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HUVEC/TERT2

Telomerized human umbilical vein endothelial cells

- Study of angiogenesis, inflammation
- Phenotypic drug screening, orthogonal screening

Key characteristics
Morphology and marker expression

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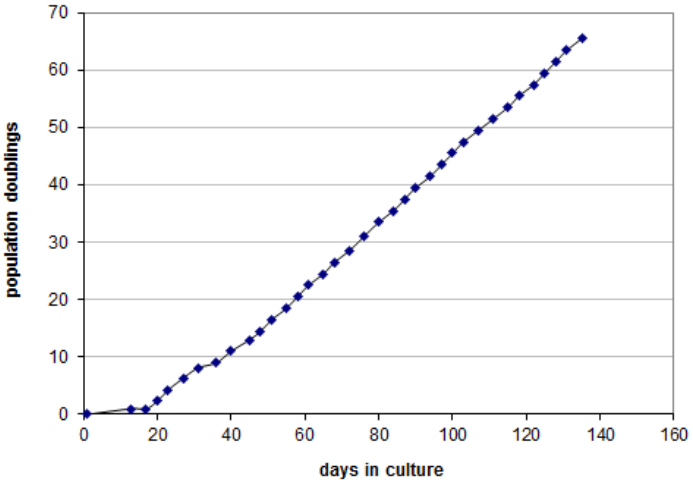
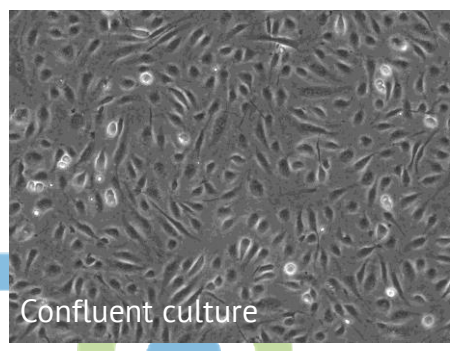
Continuous growth *in vitro* and endothelial morphology

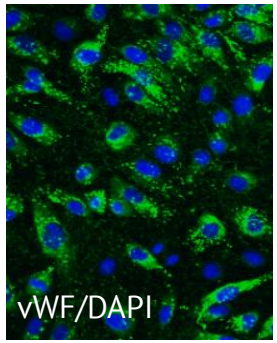
The cell line was continuously cultured for more than 70 population doublings without showing signs of growth retardation and a stable growth rate. On the contrary the parental cells senesced after having reached 33 population doublings. The cells are characterized by the typical endothelial morphology and telomerase activity.

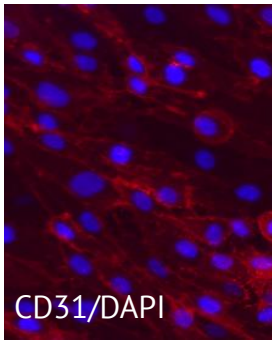


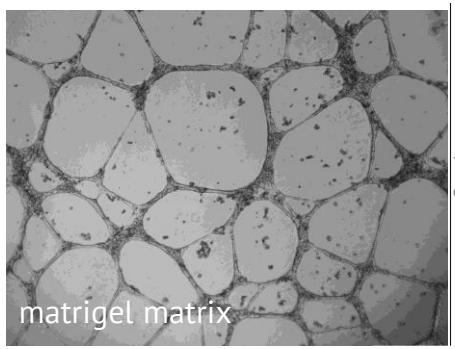
Marker Expression and neoangiogenic properties

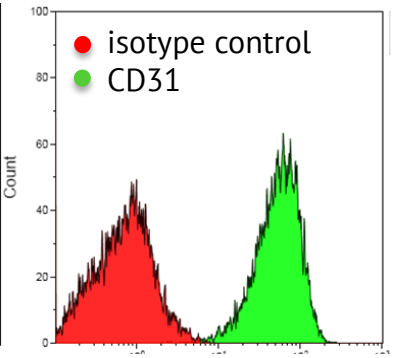
HUVEC/TERT2 cells homogenously express vWF and CD31 PECAM1 as revealed by immunofluorescence stainings. HUVEC/TERT2 cell line also forms neo-angiogenic webs when inoculated onto matrigel matrix.











Key characteristics
RNA and protein expression data

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- Current collaboration with the Human Protein Atlas
- NGS data on 6 exponentially growing Evercyte cell lines
  http://www.proteinatlas.org/learn/cellines

THE HUMAN PROTEIN ATLAS

New developments
Human VEGF165

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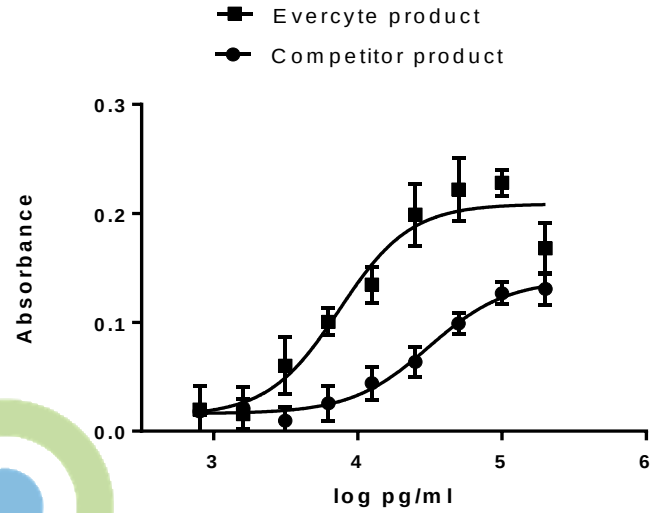
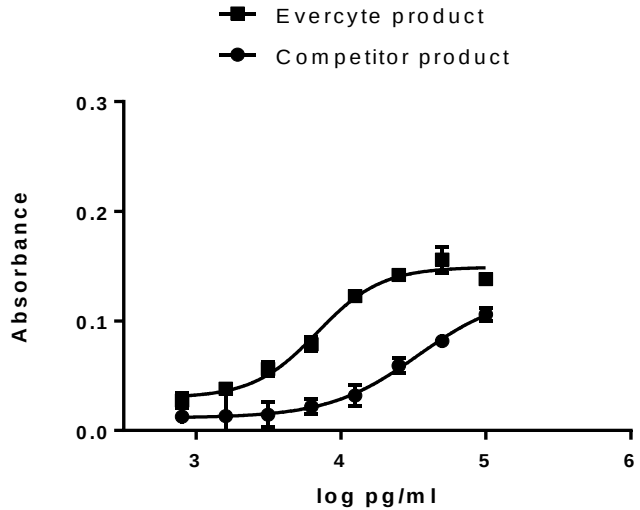
Biologically active, stable and cost-efficient VEGF165

Recombinant vascular endothelial cell growth factor produced in *Pichia pastoris* is characterized by full biological activity (EC_{50} < 10 ng/ml) and attractive prices.
More importantly, the novel VEGF preparation shows above-average biological stability. Whereas a competitive product significantly looses biological activity after 10 weeks of storage at 4° C (EC_{50} > 30 ng/ml), the Evercyte product remains stable (EC_{50} < 10 ng/ml). Additionally, when diluted in culture medium and stored at 4° C the EC_{50} value of a competitive product increases significantly (> 33 ng/ml), whereas the Evercyte VEGF165 remains stable.
VEGF121 is available as well with similar characteristics as VEGF165.





Applications
In vitro angiogenesis bioassays

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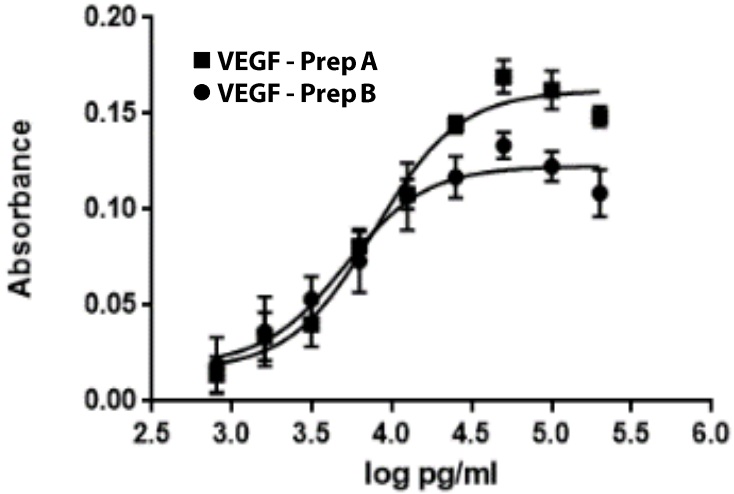
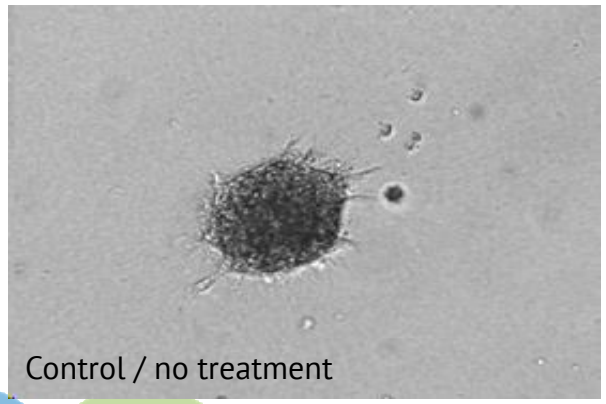
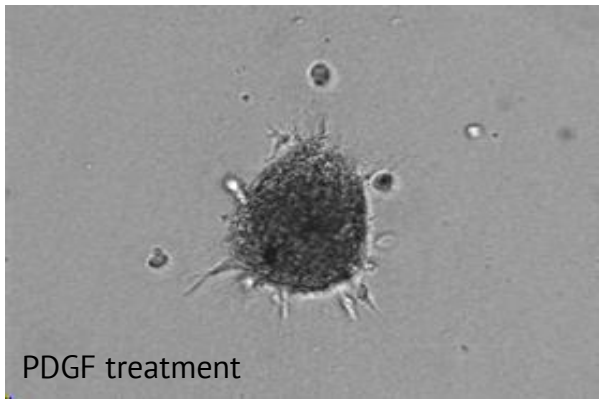
In vitro angiogenesis model

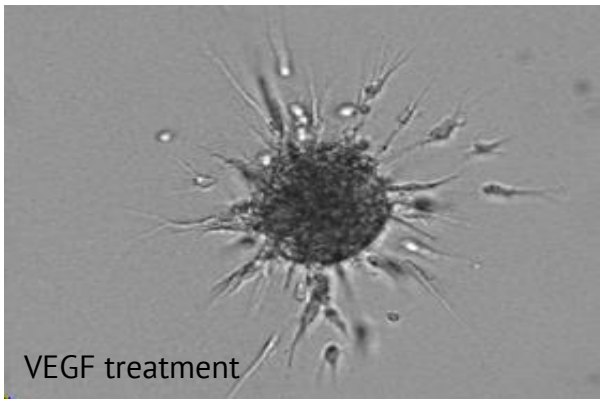
HUVEC/TERT2 cells grown in 96-well plates and treated with compounds inducing or inhibiting angiogenesis, respond to substance treatment with changes in the cellular proliferation rate. IC50 values can be calculated.

Moreover, cells grown as 3D spheroids respond to treatment with pro-angiogenic substances with sprouting into the surrounding matrix.




Control / no treatment


PDGF treatment


VEGF treatment

Applications
High throughput bioassays

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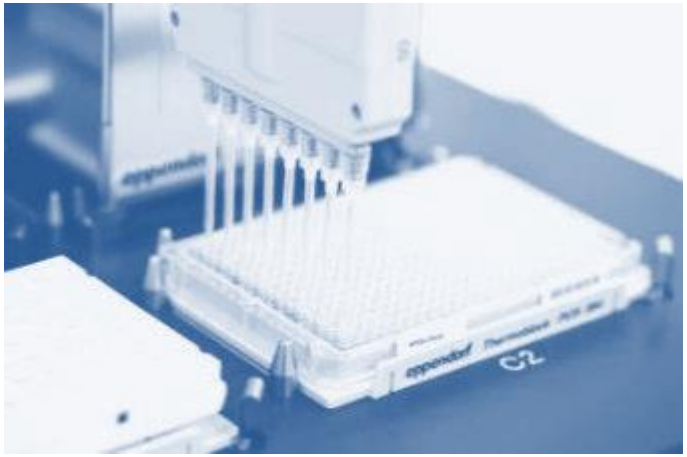
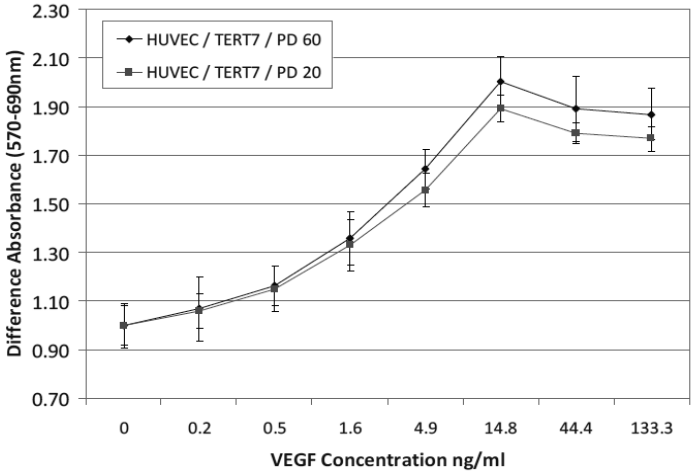


- Endothelial cells (HUVEC/TERT cells)
- input 4000 cells per well
- $1*10^6$ cells per 96 well plate (reserve)
- 80 PDs result in: ~10^{53} 96 well plates
- 1000 x 96 well plates per week: **10^{21} years**



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VEGF response of hTERT immortalized human endothelial cells

The cells reproducibly respond to VEGF treatment at low (20) as well as high (60) population doublings.

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Expertise and enthusiasm for your aims!

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