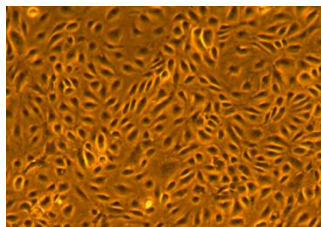
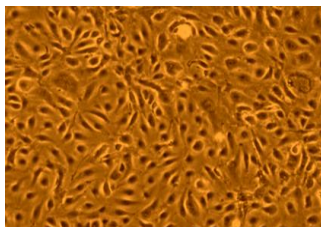


Normal Human Microvascular Endothelial Cells Specification Sheet

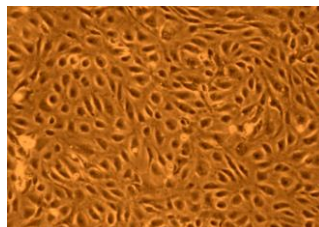
Human Cardiac Microvascular Endothelial Cells (HC-MVEC)
 Human Dermal Microvascular Endothelial Cells, Neonatal (HD-MVECn)
 Human Dermal Microvascular Endothelial Cells, Adult (HD-MVECa)
 Human Lung Microvascular Endothelial Cells (HL-MVEC)



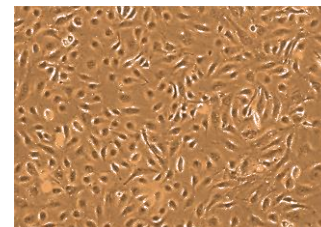
HD-MVECn cultured in VascuLife EnGS-Mv, passage 4, 5 days after inoculation with 5,000 cells/cm² (100X).



HD-MVECa cultured in VascuLife VEGF-Mv, passage 5, 6 days after inoculation with 5,000 cells/cm² (100X).



HL-MVEC cultured in VascuLife VEGF-Mv, passage 5, 7 days after inoculation with 5,000 cells/cm² (100X).



HC-MVEC cultured in VascuLife VEGF-Mv, passage 4, 5 days after inoculation with 5,000 cells/cm² (100X).

CELL FEATURES:	ISOLATED FROM:	CRYOPRESERVED AT THE END OF:
<ul style="list-style-type: none"> • HC-MVEC 	<ul style="list-style-type: none"> • Human Heart 	<ul style="list-style-type: none"> • Tertiary Culture*
<ul style="list-style-type: none"> • HD-MVECn 	<ul style="list-style-type: none"> • Human Dermal Skin 	<ul style="list-style-type: none"> • Less than four weeks in culture
<ul style="list-style-type: none"> • HD-MVECa 	<ul style="list-style-type: none"> • Human Dermal Skin 	<ul style="list-style-type: none"> • Quaternary Culture*
<ul style="list-style-type: none"> • HL-MVEC 	<ul style="list-style-type: none"> • Human Lung Lobes 	<ul style="list-style-type: none"> • Quaternary Culture*
<ul style="list-style-type: none"> • Human Microvascular Endothelial Cells provide an ideal model for the study of angiogenesis, atherosclerosis, or vascular biology. 		
<ul style="list-style-type: none"> • HD-MVECn may be cultured with either LL-0004 or LL-0005 media. 		
<ul style="list-style-type: none"> • Lifeline recommends for HC-MVEC, HD-MVECa, and HL-MVEC to be cultured with LL-0005 medium. 		
<ul style="list-style-type: none"> • Lifeline's human microvascular endothelial cells are extensively tested for quality and optimal performance. 		
<ul style="list-style-type: none"> • Lifeline guarantees performance and quality. 		

NORMAL HUMAN MICROVASCULAR ENDOTHELIAL CELLS ARE TESTED FOR:	
<ul style="list-style-type: none"> • Cell Count 	500,000 cryopreserved cells per vial
<ul style="list-style-type: none"> • Proliferation and Morphology 	Normal cell appearance for 15 population doublings
<ul style="list-style-type: none"> • Cell Viability 	Minimum 70% viability when thawed from cryopreservation
<ul style="list-style-type: none"> • Sterility Testing 	Negative for mycoplasma Negative for bacterial and fungal growth
<ul style="list-style-type: none"> • Virus Testing 	Negative for HIV-1, HIV-2, HBV, and HCV by PCR
<ul style="list-style-type: none"> • Specific Staining 	von Willebrand Factor positive Smooth muscle α -actin negative

PART NUMBER	DESCRIPTION
FC-0039	HD-MVECa, Normal Human Dermal Microvascular Endothelial Cells, Adult – 500,000 cells per vial
FC-0042	HD-MVECn, Normal Human Dermal Microvascular Endothelial Cells, Neonatal – 500,000 cells per vial
FC-0053	HC-MVEC, Normal Human Cardiac Microvascular Endothelial Cells – 500,000 cells per vial
FC-0058	HL-MVEC, Normal Human Lung Microvascular Endothelial Cells – 500,000 cells per vial
LL-0004	VascuLife® EnGS-Mv Medium Complete Kit (VascuLife Basal Medium, VascuLife EnGS-Mv LifeFactors® Kit)
LL-0005	VascuLife VEGF-Mv Medium Complete Kit (VascuLife Basal Medium, VascuLife VEGF-Mv LifeFactors Kit)
CM-0004	Gelatin Solution [0.1%]
LS-1104	GA Antimicrobial Supplement, 0.5 mL (Gentamicin 30 mg/mL, Amphotericin B 15 µg/mL); provided with purchase of LL-0004 or LL-0005

To place an order, please visit lifelinecelltech.com or call customer service at 877.845.7787.

Lifeline's Normal Human Microvascular Endothelial Cells

Lifeline's normal human microvascular endothelial cells, when grown in Lifeline's Vasculife® Medium, provide an ideal low-serum culture model, for the study of angiogenesis, atherosclerosis, or vascular biology.

To support cell proliferation of FC-0039, FC-0053, or FC-0058, Lifeline® recommends using Vasculife VEGF-Mv (LL-0005) Medium. To support cell proliferation of FC-0042, Lifeline recommends using either Vasculife EnGS-Mv (LL-0004), or Vasculife VEGF-Mv (LL-0005) Medium.

Lifeline's human microvascular endothelial cells are cryopreserved at the earliest possible passage to ensure the highest viability, purity, and plating efficiency. Our human microvascular endothelial cells are quality tested to ensure optimal growth and morphology over a period of at least 15 population doublings.

Lifeline's human microvascular endothelial cells are not exposed to antimicrobials or phenol red when cultured in Vasculife Media. Lifeline offers antimicrobials and phenol red; however, they are not required for eukaryotic cell proliferation. A vial of Gentamicin and Amphotericin B (GA; LS-1104) is provided with the purchase of Vasculife EnGS-Mv (LL-0004), or Vasculife VEGF-Mv (LL-0005) Medium Complete Kits for your convenience. The use of GA is recommended to inhibit potential fungal or bacterial contamination of eukaryotic cell cultures. Phenol Red (LS-1009) may be purchased, but is not required.

Quality Testing for Guaranteed Consistency and Reproducible Results

Lifeline Cell Technology manufactures products using the highest quality raw materials and incorporates extensive quality assurance in every production run. Exacting standards and production procedures ensure consistent performance.

The Lifeline Guarantee

Lifeline's rigorous quality control ensures sterility and performance to standardized testing criteria. Upon request, Lifeline will provide lot specific QC test results, material safety data sheets, and certificates of analysis. See complete guarantee/warranty statement at lifelinecelltech.com or contact your Lifeline representative for more information.

All donated tissues have been obtained under proper informed consent and adheres to the Declaration of Helsinki, The Human Tissue Act (UK), CFR Title 21, and HIPAA Regulations relative to obtaining and handling human tissue for Research Use.

Safety Statement

This product is for Research Use Only. This product is not approved for human or veterinary use or for use in *in vitro* diagnostics or clinical procedures.

Lifeline recommends storing cryopreserved vials in liquid nitrogen vapor phase. Handle cryopreserved vials with caution. Always wear eye protection and gloves when working with cell cultures. Aseptically vent any liquid nitrogen from cryopreserved vials by carefully loosening the vial cap in a biosafety cabinet prior to thawing the vials in a water bath. If vials must be stored in liquid phase, the vials should be transferred to vapor phase storage or -80°C for up to 24 hours prior to being thawed.

**Lifeline Technical Note: There are different and often contradictory terminologies used by cell culture companies to define the passage number of cells. Lifeline's designation of 'tertiary cells' are cells that have been isolated from tissue, plated onto culture vessels, and expanded in culture vessels three times before being harvested for cryopreservation. Lifeline's designation of 'quaternary cells' are cells that have been isolated from tissue, plated onto culture vessels, and expanded in culture vessels four times before being harvested for cryopreservation.*

Call Lifeline Technical Service and Sales at 877.845.7787
or visit lifelinecelltech.com for more information

Lifeline Cell Technology – 8415 Progress Drive, Suite T – Frederick, MD 21701

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