

CellRetention-13 P-SUBmerged™ ATF

World's most efficient Perfusion-SUB

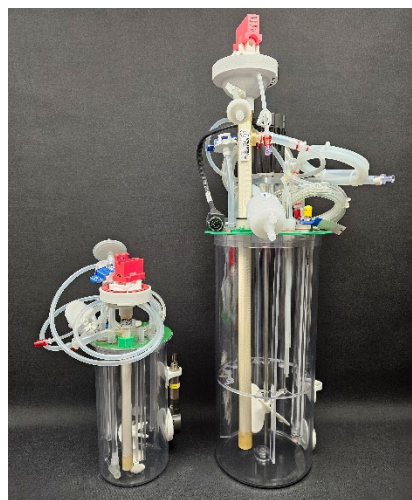
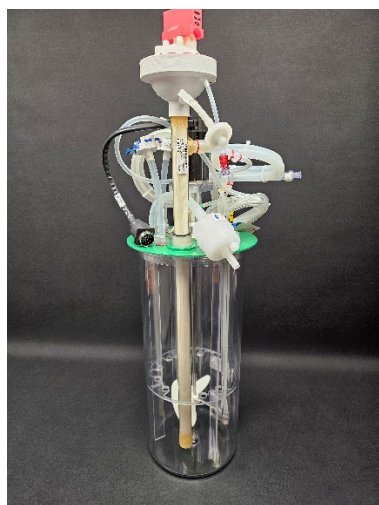
This unique setup SUBmerge the Hollow-Fiber-Filter inside the Single-Use-Bioreactor with the inverted integrated diaphragm Single-Use-Pump on top of the HFF. Extra ordinary benefits are:

Avoid fouling – avoid dead volume – avoid cell death – reduce shear force stress

Perfusion-SUBmerged in ATF perfusion cultivation by cell retention including also necessary Single-Use-Sensors. By variable, selectable broth velocity ranging 0 – 10 m/s fouling is regularly flushed out of the HFF and back into the SUB by the Thalia pump. SUBmerged HFF eliminate any need for hoses and connectors thus no dead volume. The inverted pump by nature cannot retain cells. SUBmerged has no fluid path restrictions and shear force stress is thus also eliminated.

General features of CellRetention SUBmerged-13 P-SUB:

- The Thalia diaphragm pump is directly integrated with the Meissner SeptraPor HFF
- Working Volume range from 4 to 10 liter for >100 mio/CHO/cell/ml cell density
- Pumped volume and velocity accurately measured – no guessing.
- The complete and pre-assembled unit packed in dual film bags and precision irradiated – forget the autoclave.



LASER sensor mounted in the red bracket above the dome of the Thalia TM100 pump. 650 different impellers from www.CerCell.com to choose from. The P-SUBmerged agitation is driven via Head-Plate-Drive and easy to integrate for thermal control with an Electrical-Heating-Blanket.

The SUBmerged-13 is from birth a P-SUB by integrating both the SUB, HFF, SUP, SUS in one package. Shown version features pre-installed DO, pH, level, and mounted with InCyte bio-mass Single-Use-Sensor patch. The Thalia TM100 is driven by the Clotho Drive Unit and offers 5-200 ml/stroke capacity, 15 strokes/min and measure conveyed volume and velocity with 2% accuracy.

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