

The unique advantages of the Q-graft®

SVF cell harvesting at the point-of-care

Fast and effective

Separation, concentration and collection of high numbers of viable, lipid-free regenerative cells (SVF, ASC, MSC).

Safety

SVF cell separation in a standardized process – in a closed system – on the sterile OR instrument table.

Point-of-care

No laboratory and no centrifugation required. No transfer of tissue or cells outside the operating/procedure room, e.g. to a laboratory and back.

Q-graft® can be used with and without collagenase.

Standardized, sterile fat harvesting

Aspiration and collection of viable fat tissue in the Q-graft® collector – in a closed system with body-jet®.

Optimum tissue dissociation

Heating of the lipoaspirate to 38 °C and effective mixing in the Q-graft® collector reduces the required amount of collagenase and the duration of collagenase digestion.

Sterile sampling of regenerative cells

The lipid-free SVF cell suspension is directly extracted from the CELLS port of Q-graft® collector into a syringe via Luer connector.

Q-graft® in the operating room

for intraoperative separation and concentration of adipose derived stem cells



Q-graft® is used on the sterile OR instrument table in the operating/procedure room during liposuction, or in the research laboratory, for standardized separation and concentration of high numbers of viable SVF (stromal vascular fraction) cells in a sterile closed system.

Q-graft® in the research laboratory

for research purposes and production of mesenchymal stem cells



In the laboratory it can help simplify the open, labor-intensive manual tasks associated with laboratory-based SVF and adipose stem cell isolation, concentration and culture.

About human med

Leading in water-jet technology

An innovator and leader in water-jet surgery, human med is the world's first and foremost manufacturer of water-jet assisted aesthetic devices. Building on a long history of success in the fields of general surgery, urology and neurosurgery, where gentle water-jet tissue dissection is essential, in 2004 human med turned its vision to the aesthetics field. The launch of the company's innovative body-jet®, a water-jet based infiltration, irrigation and aspiration system for removing unwanted body fat has helped to usher in a fundamentally new approach to lipoplasty and natural fat harvesting. The new unique Q-graft® system for the intraoperative harvesting of regenerative cells during liposuction will provide exciting options for adipose stem cell research and new therapies.

Distributed by:

••Q-graft®

Technical details Q-graft® collector

Dimensions: 14,2 (Ø) x 40 (H) cm
Weight: 540 g
Aspirate volume / Lipocollector function:
75 ml fat tissue
Maximum fill volume upper chamber: 200 ml
Volume of SVF cell suspension: 20 ml
Vacuum supply: -500 mbar
Mixing Frequency: 15/min
Rotation during cross-flow filtration: Up to 480/min
Control temperature during incubation: 38 °C

Ordering information

Q-graft® control Ref. 300000
Q-graft® collector Ref. 300001

Technical details Q-graft® control

Dimensions: 25 (W) x 20 (D) x 15 (H) cm
(without Q-graft® collector)
Weight: 1600 g
Voltage: 100-240 V (wide-band power supply)
Protection class II

Q-graft® disposable set Ref. 300002
Q-graft® centrifugation set Ref. 300003

••Q-graft®

Intraoperative separation and collection of adipose regenerative cells



Quality

Highly efficient SVF cell separation and concentration right on the sterile OR instrument table

Quantity

High yield of viable regenerative cells (SVF and ASC)

Quick

Fast fat harvesting and SVF isolation in one single-use closed system

Q-graft® is a registered trademark owned by human med AG, Germany. Q-graft® technology is protected by U.S., European and other patents.



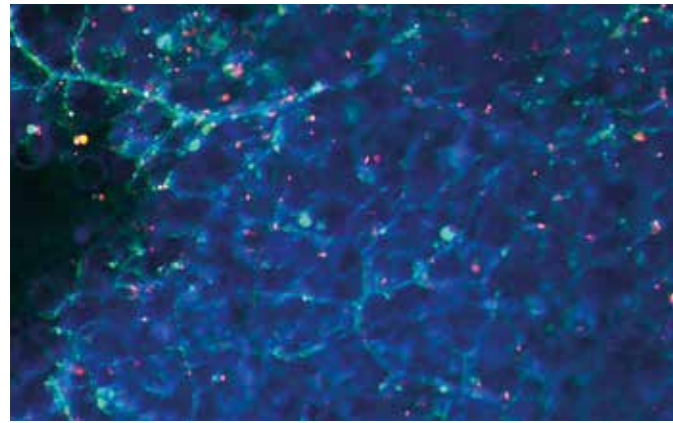
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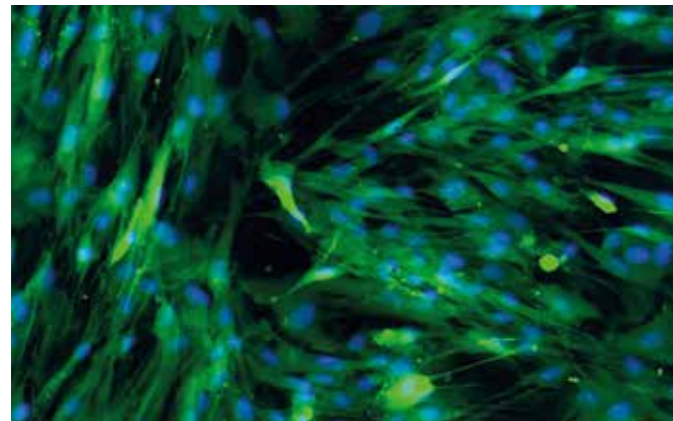
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human med
water-jet assisted medical technologies



Vital adipose tissue from body-jet® lipoaspirate with blood vessels (vital staining)



Vital adipose stem cells from body-jet® lipoaspirate (vital staining)

Q-graft® research and development

Extensive research work in collaboration with renowned medical universities has been the basis for the development of the Q-graft® system, enabling the realization of cutting-edge technologies for the separation and concentration of adipose derived regenerative cells in a compact closed system, to be used on the sterile OR instrument table in the operating/procedure room.



Scientific research is the basis for the development of the Q-graft®

●● Q-graft®

Intraoperative separation and collection of adipose regenerative cells on the sterile OR instrument table in the operating/procedure room

The new compact **Q-graft® System** for the intraoperative separation and collection of adipose regenerative cells – stromal vascular fraction (SVF) and adipose stem cells (ASC) or adipose derived mesenchymal stem cells (MSC) – will enhance and facilitate the research and clinical applications of adipose derived regenerative cells in many therapeutic indications.

- The Q-graft® system consists of
- the single-use **Q-graft® collector** and
 - the device **Q-graft® control**.

The **Q-graft® collector** enables you to collect and concentrate the lipoaspirate, and to separate the regenerative cells (SVF and ASC/adMSC) in one sterile closed

system, directly on the sterile OR instrument table in the operating/procedure room, or in the research laboratory.

The corresponding control unit **Q-graft® control** regulates the functions of the single-use Q-graft® collector. The Q-graft® collector is placed on top of Q-graft® control, directly on the sterile OR instrument table.

Q-graft® control regulates the warming and mixing of the lipoaspirate during incubation, and the cross-flow filtration during the concentration of the SVF cell suspension.

The lipid-free SVF cell suspension is directly extracted from the sterile Q-graft® collector into a syringe via the CELLS port.

Phase 1: Preparation of the Q-graft® with body-jet®



Q-graft® collector and Q-graft® control are placed on the sterile OR instrument table. Q-graft® control is covered by a sterile cover. The tubings are connected between Q-graft® collector, Q-graft® control and body-jet® as designated.

Phase 2: Collection of lipoaspirate in a closed system



Lipoaspiration with the body-jet® starts and the lipoaspirate is directly collected and concentrated in the upper chamber of the Q-graft® collector. Waste fluid is removed automatically by the body-jet®.

Phase 3: Incubation and mixing of the lipoaspirate with Q-graft® control



By activating the appropriate Q-graft® control buttons the lipoaspirate is mixed and incubated at 38 °C for 45 minutes.

Q-graft® can be used with or without collagenase. Human med offers a specially designed GMP grade enzyme mixture (Humanase®) with the exact dosage for this application.

Phase 4: Cell separation under cross-flow filtration, concentration of SVF cells



Immediately afterwards the SVF cells are isolated mechanically by fractional cell separation and cross-flow filtration. The residual collagenase (if used) is removed by consecutive washing steps. The waste filtrate is removed from the Q-graft® collector WASTE port via Luer connector into a syringe.

Phase 5: Sterile collection of the lipid-free SVF cell suspension via CELLS port



After concentration in the radial filter, the lipid-free SVF suspension is extracted from the Q-graft® collector CELLS port via Luer connector into a syringe.



Harvesting adipose regenerative cells in the operating/procedure room

Duration of SVF cell separation

The whole process of fat harvesting, SVF cell separation and concentration requires approximately one hour.

Use of collagenase (Humanase®)

Q-graft® can be used with or without collagenase digestion. Without collagenase the SVF cell yield will be reduced.

Recommendation:

The use of a centrifugation device, like e.g. Hettich Rotofix 32 A, increases the concentration of SVF cells. The quantity and viability of nucleated SVF cells can be documented quickly with a cell counting device like e.g. Chemometec NucleoCounter 200.

