

ENHANCED CANCER IMMUNOTHERAPY USING MICRORNA-155

SUMMARY

Scientists at the NIH recently discovered that the overexpression of microRNA-155 (miR-155) in tumor-reactive murine CD8+ T cells can enhance T cell proliferation and anti-tumor efficacy without lymphodepletion and exogenous cytokine administration. The National Cancer Institute's Surgery Branch seeks parties to co-develop the use of miR155 CD8+ T cells as an adoptive immunotherapy to treat cancer.

REFERENCE NUMBER

E-272-2012

PRODUCT TYPE

- Therapeutics

COLLABORATION OPPORTUNITY

This invention is available for licensing and co-development.

DESCRIPTION OF TECHNOLOGY

The National Cancer Institute's [Surgery Branch](#) seeks parties to co-develop the use of miR155 CD8+ T cells as an adoptive immunotherapy to treat cancer.

Scientists at the NIH recently discovered that the overexpression of microRNA-155 (miR-155) in tumor-reactive murine CD8+ T cells can enhance T cell proliferation and anti-tumor efficacy without lymphodepletion and exogenous cytokine administration. The invention describes miR155 CD8+ T cell compositions and methods of using the miR155 CD8+ T cells to potentiate immunotherapies for cancer and also infectious diseases.

Tumor immunotherapy is a promising approach for the treatment of cancer. However, current T cell-based immunotherapies are limited by the poor engraftment and functionality of the transferred T cells. Moreover, lympho-depleting regimens used to enhance engraftment and function of transferred tumor-reactive T cells are plagued by life-threatening side effects. The current technology of using the miR155 overexpressing human CD8+ T cells could provide a safer, more effective T cell-based immunotherapy.

POTENTIAL COMMERCIAL APPLICATIONS

- Provide a safer, more effective T cell-based immunotherapy
- Enhanced adoptive immunotherapy to treat cancer

COMPETITIVE ADVANTAGES

- Enhanced T cells proliferation, survival and function
- Increases robust tumor response without the need of lymphodepletion and exogenous cytokine support

INVENTOR(S)

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DEVELOPMENT STAGE

- Pre-clinical (in vivo)

PUBLICATIONS

Dudda JC et al., Immunity. 2013 Apr 18; 38(4):742-53. [PMID 23601686]

PATENT STATUS

- **U.S. Filed:** U.S. Patent Application No. 14/436,947 filed April 20, 2015

THERAPEUTIC AREA

- Cancer/Neoplasm