

Alpha/beta T-cell/CD19+ B-cell-depleted Unrelated or Partially Matched Donor-derived Allogeneic Peripheral Blood Stem Cells

National Cancer Institute

Source

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A preparation of allogeneic peripheral blood stem cells (PBSCs) from an unrelated or partially matched related donor that have been selectively depleted of alpha/beta T-cells and CD19-positive (CD19+) B-cells with potential immune reconstituting activity. The alpha/beta T-cell/CD19+ B-cell-depleted stem cells contain high amounts of natural killer (NK) cells, gamma/delta T-cells, CD34+ stem cells, and dendritic cells (DCs), while devoid of alpha/beta T-cells and CD19-positive B-cells. Depletion of alpha/beta T-cells, which are implicated in the adaptive immune response that mediates graft-versus-host disease (GvHD), may promote rapid and sustained engraftment, immune reconstitution, and may prevent or reduce the development of GvHD. The depletion of CD19+ B-cells may reduce the risk of Epstein-Barr virus (EBV)-driven post-transplant lymphoproliferative disorders. The retained CD3+ gamma/delta T-cells and NK cells may synergistically exert an anti-leukemic and antiviral effector function, which may further promote engraftment and immune reconstitution.