Biological cryopreservation and cell expansion of autologous fibroblasts
Fibroskill is based on the injections of autologous fibroblasts extracted from a sample of skin from behind the ear. Thanks to fibroskill it is possible to preserve one’s own cells at -196°C interrupting the physiological ageing process. With the cell cultivation processes foreseen in the Fibroskill protocol it is possible to further rejuvenate cryopreserved cells and multiply them to obtain natural skin rejuvenation.

**Fibroblasts**

**Protagonists in cutaneous rejuvenation**

The skin is the organ most subject to changes due to ageing and pathological conditions of the body. These changes are mainly due to the loss of collagen, the most important protein among those responsible for skin support and quality. Collagen is produced by fibroblasts, the cells which contribute to creating the dermal network of fibres, typical of a healthy, compact and elastic skin. Physiological ageing involves a significant reduction in the quality and quantity of fibroblasts in the dermis, to the detriment of collagen production. Over the years, the consequences of collagen loss become apparent through a gradual reduction in skin thickness, compactness and elasticity.

**Cell Factory**

Bioscience Institute is a cell factory dedicated to biological cryopreservation and cellular culture for clinical use and scientific research. Bioscience Institute laboratories are engaged in the isolation, analysis, expansion and planned freezing of several types of cells: hematopoietic cord blood stem cells, adipose-derived stem cells, fibroblasts, keratinocytes and melanocytes. Bioscience Institute, in collaboration with prestigious Italian and foreign universities, conducts research work aimed at extending the possible clinical applications of stem cells to several areas of medicine: cardiology, surgery, dentistry, gynaecology and dermatology. Bioscience Institute laboratories include a 220 m² sterile environment (Clean Rooms) equipped with laser particle counters which constantly monitor the safety level in the room and under the laminar flow hoods. It is possible to monitor the sterility level of these rooms and the quality of the operational procedures adopted by the staff from the [www.cellfactory.it](http://www.cellfactory.it) website which gives access to the environmental safety parameter control monitors and to the cameras inside the labs. Bioscience Institute has adopted the highest quality standard, thus bringing up to excellent levels the operational procedures and sterility level of the laboratories; all its work can be controlled by anyone through a simple internet connection thus guaranteeing the maximum transparency.
Cryopreservation

Stops the mechanisms involved in cellular senescence

Fibroblasts can be stored for decades in biological cryo-containers at a temperature of about -196°C. A large number of studies conducted in the area of regenerative medicine have shown that cryopreserved cells maintain the biological age and characteristics they had at the time they were frozen.

The preservation of fibroblasts is a prevention tool which makes possible the use of cells that are always young, even after many years, for anti-ageing and skin lesion treatments. Bioscience Institute cell factory preserves fibroblasts making them available for treatment anytime they may become necessary during the cryopreservation period.

Advantages

- Fibroblasts treatments interrupt physiological skin ageing
- Cryopreservation interrupts ageing of preserved fibroblasts
- The use of autologous cells guarantees absolutely natural results
- Treatments may be repeated up to 10 times thanks to cryopreserved cells
- The use of the patient’s own fibroblasts prevents any risk of rejection or infection
- The effectiveness of fibroblasts clinical application is widely demonstrated in literature

Use of autologous fibroblasts

Interrupts skin ageing processes

Preserved fibroblasts can be expanded in a few days and reach a concentration of approximately 2,000,000/ml. For each treatment, the laboratory will provide a 3ml vial containing an amount of fibroblasts sufficient for the treatment of large areas of skin.

The treatment is done by mean of a microscopic needle which is supplied with the vial.

The process is painless and avoids temporary skin marks.
32. Autologous Fibroblast Transplantation in Facial Deformities (NCT01115634).
33. Use of Biopsy Punch for Skin Biopsies for Fibroblasts Culturing (NCT00340912).
34. Safety and Efficacy Study of Isolagen Therapy in the Treatment of Severe Facial Acne Scarring (NCT00642642).
35. Dermagraft® for the Treatment of Patients With Diabetic Foot Ulcers (NCT01181440).
38. Safety and Efficacy Study of Isolagen Therapy™ in the Treatment of Nasolabial Fold Wrinkles (NCT00649428).
39. Safety and Efficacy Study of Isolagen Therapy™ in Treatment of Interdermal Papillary Insufficiency (NCT00655889).
40. Pivotal Trial of Dermagraft® to Treat Venous Leg Ulcers (NCT00909870).
41. Efficacy and Safety Study of DERMAGEN® vs Conventional Treatment to Treat Diabetic Neuropathic Foot Ulcer (NCT00521937).
42. StrataGraft® Skin Tissue as an Alternative to Autografting Deep Partial-Thickness Burns (NCT01437852).
43. StrataGraft™ Skin Tissue In The Surgical Management Of Complex Skin Defects (NCT00618839).
44. Pivotal Trial of Dermagraft® to Treat Diabetic Foot Ulcers Advanced (NCT01181453).

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