Title (en)

METHOD AND BIOREACTOR FOR THE CULTIVATION AND STIMULATION OF THREE-DIMENSIONAL VITAL AND MECHANICALLY-RESISTANT CELL TRANSPLANTS

Title (de)

VERFAHREN UND BIOREAKTOR ZUM KULTIVIEREN UND STIMULIEREN VON DREIDIMENSIONALEN, VITALEN UND MECHANISCH WIDERSTANDSF HIGEN ZEL LTRANSPLANTATEN

Title (fr)

PROCEDE ET BIOREACTEUR POUR LA MISE EN CULTURE ET LA STIMULATION DE GREFFONS CELLULAIRES TRIDIMENSIONNELS, VITAUX ET MECANIQUEMENT RESISTANTS

Publication

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Application

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Abstract (en)

[origin: WO2005040332A2] The aim of the invention is a method and a bioreactor for the cultivation and stimulation of three-dimensional, vital and mechanically-resistant cell cultures which can be cultivated and stimulated within a short time of each other, or simultaneously. The bioreactor should permit a transplant cultivation according to GMP standards under guaranteed sterile conditions. The bioreactor (1) comprises a base body, connected in a pressure-tight and sterile manner to a reactor closure (21), forming at least one reactor chamber in which a deposition surface for a transplant (11) and a mini-actuator (14) are embodied. The bioreactor (1) is further provided with at least two hose coupling connectors (19), for medium introduction and medium withdrawal and for gas introduction. The invention permits a production of three-dimensional, vital and mechanically-resistant cell cultures, according to GMP standards, preferably cartilage cell constructs, which can be cultivated and stimulated simultaneously, serially, or following a controlled time plan in a closed mini-bioreactor. Transplants grown in this manner are useful as tissue replacement materials for the treatment of, for example, connective and support tissue defects, direct joint traumas, rheumatism and degenerative joint diseases and can be used in knee joint arthrosis as an alternative to conventional (operative) therapeutic application, such as, for example, microfracturing or drilling.

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