

# Umbilical Cord Blood-derived Hematopoietic CD34-positive Progenitor Cells

National Cancer Institute

## Source

National Cancer Institute. *Umbilical Cord Blood-derived Hematopoietic CD34-positive Progenitor Cells*. NCI Thesaurus. Code C127119.

A population of cryopreserved, ex vivo expanded and nicotinamide (NAM)-treated, CD34-positive hematopoietic progenitor cells (HPCs) derived from allogeneic, CD34+ cells isolated from human umbilical cord blood (UCB) that can be used during transplantation. CD34+ HPCs were isolated from human UCB mononuclear cells, and expanded ex vivo. Upon transplantation with the UCB-derived CD34+ HPCs, these cells can differentiate into a variety of cell types including fibroblasts, osteoblasts, chondrocytes, myocytes, adipocytes, and endothelial cells. Compared to bone marrow transplants, these HPCs have decreased risk of causing graft-versus host disease (GvHD), increased survival, and enhanced transplant and engraftment potential for any given patient as there is no need for a matched donor. Compared to untreated HPCs, treating the cells ex vivo with NAM increases the number of HPCs from UCB, enhances migration, bone marrow (BM) homing, engraftment and increases neutrophil and platelet recovery.