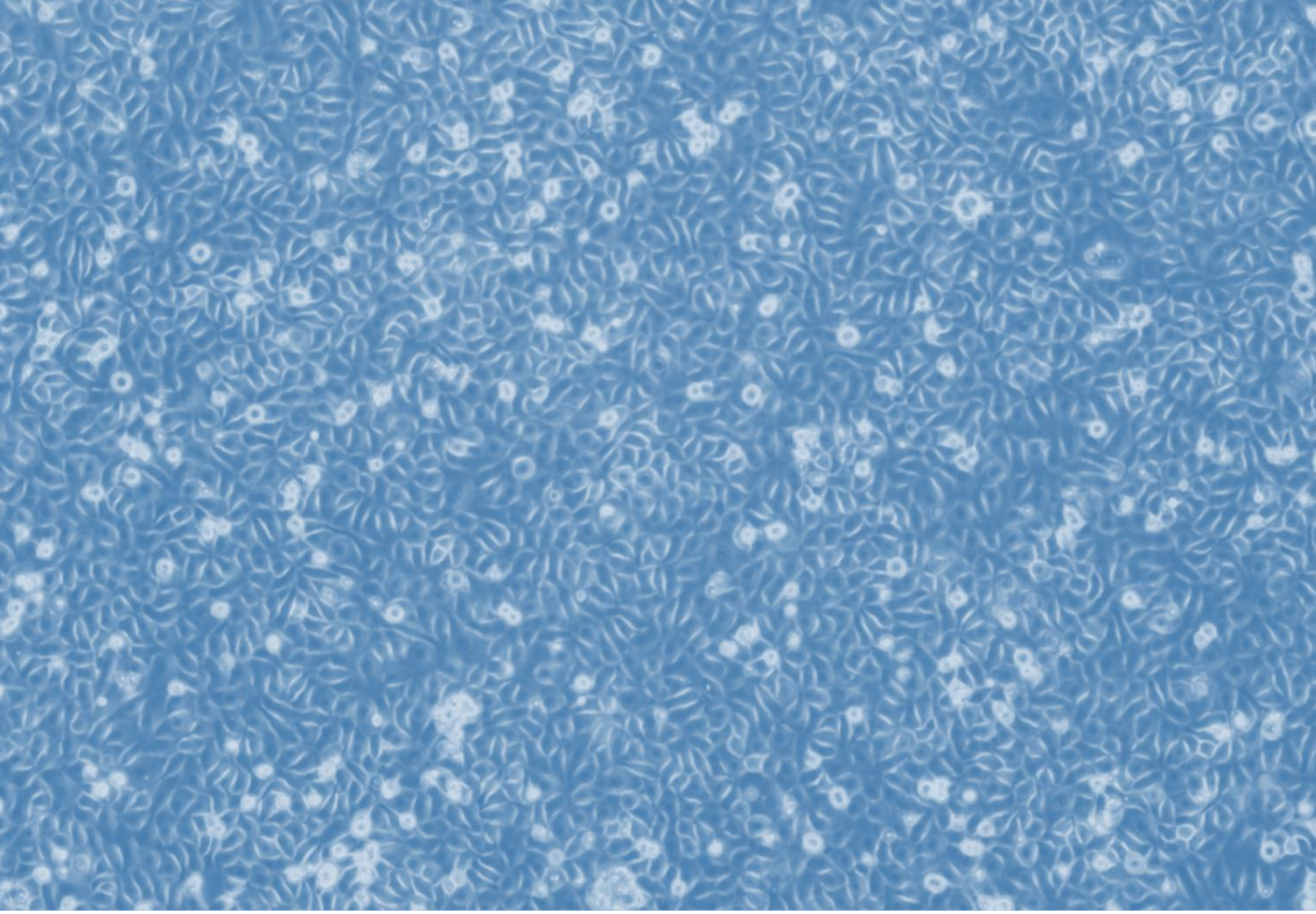

Human corneal epithelial cells

hTERT immortalized

hTCEpi

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 corneal epithelial cells (hTCEpi)

The cornea as the most outer part of the eye is constantly exposed to the outside environment and thus subject to damage due to various insults such as infections, drug- or chemical induced toxicity. In order to sustain such damage the corneal epithelial cells form a resistance barrier, which is continuously renewed by stem cells located in the adjacent limbal region. *In vitro*, the cells are frequently applied to study drug transport, drug- and chemical-induced toxicity on the corneal epithelium as well as inflammation processes and wound healing.

In a nutshell

RNA-Seq data available at evercyte.com !

- Original tissue: **human cornea, limbal region**
- Developed in the **Shay/Wright lab at UT Southwestern** (Robertson et al. 2005)
- Ectopic expression of **hTERT** (catalytic subunit of telomerase) in corneal epithelial cells
- Expression of cell-type specific markers such as **Keratin 3** (KRT3) and **ZO1**
- Formation **of stratified multilayered epithelium** when grown in an air-liquid interface

Cell-type specific characteristics

Continuous growth *in vitro*

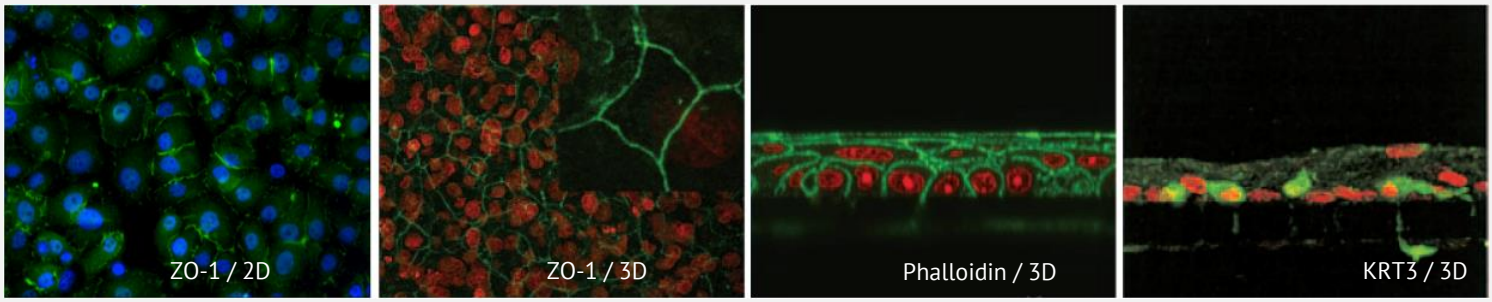
The cell line was continuously cultured for more than 200 population doublings without showing signs of growth retardation or replicative senescence (Robertson et al. 2005). The population doubling time of hTCEpi is 24-32 hours.

Morphology and marker expression

hTCEpi cells are characterized by the typical epithelial cobblestone morphology and expression of ZO-1 at cell-cell contacts in 2D culture as well as after 3D differentiation.

Differentiation in an air-liquid interface

hTCEpi cells can form corneal sheets containing morphologically distinct cuboidal basal cells, polygonal wing cells and a squamous epithelial cell layer and stain positive for KRT3.



Pictures are taken from DM, Li L, Fisher S, et al. Characterization of growth and differentiation in a telomerase-immortalized human corneal epithelial cell line. *Invest Ophthalmol Vis Sci.* 2005;46:470- @copyright holder: ARVO

Applications

- Model for testing in vitro toxicity
- Study of corneal inflammation
- Testing drug delivery, barrier function
- Getting insights into corneal wound healing
- Study of corneal damage and reconstruction and re-epithelialization

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

Robertson D.M. et al. Invest Ophtalmol Vis Sci, 2005, 46 (2): 470-478
Coecke S. et al. Altern Lab Anim, 2005, 33 (3): 261-287

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