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Poietics™ human committed erythroid progenitors

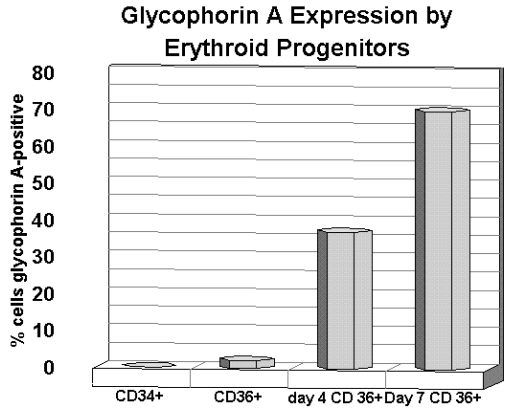
Human committed erythroid progenitors

Poietics™ committed erythroid progenitors (2C-250) are defined by the cell surface glycoprotein CD36, an early marker of the erythroid lineage. Committed erythroid progenitors are isolated from expanded human cord blood (2C-250) $CD34^+$ progenitors by positive immuno-selection of $CD36^+$ cells. Purity is ≥ 85% and the standard quantity is ≥ 1 million cryopreserved cells. Cells are supplied cryopreserved as a 1 ml aliquot in IMDM supplemented with human albumin, DMSO, and hydroxy-ethyl starch.

Media systems for cell differentiation

HPGM™ hematopoietic progenitor growth medium (PT-3926) is a serum-free formulation to support the growth and differentiation of hematopoietic cells. HPGM™ may be used to differentiate the erythroid progenitors with the addition of SCF (25 ng/ml) and EPO (3 U/ml). IL-3 (10 ng/ml) and IL-6 (10 ng/ml) may also be added.

Cells should continue to expand and will differentiate in cultures grown under the recommended conditions for 5-7 days. Cells will express glycophorin A and hemoglobin, and a small portion of the population can be expected to lose CD71 expression and enucleate.



Characterization of committed erythroid progenitors

CD36 is recognized as an early marker of erythrocyte differentiation. During the differentiation of erythrocytes, expression of this cell surface glycoprotein precedes glycophorin A and hemoglobin alpha. The figure at the left demonstrates the maturation of erythroid progenitors in culture for 4 and 7 days.

Use of committed erythroid progenitors

Drug discovery

Erythroid progenitors can be used in the screening of recombinant protein and small molecule libraries for novel erythropoietin-like factors and agonists and antagonists of cytokines which affect the various stages of erythropoiesis. These cells and the erythroblasts derived from them can be used in the discovery of erythroid progenitor-specific and erythroblast-specific genes.

Lead optimization

Small molecule erythropoietin agonist structures can be optimized for efficacy and decreased toxicity in *in vitro* assays of erythroid development. The truncation, derivatization and dimerization of recombinant cytokines which exhibit erythropoietic activity can be assayed for activity.

Toxicology

Numerous drugs have toxic effects on erythro-poiesis. Excessively toxic lead compounds can be eliminated early in the drug discovery process through the use of in vitro assays. Many drugs have erythroid lineage-specific toxic effects as shown in the table below.

Use of committed erythroid progenitors in toxicology

Numerous drugs have toxic effects on erythropoiesis; many of these toxicities are specific to the erythroid lineage.

Drug	Lineage specific effects
Fostriecin	Much more inhibitory to CFU-E than other lineages
AZT	More inhibitory to CFU-E and BFU-E than CFU-GM or CFU-Meg
Clozapine	Inhibitory effects specific to committed progenitors; more primitive cells are unaffected

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, e-mail, 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 erythroid progenitor 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-I, 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, 5th edition. If you require further information, please contact your site safety officer or scientific support.