

# DECOMPOSE LIPOASPIRATE DERIVED STEM CELL POPULATION HETEROGENEITY

**Adipose tissue (AT) is an attractive source of mesenchymal stem cells (ADSCs) for tissue regeneration for its easy access, non-invasive harvesting techniques, and collection of large quantities.**

Liposuction procedure mechanically digests AT, releasing cells from the **stromal vascular fraction (SVF)**, a heterogeneous population composed of **mesenchymal progenitors, preadipocytes, endothelial cells, and pericytes**. These cells show plastic adherence properties and similar morphological characteristics but are functionally different.

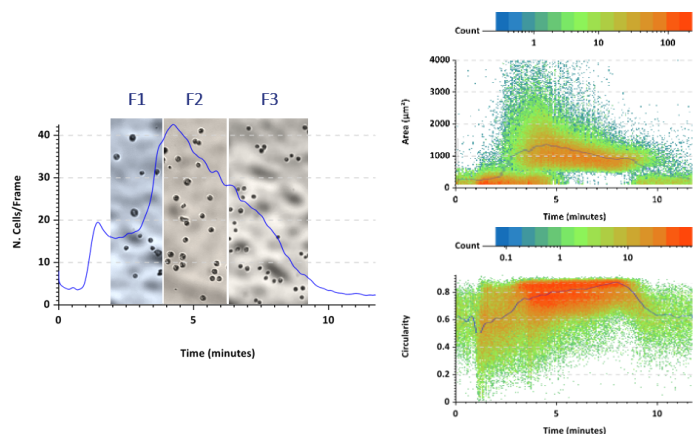
In order to use ADSCs for clinical applications, **homogeneous preparations** are strongly recommended.

Celector® identify and sort the most staminal component from expanded ADSCs with **high purity and viability**.

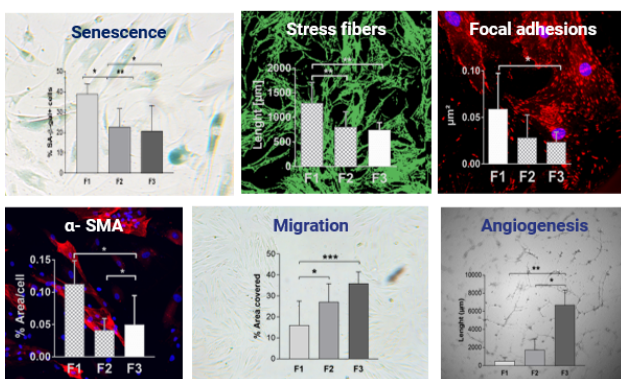
## 1 What it does

Celector® profile shows:

- High reproducibility** between donors;
- Sterility** and **viability** maintained
- Monitoring of **geometrical features** of cells (geometrical cell distribution).
- Enrichment** of the most lively and functional ADSCs in **F3**.



## 2 Biological Features



The population is divided into 3 fractions:

**F1** population presents **40% of senescent cells** and a **higher presence of stress fibers and focal adhesions**;

**F3** population is **more vital** and expresses a **low level of stress fiber** and **focal adhesions** and myofibroblast marker **α-SMA**.

**Paracrine factors derived from F3** population show a **higher migration ability** in dermal fibroblasts (wound healing) and an even higher propensity to **form new vessels** (angiogenesis);

## 3 Applications

**Enrichment** of the **most vital cell component** in expanded ADSCs;

**Depletion of senescent cells** that can negatively influence cell culture and cell therapy approaches

**Quality control (QC)** of expanded stem cell culture;

QC system **relevant** in stem cell platforms **for high expansion systems** (cell bank).