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HUMAN LEUKOMAX™ UN (ACD A) ™ HUMANLMXACDA

CD34+ haematopoietic stem cells: One cell type, multiple viable sources

HUMAN LEUKO (ACD

DT# BRH142768

BIOIVT

EXPIRATION:

WITH THE RECENT US Food and Drug Administration (FDA) approval of bluebird bio's Zynteglo, the first autologous CD34+ based gene therapy for beta thalassemia, haematopoietic stem cells (HSCs) are quickly taking centre stage for advanced therapeutics. BioIVT has more than 35 years' experience as a biospecimen provider and can deliver the full potential of these cells, from optimal source material such as mobilised leukopaks, bone marrow aspirate and cord blood.

HSCs, or CD34+ cells, are pluripotent stem cells that give rise to all blood cell types through a process called haematopoiesis. Researchers can induce differentiation towards a specific immune cell type, such as T cells, natural killer cells or monocytes, for development of *ex vivo* cell therapies including chimeric antigen receptor (CAR) T-cell therapies. Alternatively, CD34+ cells can be genetically modified for the treatment of genetic disorders such as beta thalassemia.

CD34+ cells can be collected through the process of bone marrow aspiration for a yield of approximately five to seven million CD34+ cells per donor. These cells can also be harvested from umbilical cord blood for a yield in the range of one to three million CD34+ cells per donor. This second approach is sometimes preferred, because the naivety of cord blood cells – which have no environmental or postnatal viral exposure – can be advantageous for certain cell and gene therapy development programmes. Cord blood units are also readily available off-the-shelf from banks, simplifying collection logistics.

HSCs can also be isolated from whole blood. However, CD34+ cells naturally make up a mere 0.1 to 0.5 percent of a donor's peripheral blood cells, as they are more concentrated in bone marrow. These yields can be increased to 0.5 to one percent of cells through mobilisation.

Mobilisation is a process by which a donor is chemically induced to send HSCs from their bone marrow into their peripheral blood supply. The protocols used at BioIVT are Institutional Review Board (IRB) approved and produce minimal donor side effects.

The most common chemical agents for mobilisation are filgrastim, sold under the brand name Neupogen and plerixafor, sold under the brand name Mozobil. BioIVT offers several mobilisation strategies including:

- Mozobil, one-day injection
- Mozobil, two-day injection
- Neupogen, five-day injection
- Neupogen, five-day injection and Mozobil, one-day injection
- Neupogen, five-day injection and Mozobil, two-day injection.

Products are collected through IRBapproved protocols at many of our state-ofthe-art donor centres. Depending on the mobilisation strategy, CD34+ yields can be as high as 900 million cells.

Mobilised leukopak products can either be shipped fresh, cold or cryopreserved to your site, depending on logistics and researcher work schedule.

When choosing source materials, researchers should consider the number of cells needed and impact of these products on their downstream processes. The highest possible yield comes from mobilised leukopaks. Bone marrow and cord blood derived CD34+ cells can be isolated immediately after collection, making them the freshest isolated options. For flexibility and convenience, order previously isolated cells from a standard cryopreserved inventory for CD34+ cells on demand.



To discuss which solution is best for you, contact BioIVT today at **customerservice@bioivt.com** or speak to your Immune Cell Technical Sales Specialist

Mobilized LEUKOMAX® Leukopaks

Maximize Your CD34+ **Cell Yields**

Five Mobilization Regimens

Fresh or Cryopreserved Formats

A Perfect Fit for Your Workflow!



Order **Today!**



HUMAN LEUKOMAXTM UNIT

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