large Quantities of Biologically Active ncRNAs
- New label-free method for direct RNase activity detection in biological samples

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