# Ergonomic high-throughput cell counting plates

Description

Ergonomic, high-throughput cell counting plates are designed for use with the Cellaca™ MX high-throughput cell counter, Cellaca™ PLX high-throughput image cytometer, and Celigo™ image cytometer. These cell counting plates have sample and reagent loading wells labeled for ease of use - no plate map required. Plates are single use, require as little as 50 µL of sample, and are suitable for cell counting and viability assays using ViaStain™ AOPI Staining Solution. Up to 24-samples can be run at a time in under 5 minutes using the Cellaca systems.

Features and benefits

- Available in 12 x 2 or 8 x 3 orientation
- Ergonomic design for ease of use
- Compatible with multi-channel pipettes
- Run up to 24 samples per plate
- Automation compatible
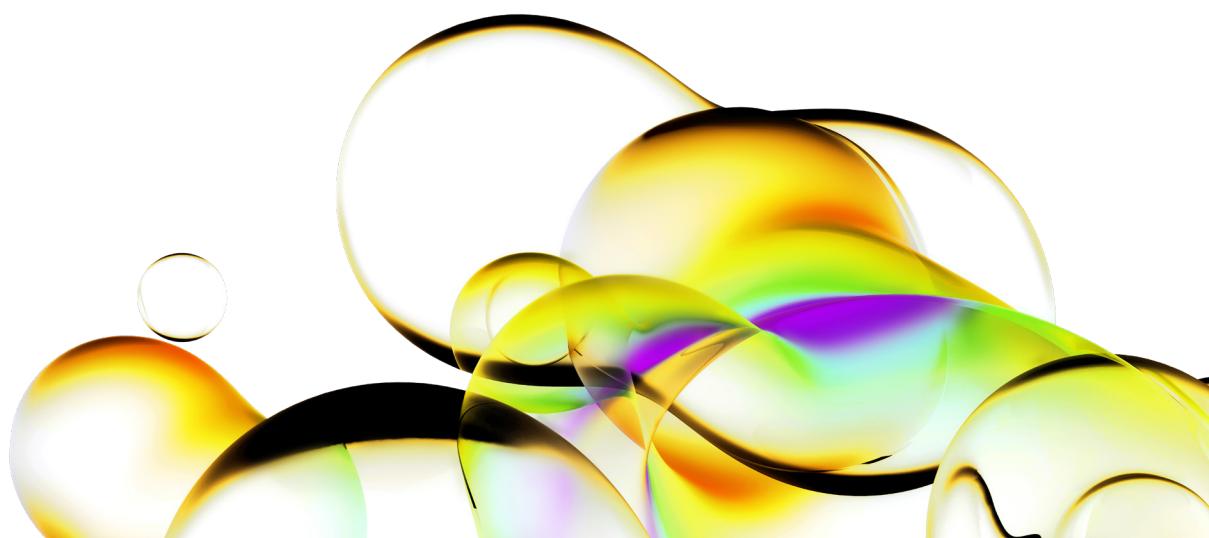
Material: Clear polystyrene all-plastic plate

Sterile: No

Lids: No

Tissue culture treated: No

Typical applications

- Cell counting

- Viability

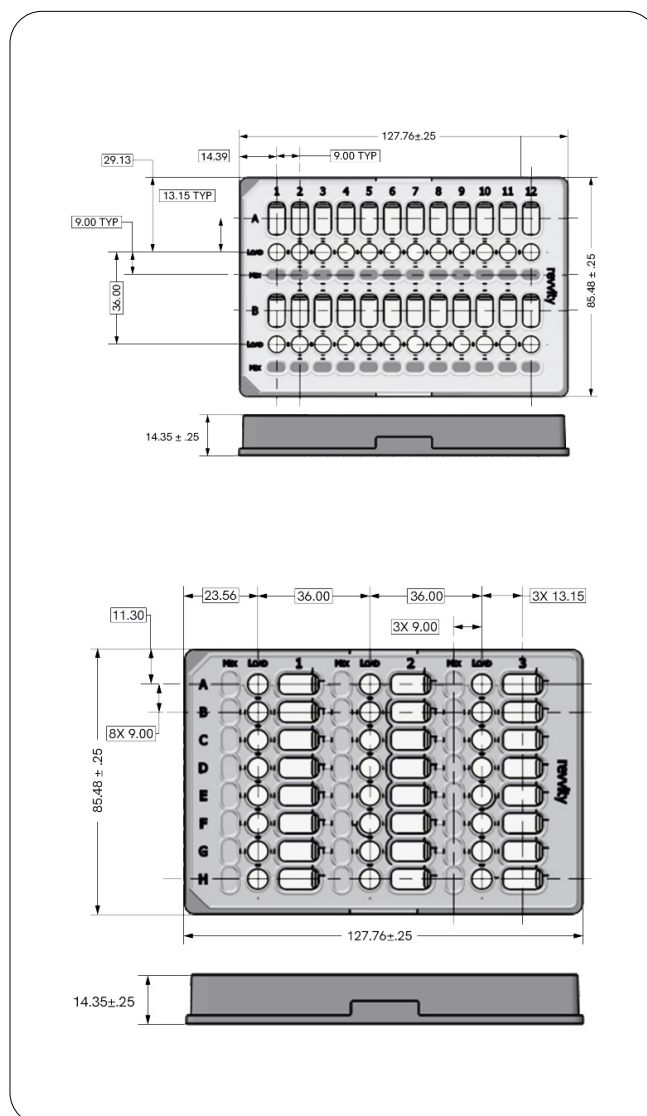- Apoptosis

- Cell vitality

- Cell health

Recommended companion products

Reagents:

- ViaStain AOPI Staining Solution, CS2-0106-5ML

- ViaStain AOPI Staining Solution, CS2-0106-25ML

Compatible instruments:

- Cellaca PLX high-throughput image cytometer

- Cellaca MX high-throughput cell counter

- Celigo image cytometer

| Part number	Orientation	Format	Number of plates
CHM24-A100-098	12 x 2	One sleeve of 10 plates	10
CHM24-A100-099	12 x 2	One case containing 4 sleeves,10 plates per sleeve	40
CHM24-A100-100	12 x 2	Five cases, each case containing 4 sleeves, 10 plates per sleeve	200
CHM24-B100-098	8 x 3	One sleeve of 10 plates	10
CHM24-B100-099	8 x 3	One case containing 4 sleeves,10 plates per sleeve	40
CHM24-B100-100	8 x 3	Five cases, each case containing 4 sleeves, 10 plates per sleeve	200

Experimental results

Consistency of ergonomic high-throughput cell counting plates

Ergonomic high-throughput cell counting plates (12 x 2 and 8 x 3 orientations) were evaluated for counting consistency by staining a sample of Jurkat cells with acridine orange/propidium iodide (AO/PI). Stained cells were loaded into all 24 wells of three different lots of 12 x 2 and 8 x 3 plates. Live, dead, and total cell concentrations and viability was measured from each plate using the Cellaca MX high-throughput cell counter. Figure 1 shows average dead and live cell concentrations of the 24 counts from each plate, with a coefficient of variation (CV) lower than 7% per plate (CV range between 4.41% and 6.29%). Additionally, a Bland-Altman analysis of the total cell concentration, commonly used to compare two methods, was performed on the 12 x 2 and 8 x 3 plates and results showed a nominal systematic bias of 2.69%, revealing that the 12 x 2 plates total cell counts are slightly higher than the 8 x 3 plates. These results show good consistency, replicability, and precision of cell counting independent of plate lot or modality. Jurkat viability was also measured for each plate modality from all three lots (Figure 2) and showed consistent results ranging from 85.3% to 86.3%. In conclusion, the 12 x 2 and 8 x 3 plates can be used interchangeably, as they measure cell concentration and viability within what is considered expected error.
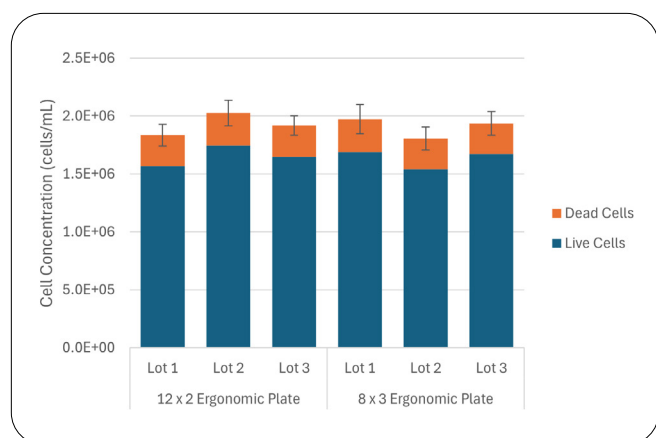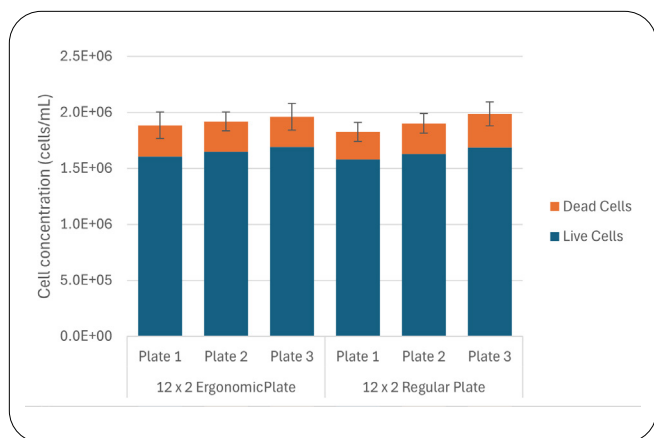

Figure 1: Average total Jurkat cell concentration (dead cells + live cells) of 24 counts from each ergonomic high-throughput cell counting plate. Error bars are the standard deviation of the total cell concentration.
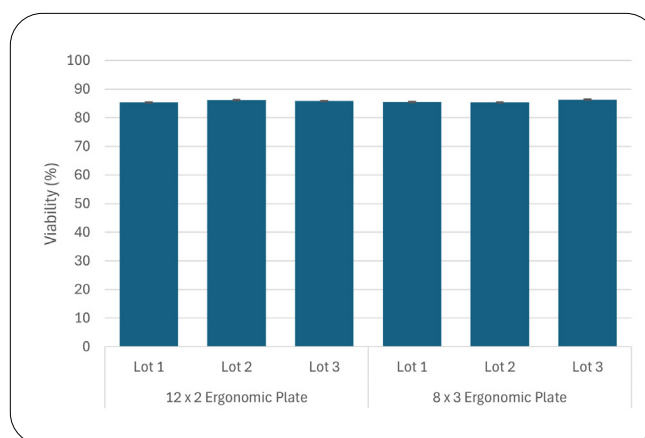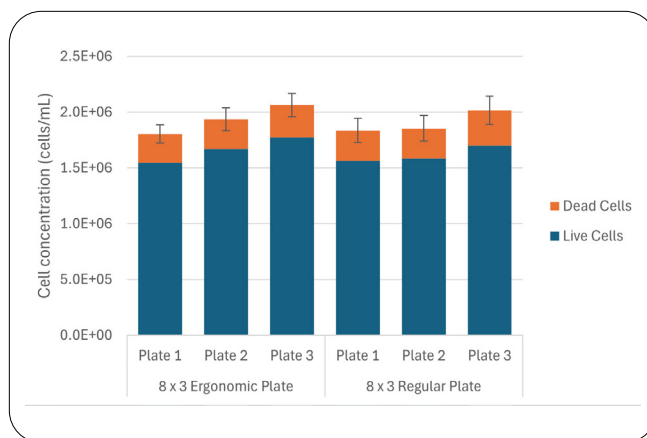

Figure 2: Average Jurkat viability of 24 counts from each ergonomic high-throughput cell counting plate. Error bars are standard deviations.

Regular high-throughput cell counting plates versus ergonomic high-throughput cell counting plates

Regular high-throughput cell counting plates (with a standard 96-well plate top) were compared to the ergonomic high-throughput cell counting plates using Jurkat cells prepared at a single concentration. Cells were stained with AO/PI and loaded into all wells of three regular or ergonomic plates from the same lot and subsequently measured on the Cellaca MX. Figure 3 shows live, dead, and total cell concentrations from regular and ergonomic 12 x 2 orientation plates, while Figure 4 shows measurements from 8 x 3 orientation plates, with CVs for all plates below 7% (range between 4.41% and 6.33%). Comparison results show consistency between regular and ergonomic plates, as the Bland-Altman analysis demonstrated a 3.59% and 1.02% bias between ergonomic and regular 12 x 2 and 8 x 3 orientation plates, respectively. Ergonomic plates measure cell concentrations slightly higher than regular plates and are within expected error, below 5%. Jurkat cell viability is displayed in Figure 5, where average cell viability ranges between 84.4% to 86.6% with a CV below 2% for each plate measured. In summary, the user-friendly ergonomic plates are a suitable replacement for regular plates as cell concentration and viability are equivalent between them.
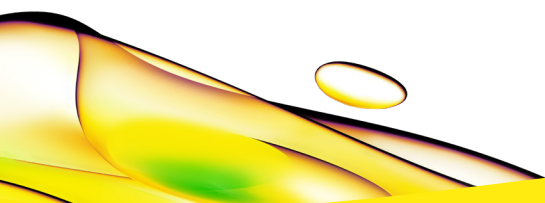
Figure 3: Average total Jurkat cell concentration (dead cells + live cells) of 24 counts from each 12 x 2 orientation plate. Error bars are the standard deviation of the total cell concentration.

Figure 4: Average total Jurkat cell concentration (dead cells + live cells) of 24 counts from each 8 x 3 orientation plate. Error bars are the standard deviation of the total cell concentration.
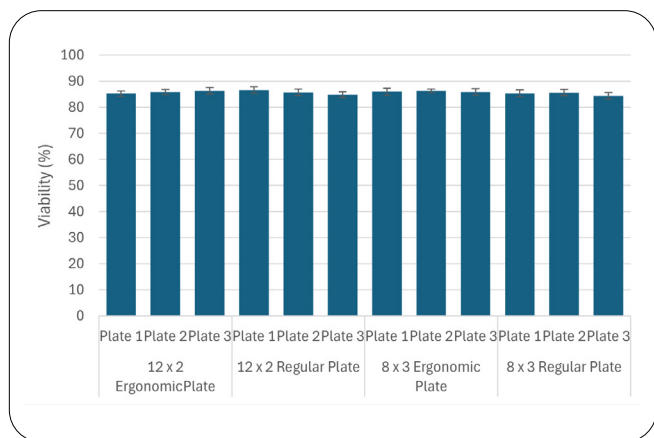
Figure 5: Average Jurkat viability of 24 counts from each plate. Error bars are standard deviations.

www.revvity.com

For research use only. Not for use in diagnostic procedures.

1969872