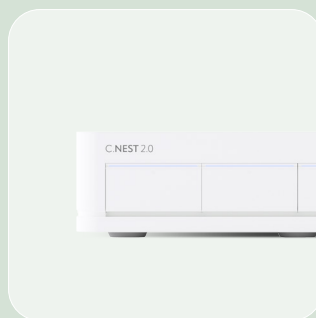


S.NEST 2.0

C.NEST 2.0

C.BIRD

Early Stage Mixing at 24/96 Well
Scale — Built for Clone Selection



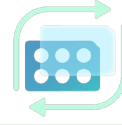


The Leadgene microbioreactor family, including S.NEST[®], C.NEST[®], and C.BIRD[™], forms a unified bioprocessing platform that supports cell line development from single cell expansion through early stage screening.

Built on three core technologies, programmable mixing in 96 and 24 well plates, real time DO and pH monitoring, and four independently controlled incubation chambers, the platform enables true high throughput, small scale bioprocessing. Integrated mixing improves oxygen transfer and reduces gradient effects, while continuous DO and pH readouts provide real time culture insight across parallel, independently controlled environments.



1 Patented 96/24-well
plate mixing



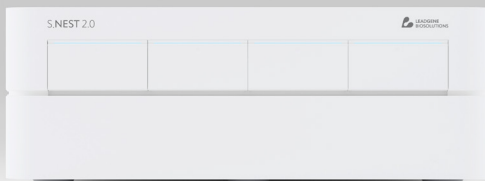
2 Real-time DO/pH
monitoring



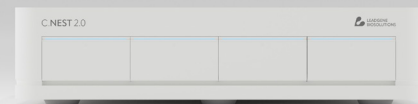
3 Four independent
incubation chambers



S.NEST 2.0



C.NEST 2.0



C.BIRD



Patented Reciprocal Mixing Technology

S.NEST®, C.NEST®, and C.BIRD™ apply patented pneumatic mixing technology via a proprietary mixing lid, delivering precise, programmable mixing in standard commercial 96- and 24-well plates.

Gentle, adjustable mixing enables true beneficial agitation even at the 96-well format. Effective and reproducible mixing at the 24-well scale to achieve shaker-ready cell numbers.

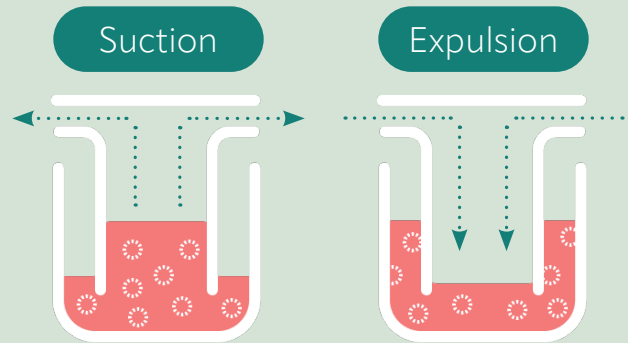
Applied in CHO single-cell workflows, the platform enables faster, more consistent clone expansion and selection.

- ⑤ Uniform nutrient distribution
- ⑤ Higher oxygen transfer

NEST Series Brochure / 4



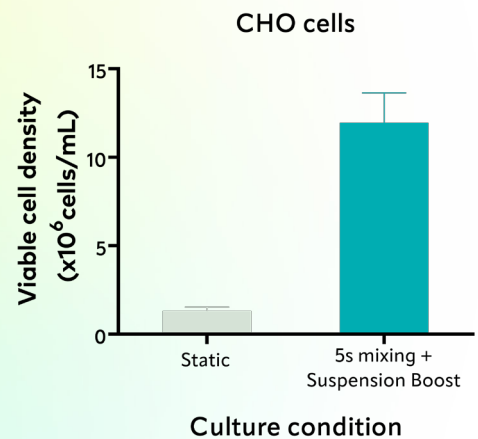
Air-driven suction and expulsion enable efficient pneumatic mixing in 96- and 24-well plates, with adjustable mixing rates to match your culture conditions.

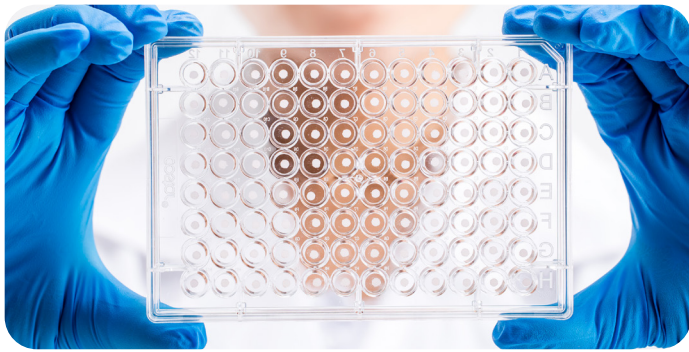


Special feature - Suspension boost

Suspension Boost is a high energy mixing mode designed to support higher viable cell densities in 24-well plates. It is particularly useful for fed batch workflows and medium optimisation studies.

In CHO scale down models, this mode can increase achievable cell density by five to ten times compared to static conditions, depending on the application.





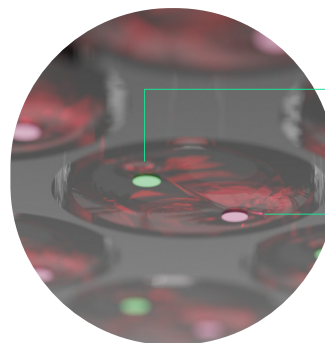
Real-Time DO/pH Monitoring

Measurements are non-invasive, enabling continuous monitoring without disrupting cultures or increasing contamination risk.

↘ Monitor cell growth trends and metabolic activity in real time

↘ Collect measurements every 10 minutes across all wells

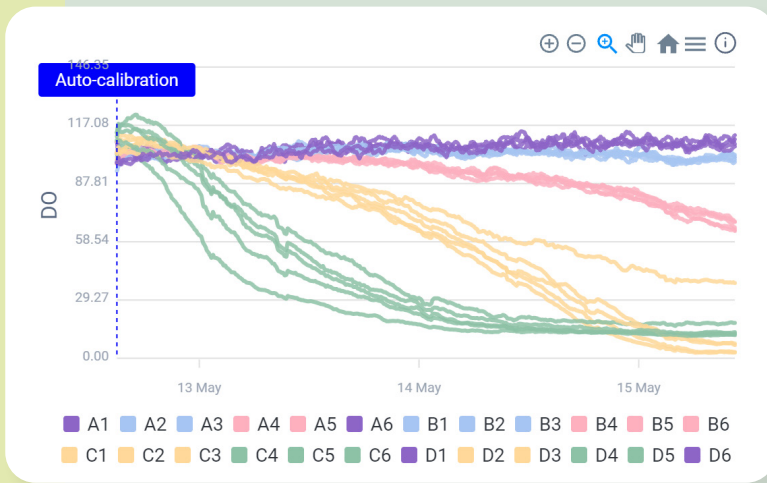
S.NEST measures DO and pH in every well using optical sensor spots integrated into standard commercial 96- and 24-well plates.



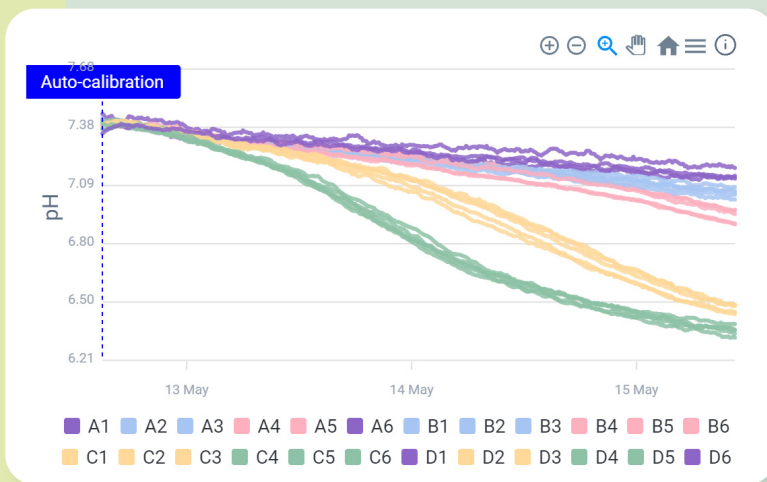
Dissolved oxygen
sensor tag

pH level
sensor tag





- Control
- 1×10^5 cells/mL
- 2×10^5 cells/mL
- 5×10^5 cells/mL
- 1×10^6 cells/mL



Real-time indicators for clone selection and medium optimisation



DO monitoring

Cell growth rate
& Cell viability

➤ Cell growth profile and
harvest time point



pH monitoring

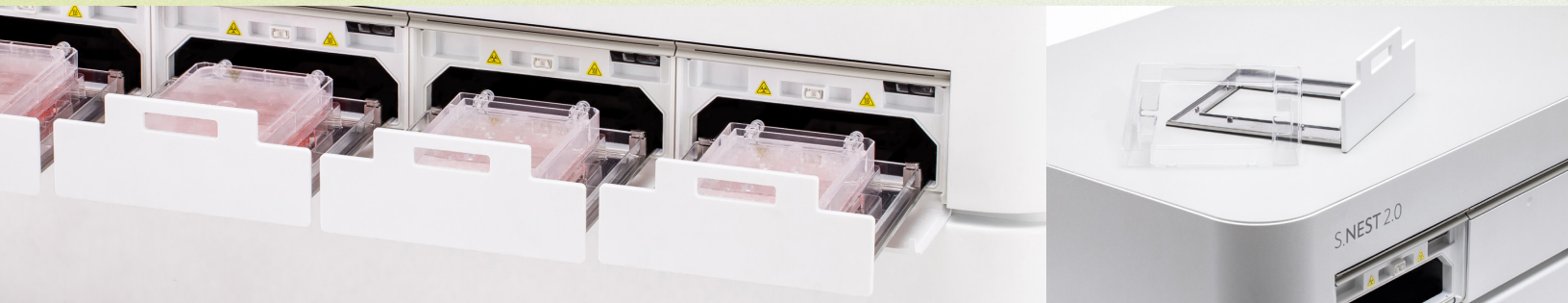
Lactate accumulation
& Metabolic switch

➤ Feed and pH control
time point



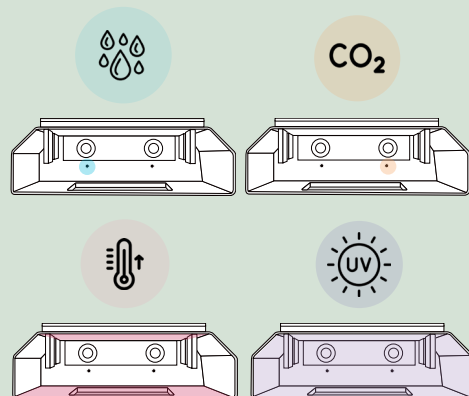
Optimized In-Well Environment & Multi-Chamber Scalability

Cultures in the four chambers can be independently configured with different incubation settings, mixing patterns, and sensing options, enabling parallel experiments with greater flexibility.



Four independently controlled incubation chambers

- ↘ Disposable water reservoir
- ↘ Temperature control
- ↘ CO₂ level control
- ↘ Humidity monitoring
- ↘ UV light sterilization





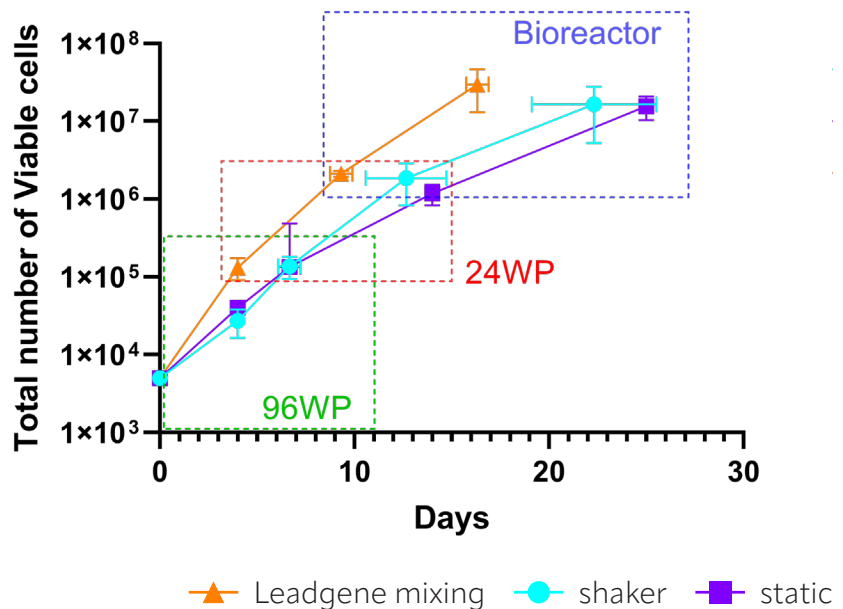
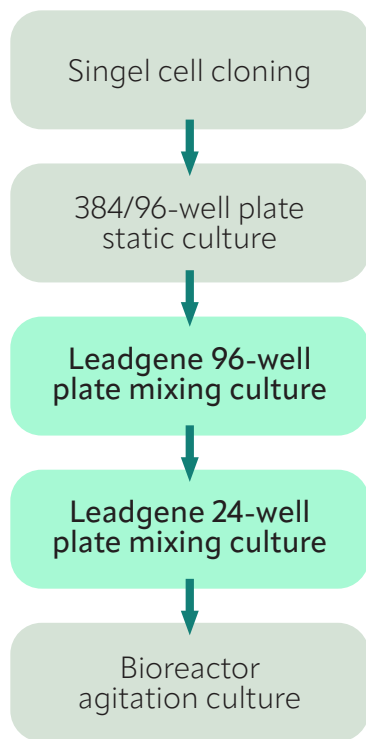
Choose the system that fits your workflow

	S.NEST 2.0	C.NEST 2.0	C.BIRD
Mixing rate (Sec/cycle)	5–50 (±5%)	5–50 (±5%)	15–50 (±2%)
Suspension boost	Yes	Yes	N/A
Throughput	96 * 4 / 24 * 4	96 * 4 / 24 * 4	96 * 3 / 24 * 3
Medium Volume (µL/well)	1000 – 1600 150 – 200	1000 – 1600 150 – 200	1000 – 1600 150 – 200
Incubation chambers	4	4	N/A
Temperature Control (°C)	(RT+10) to 40	(RT+10) to 40	N/A
CO ₂ Control (%)	1 – 20	1 – 20	N/A
Humidity Monitoring	Yes	Yes	N/A
UV light Sterilization	Yes	Yes	N/A
Data Output	DO / pH	N/A	N/A
Automation Compatibility	Yes	Yes	N/A
Workstation	Yes	Yes	N/A

Accelerate CLD Workflows by 29–42%

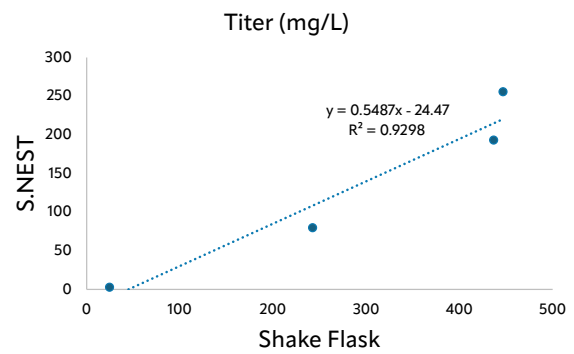
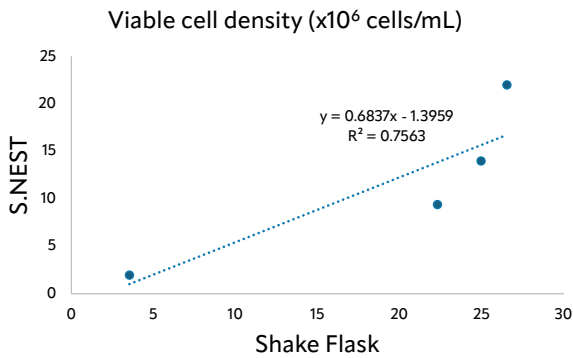
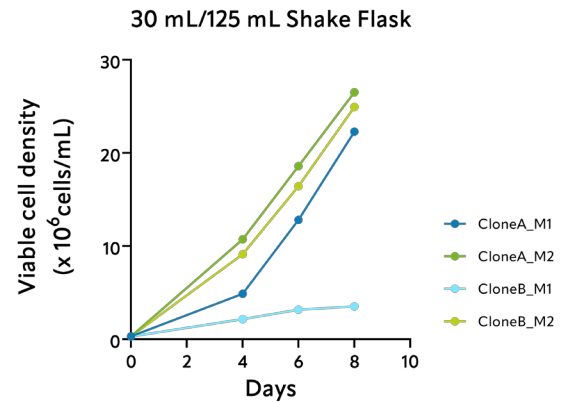
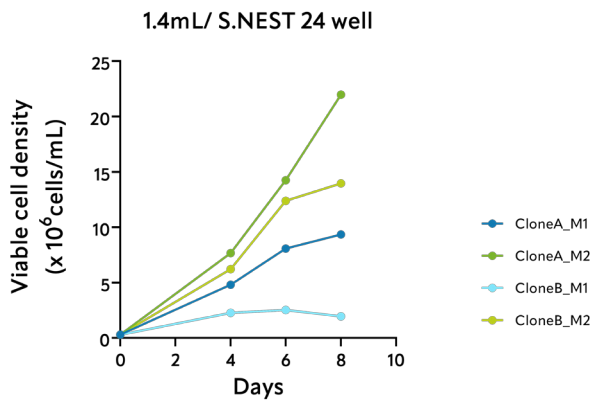
Accelerating Early Scale-Up in Cell Line Development

- Accelerates early scale-up by enabling faster cell expansion and a direct transition to larger formats.
- Reduces passaging by skipping intermediate 12- and 6-well steps.



Building Predictive Models for Process Development

- High-throughput scale-down models that improve clone ranking consistency with shake-flask results.
- Integrated DO/pH monitoring for real-time process insight.
- Supports data-driven and AI-assisted process optimization.



CELLULAR INTELLIGENCE



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