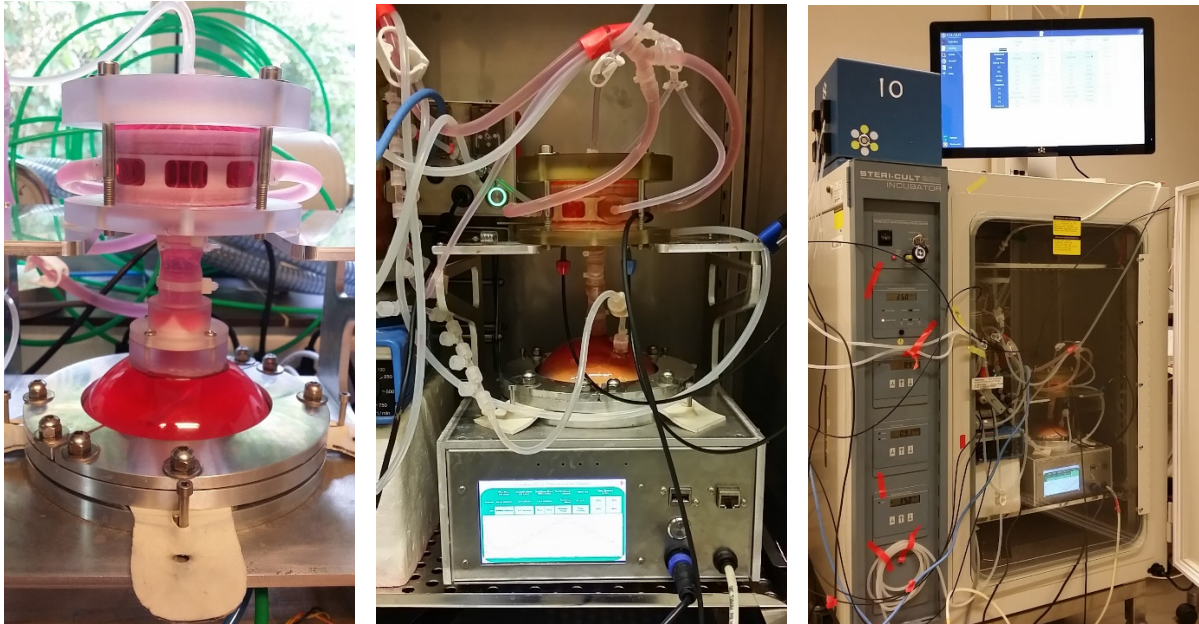
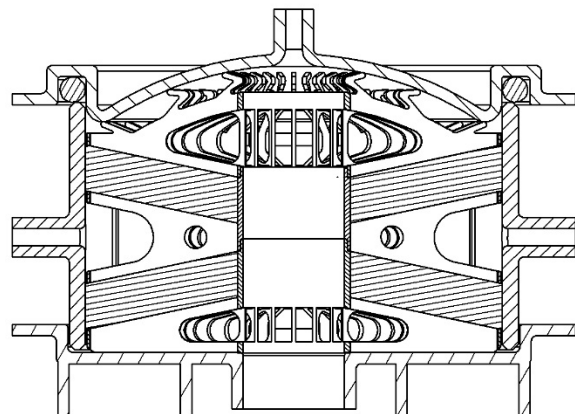


HESUB project combines several individual technologies from previous FP projects into one product that is capable of producing enough stem cells for one therapeutic treatment per day per unit. The HESUB product concept is a Single-Use-Bioreactor, which integrates a nanofibre porous scaffold optimised for the proliferation of cells and a sensor package that measures a range of key parameters. Which provides cost-efficient production of human stem cells for therapeutic treatment or a range of diseases.



The HESUB concept shown in various laboratories. The curved dome integrate the diaphragm of the pump which is used for media recirculation and cell bleeding. Sensors from Presens measure pH, DO, Lactate and Glucose. Process-Control-System from Solaris Biotech control the process.



The 50 ml scaffold volume from TECL are fixed inside two envelope spaces with fresh media inlet from top and bottom. Used media outlet between the two angled envelopes. Cells are harboured inside the scaffold and cultivated stationary and harvested via the diaphragm pump without the use of Trypsin.

HESUB's goal is to update the current 2D technology used for culturing satellite cells by inventing a perfused Single-Use-Bioreactor. This device allow the propagation and/or differentiation of large numbers of satellite cells that retain myofibre regeneration properties of satellite cells.

- 1) Stobbe Tech A/S, Denmark
- 2) The Electrospinning Company Ltd, United Kingdom (TECL)
- 3) PreSens Precision Sensing GmbH, Germany
- 4) 3H Biomedical, Uppsala, Sweden
- 5) Kungliga Tekniska Högskola, Royal Institute of Technology, Stockholm, Sweden (Coordinator)

Project acronym: HESUB
Project full title: "High Efficient, Single Use-Bioreactor simulating mammalian tissue conditions for expression and proliferation"
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