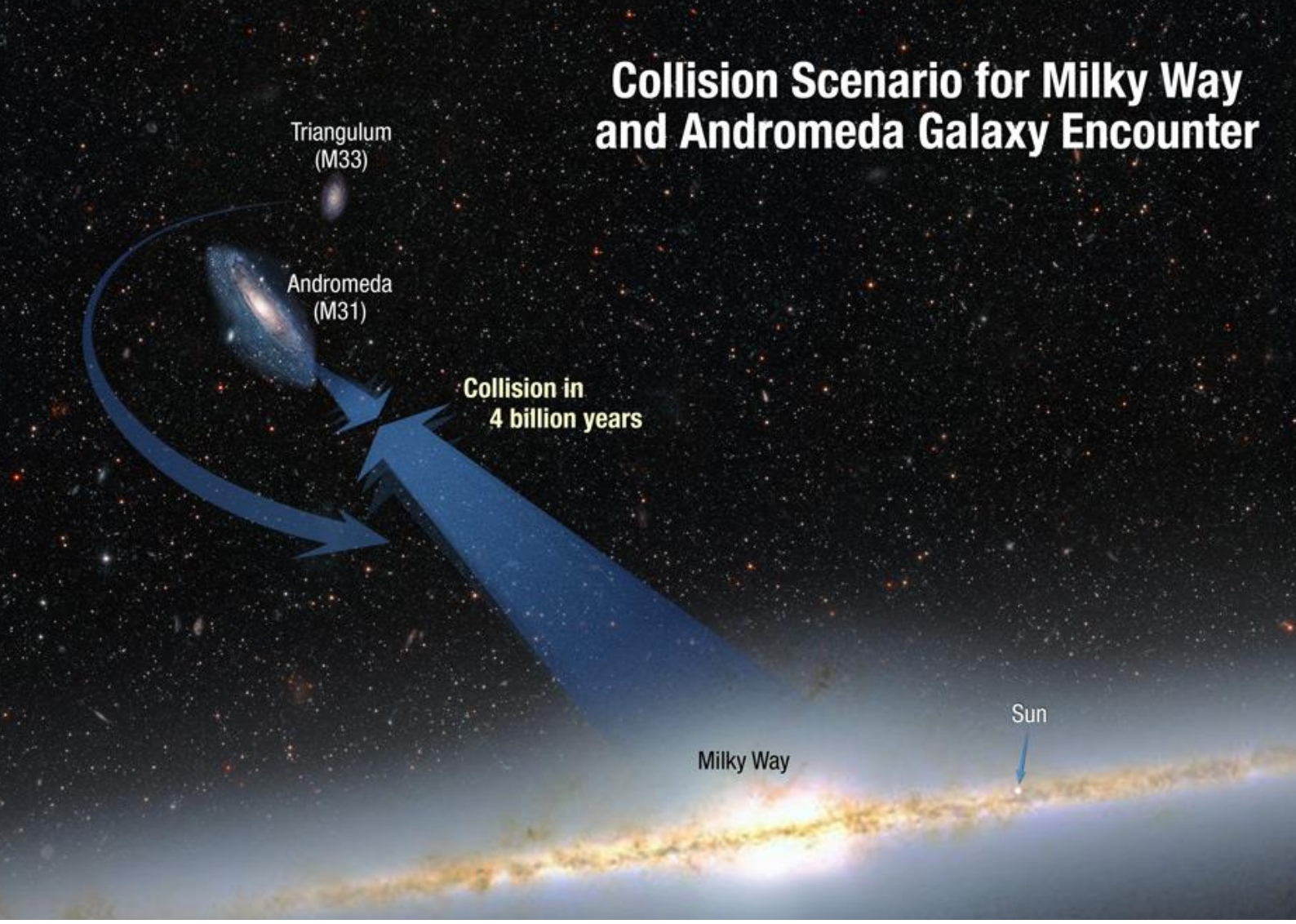


Telomerized human cells

Relevant and standardized in vitro model systems for eternity
and
novel production hosts for biopharmaceuticals / extracellular vesicles

Good experiments start with the right choices – telomerized human 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!

www.evercyte.com

EVERCYTE
forever is just enough.

Human telomerized cell lines

Highly differentiated cells are of ever increasing importance as in vitro test systems in various fields of biomedicine, toxicology and biotechnology. Additionally, human derived cells have a high potential as innovative production hosts for biopharmaceuticals and secreted vesicles for clinical applications.

However, currently used human derived cells show significant disadvantages. Although normal human cells are characterized by a phenotype similar to the corresponding cells in vivo, cellular proliferation is limited by replicative senescence so that donors have to be repeatedly exchanged, and with each different donor the bioassays as well as the production processes have to be re-evaluated and re-adjusted. On the other hand, tumor cells have lost many cell-type specific functions in favor of continuous growth.

In order 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 behavior. Bioassays established with such cells are relevant and standardizable and produced molecules have a high potential as novel therapeutics.

In a nutshell

- **Primary cells** are isolated from biological waste material (surgical waste or urine)
- The cellular life span of primary cells is extended by **ectopic expression of hTERT**
- Cdk-4 or oncogenes are concomitantly expressed if necessary for full immortalization
- **The cellular phenotype** is analyzed in detail (marker expression and function)
- **Cell banks** are established **and quality control** tests are performed

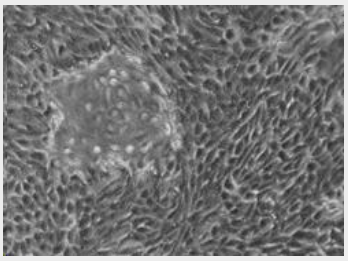
SERVICE
Customer-tailored cell line development as ONE-STOP-SOLUTION

Cell-type specific characteristics and examples

Telomerized human cells are characterized by a morphology, a phenotype and functions that are similar to the 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.

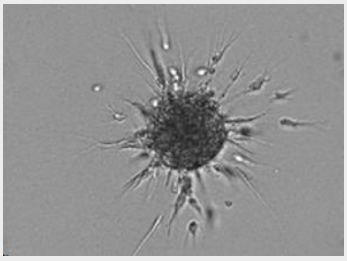
Renal transport model

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



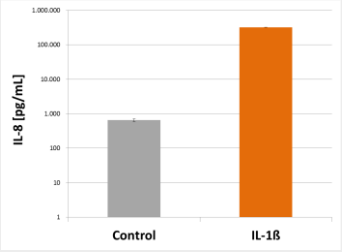
Angiogenesis model

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



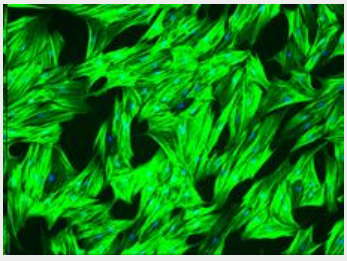
Inflammation model

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



Fibrosis model

Telomerized fibroblasts respond to TGFß 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, 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**

Product range comprises

renal epithelial cells ♦ bronchial epithelial cells ♦ mammary epithelial cells ♦ colonic epithelial cells ♦ corneal epithelial cells ♦ thymic epithelial cells ♦ skin cells ♦ endothelial cells ♦ myoblast cells ♦ mesenchymal stem cells

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