Title (en)

MICROFLUIDIC DEVICE FOR THE DIGESTION OF TISSUES INTO CELLULAR SUSPENSIONS

Title (de)

MIKROFLUIDISCHE VORRICHTUNG ZUR VERDAUUNG VON GEWEBE ZU ZELLSUSPENSIONEN

Title (fr)

DISPOSITIF MICROFLUIDIQUE POUR LA DIGESTION DE TISSUS EN SUSPENSIONS CELLULAIRES

Publication

EP 4294568 A1 20231227 (EN)

Application

EP 22756955 A 20220217

Priority

- US 202117180711 A 20210219
- US 2022016855 W 20220217

Abstract (en)

[origin: WO2022178168A1] A microfluidic device uses hydrodynamic shear forces on a sample to improve the speed and efficiency of tissue digestion is disclosed. The microfluidic channels are designed to apply hydrodynamic shear forces at discrete locations on tissue specimens up to 1 cm in length and 1 mm in diameter, thereby accelerating digestion through hydrodynamic shear forces and improved enzyme-tissue contact. The microfluidic digestion device can eliminate or reduce the need to mince tissue samples with a scalpel, while reducing sample processing time and preserving cell viability. Another advantage is that downstream microfluidic operations could be integrated to enable advanced cell processing and analysis capabilities. The device may be used in research and clinical settings to promote single cell-based analysis technologies, as well as to isolate primary, progenitor, and stem cells for use in the fields of tissue engineering and regenerative medicine.

IPC 8 full level

B01L 3/00 (2006.01); **C12M 1/00** (2006.01); **C12N 15/10** (2006.01)

CPC (source: EP KR)

B01L 3/502746 (2013.01 - KR); **B01L 3/502753** (2013.01 - EP KR); **C12M 23/16** (2013.01 - EP KR); **C12M 45/02** (2013.01 - EP KR); B01L 3/502746 (2013.01 - EP); B01L 2200/0647 (2013.01 - EP KR); B01L 2300/0681 (2013.01 - EP KR); B01L 2300/0816 (2013.01 - EP KR); B01L 2300/0864 (2013.01 - EP KR); B01L 2400/0487 (2013.01 - EP KR); B01L 2400/086 (2013.01 - EP)

Designated contracting state (EPC)

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Designated extension state (EPC)

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