

NANT 001 System



The Smartest System for
Automated Cell Expansion

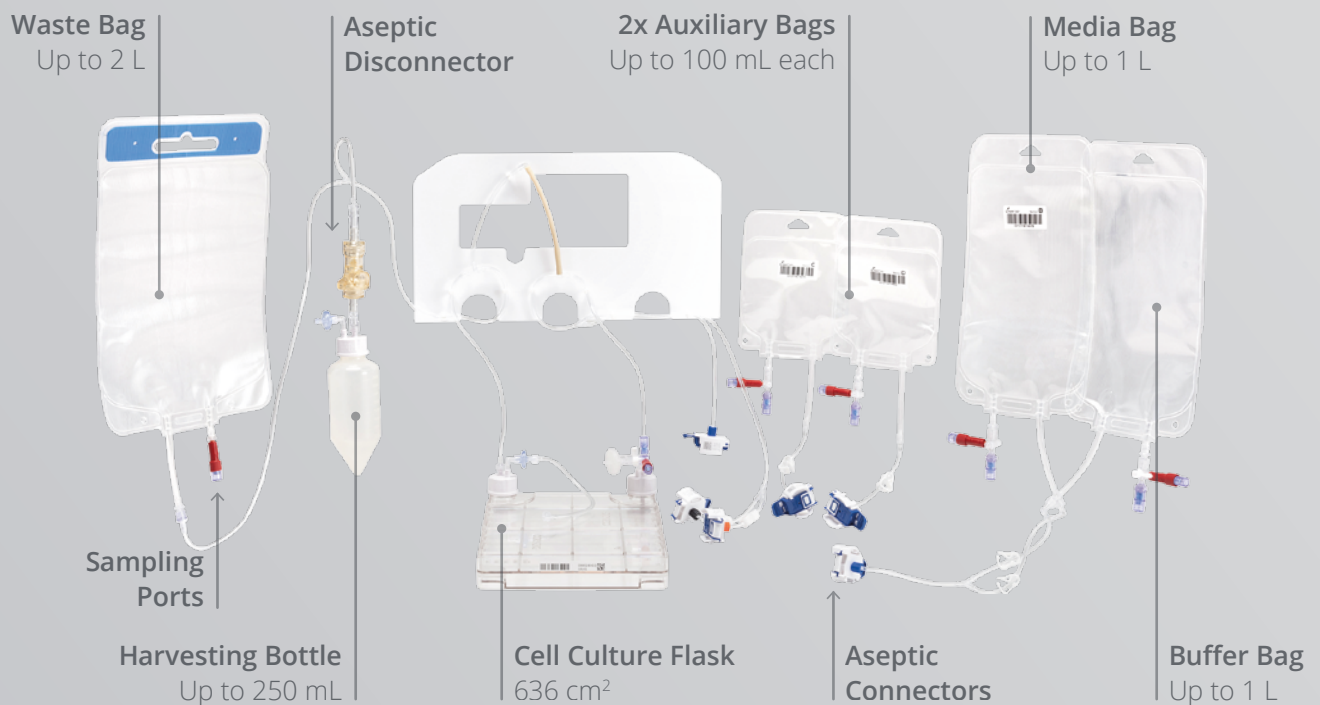
NANT 001 Bioreactor

Automation at your service, built-in microscope, in-process controls including reliable confluency estimation and remote access for continuous monitoring. Everything at your fingertips. Sophisticated technology made simple thanks to the distinctive features of NANT Automated Cell Culturing Systems.



NANT 001 Cartridge

Components you already know, engineered in an easy-to-load, single-use closed-system for safe and cGMP-compliant cell processing.



Aseptic Connections, in seconds

As in all NANT Automated Cell Culturing Systems, the different sections of NANT 001 Cartridge are designed to be quickly and easily connected and disconnected - when required - thanks to the integration of validated aseptic connectors and disconnectors.



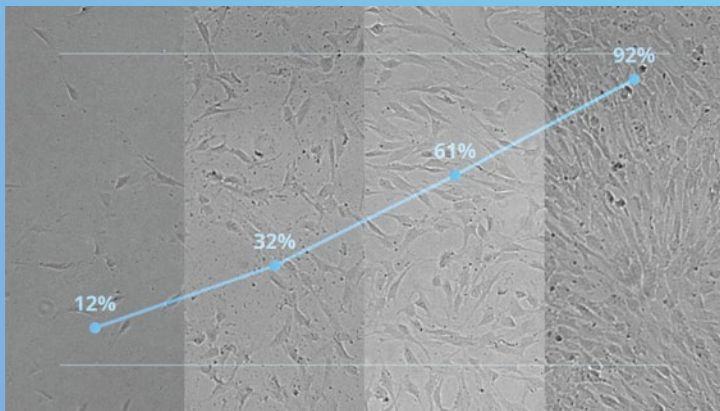
Integrated Cell Imaging System

Automated real-time visual cells monitoring thanks to autofocus liquid lens microscope which periodically grants clear and sharp downloadable images of the cell culture in progress.



Unique Microscopic Imaging and Cell Confluency Estimation

The built-in auto-focus microscopic imaging automatically acquires and calculates Cell Confluency. The ideal feature to identify the optimal timeframe for cell harvesting - or just to see cells growing in real-time.



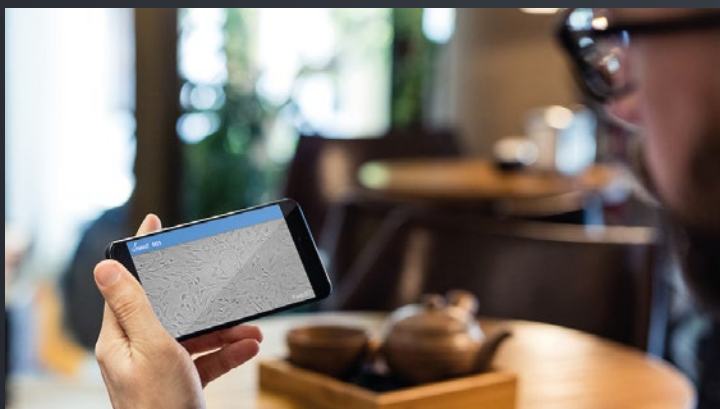
Gas Mixing Accessory

NANT G-MIX is the most reliable and flexible choice allowing for a precise flow regulation and mixing of input gasses, designed to be implemented within the NANT 001 System. Each NANT G-MIX can serve up to 5 NANT 001 Systems.



Remote Access to Real-Time In-Process Control

In-process control information can be accessed remotely in real-time, by a dedicated web application. Users can conveniently monitor the culture performance from any device, anywhere and whenever. Even during coffee break!



Ready for Downstream Processing

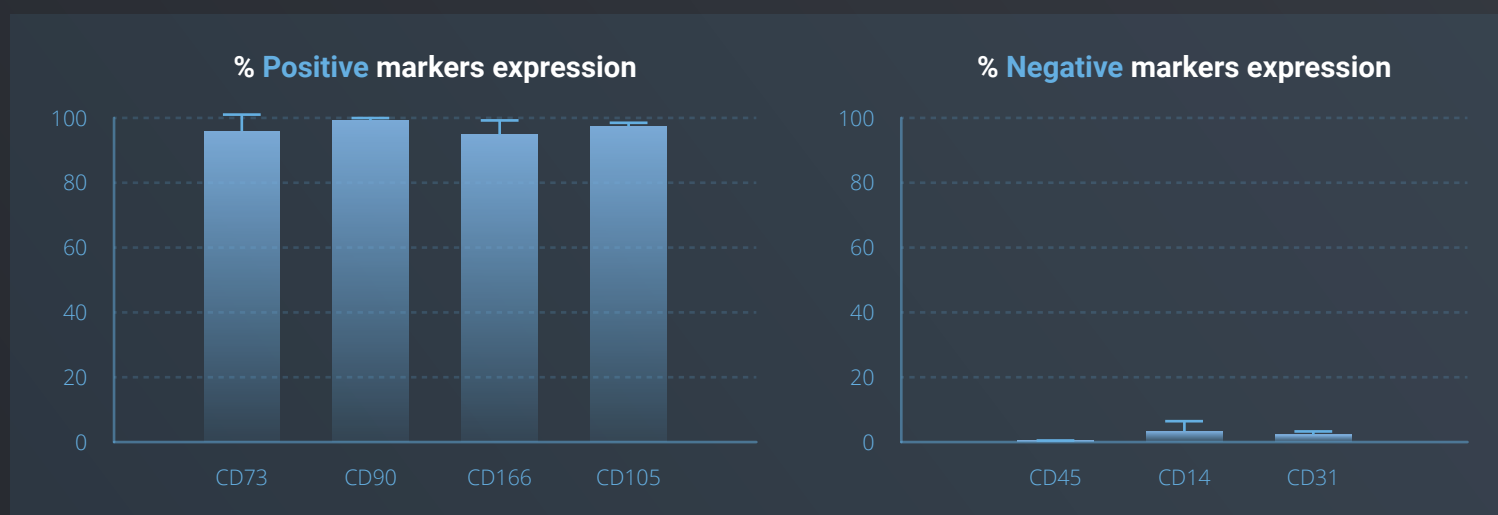
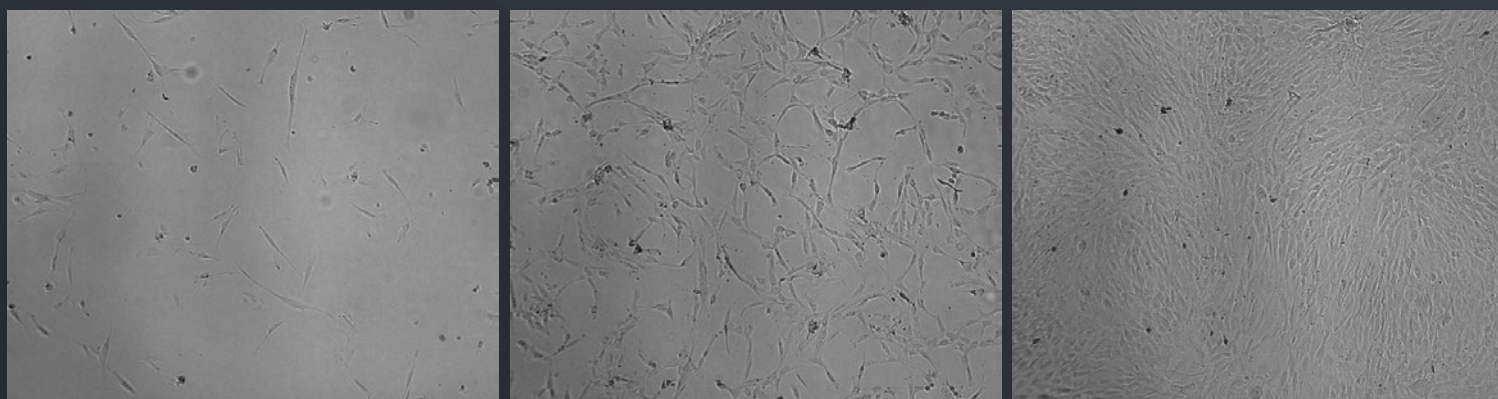
NANT 001 System output is ready for the required downstream processing with no further operation. It is provided in the form of a cell suspension contained into a conical-bottom centrifuge tube for absolute convenience.



Example of AD-MSCs Expansion with the NANT 001 System

Amount of starting material	Days of culture	Cell Culture Surface (cm ²)	No. of cells harvested	Density of harvested cells (no. of cells/cm ²)	Viability of harvested cells (%)
SVF from 10 mL of lipoaspirate	10 ± 3	636	53.7 × 10 ⁶ ± 16.6 × 10 ⁶	8.98 × 10 ⁴ ± 2.29 × 10 ⁴	92.6 ± 3.0

Representative images of MSCs taken by the NANT 001 System during cell culture



Highlights

- Straight-forward cell expansion system, for a seamless transition from a manual to an automated culturing protocol.
- Remote monitoring of culture conditions and in-process control.
- Suitable for small and mid-size batches with proven results in culturing MSCs from different sources.
- Flexibility of the system for different types of cell cultures, both in adhesion and suspension.
- Full traceability of operations, disposables and identification of users, with final cell culture report downloadable as PDF.

Technical Specifications

NANT 001 Bioreactor

Dimensions 50 x 92 x 58 cm
(W x D x H) 19,7 x 36,2 x 22,8 in

Weight 61 kg
134,5 lbs

Operating 18-28°C
Temperature 64-82°F

Pump Flow Rate 1-100 mL/min

User Interface 7" resistive touch-screen

Connectivity Wireless remote process control
and ethernet port

Traceability Barcode-based User and
Cartridge identification

Remote Access Web application-based access to
process parameters and culture
microscope images

Cell Culture Report Automated recording of
Information user-dependent operations,
process parameters (temperature,
pH), error log, sampling log, cell
confluency graph

Power Supply 100-240 VAC, 50/60 Hz

NANT 001 Cartridge

Working volumes

Cell Culture Flask 40 mL – 700 mL
(636 cm²)

Media Bag Up to 1 L

Buffer Bag Up to 1 L

Auxiliary Bags (2x) Up to 100 mL

Waste Bag Up to 2 L

Materials

Cell Culture Flask Polystyrene

Bags (UV-safe) EVA, EVOH

Tubing (fluid path) Tygon®

Tubing (pump segment) Pharmed® BPT

Harvesting Bottle Polypropylene

Gas Filters (0,22 µm) Nylon

Other info

β-rays Irradiation Dose >25 kGy

Sampling Ports Unidirectional sampling valves

Sections Connections Genderless sterile-septum
connectors and disconnector

NANT 001 System is designed for Research purposes and any use for human therapy must be conducted under the full responsibility of the user.

ORDERING DETAILS

Item	Catalogue Number
NANT 001 Bioreactor	BM2010G
NANT 001 Cartridge	BC2010G

ENQUIRIES AND SERVICE

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