

### Practical information

As we use your own mesenchymal stem cells from fat tissue as basis for your stem cell and secretome treatment, the first step is a liposuction under local anaesthesia after a general examination, consultation, blood sampling and any other exams deemed suitable. Your tissue will then be processed in our state of the art, dedicated aseptic clean room facilities, which are located within the clinic premises. Your stem cells will be isolated and expanded over a

time period of 2-3 weeks and then stored in liquid nitrogen for future uses. However, the first cells and secretome are already available after 7 days (depending on condition and treatment options). In most cases several injections or infusions will be necessary for optimal results.

**mesENCELL**

Biosciences National Centre

**Mesencell**

Villa No.Z3 006 at Muscat Bay,

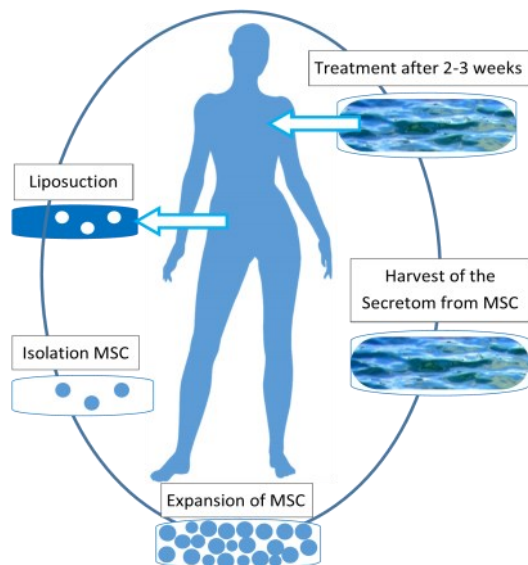
Quantab, Bandar Al Jissah St,

**Muscat Sultanat of Oman**

Email: [science@mesencell-biotech.com](mailto:science@mesencell-biotech.com)

Telephone/Whatsapp: +33 633 81 32 79

Wechat: StevenJames2019



## Prevention and Treatment

## Anti - Ageing & Antimorbidity With Your Own Cells

### Mesenchymal stem cells

Mesenchymal stem cells, or MSCs, are multipotent stromal cells that can change into a variety of cell types, including: osteoblasts, chondrocytes, neurons, muscle cells and adipocytes. MSCs are distributed all over the body and are responsible for regeneration. Commonly used tissues for the isolation of MSC are bone marrow, umbilical cord, cord lining and, increasingly, adipose tissue, which has a superior amount of MSCs.

Research has also demonstrated MSCs orchestrate important immunologic functions through modulation of the local inflammatory response.



# Anti-ageing - Anti-morbidity

## Stem Cell Treatments

Stem cell treatments are done on a scientifically proven basis and under strict rules applying to the quality of production. Adipose tissue samples are processed in a so called clean room under aseptic, sterile conditions with absence of particles in the air flow. No animal components are used in this process and the final treatment is subjected to various tests achieving a constantly high quality of cells and secretome.

## Secretome

The use of MSCs for tissue repair was initially based on the hypothesis that these cells home to and change within the injured tissue into specialized cells.

However, it now appears that only a

small proportion of transplanted MSCs actually integrate and survive in host tissues. Thus, the predominant mechanism by which MSCs participate in tissue repair seems to be related to their paracrine activity.

Indeed, MSCs provide the microenvironment with a multitude of trophic and survival signals including growth factors and cytokines. Alongside these conventional mediators of cell secretome, sophisticated nanovesicles transfer proteins, lipids and, most importantly, various forms of RNAs to neighbouring cells, thereby mediating a variety of biological responses.

## Causes of ageing:

chronic inflammation, DNA damage, oxidative stress, free radicals, cellular ageing, stem cell exhaustion/depletion.<sup>Ref.7</sup>

**Ref.1.** Seung Yong Song et al.: Determination of adipose-derived stem cell application on photo-aged fibroblasts, based on paracrine function. *Cytotherapy*, 2011 Mar; 13(3): 378-84 **Ref. 2.** Lecka-Cernik et al.: Skeletal aging and the adipocyte program. *Cell cycle* 9:18, 3648-3654: September 15, 2010 **Ref.3.** Mimeault, M and SK.Batra: Aging of tissue-resident adult stem/progenitor cells and their pathological consequences. *Panminerva Med.* 2009 Hun; 51(2):57-79 **Ref.4.** Ho et al.: Stem cells and ageing. *EMBO reports* Vol 6, Special Issue, 2005 **Ref.5.** Knight, J.A.: The biochemistry of aging. *Adv Clin Chem.* 2000;35:1-62 **Ref.6.** Rando, TA: Stem cells, ageing and the quest for immortality. *Nature.* 2006 Jun 29;441(7097):1080-6 **Ref.7.** Dr Steven James Kellner: Anti-morbidity and Anti-ageing: present and future uses of adipose derived mesenchymal stem cells and their secretome in improving health span

# Treatments with your own cells



**Clinical studies on ageing, anti-ageing and anti-morbidity**

The anti-inflammatory and cell death limiting effect of mesenchymal stem cells and their secretome are well documented in literature. Our own studies into the effects of the stem cell secretome on skin cells, heart muscle cells, chondrocytes, cartilage explants and aged mesenchymal stem cells have shown impressive reduction of known factors of inflammation and cell death. In our ongoing studies, we are looking at biomarkers in the blood which would provide even more scientific evidence that key elements of ageing or suppressed by the use of stem cells or their secretome. We have identified 10 biomarkers, ranging from DNA methylation to markers of inflammation, which we test from your blood samples.



*Mesencell can preserve your cells in liquid nitrogen for up to 10 years.*