

## Poietics™ human immune system cells

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### Cord blood CD4<sup>+</sup> T cells

Cord blood CD4<sup>+</sup> T cells (2C-200) which express the cell surface marker CD45RA are defined as "naive" and are deficient in their ability to assist in antibody production. Such cells are particularly abundant in human cord blood. CD4<sup>+</sup> T cells are commonly used to produce Th0, Th1 and Th2 T cell populations. The cord blood CD4<sup>+</sup> T cells are isolated from cord blood mononuclear cells using negative immunomagnetic selection. Purity is ≥ 85% and the standard quantity is ≥ 20 to 40 million cells, supplied either fresh or cryopreserved.

### Peripheral blood CD4<sup>+</sup> T cells

Peripheral blood CD4<sup>+</sup> T cells (2W-200) play a central role in regulating the cell-mediated immune response to infection. Often known as "helper" T cells, they act on other cells of the immune system to promote various aspects of the immune response, including immunoglobulin isotype switching and affinity maturation of the antibody response, macrophage activation and enhanced activity of natural killer cells and cytotoxic T cells (CTL). CD4<sup>+</sup> T cells act by releasing cytokines in response to antigenic stimulation. The release of cytokines allows cells of different types to "talk" to each other in the on-going immune response. One of the major effector functions of the peripheral blood CD4<sup>+</sup> T cells is in the activation of macrophages. The peripheral blood CD4<sup>+</sup> T cells are isolated from normal peripheral blood using negative immunomagnetic selection. Purity is ≥ 90% and the standard quantity is ≥ 10 million viable cells per cryopreserved ampule.

### Cord blood CD19<sup>+</sup> B cells

CD5<sup>+</sup> is expressed on the majority of B cells in human cord blood but only one-tenth that number in adult peripheral blood. CD5<sup>+</sup> B cells appear in relatively large numbers in recipients of bone marrow transplants and in patients with autoimmune disorders. Chronic B-lymphocytic leukemia cells are CD5<sup>+</sup>. While the role of CD5<sup>+</sup> B cells is currently not fully understood, they may represent a developmental step in the differentiation of the B cell lineage. Poietics™ CD19<sup>+</sup> B cells are isolated from cord blood mononuclear cells using negative immunomagnetic selection. Purity is ≥ 85%, and the standard quantity is ≥ 5 million cells supplied either fresh (1C-300) or cryopreserved (2C-300).

### Natural killer cells

Natural killer (NK) cells are lymphocytes of the immune system that are critical in host defense and immune regulation. Since they are part of innate immunity, they do not require sensitization for the expression of their activity. NK cells play significant roles in viral infections, autoimmunity, pregnancy, cancer, bone marrow transplantation, and more recently adaptive immunity. NK cells are most traditionally characterized by the presence of surface marker CD56. Poietics™ human NK Cells are isolated using positive immunomagnetic selection for the CD56 marker (2W-502) or negative selection which results in the enrichment of CD56 expressing cells (2W-501). Purity is ≥ 90% for CD56 for both products. 2W-501 cells are also simultaneously ≥ 70% positive for CD16. The standard quantity is ≥ 5 million viable cells per cryopreserved ampule after thawing.

When placing an order or for scientific support, please refer to the product numbers and descriptions listed above. For a complete listing of all Poietics™ products, refer to the Lonza website or the current Lonza catalog. To obtain a catalog, additional information or scientific support you may contact Lonza by web, telephone, fax or mail.

### Product warranty

**CULTURES HAVE A FINITE LIFESPAN *IN VITRO*.** Lonza warrants its cells only if Poietics™ media are used, and the recommended protocols are followed. Cryopreserved primary human hematopoietic cells are assured to be viable and functional when thawed and maintained properly.

**THESE PRODUCTS ARE FOR RESEARCH USE ONLY.** Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* procedures.

**WARNING: CLONETICS™ AND POIETICS™ PRODUCTS CONTAIN HUMAN SOURCE MATERIAL, TREAT AS POTENTIALLY INFECTIOUS.** Each donor is tested and found non-reactive by an FDA approved method for the presence of HIV-1, hepatitis B virus and hepatitis C virus. Where donor testing is not possible, cell products are tested for the presence of viral nucleic acid from HIV, hepatitis B virus, and hepatitis C virus. Testing can not offer complete assurance that HIV-1, hepatitis B virus, and hepatitis C virus are absent. All human sourced products should be handled at the biological safety level 2 to minimize exposure of potentially infectious products, as recommended in the CDC-NIH manual, [Biosafety in Microbiological and Biomedical Laboratories](#), 5<sup>th</sup> edition. If you require further information, please contact your site safety officer or scientific support.