

VIRAL VECTORS TO INCREASE EFFICIENCY OF INDUCIBLE PLURIPOTENT STEM CELL PRODUCTION

SUMMARY

The National Cancer Institute, Laboratory of Human Carcinogenesis, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate or commercialize Retroviral and Lentiviral Vectors

REFERENCE NUMBER

E-239-2010

PRODUCT TYPE

- Therapeutics

KEYWORDS

- inducible pluripotent stem cells
- iPSCs
- p53
- retroviral vectors
- lentiviral vectors

COLLABORATION OPPORTUNITY

This invention is available for licensing.

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DESCRIPTION OF TECHNOLOGY

The National Cancer Institute's [Laboratory of Human Carcinogenesis](#) seeks parties interested to co-develop retroviral and lentiviral vectors for the production of inducible pluripotent stem cells (iPSCs).

The tumor suppressor protein, p53, is known to have an effect on the induction of pluripotent stem cells. The activity of p53 regulates the self-renewal and pluripotency of normal and cancer stem cells, and also affects re-programming efficiency of iPSCs. Researchers at the National Cancer Institute have discovered that modulating a specific p53 isoform increases the number of iPSCs that can be obtained from cells that are being re-programmed to obtain pluripotent cells. Although other methods exist to

decrease the effect of p53, such as using siRNA or mutant p53 methods, this p53 isoform-based technology allows for a more selective control of p53 activities and provides a more natural process of increasing iPSC production than previous methods.

POTENTIAL COMMERCIAL APPLICATIONS

- Stem cell-based regenerative medicine
- Cancer therapeutic that targets cancer stem cells

COMPETITIVE ADVANTAGES

The retroviral and lentiviral vectors allow more selective control of p53 activities than siRNA or mutant p53 methods

INVENTOR(S)

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DEVELOPMENT STAGE

- Basic (Target Identification)

PATENT STATUS

- **U.S. Filed:** US, Application No. 13/877,100 filed 29 Mar 2013

RELATED TECHNOLOGIES

- [E-033-2008 - Alteration of p53 Isoform expression to Treat Age-Related Disorders and Cancer](#)
- [E-137-2010](#)

THERAPEUTIC AREA

- Cancer/Neoplasm