

# EV toolbox

## From production hosts to recombinant EVs for in vitro tests and clinical applications

Novel production hosts for extracellular vesicles – human telomerized 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!

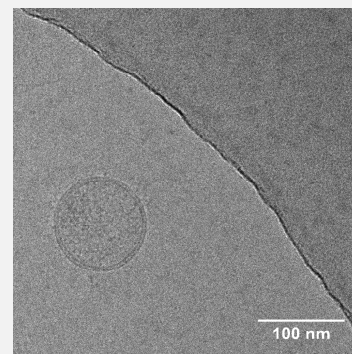
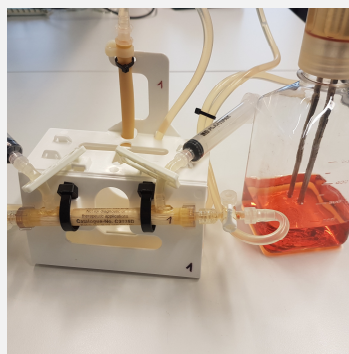
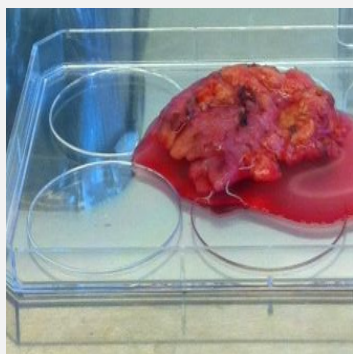
# Extracellular vesicles from human telomerized cells

Extracellular vesicles (EVs) play an essential role in cellular communication by transporting proteins, lipids as well as nucleic acids. Thus, EVs have attracted the attention of biomedical research in immunotherapy, anti-tumor therapy, or regenerative and transplant medicine, as EVs secreted from e.g. human stem cells have been shown to be equally effective as the transplanted cells in different studies. Thus, using EVs instead of cells might reduce regulatory burden and allow for therapeutic off-the-shelf products.

**Evercyte has focused on the establishment of human cell lines that allow standardizable production of high quality extracellular vesicles.**

## ONE-STOP-SHOP: products and services

From primary tissues - to telomerized cells - to production of EVs - to purification, characterization of EVs

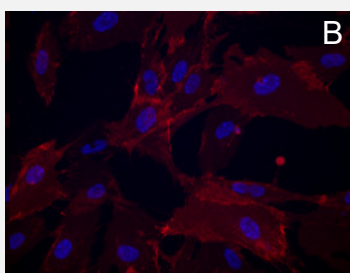


## Human production hosts

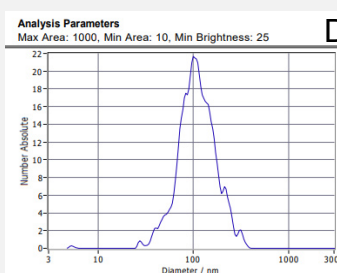
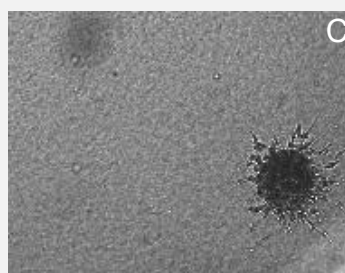
- Tissue sourcing and establishment of primary cells (under xeno-free conditions)
- Life span extension of primary cells by ectopic expression of hTERT and/or cell cycle regulators
- Characterization of cells for expression of cell type specific markers and function, quality control testing, cell stability, identity

## Extracellular vesicles

- Production of EVs in 2D/3D culture (Hollowfiber bioreactor)
- Purification of EVs using ultracentrifugation, tangential flow filtration, size exclusion chrom.
- Characterization of EVs for size (NTA), protein content and presence of antigens (WB), morphology (cryoTEM)



(A) Typical morphology of telomerized Wharton's jelly derived MSCs (WJ-MSC), (B) expression of CD90 in telomerized WJ-MSCs



(C) induction of sprouting in endothelial cells after treatment with EVs derived from WJ-MSCs and (D) representative NTA measurement of EVs from human telomerized cells (NTA ParticleMetrix).

## Evercyte's EV toolbox

- Telomerized cells from different human tissues
- EVs produced from different telomerized cells
- Customer tailored cell line establishment
- Purification and characterization of EVs
- Potency assay development
- Generation of recombinant EVs

## Needs for production hosts

- Approval from responsible IRB
- Prior written informed consent
- Tests for presence of contamination
- Authentication (STR profiling)
- Stability and longevity testing
- Full documentation, xeno-free cultivation

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EVs towards clinical application  
EVs produced by human cell lines established under xeno-free conditions with full documentation!

**NEW!**

  
EVERCYTE