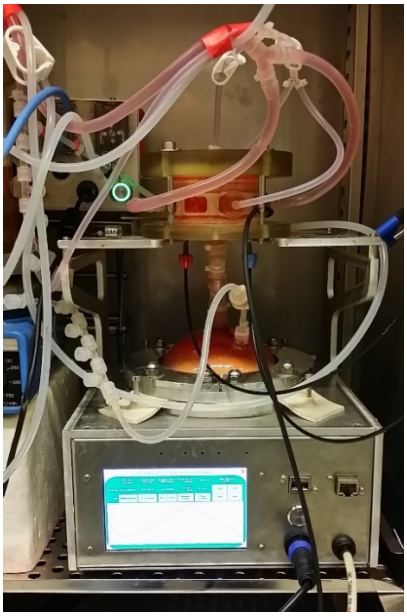
www.hesub.eu

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.



The HESUB concept depends on a diaphragm Single-Use-Pump (SUP). The pump chamber is connected directly to the SUB and convey all liquids. A very important feature is the SUP is able to bleed out, harvest cultivated cells without the use of Trypsin. The position of the diaphragm is constantly measured with 0.1 mm accuracy. The build-in computer control movements of the diaphragm and hereby volume, velocities, pulsations are under full control. The newly patented SUP offer low cost-of-use and unique performance.

The dome is sealed with a thin silicone membrane dividing the sterile wetted internal volume from external non-sterile environment. One or more hoses connect to inlet, outlet, valves, pinch valves for control of liquid volume and direction. This SUP eliminate the typical need for peristaltic pumps.

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) Kunglige 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" HESUB is funded by the European Union 7th framework programme under grant agreement no. 601700