Product sheet

SVEC4-10 Cells | 305180

General information

Description	The SVEC4-10 cell line is derived from murine endothelial cells and is widely utilized in research focused on vascular biology and endothelial function. These cells are characterized by their robust proliferative capacity and ability to form capillary-like structures, making them an excellent model for studying angiogenesis and vascular network formation. SVEC4-10 cells express typical endothelial markers such as CD31 (PECAM-1) and von Willebrand factor, which are essential for their identification and functionality in vascular studies. In addition to their use in angiogenesis research, SVEC4-10 cells are also employed in studies investigating endothelial cell response to various stimuli, including cytokines, growth factors, and pharmacological agents. They provide a valuable in vitro system to explore mechanisms of endothelial dysfunction and its implications in diseases such as atherosclerosis, hypertension, and diabetes. The ability to manipulate these cells genetically further enhances their utility in dissecting molecular pathways involved in endothelial cell biology. Overall, SVEC4-10 cells are a vital tool in vascular research, contributing to the understanding of endothelial cell behavior and pathology.
Organism	Mouse
Tissue	Axillary Nodes
Synonyms	SVEC 4-10

Characteristics

Breed/Subspecies	C3H/HeJ
Age	Adult
Gender	Male
Morphology	Epithelial
Growth properties	Adherent

Regulatory Data

Citation	SVEC4-10 (Cytion catalog number 305180)
Biosafety level	1
NCBI_TaxID	10090

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CellosaurusAccession	CVCL_4393
GMO Status	GMO-S1: This murine lymph node-derived endothelial-like cell line (SVEC4-10) contains an SV40 T-Antigen construct introduced by transfection, enabling immortalization of vascular endothelial cells. The insert is stably integrated. This classification applies only within Germany and may differ elsewhere.

Biomolecular Data

Receptors expressed	High affinity receptors for low density lipoprotein (LDL)
Antigen expression	H-2 K, Factor VIII related antigen, VCAM
Tumorigenic	Yes, the cells induce spindle tumors with some of the histopathologic characteristics of human Kaposi Sarcoma after a latency period of approximately 14 weeks.

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Doubling time	24 to 30 hours
Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
Fluid renewal	2 to 3 times per week
Freeze medium	As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

Thawing and Culturing Cells	1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit. 2. Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required. 3. For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains. 4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening. 5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently. 6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium. 7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth. 8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
Shipping Conditions	Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.
Storage Conditions	For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Quality Control & Molecular Analysis

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Sterility	Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods. To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.