



RESEARCH TOPIC CLI12

Mechanically - activated autologous fat grafting for clinical use

Research Area

Surgical Area

Clinical Unit name

Plastic Surgery Unit

Supervisor

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Abstract

Autologous fat graft (AFG) is a procedure widely used in plastic surgery for its great versatility; particularly innovative is the application in the analgesic field [1–5]. The influence of mechanical stressors on AFG has led to the concept of mechanically, induced pluripotent stem cells (iPSC) [6, 7]. It is important to investigate the physical changes and molecular action of AFG when the adipose-derived stem cells are mechanically stimulated in a microfluidic platform, with effects on the biological/anti-inflammatory response [8–10]. The efficacy potential of iPSC will be assessed by determining cell viability and macroscopic characterization of the cellular components, as well as through the quantification of mediators such as CD73, CD39, TNF, IL-6, CXCL8, ADP, adenosine, M2 macrophages, CD304+, adiponectin, Ap2 and GLUT4 which will further support the use of AFG in clinical practice due to its beneficial anti-inflammatory, pain-relieving and antidiabetic properties.

Scientific references

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Type of contract

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