Human umbilical vein endothelial cells
hTERT immortalized
HUVEC/TERT2

Good experiments start with the right choices – hTERT immortalized cell lines retain the cell-type specific phenotype while constantly growing. No more lot-to-lot variability. No more growth arrest.

Just the perfect choice!

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Human umbilical vein endothelial cells (HUVEC/TERT2)

Vascular endothelial cells line the inner surface of blood vessels, thereby directly interacting with the blood stream. These cells show distinct functions in processes such as angiogenesis, vascular permeability, leukocyte trafficking or coagulation and fibrinolysis.

Human umbilical vein endothelial cells (HUVEC) are a valuable in vitro model that has contributed significantly to major insights in regulation of endothelial cell function and angiogenesis or the pathophysiology of atherosclerosis and plaque formation.

_in a nutshell

- Original tissue: human umbilical vein
- Transduction of HUVECs with a retrovirus carrying hTERT (catalytic subunit of human telomerase)
- Expression of cell-type specific markers von Willebrand factor (vWF) and PECAM-1 (CD31)
- Formation of neoangiogenic webs upon cultivation on matrigel, angiogenic sprouting from spheroids
- Induction of proliferation upon VEGF treatment

_cell-type specific characteristics

- Continuous growth in vitro

HUVEC/TERT2 cell line was continuously cultured for more than 70 population doublings (PDs) without showing signs of growth retardation or replicative senescence, whereas the parental cells senesced after having reached 33 PDs. The population doubling time of HUVEC/TERT2 cells is 28-36 hours.

Marker Expression

HUVEC/TERT2 cells homogenously express vWF and PECAM1 as revealed by immunofluorescence staining.

VEGF response

HUVEC/TERT2 cells respond to different VEGF preparations in a concentration dependent manner.

Neo-angiogenic properties

HUVEC/TERT2 form neo-angiogenic webs when inoculated onto matrigel matrix.

applications

- Screening for pro- or anti-angiogenic factors
- Study of vascularization in response to hypoxic conditions in tumors or ischemic tissues
- Co-culture with immortalized MSCs (ASC/TERT1) as enhanced in vitro model for studying vascular biology
- Assessment of interaction with leukocytes and macrophages, study of inflammation

adherence to GCCP-Standards!

Evercyte is committed to follow the principles of Good Cell Culture Practice (GCCP, Coecke et al., 2005). Therefore, our cell lines are:

- established following ethical standards (approved by IRB in accordance with the Declaration of Helsinki)
- quality tested (sterility, absence of specific human-pathogenic viruses, STR-profile, longevity)
- characterized for expression of cell type specific markers and functions

references


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