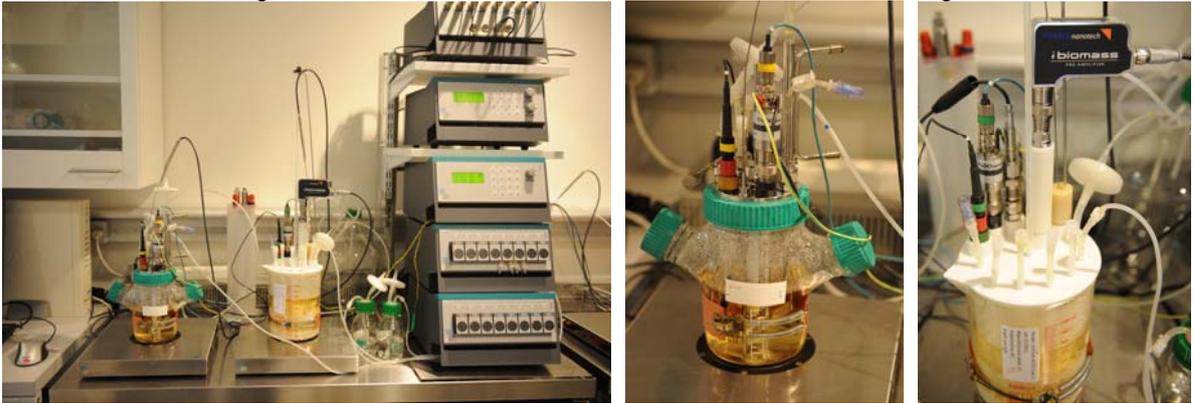


CellTank SUB in perfusion mode operation at Bioneer

Holger K. Riemann, Per Stobbe, Bent Svanholm, Peter Mosegaard



Set-up on DasGip with batch in traditional glass/steel STR on stirrer table 1 and perfusion SUB on stirrer table 2.

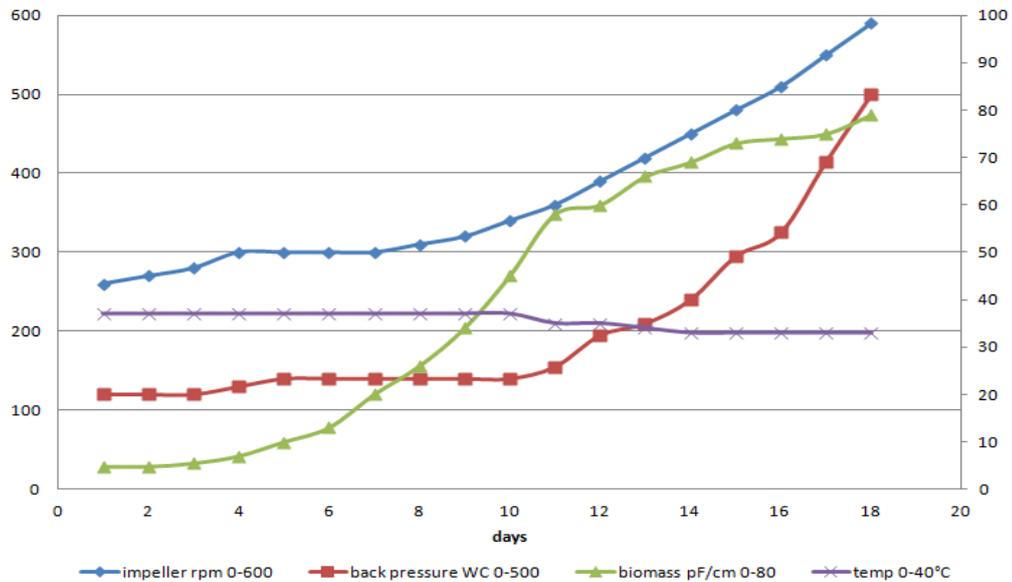


Figure – Relation between data which show the development of increased impeller rpm in order to keep constant flux at 20 cm/min as to the increase in bio mass measured in pF/cm. Start at 4.9 pF/cm and end at 79 pF/cm. The measured bio mass to actual cell number **correction factor** is app 1 pF/cm = one million cells per millilitre matrix volume.

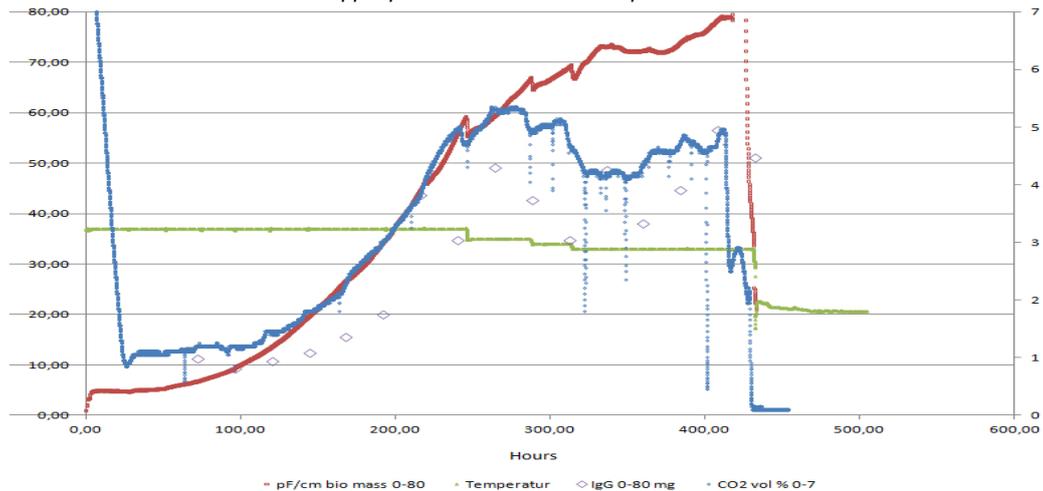


Figure – VCD measurement of bio mass vs. vol % CO2 in off-gas vs. specific productivity of IgG in 10 mg day over hours.

The SUB operated over several days at ~70 pF/cm cell mass density at 33°C with app 1 g/liter glucose and ~40 mMol lactate. The CHO cell line was able to express a product at temperature as low as 33°C with limited proliferation. The SUB produced 0.52 gram product over 15 days with 31 litre spent media being 11 times more than the STR batch which produced 0.045 gram antibody based on 0.6 liter media.