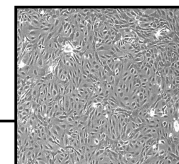


Clonetics™ Umbilical Vein Endothelial Cell Systems HUVEC



Introduction

Clonetics™ Umbilical Vein Endothelial Cell Systems contain normal human umbilical vein endothelial cells (HUVEC) and optimized media for their growth. Each system can quickly generate HUVEC cultures for experimental applications in cardiovascular pharmaceutical development and vascular pathology, including atherosclerosis. Clonetics™ Umbilical Vein Endothelial Cell Systems are convenient and easy to use, allowing the researcher to focus on results. Cryopreserved HUVEC are shipped as frozen primaries. Proliferating HUVEC are shipped as secondary cultures.

Cell System Components (Sold Separately)

- One umbilical vein endothelial cell product (cryopreserved or proliferating) isolated in EGM™ Medium or EGM™-2 Medium
- One endothelial cell medium product (Complete Medium or BulletKit™ Medium) - 500 ml
Clonetics™ EGM™ BulletKit™ Medium (CC-3124) contains one 500 ml bottle of endothelial cell basal medium and the following growth supplements: BBE (bovine brain extract), 2 ml; hEGF, 0.5 ml; hydrocortisone, 0.5 ml; ascorbic acid, 0.5 ml; FBS, 10 ml; GA-1000, 0.5 ml.

or

- Clonetics™ EGM™-2 BulletKit™ Medium (CC-3162) contains one 500 ml bottle of endothelial cell basal medium-2 and the following growth supplements: hydrocortisone, hFGF-B, 2 ml; VEGF, 0.5 ml; R3-IGF-1, 0.5 ml; ascorbic acid, 0.5 ml; heparin, 0.5 ml; FBS, 10 ml; hEGF, 0.5 ml; GA-1000, 0.5 ml.
- One ReagentPack™ Subculture Reagents (CC-5034) containing:

| | |
|--------------------------------|--------|
| Trypsin/EDTA | 100 ml |
| Trypsin neutralizing solution | 100 ml |
| HEPES buffered saline solution | 100 ml |

Characterization of Cells

Routine characterization of HUVEC in EGM™ Medium (CC-2517 and CC-2519) includes morphological observation throughout serial passages and all lots produced after 01 May 2010 stain at least 90% double-positive for CD31/CD105 at passage four. HUVEC in EGM™-2 Medium (C2517A, C2519A, C2517AS, and C2519AS) are guaranteed to test positive for acetylated LDL uptake, von Willebrand factor VIII related antigen, CD105 and CD31 endothelial markers and negative for alpha smooth muscle actin marker at passage four. Pre-screened HUVEC (C2517AS and C2519AS) are guaranteed to test positive for angiogenesis and vascular cell health markers, eNOS, Tie-2, VEGFr2, and Axl in the first passage out of cryopreservation.

Performance

| | |
|--------------------------------------------------------------------|-------------------------------------|
| Recommended seeding density for subculture | 2,500 - 5,000 cells/cm ² |
| Typical time from subculture to confluent monolayer | 5 - 9 days |
| Additional population doublings guaranteed using Clonetics™ System | 15 |

Quality Control

All cells are performance assayed and test negative for HIV-1, mycoplasma, hepatitis-B, hepatitis-C, bacteria, yeast and fungi. Cell performance and characterization are measured after recovery from cryopreservation. Clonetics™ Media are formulated for optimal growth of specific types of normal human cells. Certificates of analysis (COA) for each cell strain are shipped with each order. COA for all other products are available upon request.

Ordering Information

| Cell Type | Recommended Media | Size / Format | | | | |
|----------------------------------|-------------------|---------------------|-----------------------------|--------------------------|----------------------------------------|--------------------------|
| | | Cryopreserved Cells | Proliferating Cells – Flask | | Proliferating Cells – Multiwell Plates | |
| | | | T-25 | T-75 | 48-well | 96-well |
| Catalog Number | | | | | | |
| HUVEC, single donor | EGM™ Medium | CC-2517 | CC-2617 | CC-0216 | CC-2517W48 | CC-0124 |
| | EGM™-2 Medium | C2517A | C2517AT25 | C2517AT75 | C2517AW48 | C2517AW96 |
| HUVEC, single donor pre-screened | EGM™-2 Medium | C2517AS | (Available upon request) | (Available upon request) | (Available upon request) | (Available upon request) |
| HUVEC, pooled | EGM™ Medium | CC-2519 | CC-2619 | CC-0276 | CC-2519W48 | CC-2519W96 |
| | EGM™-2 Medium | C2519A | C2519AT25 | C2519AT75 | C2519AW48 | C2519AW96 |
| HUVEC, pooled pre-screened | EGM™-2 Medium | C2519AS | (Available upon request) | (Available upon request) | (Available upon request) | (Available upon request) |

For additional proliferating formats, please go to the website or call Scientific Support.

Related Products

Endothelial Growth Medium (Must be Purchased Separately):

| Cat. No. | Product | Description |
|----------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| CC-3162 | EGM™-2 BulletKit™ Medium | Kit which contains a 500 ml bottle of EBM™-2 Basal Medium, (CC-3156) and EGM™-2 SingleQuots™ of Growth Factors (CC-4176). |
| CC-3156 | EBM™-2 Basal Medium | Endothelial basal medium-2 (no growth factors) (500 ml) |
| CC-4176 | EGM™-2 SingleQuots™ of Growth Factors | Supplements and growth factors (hydrocortisone, hEGF, FBS, VEGF, hFGF-B, R3-IGF-1, ascorbic acid, heparin and gentamicin/ amphotericin-B) |
| CC-3124 | EGM™ BulletKit™ Medium | Kit which contains a 500 ml bottle of EBM™ Basal Medium, (CC-3121) and EGM™ SingleQuots™ of Growth Factors (CC-4133). |
| CC-3121 | EBM™ Basal Medium | Endothelial basal medium (no growth factors) (500 ml) |
| CC-4133 | EGM™ SingleQuots™ of Growth Factors | Supplements and growth factors (BBE, hydrocortisone, hEGF, ascorbic acid, FBS and gentamicin/ amphotericin-B) |
| CC-3129 | EBM™ Phenol Red Free Basal medium | Endothelial basal medium - phenol red free (no growth factors) (500ml) |
| CC-3024 | EGM™ Complete Medium | Endothelial growth medium (supplemented) (500 ml) |
| CC-5034 | ReagentPack™ Subculture Reagents | Contains 100 ml each of Trypsin/EDTA, HEPES buffered saline solution, and trypsin neutralizing solution |

Product Warranty

CULTURES HAVE A FINITE LIFESPAN *IN VITRO*. Lonza guarantees the performance of its cells only if Clonetics™ Media and Reagents are used exclusively, and the recommend protocols are followed. The performance of cells is not guaranteed if any modifications are made to the complete cell system. Cryopreserved HUVEC are assured to be viable and functional when thawed and maintained properly.

When placing an order or for technical service, please refer to the product numbers and descriptions listed above. For a complete listing of all Clonetics™ Products, refer to the Lonza website or the current Lonza catalog. To obtain a catalog, additional information or technical service you may contact Lonza by web, e-mail, telephone, fax or mail (See page 1 for details).

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](#), 5th ed. If you require further information, please contact your site safety officer or Scientific Support.