



Multipotent Lymphohematopoietic Progenitor Cells

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a population of cells that comprise unique, multipotent lymphohematopoietic progenitors.

Overview

Human embryonic stem (hES) cells have the potential to provide a source of specific cell types for research and ultimately, for therapeutic transplantation into humans.

The Invention

UW-Madison researchers have developed a population of cells derived from hES cells that comprise unique, multipotent lymphohematopoietic progenitors. The cells, which were obtained from co-culture of hES cells with OP9 stromal cells, are CD34 and CD43 positive, but CD45 and lin negative. These cells express gene profiles characteristic of definitive, multipotent hematopoietic progenitors and are capable of differentiating into lymphocytes, myeloid cells, erythroid cells and megakaryocytes. They are no longer capable of differentiating into non-hematopoietic lineages. If the cells are cultured until they express CD45, a cell surface marker found in hematopoietic progenitor cells derived from somatic (adult) stem cells, they lose the ability to produce differentiated cells of B lymphoid lineages.

Applications

- Provides a method for generating large numbers of human lymphohematopoietic cells for use in scientific research and for potential use in human therapies

Key Benefits

- Represents the earliest multipotent hematopoietic progenitors generated in hES cell/OP9 co-culture
- Provides a population of cells with the potential to form lymphoid cells and all of the cell types from the hematopoietic lineage
- Unlike hematopoietic progenitors derived from somatic stem cells, these lymphohematopoietic progenitors do not express cell surface marker CD45.

Additional Information

For More Information About the Inventors

- [Igor Slukvin](#)
- [James Thomson](#)

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