User Guide

MultiScreen® 96-well Transport Receiver Plate

MATRNPS50

Introduction

The MultiScreen® Transport Receiver Plate is a non-sterile 96-well disposable device designed for transport assays such as drug compound permeability assessment using an artificial membrane. The transport receiver plate is a disposable alternative to the MultiScreen® polytetrafluoroethylene (PTFE) Acceptor Plate (MSSACCEPT0R). The transport receiver plate has the following attributes:

- High drug recovery for micromolar (µM) to millimolar (mM) concentration samples
- Shake and stir compatibility
- Low evaporation at room temperature
- Automation compatible; conforms to ANSI/SLAS 1–2004 (footprint dimensions), 3–2004 (bottom outside flange dimensions), and 4–2004 (well positions) microplate standards

The transport receiver plate is designed to be assembled with a standard 96-well MultiScreen® Filter Plate, and can be used manually or with many standard automated liquid handlers. For specific recommendations please contact Technical Service.

Materials Required

In addition to the MultiScreen® Transport Receiver Plate, the user must supply the following materials and equipment:

- MultiScreen® 96-well Filter Plate (e.g., MAIPN4550 or MPC4NTR10)
- Compound samples in concentrated or pre-prepared dilutions
- Aqueous transport buffer
- Artificial membrane solution and solvent
- UV/Vis spectroscopic microplate reader, HPLC/UV or LC/MS/MS

Optional Equipment

- MultiScreen® 96-well Deep Well Collection Plate for transport sample prep (MDCPN2M50)
- MultiScreen®$_{HTS}$ 96-well UV-compatible Collection Plate (MSCPNUV40)
- MultiScreen® Single-well Culture Tray (MAMCS0110)
- Titer plate shaker
- Magnetic tumble stirrer (e.g., V&P Scientific Inc., VP710C1)
- Tumble stir discs (e.g., V&P Scientific Inc., VP721F1)

Usage Guidelines

- For research use only
- Single use only
- Designed for use with MultiScreen® filter plates; not compatible with MultiScreen®$_{HTS}$ or third party filter plates.
- Careful assembly and disassembly are required to avoid air entrapment or cross-well contamination.
- Plates are designed to support aqueous transport assays. Solvent systems should be tested prior to running samples.
- Minimize evaporation during extended incubation by covering filter plate with the lid provided. When stacking assemblies, place lid only on the top filter plate.
- For certain compounds, mixing, shaking, or stirring may increase permeation, enabling faster sample processing.
- Disassembly may be required to retrieve the permeant for further analysis by UV/Vis spectroscopy, HPLC/UV or LC/MS/MS.
- See references 1–4 for more details on running hexadecane-permeability and lipid-PAMPA assays.

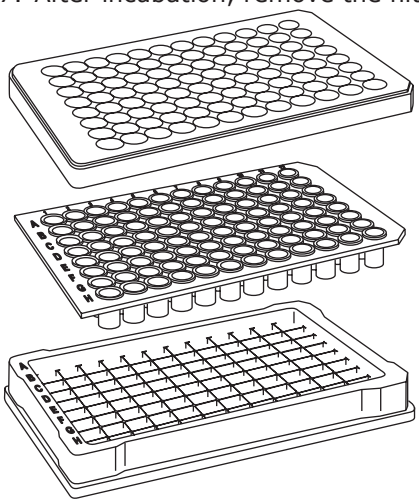
Permeability Assay Procedure

If the filter plate has an underdrain, remove it and place the filter plate into a single-well tray before beginning the permeability assay. The single-well tray will protect the bottom of the filter wells during artificial membrane formation.

1. Prepare transport samples in 96-well deep well plate, if necessary.
2. Apply lipid or hexadecane solution to center of each filter plate well to form an artificial membrane.
3. Add buffer to transport receiver plate wells. The recommended volume is 300 µL per well.
4. Transfer transport samples to filter plate wells. The recommended volume is 150 µL per well.
5. Align the cut corners and stack the filter plate on top of the transport receiver plate. Cover filter plate with lid to prevent evaporation during extended incubation periods.

   NOTE: Handle plates carefully during steps 5, 6, and 7 to prevent air entrapment or spillover into adjacent wells.
6. Incubate transport receiver plate assembly at 25 °C for desired length of time.

   NOTE: Incubation times can range from 5 to 16 hours depending on filter, artificial membrane composition, mixing, nature of compounds, and detection method sensitivity.
7. After incubation, remove the filter plate from



   the receiver plate to retrieve the permeant.
8. Evaluate permeant using a standard detection method such as a UV/Vis plate reader, HPLC/UV or LC/MS/MS.

Specifications

Operating Temperature	Ambient
Operating Volume	
Minimum	290 µL
Maximum	310 µL
Dimensions	
Length	127.8 mm
Width	85.5 mm
Height	17.4 mm
Material of Construction	Polystyrene

Device Storage

Store at room temperature for up to 3 years from date of manufacture. Refer to expiration date on package label.

Product Ordering Information

This section lists the catalogue numbers for the MultiScreen® Transport Receiver Plate and related products. See the Technical Assistance section for contact information. You can purchase these products online at www.SigmaAldrich.com.

Description	Catalogue No.	Qty/Pk
MultiScreen® 96-well Transport Receiver Plate	MATRNPS50	50/pk
Related Products		
MultiScreen®-IP Hydrophobic 0.45 µm 96-well Filter Plate	MAIPN4550	50/pk
MultiScreen® Permeability 0.4 µm 96-well Filter Plate	MPC4NTR10	10/pk
MultiScreen®HTS 96-well UV-compatible Collection Plate	MSCPNUV40	40/pk
MultiScreen® 96-well Deep Well Collection plate	MDCPN2M50	50/pk
MultiScreen® Single-well Culture Tray, sterile	MAMCS0110	10/pk
MultiScreen® Acceptor Plate	MSSACCEPT0R	1/pk

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