

# BioNOC II™ Cell Culture Microcarriers

BioNOC™ II are carriers for the growth of animal, mammalian and insect cells. Most anchorage-dependent cells have been successfully grown in BioNOC™ II carriers in both serum-containing and serum-free medium. BioNOC™ II is made by 100% pure polyester non-woven fabrics according to cGMP guidelines.

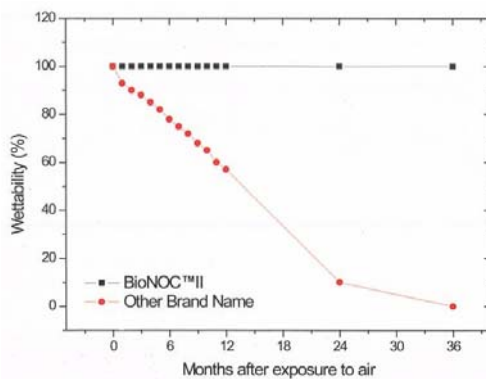
The fabrics are specially surface-treated to make it hydrophilic and biocompatible. It is then process through a cutting procedure to form a 5 mm wide and 10 mm long strip.

## Features

- 100% pure PET non-woven fabrics
- Non-pyrogenic
- Non-cytotoxic
- High cell density (up to  $1 \times 10^9$  cells/g)
- High surface area to volume ratio; S/V  $300 \text{ cm}^{-1}$
- High specific surface area ( $2,400 \text{ cm}^2/\text{g}$ )
- Novel surface treatment technology with no decay of hydrophilicity
- All materials are manufactured according to cGMP guidelines



BioNOC™ II carriers are specially folded to enable sufficient nutrient transfer during cell culture



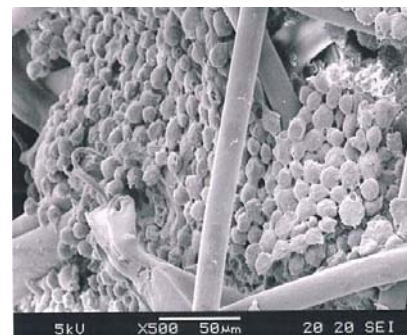
Long term monitoring for hydrophilicity stability test indicating zero decay of wettability in BioNOC™ II carriers for over 36 months, compared with the decay profile in other matrices



BioNOC™ II is made from 100% PET fabrics

## BioNoc™ II Specification

Material	100% PET
Dimension	5 mm x 10 mm strip
Porosity	~94% in packed bed
Specific Surface area	$2,400 \text{ cm}^2/\text{g}$
Packed volume	15 ml/g
Autoclvable	OK (121 °C, 30 min in PBS)
Gamma Irradiation	OK (25 kGy)
Endotoxin Tested (Limulus Ameobocyte Lysate)	Yes (< 0,25 EU/ml)
Bioburden	Yes (< 1 CFU/g)
Cytotoxicity Tested	Yes (serum and serum-free culture test)
Quality control	Bioburden, LAL test, Cytotoxicity, Growth performance according to USP<87><88>, ISO 10993-5



SEM Figure of Sf-9 cells in BioNoc™ II carriers

Many types of cells, including Vero, Sf-9, Hi-5, Sf-21, BHK-21, rBHK, CHO-K1, rCHO, rC-127, HEK293, HEK293A, HepG2, C3A, Hela, Huh 7, RK-13, L929, Human Foreskin Fibroblast cells, Human Muscle Skeleton cells, Human Mesenchymal cells, Human embryonic stem cells have been successfully cultured in BioNOC™ II cell culture carriers and in BelloCell® bioreactors.

Lit.: "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.; ESACT June 2005

## BioNOC II Carriers Questions & Answers

### 1. Q: What is BioNOC II?

A: BioNOC II carriers are made of 100% PET fabrics. They are processed through a special surface treatment to make it biocompatible according to cGMP guideline. The carriers provide around 2,400 cm<sup>2</sup>/g specific surface area for cell growth. One gram of BioNOC II carriers can occupy 15 ml packed bed volume.

### 2. Q: Is BioNOC II carriers FDA approved?

A: BioNOC II disks are made from FDA approved materials and are manufactured according to cGMP guideline. BioNOC II disks are manufactured in a 10,000 class clean room with strict quality control. A Certificate of Qualification document will accompany each purchase order.

### 3. Q: Can cells in BioNOC II be viewed under a microscope?

A: BioNOC II disks are made of porous nonwoven fabrics. Cells are difficult to be viewed directly through phase contrast microscope without staining. The common staining solution is hematoxylin, coomassie brilliant blue G etc.

### 4. Q: Can I culture cells by using serum-free medium in BioNOC II ?

A: Yes, most serum-free medium can be used with BioNOC II carriers. Customers are encouraged to request samples for testing and evaluation.

### 5. Q: Can I obtain BioNOC II carriers solely for other purposes?

A: Yes, you can purchase BioNOC II carriers. They are autoclavable and can be applied to packed-bed type bioreactors.

### 6. Q: Are BioNOC II carriers autoclavable or reusable ?

A: BioNOC II carriers can be autoclaved, gamma-irradiated and EO sterilized. BioNOC II is designed for one time use only. Reuse BioNOC is not recommended.

### 7. Q: How can I autoclave BioNOC II carriers?

A: First distribute BioNOC II carriers inside bioreactor chamber, and then add PBS to submerge the carriers. Remember that one gram of BioNOC II carriers can be packed for 15 ml. Autoclave at 121 °C for 30 mins. Drain the PBS solution before adding culture medium and preparing cell culture.

#### Order information:

Cat. No.	Description	Case Qty.
BN0050	BioNOC™II Cell Culture Carriers (50 g )	1
BN0250	BioNOC™II Cell Culture Carriers (250 g)	1