

## **Human dermal fibroblasts**

### 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!**

# Human dermal fibroblast cells (fHDF/TERT166)

The human skin forms a physiological barrier against the outer environment and thereby is involved in essential processes such as protection against human pathogens, heat regulation as well as evaporation control. These functions are executed by different cells including epidermal keratinocytes and dermal fibroblasts. Therefore, these cells are frequently applied to study in vitro drug transport, drug- and chemical-induced toxicity on the human skin as well as inflammation processes and wound healing.

## \_in a nutshell

- Original tissue: **human foreskin**
- Transduction of **foreskin fibroblasts** with retrovirus carrying **hTERT**
- Characterized by the typical **fibroblast morphology**
- Expression of cell-type specific markers such as Vimentin
- **TGF $\beta$  induced  $\alpha$ -smooth muscle actin expression ( $\alpha$ -SMA)**
- **Response to IL17a and IL1 $\beta$**  treatment by increase of IL6

Cells from  
other donor  
available  
as well!

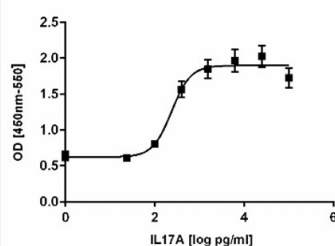
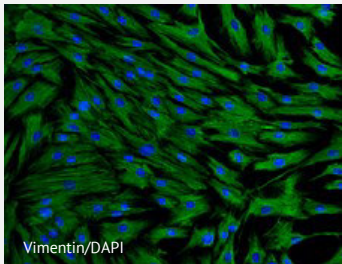
## \_cell-type specific characteristics

### ► Morphology and continuous growth *in vitro*

fHDF/TERT166 cells show the typical spindle shaped morphology and can be grown continuously for more than 60 population doublings without showing signs of growth retardation or replicative senescence. The population doubling time of fHDF/TERT166 is about 48 hours.

### ► Marker expression and IL6 secretion

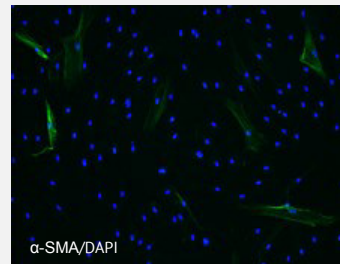
fHDF/TERT166 cells express the typical mesenchymal cell marker Vimentin and respond to IL17a treatment by secretion of IL6 in a concentration dependent manner.



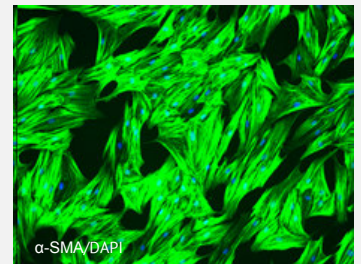
### ► Response to TGF $\beta$ treatment

Whereas  $\alpha$ -SMA is not found in untreated fHDF/TERT166 cells, TGF $\beta$  treated cells show a strong and homogenous expression of this protein.

untreated cells



TGF $\beta$  treated cells



## \_applications

- Study of inflammation and wound healing processes
- Getting insights into the formation of the extracellular matrix
- Establishment of standardized full-thickness 3D skin equivalents
- Model for testing in vitro toxicity
- Testing drug delivery, barrier function

## \_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**

