MILLIPORE

MultiScreen® Transport and PTFE Receiver Plates

- *High recovery*
- *Low evaporation*
- *Automation compatible*
- *Choice of plates available*

DATA SHEET

Choice of receiver plates available to meet a range of application needs

Receiver Plates Facilitate High Throughput Screening

PAMPA (parallel artificial membrane permeability assay) is a fast, automation-friendly method for predictive drug candidate screening. High throughput 96-well MultiScreen plates can be treated with artificial membrane components, such as lipids, and treated with compound to measure passive diffusion. Results have high correlation rates with transcellular passive diffusion assays, optimizing candidate selection prior to costly cell-based assays, and increasing profiling throughput.

Choice of Receiver Plates Available

The disposable Transport Receiver and the durable PTFE Receiver plates are both designed for full compatibility with the patented membrane access design of MultiScreen filter plates. Millipore's broad selection of substrates including Immobilon™-P hydrophobic PVDF, and ultra-thin (<20 µm) PCTE, surfactant-free thin films, offers a wide range of 96-well artificial layer systems.

Plate Selection

MATR NPS 50: Transport Receiver Plate

This precision injection molded polystyrene receiver plate is designed for full automation compatibility and is also optimized for manual assays. The plate is built to ANSI/SBS specifications and is easily handled by robotic gripper arms. The MATRNPS50 receiver plate stacks easily and the unique well design minimizes the occurrence of bubbles during assembly. The plate is compatible with a broad range of assays. In addition, it offers low evaporation when shaking or stirring, has low extractables, and features excellent surface finish for high compound recovery. The low cost, disposable design eliminates the risk of carryover between assays.

MSSA CCEP T0R: PTFE Receiver Plate

This reusable plate is made to order. The plate offers broad chemical compatibility and low drug binding. The 100% PTFE construction is rugged and ideal for challenging solvent environments.

Comparison

	Transport Receiver MATR NPS 50	PTFE Receiver MSSA CCEP T0R
Automation compatible	Yes	No
In-plate mixing/stirring	Yes	No
Broad assay compatibility	Yes	Yes

Performance

Transport Receiver Plate Provides Uniform Recovery and Low Evaporation

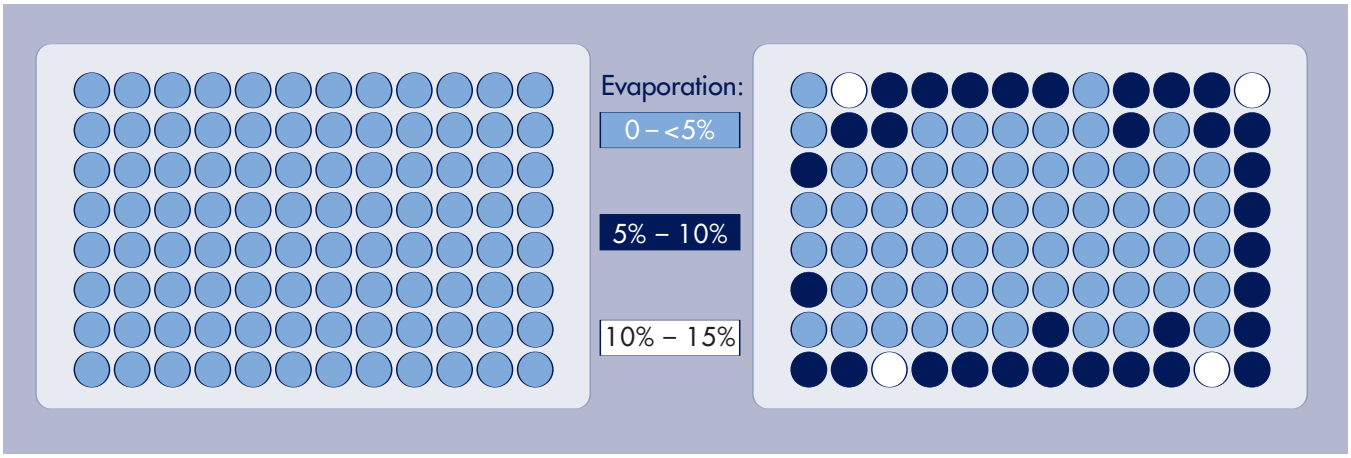
Perimeter vs. Internal Evaporation

MultiScreen Transport Receiver Plate (MATR NPS 50)				MultiScreen PTFE Receiver Plate (MSSA CCEP T0R)			
Wells	**Mean**	**STDEV**	**% CV**	**Wells**	**Mean**	**STDEV**	**% CV**
Perimeter	4.5%	0.8%	18.4%	**Perimeter**	8.9%	3.8%	42.3%
Internal	4.5%	0.6%	12.4%	**Internal**	4.6%	3.2%	70.0%

The MultiScreen Transport Receiver Plate (MATR NPS 50) demonstrates uniform recovery volume and a 5x lower volume variation from well to well as compared to the MultiScreen PTFE Receiver Plate. While both plates demonstrate low internal well evaporation, the improved design of the disposable polystyrene receiver plate eliminates the accelerated evaporation common in perimeter wells.

MultiScreen Transport Receiver Plate (MATR NPS 50)

MultiScreen PTFE Receiver Plate (MSSA CCEP T0R)



Using an automated liquid handler for precise volume distribution, 6 assemblies were prepared with 150 µL/well of buffer in a MultiScreen IP Filter Plate and 300 µL/well of buffer in receiver plate wells. Filter plate and receiver plate were then assembled and covered with the filter plate lid. Plates were left on the robotic deck overnight for 16 hours to simulate an automated time-course experimental environment. While MSSACCEPT0R plate evaporation was low, the improved design of the disposable Transport Receiver Plate reduces evaporation to <5%/well. Data shown is an average of 6 plates.

Equivalent Recovery to Pure PTFE

The MultiScreen Transport Receiver plate exhibits equivalent small molecule recovery to the pure PTFE Acceptor plate even with large differences in lipophilicity. Combined with it's decreased evaporation and the uniform volume to surface area ratios, assay to assay data consistency is assured.

Table 1.

Lipophilicity of Test Molecules

Molecule	logD	pH	% Recovery[3]
Warfarin[1]	0.64	7.4	≥90
Ibuprofen[1]	0.68	7.4	≥95
Propranolol[1]	1.26	7.4	≥95
Verapamil[1]	2.66	7.4	≥80
Testosterone[2]	3.9	6.8	≥90

[1] C. Zhu et al. **European Journal of Medicinal Chemistry,** 37, 2002, 399 – 407

[2] F.Wohnsland, B. Faller, **J. Med. Chemistry,** 2001, 44, 923 – 930

[3] Based on 90 min. radiolabeled incubation at 1 µM concentration

Specifications

	MATR NPS 50	MSSA CCEP T0R
Materials of construction	Polystyrene	PTFE
Length (mm)	127.8	127.7
Width (mm)	85.5	85.6
Height (mm)	17.4	16.7
Weight (g)	40	248

Ordering Information

Receiver Plates

Description	Qty/Pk	Catalogue No.
MultiScreen Transport Receiver Plate (disposable)	50	MATR NPS 50
MultiScreen PTFE Receiver Plate	1	MSSA CCEPT 0R

MultiScreen Filter Plates and Accessories for Transport Assays

Additional information can be found at **http://www.millipore.com/multiscreen**

Description	Qty/Pk	Catalogue No.
MultiScreen-IP Plate for lipid PAMPA assays	50	MAIP N45 50
MultiScreen-IP Plate (no underdrain) with single-well receiver	10	MAIP NTR 10
MultiScreen 0.4 µm PCTE* Plate (no underdrain)	10	MPC4 NTR 10
Single-well Cell Culture Tray	10	MAMC S01 10
96-well UV Analysis Collection Plate	40	MSCP NUV 40

**Replaces plate no. MAPB MN3 10*

Accessories

Available from V&P Scientific (www.vp-scientific.com)

- Stir bars Parylene coated: VP 721F-1
- Stir plate for 96-well plates VP710C1

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