High-Capacity Microwell Plate Growth System



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HiGro°

A high-capacity microwell plate growth system.



The HiGro is a high-capacity, incubating shaker designed to accelerate sample growth in microwell plates. This uniquely engineered instrument combines a small shaking orbital, gas flow and temperature control system in a user-friendly, compact layout. Plate-holding cassettes allow for easy loading and unloading.

The convenience and control of the **HiGro** system make it the ideal solution for facilities with high-throughput growth needs as well as for laboratories using applications that are best optimized in a microwell format.

Key Benefits

- Space-saving design
- Optimizes growth in 96- and 384-microwell plate formats
- Easy to load and unload
- Superior control over growth environment



Genomics Design Specifications

Dimensions	26" W x 21" D x 22" H (0.66m x 0.53m x .56m) (small footprint allows placement on lab bench)
	4 growth chambers, each holding 1 cassette with 12 shallow-well or 6 deep-well plates. Total system capacity is 48 shallow-well plates or 24 deep-well plates.
Temperature Hybrid	Independent control for each chamber. Range is ambient to 55°C. Resolution is 1°C.
Shaking Scanning	Rotational orbital is 8.0 mm (ideally suited for 96-well growth) or 4.0 mm (ideally suited for 384-well growth)*. Maximum speed is 650 rpm. Resolution is 1 rpm.
Gas Flow	Oxygen- or air-ready*. Gas flow rate and timing controls located on instrument front panel.

*Depending on Model

Data

HiGro & Floor Shaker Comparison for Plasmid Growth

Figure 1

3
2.5

HiGro

Floor shaker

0.5

0.4

8
10
12
14
16
18

Figures 1 & 2

 $\label{eq:conditions: Ecoli strain is DH10B carrying pUC 19; 1x TB media; inoculum: 5 \ \mu l glycerol stock culture; selection: Ampicillin; 37°C.$

HiGro: 300 μ l/well in 96-shallow-well, flat-bottom plate; 550 rpm; Air flow: no delay, 2 sec on, 30 sec off, 6 standard liters per minute; no plate lids.

Figure 1:

Floor Shaker: $1000 \,\mu$ l/well in 96-well Beckman deep-well block, 250 rpm in New Brunswick floor shaker (plates were taped down); aluminum foil placed loosely over each plate; wetted paper towel placed in shaker to maintain ambient humidity.

Cross-Contamination Growth Test with No Plate Lids

Figure 2



Plasmid Yield Time Course from 384-Well Growth*

Figure 3 5h 6h 7h 8h 3h 4h 2µl 4µl 2µl 4µl 2µl 4µl 2µl 4µl 9h 15h 16h 17h 14h 18h 2μΙ 4μ 2 ա 4 ա 2 ա 4 ա 2 ա 4 ա 19h 21h 22h 23h 24h

>1µg plasmid after only 8 hours! (total yield from 90 µl growth volume)

DNA eluted into 50 µl EB

Each band in the ladder represents 25 ng DNA

Figure 3:

Growth Conditions: 90 μ l/well Magnificent Media, 384-shallow-well, flat-bottom plate, rounded-square wells; inoculation (1 μ l) from O/N culture; high copy plasmid, 3 kb total size; selection: Carbapenem.

HiGro: 37° C; 500 rpm; Air flow: no delay, 0.5 sec on, 0.5 min off, 1.5 standard liters per minute; no plate lids.

Plasmid Prep Conditions: 90 μl (total culture) pipetted into alkaline lysis reagents (100 μl). Neutralization reagents added (100 μl). Pelleted sample. Isolated DNA on commercially available column. Eluted into 50 μl EB.

Gel Conditions: 2 μ l & 4 μ l of each (50 μ l) prep were run on 1% agarose gel. Ladder: two 10-band mass ladders combined (250 ng of each ladder).

Request the latest HiGro Application & Technical Notes.

*Data obtained through customer collaboration

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