

Human telomerized cell lines hTERT immortalized

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!**

Cell lines for
standardisable,
relevant
in vitro bioassays!

Human telomerized cell line – in a nutshell

Life span extension of primary cells isolated from various tissues by introduction of hTERT (catalytic subunit of human telomerase)

Continuously growing cells that show morphology, phenotype and functions of the corresponding primary cells

Cells for the development of relevant *in vitro* test systems that allow standardization of pre-clinical models

Innovative cell factories for production of extracellular vesicles for potential clinical applications

Life span extension of human cells

Highly differentiated cells are of ever-increasing importance as *in vitro* test systems in various fields of biomedicine, toxicology and biotechnology. However, currently used human derived cells show significant disadvantages. Although normal human cells are characterized by a phenotype like the corresponding cells *in vivo*, cellular proliferation is limited by replicative senescence, donors have to be repeatedly exchanged, and with each different donor the bioassays as well as the production processes must be re-evaluated and re-adjusted.

On the other hand, tumor cells have lost many cell-type specific functions in favour of continuous growth.

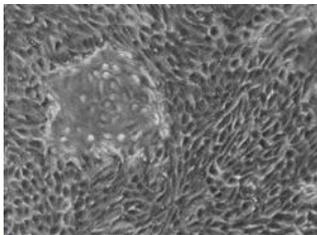
To circumvent these limitations, Evercyte has focused on the establishment of continuously growing human cell lines by reactivation of telomerase and thereby provides cells with highest similarities to primary cells in function and behaviour. Bioassays established with such cells are relevant and standardisable and produced molecules have a high potential as novel therapeutics (e.g. EVs).

Our products

Adult skin fibroblasts | Amnion epithelial cells | Bronchial epithelial cells | Colon epithelial cells | Cornea epithelial cells | Dermal keratinocytes | Dermal microvascular endothelial cells | Foreskin fibroblasts | Keratinocytes | Kidney tissue-derived podocytes | Lung fibroblasts | Mammary epithelial cells | Microvascular endothelial cells | Renal proximal tubular epithelial cells | Skeletal muscle cells | Skin microvascular epithelial cells | Thymic epithelial cells | Umbilical vein endothelial cells | Adipose tissue-derived MSC | Bone marrow-derived MSC | Dental pulp-derived MSC | Placental (chorionic plate)-derived MSC | Reflected amnion-derived MSC | Placental amnion-derived MSC | Wharton's jelly-derived MSC

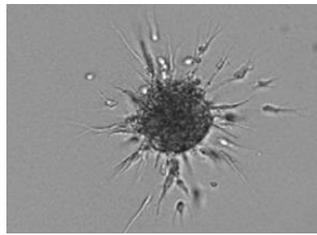
Cell-type specific characteristics

Telomerized human cells are characterized by a morphology, a phenotype and functions that are similar to their parental Primary cells. Simultaneously, the cells show a cellular life span that is at least double of the normal cells with growth rates that are stable and comparable to that of the primary cells. Additionally, telomerized cells show a stable karyotype.



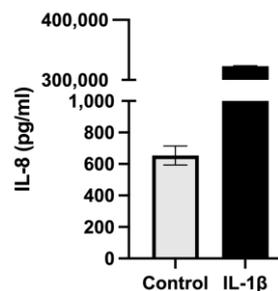
Renal transport model

Telomerized renal proximal tubular epithelial cells form domes showing active transport of water and solutes.



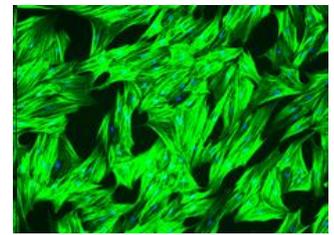
Angiogenesis model

3D spheroids from telomerized endothelial cells form sprouts when treated with pro-angiogenic factors.



Inflammation model

Telomerized colon epithelial cells treated with IL-1 β secrete significant amounts of Interleukin-8.



Fibrosis model

Telomerized fibroblasts respond to TGF- β treatment by induction of α -smooth muscle actin expression.

Applications

Cell-based *in vitro* bioassays e.g.

- In vitro toxicity studies
- Phenotypic drug / target screening
- Testing of drug delivery and barrier functions
- Gene function studies using CRISPR/Cas9

Production hosts for e.g.

- Extracellular vesicles
- Recombinant proteins, vaccines

Adherence to GCCP-Standards!

Evercyte is committed to follow the principles of Good Cell Culture Practice (GCCP, Pamies et al. 2022). Therefore, our cell lines are:

- established following ethical standards (approved by IRB) with prior given written informed consent
- quality tested (sterility, absence of specific human-pathogenic viruses, STR-profile, longevity)
- characterized for presence of cell type specific markers and functions