



July 9, 2014

## Cellular Dynamics Awarded Patents Covering Derivation of Pluripotent Stem Cells From Fresh or Banked Human Blood Samples

### Patents Secure CDI's Position as Leading Manufacturer of Human Cells From Most Common, Easily Accessible Donor Source for Research, Drug Discovery and Regenerative Medicine

MADISON, Wis., July 9, 2014 (GLOBE NEWSWIRE) -- Cellular Dynamics International, Inc. (CDI) (Nasdaq:ICEL), today announced that the U.S. Patent and Trademark Office (PTO) awarded the company three patents on the reprogramming of human cells into pluripotent stem cells from human blood. Joining an IP portfolio of over 800 patents awarded to or in-licensed by CDI, these patents position the company as the leading supplier of choice for a reliable, high quality supply of human cells for research, stem cell banking, and cellular therapy development.

#### Key points:

- Blood is the preferred tissue for the creation of human induced pluripotent stem cells (iPSCs) because of the standardized and relatively non-invasive nature of blood collection.
- The patents cover reprogramming using freshly collected blood as well as samples stored in blood banks.
- US Patent 8,691,574, issued April 8, 2014, covers the reprogramming of hematopoietic progenitor cells from blood into iPSCs using episomal vectors and under feeder-free conditions.
  - An advantage of CDI's method is that it requires only small volumes of blood, consistent with a standard doctor's office blood draw.
  - The original method of iPS cell reprogramming uses viral vectors to insert four genes into the adult tissue cell's DNA. These genes integrate directly into the cell's genome. Concerns have arisen over the potential risks associated with this insertion of foreign DNA into the cell's genome, including insertion defects and errors that could lead to tumors.
  - CDI owns the [patent](#) covering iPSC episomal reprogramming, whereby episomal vectors drive adult tissue cells back to a stem cell state before exiting the cell. This non-integrating methodology alleviates major safety concerns over the potential use of iPS-derived cells as therapeutics and removes a significant barrier for applying the technology in a clinical setting. Episomal reprogramming already has been performed to Good Manufacturing Practice (GMP) standards, a prerequisite for use of these cells in clinical applications.
- US Patent 8,741,648, issued June 3, 2014, covers the reprogramming of CD34+ hematopoietic blood cells isolated from fresh blood samples into iPSCs.
  - Other reprogramming methods utilize epidermal cells obtained from skin punch biopsies, which are often painful, typically require local anesthetic and may leave scars.
  - Collection of blood is much less invasive.
- US Patent 8,765,470, issued July 1, 2014 covers the production of iPSCs from B cells collected from a banked blood sample and immortalized by introducing elements from the Epstein-Barr virus (EBV).
  - CDI was the first to publish on the [methodology](#) to reprogram EBV-transformed cells into iPSCs, in June 2011.
  - Blood samples are often banked as reference material from the study of various diseases, rare genetic disorders and genome wide association studies (GWAS). Banked blood from these repositories can serve as a valuable resource for studying human disease.
  - Banked blood has been modified through the introduction of Epstein-Barr virus (EBV) to enable cells to be frozen, thawed and proliferate indefinitely, known as "immortalization." This patent covers the ability to take small volumes of EBV-transformed blood and create iPSCs, as well as terminally differentiated cells, that do not contain the EBV genetic elements or the episomal reprogramming vectors.
- CDI uses the technology covered in these patents to manufacture its iCell® and MyCell® products.
- CDI's iCell and MyCell products are used by biopharmaceutical companies for drug discovery; non-pharmaceutical companies, such as food companies, to develop healthier foods; and academic customers in research as well as in the development of cell-based therapies.
- These patents position CDI as the leading supplier of choice for researchers needing a reliable and high quality supply of human cells for research, stem cell banking, and cellular therapy research and development.

#### Quotes:

**Bob Palay, chief executive officer of CDI,** said, "These patents are further evidence of CDI's continued leadership in the pluripotent stem cell field. Derivation of iPSCs from blood has several advantages over other tissues: donors are already

familiar with a standard doctor's office blood draw, where only a small amount of blood is required; blood is easily accessible and not exposed to environmental influences, as skin is; and the hundreds of thousands of previously banked blood samples enable researchers to create human disease models from donors with known genotypic and phenotypic backgrounds. These patents cover the reprogramming of both fresh and banked blood, enabling our customers to access any samples in their research quest to improve healthcare."

## **About Cellular Dynamics International, Inc.**

Cellular Dynamics International, Inc. (CDI) is a leading developer and manufacturer of fully functioning human cells in industrial quantities to precise specifications. CDI's proprietary iCell Operating System (iCell O/S) includes true human cells in multiple cell types (iCell products), human induced pluripotent stem cells (iPSCs) and custom iPSCs and iCell products (MyCell Products). CDI's iCell O/S products provide standardized, easy-to-use, cost-effective access to the human cell, the smallest fully functioning operating unit of human biology. Customers use our iCell O/S products, among other purposes, for drug discovery and screening; to test the safety and efficacy of their small molecule and biologic drug candidates; for stem cell banking; and in the research and development of cellular therapeutics. CDI was founded in 2004 by Dr. James Thomson, a pioneer in human pluripotent stem cell research at the University of Wisconsin-Madison. CDI's facilities are located in Madison, Wisconsin, with a second facility in Novato, California. See [www.cellulardynamics.com](http://www.cellulardynamics.com). Follow us on Twitter @CellDynamics or [www.twitter.com/celldynamics](http://www.twitter.com/celldynamics)

## **Forward-looking Statements**

To the extent that statements contained in this press release are not descriptions of historical facts regarding Cellular Dynamics International, Inc., including the impact of the issuance of U.S. Patent Nos. 8,691,574, 8,741,648, and 8,765,470 on the reprogramming of blood cells into iPSCs, they are forward-looking statements reflecting the current beliefs and expectations of management made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Words such as "may," "will," "believe," "expect," "anticipate," "estimate," "intend," and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements. Forward-looking statements in this release involve substantial risks and uncertainties that could cause our product development efforts, actual results, performance or achievements to differ materially from those expressed or implied by the forward-looking statements. Cellular Dynamics undertakes no obligation to update or revise any forward-looking statements. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to the business of the Company in general, see Cellular Dynamic's quarterly report on Form 10-Q filed with the Securities and Exchange Commission on May 5, 2014, and as may be described from time to time in Cellular Dynamics' subsequent SEC filings.

CONTACT: MEDIA CONTACTS:

Joleen Rau

Senior Director, Marketing & Communications

Cellular Dynamics International, Inc.

(608) 310-5142

[jrau@cellulardynamics.com](mailto:jrau@cellulardynamics.com)

Robert E. Flamm, Ph.D.

Russo Partners LLC

212-845-4226

[robert.flamm@russopartnersllc.com](mailto:robert.flamm@russopartnersllc.com)

Investor Relations

Gitanjali Jain Ogawa

The Trout Group, LLC

646 378-2949

[gogawa@troutgroup.com](mailto:gogawa@troutgroup.com)

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