

S.NEST™

Next-generation Microbioreactor
for Cell Line Development



About the S.NEST

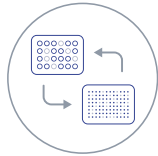
As the biopharmaceutical industry expands, companies are looking for competitive advantages in cell line development. The S.NEST, a high-throughput microbioreactor with CO₂ incubator functions, shortens the process time for cell upscaling, provides a better microscale environment for cell growth, and brings more efficiency to cell line selection.



The S.NEST increases efficiency and productivity for biologics production, drug screening and functional genomics.

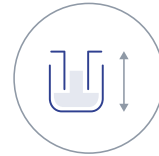


A powerful, productive, compact system



Culture

High-throughput cultivation that enables the incubation of four 24-well or 96-well plates at once.



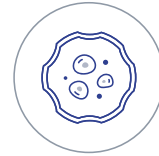
Optimize

Customizable mixing levels thanks to a unique fluid control system that increases cell growth.



Improve

Innovative components and a thoughtful design minimize the impact of evaporation.



Monitor

Real-time monitoring of pH and dissolved oxygen (DO) values during entire cell culturing process.



Analyze

Intuitive software analytics transform data into insights.



Trust

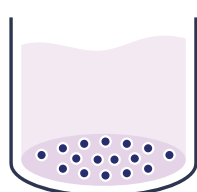
Reliable results allow you to improve your cell culture workflow.



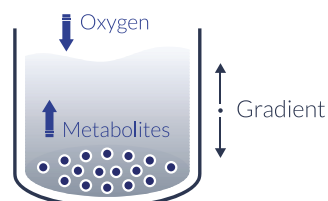
Maximum productivity with minimum effort

The S.NEST introduces suspension culture and late-stage bioreactor conditions to the early-stage cell line development pipeline, providing more growing space and oxygen than static cultures. When using the S.NEST, cells show higher density and viability compared to normal incubation, and weeks of cell expansion are no longer necessary.

× *Static culture*

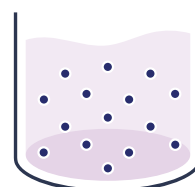


Limited 2D
Growing Space

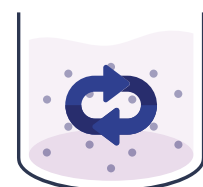


Non-homogenized
Medium

○ *Mixing culture*



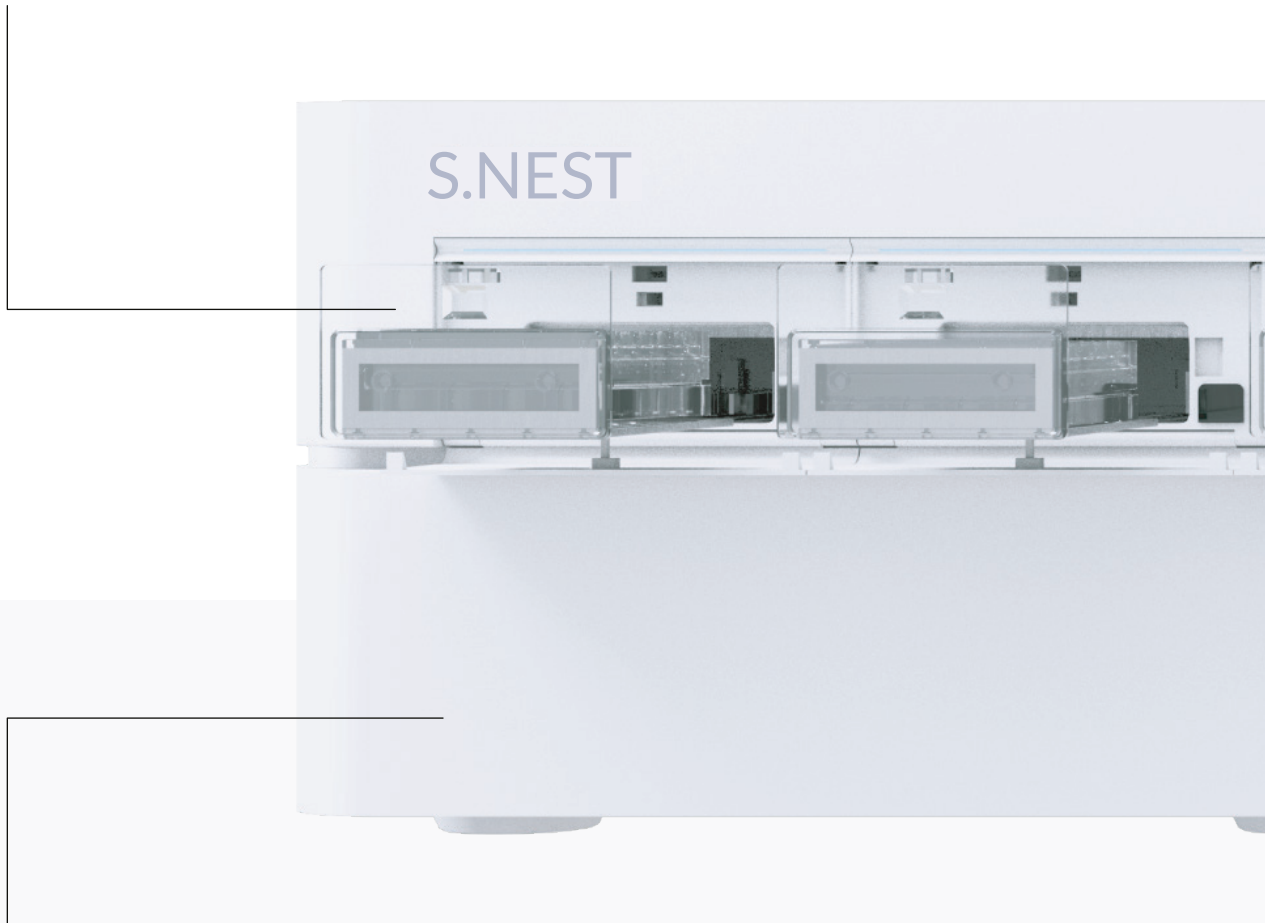
3D Growing Space



Equal Distribution

Designed for your needs

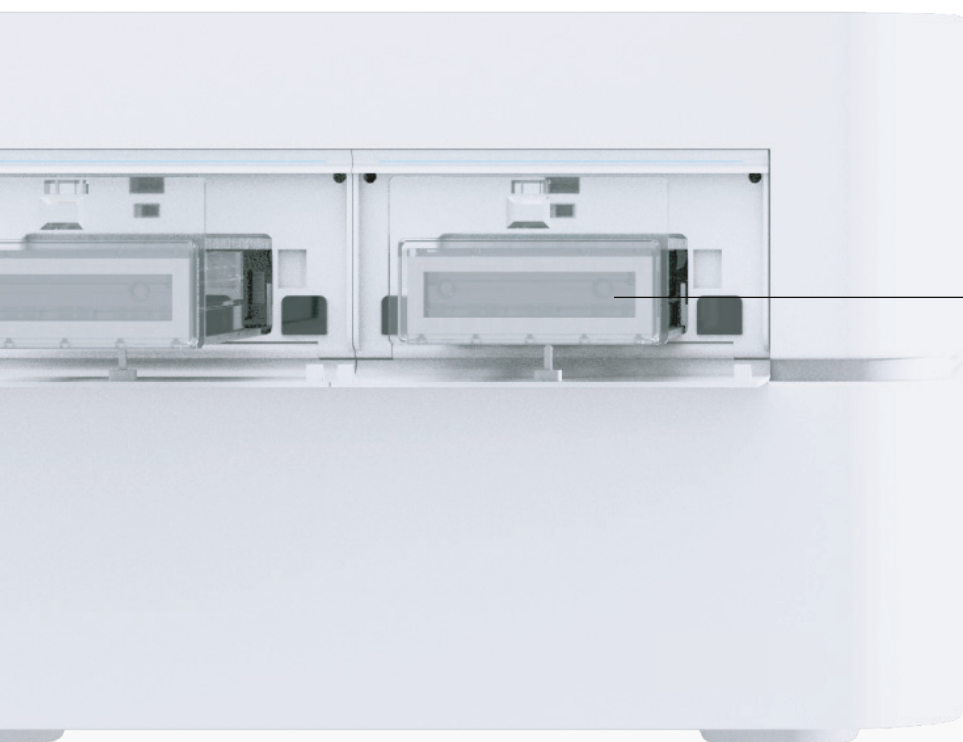
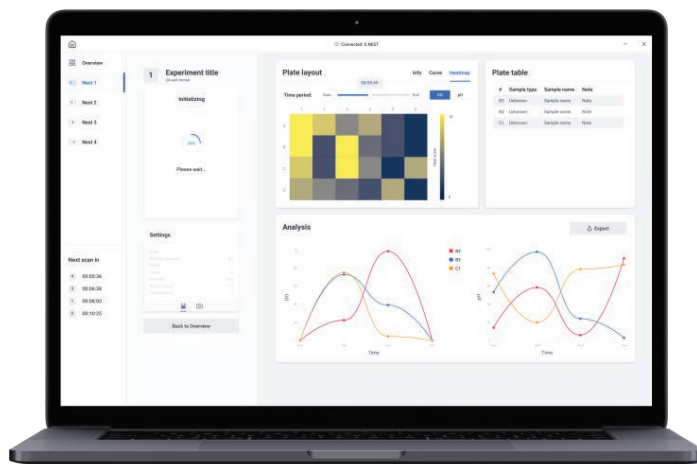
The upper section has four incubation chambers, and each includes a thermal module, water tray and air/CO₂ inlet port and sensor. Each chamber also has individual environmental controls and can fit one 96- or 24-well culture plate, enabling the cell culturing of as many as 384 wells at once.



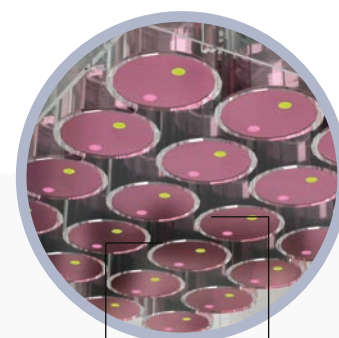
The lower section is a motion camera module that detects the optical signals from the sensors of each plate within 5 minutes and displays real-time monitoring data on the S.NEST software.

Real-time monitoring

The S.NEST software displays the sensor results and allows users to adjust environmental controls.



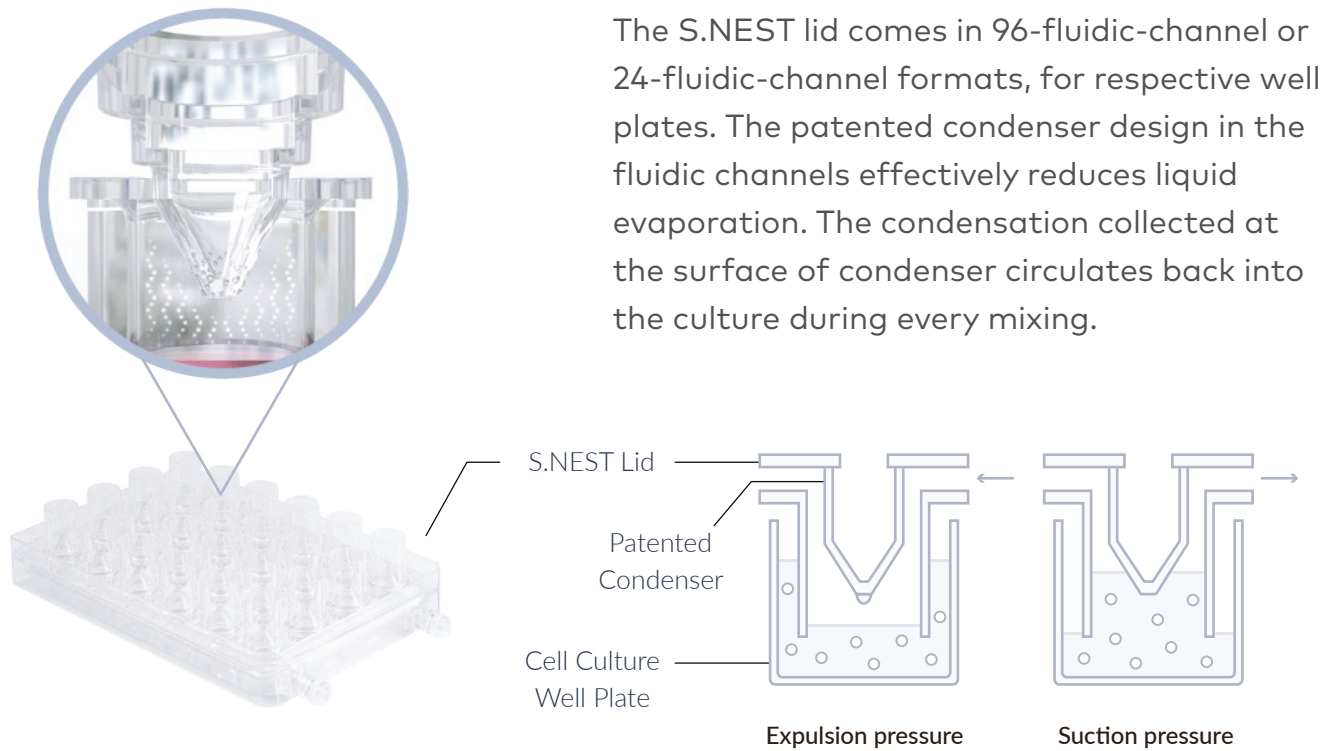
S.NEST 24-Well Plate



Dissolved oxygen
pH levels

Optical sensors are attached to the bottom of each well to monitor the pH and DO value of all wells simultaneously.

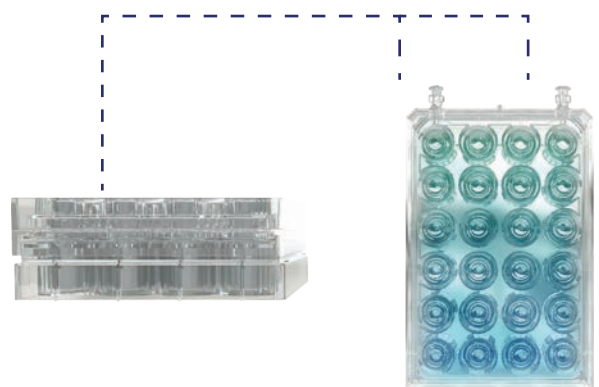
Consumables for optimal cell culture



Increased oxygen transfer

The S.NEST exerts suction or expulsion pressure through the fluidic channels to enable homogenous reciprocating mixing. Adjustable mixing control minimizes shear rate for different cell lines.

The oxygen transfer tubes connecting to the lid offer the cells a continuous oxygen supply to maintain a healthy environment.



Software

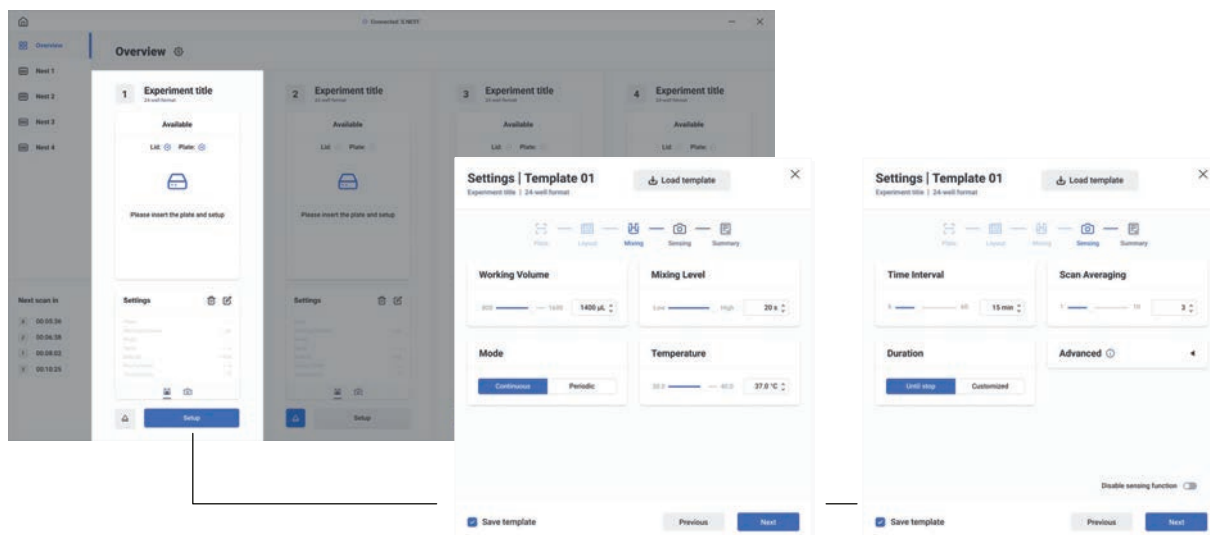
The S.NEST software provides insightful graphs from the pH and DO sensor data:

- Heatmap for each well from start to finish
- Measurements for each well at each time interval
- Time curve table of data from selected wells



The S.NEST software provides intuitive settings for:

- Incubation chamber environment (temperature, CO2 levels and humidity levels)
- Mixing system (mixing level and mode)
- Motion camera (time interval and scan average)



Specifications

Working Volume	96-well plate	150-200 μ L
	24-well plate	1000-1600 μ L
Mixing Control	Rate	10-50 s/period (96-well plate) 10-50 s/period (24-well plate)
	Accuracy	± 1 s
CO₂ Gas Control	Range	1%-20%
	Accuracy	$\pm 0.2\%$
	Control Accuracy	$\pm 0.1\%$
Humidity Monitoring	Range	0%-100% @ 37°C
	Accuracy	$\pm 0.1\%$
Temperature Control	Range	30°C-45°C
	Accuracy	$\pm 0.2^\circ\text{C}$
	Control Accuracy	$\pm 0.1^\circ\text{C}$
pH Measurement	Range	6.0-8.0
	Accuracy	<0.1 pH
	Sampling rate	>5 min
DO Measurement	Range	0%-100% (air saturation)
	Accuracy	<0.5% (@ 0% air saturation) <3% (@ 100% air saturation)
	Sampling rate	>5 min
Dimensions (LxWxH)		434x785x288 mm
Weight		43 kg

Ordering information

Cat. No.	Product	Information
Microbioreactor systems		
2001	S.NEST (24-well format)	<ul style="list-style-type: none"> - 4 S.NEST 24-well culture chambers - DO/pH real-time sensing module - S.NEST Software - Standard warranty (12 months from date of installation) <p>Origin: Taiwan</p>
2002	S.NEST (96-well format)	<ul style="list-style-type: none"> - 4 S.NEST 96-well culture chambers - DO/pH real-time sensing module - S.NEST Software - Standard warranty (12 months from date of installation) <p>Origin: Taiwan</p>
209X	S.NEST (customized format)	<ul style="list-style-type: none"> - 4 S.NEST culture chambers with customized format - DO/pH real-time sensing module - S.NEST Software - Standard warranty (12 months from date of installation) <p>Origin: Taiwan</p>
Recommended Consumables		
FSN01PSN01	S.NEST Cell Culture Kit- 24-well (10 sets / 1 box)	<ul style="list-style-type: none"> - 10 single-packed Greiner CELLSTAR 24-well culture multiwell plates (No. 662102) with DO/pH sensor - 10 single-packed S.NEST 24-well lids
Service and Warranty		
WSN001	1-year extended warranty	<ul style="list-style-type: none"> - Replacement parts (for non-negligent damages) - 6 hours of technical support
WSN002	2-year extended warranty	<ul style="list-style-type: none"> - Replacement parts (for non-negligent damages) - 12 hours of technical support
WSN003	3-year extended warranty	<ul style="list-style-type: none"> - Replacement parts (for non-negligent damages) - 20 hours of technical support



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