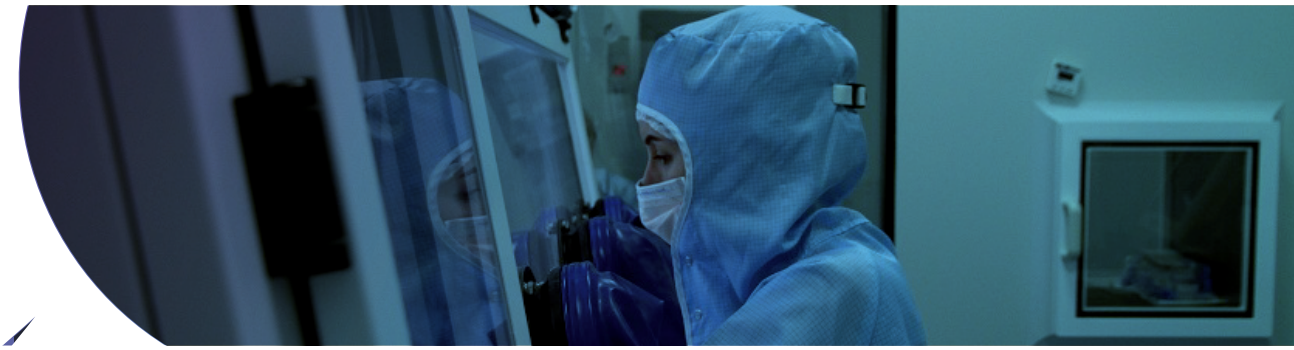
irisbiosciences



Human Stromal Vascular Fraction (hSVF)

Adipose tissue is comprised of adipocytes and other cell types which represent a significant fraction of the tissue. The stromal vascular fraction is obtained as a product following adipose tissue digestion, and contains a heterogeneous cell population consisting of endothelial (progenitor) cells, smooth muscle cells, fibroblasts, lymphocytes, pericytes, monocytes, macrophages, progenitor cells, as well as mesenchymal/hematopoietic stem cells. Provided hSVF samples are from human origin (single donor). Cell isolation is performed under Good Manufacturing Practices (GMP) equivalent conditions using GMP grade reagents.

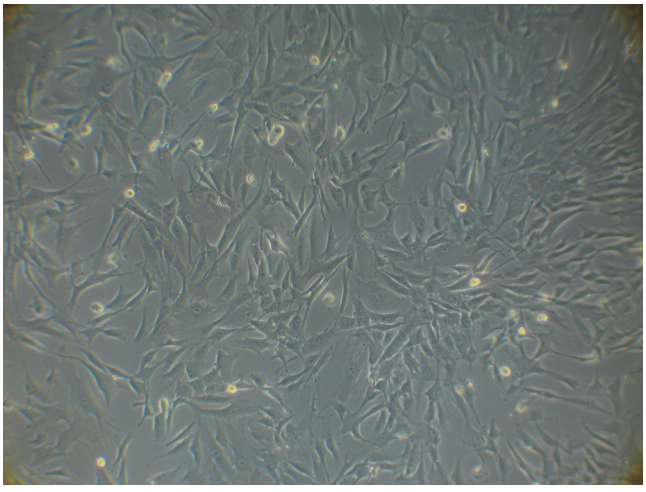
Description

Adipose tissue (AT) represents an important source of stromal cells, being comprised of adipocytes, as well as of other cell types. The human stromal vascular fraction (hSVF) is obtained following adipose tissue digestion, and contains a heterogeneous cell population of many cell types. Cell types present in the hSVF include endothelial (progenitor) cells, smooth muscle cells, fibroblasts, lymphocytes, pericytes, monocytes, macrophages, preadipocytes, progenitor cells, as well as mesenchymal/hematopoietic stem cells [1-4].

The interest of these hSVF cells for fundamental and applied studies has grown significantly during the last decade. hSVF can be used as a single source for the isolation of specific cell types present within, for both basic and applied areas of research.

Among its many potential applications, hSVF can be used as platform for isolation of progenitor cells, as well as mesenchymal/hematopoietic stem cells. Multipotent stem cells obtained from hSVF, have been shown to differentiate into lineages of mesodermal tissues (bone, muscle, tendons, cartilage, and fat)[1]. Several clinical applications have been, so far, proposed for these cells [5,6].

Ongoing clinical investigations have reported the use of human adipose derived stem cells (hASCs) for treatment of several medical conditions[7,8], including cardiovascular tissue regeneration, bone/cartilage repair, breast reconstruction, ischemia revascularization, perianal/rectovaginal fistula treatment and urinary tract reconstruction among others.



Stem cells derived from hSVF in culture.

Key Aspects

· Human origin hSVF is obtained from lipoaspirated tissue from a single donor, following collagenase digestion of the tissue.

· Adipose tissue processing and cell isolation are performed under Good Manufacturing Practices (GMP) equivalent conditions and using GMP grade reagents.

· Samples are provided with indication of donor age, gender, ethnicity and Body Mass Index (BMI).

Irisbiosciences provides high quality hSVF cells that have been subjected to low levels of cell manipulation (non substantial manipulation – as defined by EU Guidelines for ATMPs). Using our hSVF, any researcher has the ability to isolate multiple cell types using her/his own specific criteria from a single donor. In most cases that is not possible for other cell sources currently available in the market.

A possible use for hSVF concerns isolation of hASCs and standard Quality Control (QC) data reflects this potential purpose. Upon request, we can also provide additional data that complements the standard QC provided. Many cell markers currently adopted for isolating hASCs are not yet fully standardized, so we provide a minimally manipulated cell source that enables researchers more experimental freedom and substantially reduces dependence on isolation criteria adopted by external providers.

Strict quality control tests are performed for each batch of hSVF cells. Cells are tested for cell morphology and viability. Batches are regularly tested by flow cytometry analysis of a panel of markers, e.g. CD105, CD73, CD90, CD34 and CD45[9]. hSVF cells are passage 0. When in culture, adherent cells present the following phenotype: more than 95% positive for CD105, CD90 and CD73; less than 5% positive for CD45[9].

All tissues are tested for the absence of HIV-1, HBV, HCV, and microbial contaminants (fungi and bacteria). Samples are provided in 1 ml vials containing approximately 1 million cells per vial. Vials are sold per unit and shipped frozen.

Applications

Research areas may include fundamental and applied cell biology studies.

Intended Use

Samples provided are for research use only (RUO). Not intended for human or animal diagnostics or for any sort of therapeutic use.

References

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Disclaimer

Although tested negative for HIV-1, HBV, and HCV, the hSVF cells as all products of human origin should be handled as potentially infectious. No test procedure can completely guarantee the absence of infectious agents.

Further Information

For further information concerning service conditions, please contact us.

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