Hek293 Cell Line Producing Murine GM-CSF

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BACKGROUND

Colony-stimulating factors (CSF) including macrophage colony-stimulating factor (M-CSF), granulocyte colony-stimulating factor (G-CSF), and granulocyte-macrophage colony stimulating factor (GM-CSF also known as colony stimulating factor 2, CSF2) are crucial for survival, proliferation, differentiation and functional activation of hematopoietic cells, including macrophages and dendritic cells (DCs).

Due to cell number limitations from harvesting cDCs and AMs directly from mice, in vitro culturing of bone marrow and bronchoalveolar lavage fluid for dendritic cells and alveolar macrophages is important. GM-CSF greatly facilitates the culturing of these cells. However GM-CSF is difficult to produce and therefore expensive.

TECHNOLOGY DESCRIPTION

Susan Carpenter's lab at USC has constructed Human embryonic kidney 293T (HEK293T) cell lines that stably express and secrete murine GM-CSF. HEK293T is the ideal choice for expressing a CSF protein, as it has been shown not to express innate immune pattern recognition receptors or naturally secrete immune-related cytokines. This ensures that in these cells GM-CSF is predominantly expressed and that there is no inadvertent activation of the inflammatory cascade.

APPLICATIONS

- Production of functional murine GM-CSF

ADVANTAGES

- No human GM-CSF expression
- GM-CSF is secreted into the supernatant for easy recovery
- Resistent to freeze-thaw cycles

RELATED MATERIALS

- Generation and utilization of a HEK-293T murine GM-CSF expressing cell line

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Methods and Compositions for Treating Inflammatory Diseases
- CRISPRware

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INVENTORS

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OTHER INFORMATION

KEYWORDS

GM-CSF, Murine GM-CSF, HEK293RT, cytokine production

CATEGORIZED AS

- **Research Tools**
  - Cell Lines
  - Reagents

RELATED CASES

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