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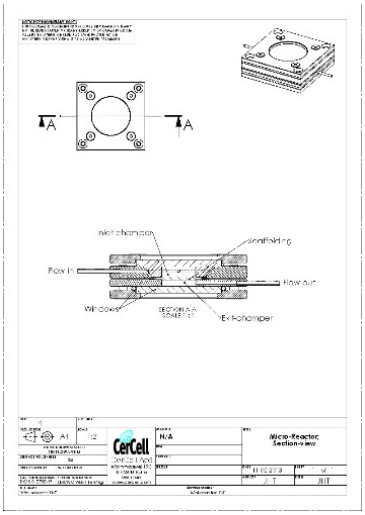
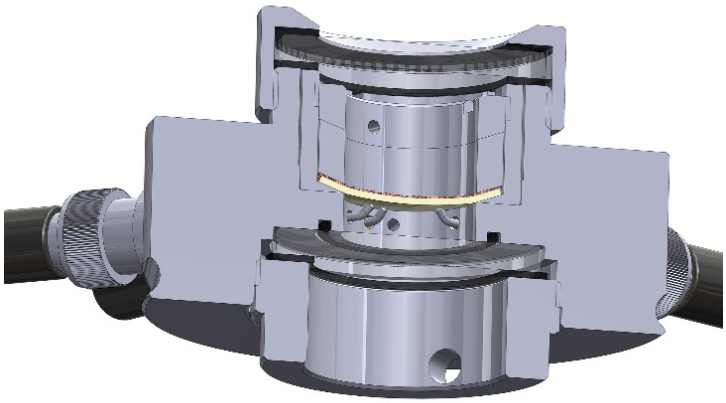
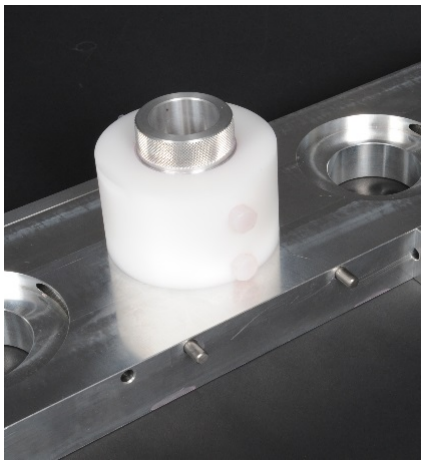
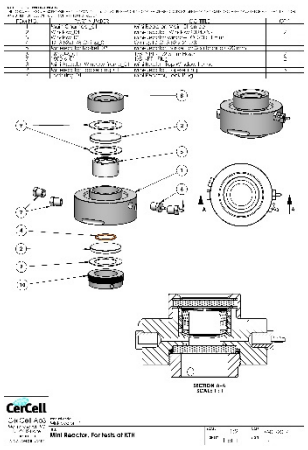
HESUB project combines several individual technologies from previous FP projects into one product that is capable of producing enough stem cells for one therapeutic treatment per day per unit. The HESUB product concept is a Single-Use-Bioreactor, which integrates a nanofibre porous scaffold optimised 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.





13 very different mini-bioreactor design was developed, 5 different types manufactured in numbers and supplied to KTH. The final and 5th produced was found to fulfil the many requirements.





6 sets of ver 5 of the mini-bioreactor with 5 ml scaffold was manufactured purely in AISI316 steel. One of several advantages of the latest design is that the scaffolding envelope can easily be altered in height from almost zero to 6 mm. The flow of media is laminar through and perpendicular to the scaffold.

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 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