CytoOne® Multiwell Plates.

PREMIUM PLATES

Independent wells! CytoOne® plates have wells with 360° clearance to prevent cross-contamination and provide uniform temperature transfer across all wells. They also feature vented skirts with ridged gripping areas for easier handling.

CytoOne® plates are manufactured from crystal clear premium grade, non-toxic virgin polystyrene and are supplied individually wrapped with the lot number on the packaging.

PRODUCT FEATURES

- Wells with complete 360° clearance prevents cross-contamination and provides uniform temperature transfer across all wells
- Gripping areas on plate bases for secure handling
- Vented skirt reduces condensation and surface tension between stacked plates
- Moulded alpha-numeric matrix
- Optical clarity provides distortion-free microscopy
- Certified RNase, DNase, DNA and Pyrogen free
- Gamma sterilised and individually-wrapped

CytoOne® Multiwell Plates

Cat. No.	Description	Pack Size
Tissue Culture Treated Plates		
CC7682-7506	6-Well CytoOne® Plate, TC-Treated	50
CC7682-7512	12-Well CytoOne® Plate, TC-Treated	50
CC7682-7524	24-Well CytoOne® Plate, TC-Treated	50
CC7682-7548	48-Well CytoOne® Plate, TC-Treated	50
CC7682-7596	96-Well CytoOne® Plate, TC-Treated	50
Non-Treated Plates		
CC7672-7506	6-Well CytoOne® Plate, Non-Treated	50
CC7672-7512	12-Well CytoOne® Plate, Non-Treated	50
CC7672-7524	24-Well CytoOne® Plate, Non-Treated	50
CC7672-7548	48-Well CytoOne® Plate, Non-Treated	50
CC7672-7596	96-Well CytoOne® Plate, Non-Treated	50

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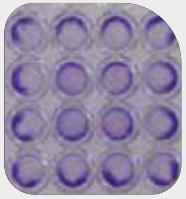
THE EDGE EFFECT

The tendency for cells to clump towards the edge of wells (due to the increased temperature at the edges) is what we refer to as the 'Edge Effect', also known as 'Cellular Sheet Folding'. CytoOne® plates can go a way towards eliminating this, as shown by the cell growth below:



CytoOne® plate with the channels between the wells left empty

CytoOne® plate with the channels between the wells filled with DMEM medium

The 'edge effect' can often invalidate results, especially when using techniques involving Fluorescence Spectroscopy or High Content Screening whereby molecular stains such as Propidium Iodide (PI) are used.

When attaining a fluorescent colorimetric signal using PI staining forcell cycle analysis, if two haploid cells are in extremely close proximity, it would provide the same result as cells with diploid or polyploidy nuclear content, thus producing unreliable results. This would incur an inability to reliably tell at which phase in the cell cycle the cells are. You could only use results from the fewer, isolated cells in the middle of the wells which are clearly valid. amongst the grouped cells.

The edge effect can also cause difficulty in cytometric procedures, including imaging cytometry or confocal microscopy; and can even slow down the proliferation rate of cells too due to incresed signal transduction

The wells of CytoOne® plates have a complete 360° open channel around each well. Filling the channels with medium during incubation helps reduce the edge effect. It does this by providing a more uniform temperature transfer across all wells. DMEM is recommended for this as it has a lower surface tension than water, so it will spread around the wells more easily. Surfactants or detergents in water are not recommended for this, as they will harm your cells if they accidentally get into a well.

THE VOLUMES TO ADD TO EACH PLATE ARE AS FOLLOWS:

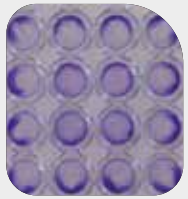
6-well: 15 – 20 ml
12-well: 20 – 25 ml
24-well: 20 – 25 ml
48-well: 20 – 25 ml
96-well: 10 – 12 ml

These volumes are enough to fill the space between the wells on the plate about half way. For TC-treated plates (generly producing a monolayer) this will be more than enough for equal heat distrbution. For Non-TC, this should be more than enough, but the cells would likely be in suspension and so the plate would need to be filled enough to be level with the media in the well for perfect heat distribution.

CytoOne® Multiwell Plates.

MINIMISING THE 'EDGE EFFECT' WITH CYTOONE® PLATES

The wells of CytoOne® plates have a complete 360° open channel around each well. Filling the channels with medium during incubation helps reduce clumping of cells towards the edges for a more uniform cell layer.



Cell growth in a CytoOne® plate with the channels between the wells left empty

Cell growth in a CytoOne® plate with the channels filled with DMEM medium shows a marked reduction in 'edge effect'

Volumes to add to each plate:

6-well: 15 – 20 ml
12-well: 20 – 25 ml
24-well: 20 – 25 ml
48-well: 20 – 25 ml
96-well: 10 – 12 ml

Tests were carried out on six other brands of 96-well tissue culture plates which were all seeded and incubated under the same conditions as CytoOne®. All display an edge effect which could affect the integrity of your data.

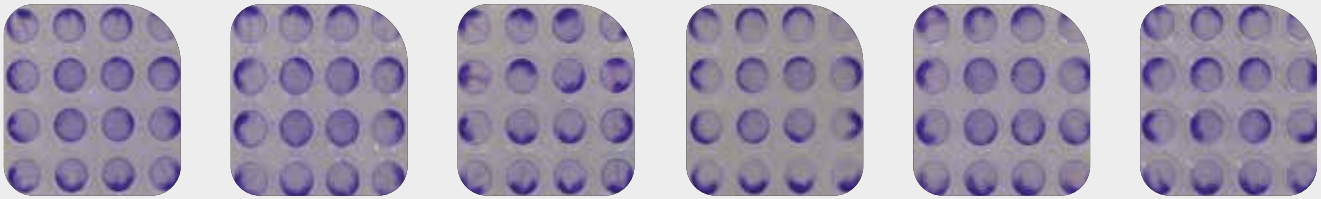


Plate A **Plate B** **Plate C** **Plate D** **Plate E** **Plate F**

NIH3T3 cells stained with Crystal-Violet after 24 hours at 37 °C, 5 % CO^2.
Initial seeding 0.01 x 106 cells per well.