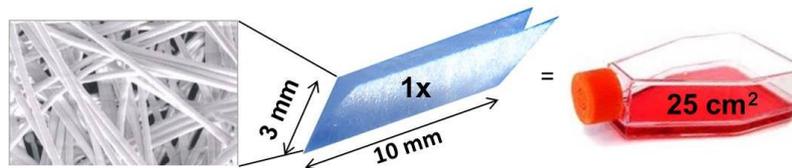


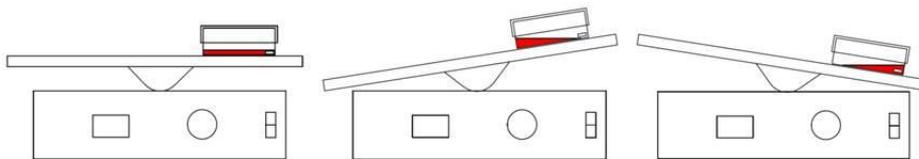
## Mini-TideCell: Cell Culture Device with Microcarriers

Mini-TideCell is a small scale cell culture device mimicking the tidal flow principle. It was developed to pre-test the TideCell® concept: to pre-select a suitable culture medium, and to pre-test cell performance including cell attachment, cell growth and cell harvest. Therefore, it serves as a very useful tool to assist in process development and scaling up studies, e.g. before using Cesco's BelloCell® bioreactor, or it can be used for small scale production of proteins, viruses and more.



One Mini-TideCell contains two BioNOC™ II microcarriers in a cell culture plate for adding 10 ml culture medium without requiring repeated exchange of culture medium during culture. The cell number in one BioNOC™ II microcarrier is equivalent to one 25 cm² T-flask.

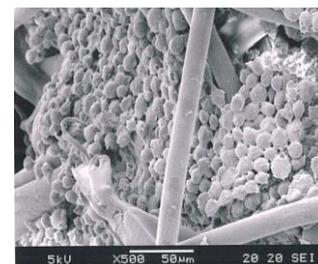
For operating Mini-TideCell, one has to prepare a rocker with 10 to 15° tilt angle and minimum 5 rpm rocking rate. After seeding of cells in 10 ml culture medium and placing the device on a rocker, the BioNOC™ II microcarriers will be exposed to air and submerged by media alternatively during the rocking motion mimicking the tidal flow.



**Suitable rockers also in our programme**

### BioNOC™ II Microcarrier

Material	100 % PET
Dimension	5 mm x 10 mm strip
Pore Size	50 - 200 µm
Specific Surface Area	2.400 cm²/g
Autoclavable	Yes (121 °C, 30 min in PBS)
Gamma Irradiation	Yes (25 kGy)
Endotoxin Tested	Yes (<0,25 EU/ml)
Bioburden Tested	Yes (<1 CFU/g)
Cytotoxicity Tested	Yes, pyrogen-free
Quality Control	USP Class VI, USP<87>,<83>, ISO 10993-5
Storage / Shelf Life	Room temperature, dark / 2 years
Cell Lines	CHO, CHO-K1, rCHO-hlgO, rC-127-TPA, HEK-293, VERO, SF-9, Hi-5, BHK-21, rBHK-Factor VIII, HepG2, Hela, Huh7, RK-13, ST, MDCK, MDBK, 3T3, MRC-5, CEF, human foreskin fibroblast, human muscle skeleton cell, human mesenchymal cell, human embryonic stem cell, etc.
Literature	"Growth of Mammalian and Lepidopteran Cells on BioNOC™ II carriers, a novel macroporous microcarrier", Drugmand J.-C., Michiels J.-F., Agathos S.N., Schneider Y.-J



SEM figure of Sf-9 cells in BioNoc™ II microcarrier

Cat. No.	Description	Case
BAG001AA	<b>Mini-TideCell Cell Culture Device</b> One case contains 1 Mini-TideCell device with 2 BioNOC™ II microcarriers. Pre-packed, pre-sterile, and ready-to-use. Minimum order quantity: 10 pcs.	1

## Protocol

1. Prepare a rocker with at least 10 to 15° tilt angle and minimum 5 rpm rocking speed. Place it into a CO<sub>2</sub> incubator humidified with a water tray.
2. Prepare cells with a concentration of 200,000 to 400,000 cells in 2.5 ml culture media.
3. Shake the Mini-TideCell to move the BioNOC™ II microcarriers to one side of the device.
4. Drop 1.25 ml of the cell containing media on each BioNOC™ II microcarrier.
5. Start rocking the Mini-TideCell device immediately at 5 rpm with 10 to 15° tilt angle to ensure that the BioNOC™ II microcarriers are alternatively covered by or free of the medium.
6. After 3 to 4 hours, collect a sample of media for cell counting in order to measure the cell attachment efficiency.
7. If the cell attachment rate is satisfying, add 7.5 ml of media for a total of 10 ml per device.  
If the cell attachment rate is too low, continue rocking without additional media and count again later.
8. Check the cell growth after three and six days during culture. Usually cells will grow to plateau by day five or six if sufficient cells were added initially. Cell counting could be done by trypsin or crystal violet nuclei count method. Users can fix and stain the cells to observe cell morphology under a microscope.

## Growth of Hek293 and Vero cells in Mini-TideCell devices compared to T25 flasks

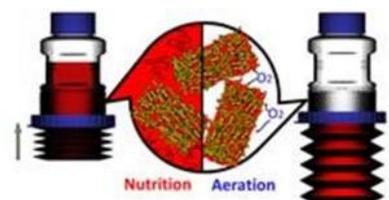
	Hek293 cells		VERO cells	
	Mini-TideCell	T25 flask	Mini-TideCell	T25 flask
<b>Number of microcarriers</b>	2	0	2	0
<b>Cell count method</b>	CVD	Vi-Cell	CVD	Vi-Cell
<b>Number of cells seeded</b>	200,000	200,000	200,000	200,000
<b>Number of cells at day 3 (Increase ratio)</b>	2,420,000 (12.10 x)	1,380,000 (6.92 x)	3,040,000 (15.23 x)	1,730,000 (8.67 x)
<b>Number of cells at day 6 (Increase ratio)</b>	10,400,000 (51.90 x)	5,880,000 (29.42 x)	9,440,000 (47.23 x)	4,380,000 (21.90 x)

## Further suitable products

(Please enquire for additional information)

### BelloCell® High Density Bioreactor

- Disposable high-yield cell culture system
- Systems with or without continuous media recirculation
- **Operating mode:**  
BelloStage® compressor actively compresses the BelloCell® bottles to force the medium up through the porous microcarriers, where cells reside and grow.  
When the BelloStage® platform lowers, the bottle fully expands and media recedes, exposing cells to air to facilitate aeration.
- **Applications:**  
Mammalian and insect cell culture, protein and virus production, monoclonal antibody production, proteom and drug research, etc.



### GlucCell® Glucose Monitoring Systems

- Designed for measuring the glucose concentration in serum-containing and serum-free culture medium during mammalian- and insect cell culture.  
Also suitable for yeast culture.
- Measurement range: 20 - 600 mg/dl (1.1 - 33.3 mmol/l)
- Pre-calibrated and ready-to-use
- Direct measurement without requirement to separate cells
- Precision: 95 %, Accuracy >90 %
- Sample volume: 1.5 µl, Test result time: 15 seconds

