Deepwell LumaPlate-96

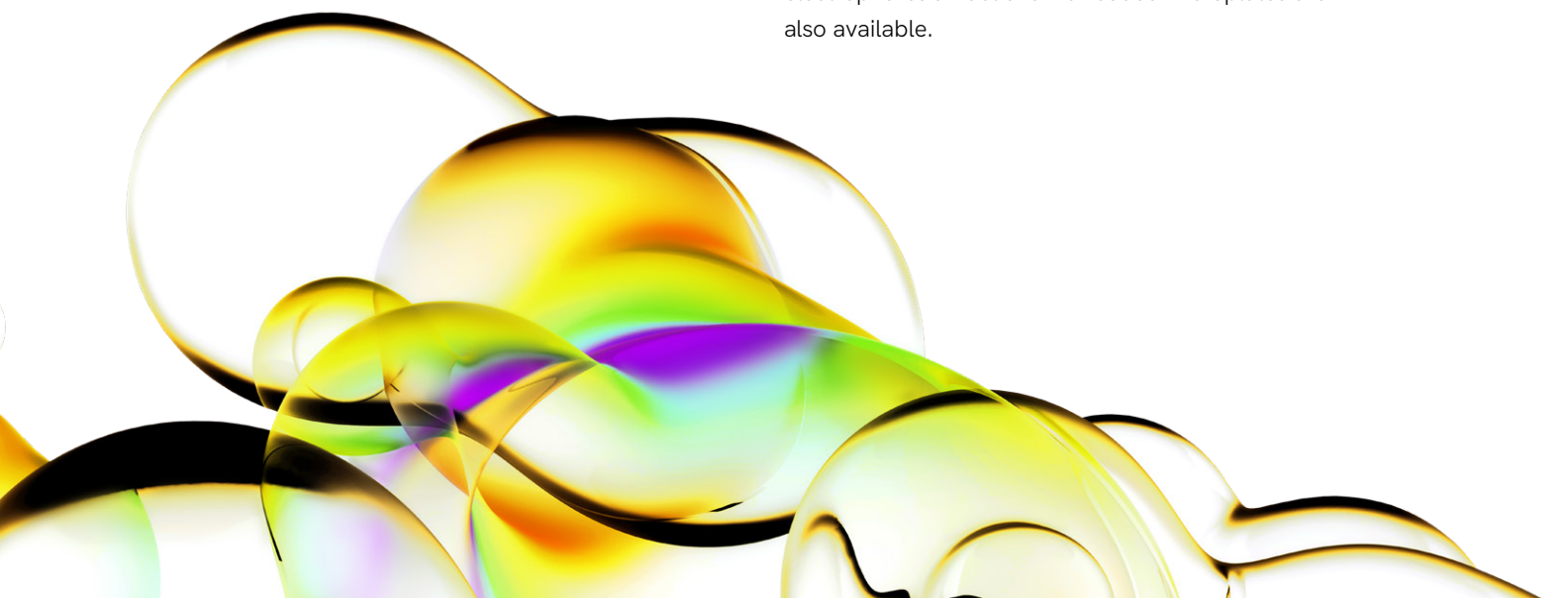
96-well, scintillator coated plates

Features and benefits

- Sample volumes of up to 300 µL
- Very low backgrounds for greater sensitivity
- High counting efficiency for greater sensitivity
- No variable chemical quench for maximum signal output
- Easy to use with reproducible results
- No liquid radioactive waste - reduces disposal costs

Description

The Deepwell LumaPlate™-96 is a solid scintillator coated, 96-well microplate that eliminates the need for adding LSC cocktail. This deepwell version has a sample working volume of 300 µL. For analysis of non-volatile samples, simply dispense samples into the standard Deepwell LumaPlate wells, dry down and count on a microplate scintillation counter, such as the Revvity TopCount® or MicroBeta®. The LumaPlate's solid scintillator simplifies single and dual label CPM/DPM counting by eliminating variable chemical quench and in addition dramatically reduces total cost per sample. Deepwell LumaPlates are particularly suitable for samples produced from ^{51}Cr release assays, enzyme inhibition assays, organic extractions, chromatography fractions, and capillary electrophoresis fractions. Bar coded microplates are also available.



Material	Polystyrene
Sterile	No
Lids	No
Tissue culture treated	No
Filter type	Not applicable
Bar code	Optional
White writing area	Not applicable

Typical applications

- HPLC fraction analysis
- Larger sample volumes (up to 300 µL)
- Enzyme inhibition assay
- ^{51}Cr release assay

Recommended companion products

Microplate sealing:

- TopSeal™-A 6005185
- TopSeal-S 6005161
- MicroMate™ heat sealing system (for TopSeal-S)

Instrumentation:

- TopCount Microplate Scintillation and Luminescence Counter
- MicroBeta Microplate Scintillation and Luminescence Counter

Ordering information

Deepwell LumaPlate-96, 96-well, White, Scintillator Coated

Case of 50 Part No. 6005630

Barcode labeled Deepwell LumaPlates are available. Contact your local Revvity representative for details

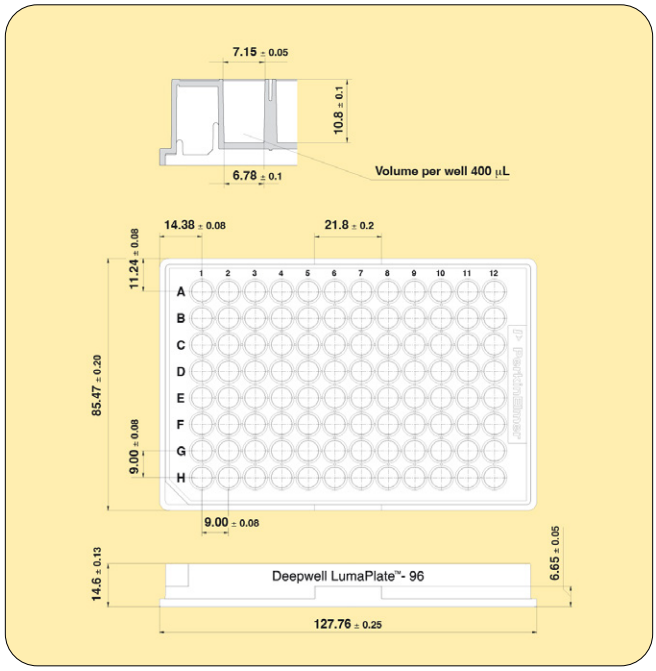
Technical information

Material:

Polystyrene with white colorant.
Scintillator layer on well bottom.

Dimensions (olerances):

Length	127.76 mm	(± 0.25 mm)
Width	85.47 mm	(± 0.20 mm)
Height	14.60 mm	(± 0.13 mm)
Well diameter	7.15 mm	
Well depth	10.80 mm	
Well volume (nominal)	400 µL	
A1 offset to top	11.24 mm	(± 0.08 mm)
A1 offset to side	14.38 mm	(± 0.08 mm)



Experimental results

The chromatogram below (Figure 3) shows the result of two HPLC runs of the same rat urine. Curve B represents a 100 µL injection with 61,500 DPM of ^{3}H labeled drug and its metabolites measured on-line using the Revvity Radiomatic Model 505TR flow scintillation analyzer. Curve A represents a 7 µL injection with only 4,300 DPM of total radioactivity measured off-line in a Deepwell LumaPlate-96 with the TopCount system. For better visualization, the upper curve of A was also expanded by a factor of five.
When comparing the classical on-line and the new off-line approaches, it becomes clear that curve A shows much more detail than does curve B. In addition to using a 14-fold smaller injection volume, the TopCount/Deepwell LumaPlate-96 combination provides better sensitivity because of a much lower background, while maintaining very high counting efficiency. On a blank Deepwell LumaPlate-96, the background was determined to be only 0-2 CPM. Every count above 4 CPM can be interpreted as a valid tritium signal. It should also be noted that all peak intensities in both curves (A and B) compare well to each other.
The main metabolite at a retention time of 16.5 minutes is clearly visible in both curves (A and B). This peak measured by the TopCount shows a better chromatographic resolution than the on-line chromatogram.

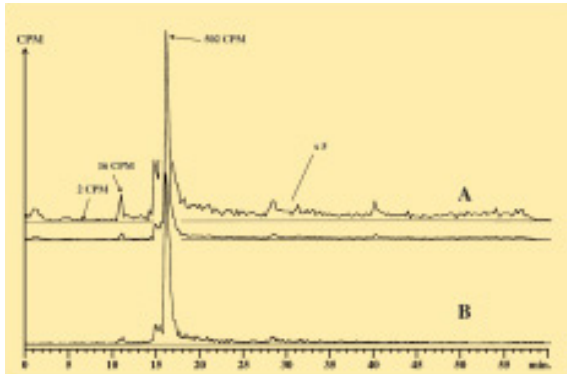


Figure 3: Radioactivity chromatogram of rat urine containing ^{3}H labeled drug;

A = 4300 DPM (7 µL) injected and counted with the TopCount system (8 minutes per well).

B = 61500 DPM (100 µL) injected and monitored on-line with adding 800 µL LSC-cocktail to a 100 µL mixing cell.

Reference: Packard Application Note AN004-TC

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