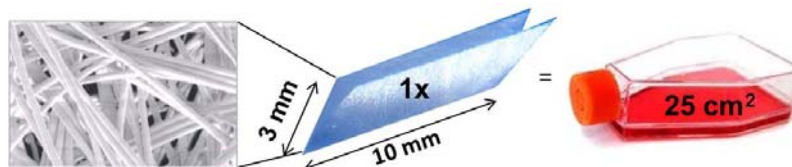


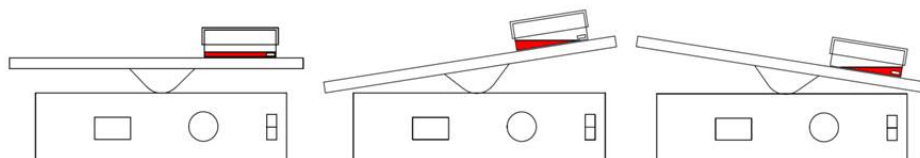
Mini-TideCell: Cell Culture Device with Microcarriers

Mini-TideCell is a small-scale cell culture device mimicking the tidal flow principle. It was developed to pre-test the TideCell® concept: to select a suitable culture medium, and to 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 cultivation. The cell number in one BioNOC™ II microcarrier is equivalent to one 25 cm² T-flask.

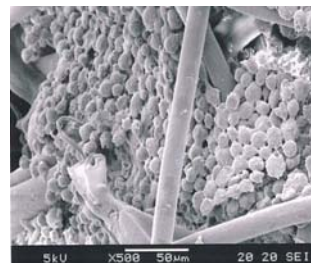
For operating Mini-TideCell, prepare a rocker with 10 to 15° tilt angle and minimum 5 rpm rocking rate. After seeding of cells in 10 ml culture medium and placing the device on a rocker, the BioNOC™ II microcarriers will be exposed to air and submerged by media alternatively during the rocking motion 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; Cell Technology for Cell Products, pp. 781-784



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

Cat. No.	Description	Case
BAG001AA	Mini-TideCell Cell Culture Device 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.
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 dish.
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 are free of the medium.
6. After 3 to 4 hours, collect samples from each Mini TideCell for cell counting in order to determine the cell attachment efficiency.
7. If the cell attachment rate is satisfactory, add 7,5 ml of media for a total of 10 ml per dish.
If the cell attachment rate is too low, continue rocking without addition of media and count again later.
8. Check the cell growth after three and six days of cultivation. Usually cell growth reaches a plateau (stationary phase) by day five or six if sufficient cells were added initially. Cell counting can be done either after trypsin addition (cell dissoziation) or by the crystal violet nuclei count method. Users can fix and stain their 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
Number of microcarriers	2	0	2	0
Cell count method	CVD	Vi-Cell	CVD	Vi-Cell
Number of cells seeded	200,000	200,000	200,000	200,000
Number of cells at day 3 (Increase ratio)	2,420,000 (12.10 x)	1,380,000 (6.92 x)	3,040,000 (15.23 x)	1,730,000 (8.67 x)
Number of cells at day 6 (Increase ratio)	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 (Tidal flow principle):

BelloStage® compressor actively compresses the BelloCell® bottles to force the medium and air up through the porous microcarriers, where cells reside and grow.

When the BelloStage® platform lowers, the bottle fully expands and culture medium recedes, exposing cells to air facilitating 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

