METHOD FOR GENERATING PLURIPOTENT AND MULTIPOTENT CELLS

SUMMARY

This technology represents a safe yet highly efficient strategy for somatic cell reprogramming, and has broad applicability for basic research, disease modeling, and regenerative medicine.

REFERENCE NUMBER

E-086-2012

PRODUCT TYPE

- Research Materials
- Therapeutics

KEYWORDS

- iPS cells
- cell-reprogramming
- cell-based therapies
- regenerative medicine

COLLABORATION OPPORTUNITY

This invention is available for licensing and co-development.

CONTACT

John D. Hewes
NCI - National Cancer Institute
240-276-5515

John.Hewes@nih.gov

DESCRIPTION OF TECHNOLOGY

Research and clinical applications of induced pluripotent stem (iPS) cells are currently limited by reprogramming methods that may modify the host genome, and therefore be potentially unsafe and problematic for use in basic research, cell-based therapies, and drug-discovery applications.

Researchers at the National Cancer Institute's Laboratory of Pathology have overcome this challenge by using CD47 inhibiting peptides, antibodies, and morpholinos to generate and expand iPS cells. This technology represents a safe yet highly efficient strategy for somatic cell reprogramming, and has broad applicability for basic research, disease modeling, and regenerative medicine. The NCI seeks partners interested in licensing or collaborative research to co-develop methods for generating and expanding iPS cells and lineage-committed stem cells using a single agent.

POTENTIAL COMMERCIAL APPLICATIONS

- iPS cell generation (human and murine)
- Lineage-committed stem cell generation
- Regenerative medicine
- Stem cell therapy

COMPETITIVE ADVANTAGES

- Virus-free reprogramming
- Genomic integration-free
- Allows generation and maintenance of a ready supply of iPS cells and fate-committed stem cells using a single defined agent
- Maintains cell growth and morphology for at least 6 months

INVENTOR(S)

David Roberts (NCI)

DEVELOPMENT STAGE

- Pre-clinical (in vivo)

PUBLICATIONS

Kaur S., et al. Sci.Rep. 2013;3:1673 [PMID: 23591719]

PATENT STATUS

- **U.S. Filed:** US Application No. 14/390,134 filed 2 Oct. 2014
- **Foreign Filed:** Canadian Patent Application No. 2,869,913 filed 7 Oct. 2014

RELATED TECHNOLOGIES

- E-227-2006

THERAPEUTIC AREA

- Cancer/Neoplasm