

## Human myoblasts

hTERT and cdk4 immortalized

*LHCN-M2*

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 myoblasts (LHCN-M2 )

The skeletal musculature is crucial for the maintenance of skeletal movement and posture and is an important site for insulin-dependent glucose disposal. Satellite cells are the progenitor cells that reside in the tissue and fuse to mature myofibers upon stimulation. Therefore, these cells are a valuable tool to study the physiology and pathology of skeletal muscle.

## In a nutshell

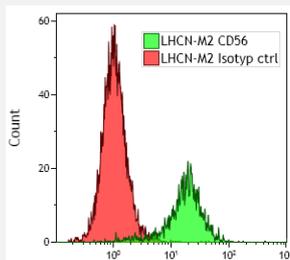
- Developed in the **Shay/Wright lab at UT Southwestern** (Zhu et al. 2007)
- Original tissue: **pectoralis major muscle**
- Ectopic expression of **hTERT** (catalytic subunit of telomerase) and **cdk-4** (cyclin dependent kinase 4) in satellite cells (small mononuclear progenitor cells)
- Expression of cell type specific markers **desmin, myosin heavy chain, CD56**
- Formation of **multinucleated myotubes** upon **differentiation**

RNA-Seq data  
available at  
evercyte.com !

## Cell-type specific characteristics

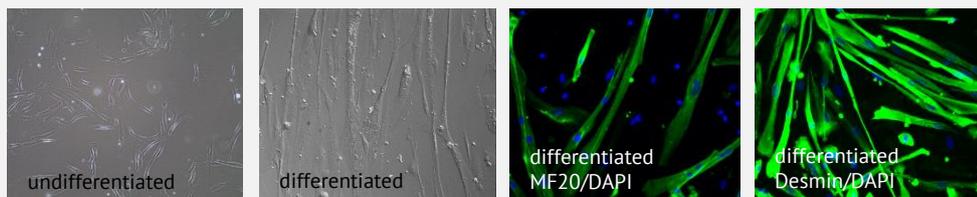
### Continuous growth *in vitro*

The cell line was continuously cultured for more than 200 population doublings without showing signs of growth retardation or replicative senescence (Zhu et al. 2007) with a population doubling time of 35-40 hours.



### Expression of CD56

Flow cytometric analysis of LHCN-M2 cells shows that > 90% of undifferentiated cells express the myogenic marker CD56.



### 2D differentiation *in vitro*

LHCN-M2 cells show the typical myoblast morphology. When cultivated in differentiation medium, the cells fuse to multinucleated myotubes that are characterized by presence of typical marker proteins such as myosin heavy chain (MF20) or desmin.

## Applications

- Study the **development of muscle disorders**
- **Insulin dependent glucose uptake/resistance**
- **Pre-clinical toxicity tests** (i.e. drug induced muscle disorders)
- **Drug screening** and development (i.e. HTS)



## 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:

Zhu et al. 2007, Aging Cell, PMID: 17559502 ♦ Salvadó L. et al. 2014, Diabetologia, PMID: 25063273 ♦ Salvadó L. et al. 2013, Diabetologia, PMID: 23460021 ♦