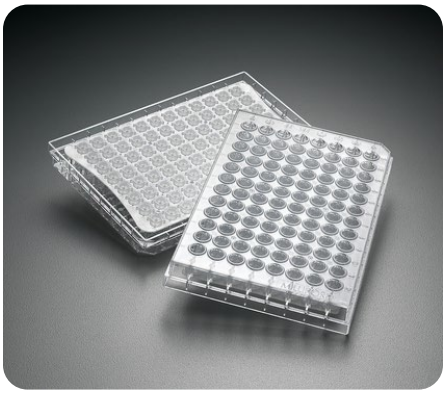
Millipore®
Preparation, Separation,
Filtration & Monitoring Products

Data Sheet

MultiScreen®$_{HTS}$ Filter Plates for ELISpot

Optimized filter plates measure immune response on a single cell level



- Validated membranes
- Uniform spot morphology
- Easy membrane access
- Compatible with automation

Reliable Assay Results

ELISpot assays are used for a range of applications to monitor immune responses and immunological response patterns, and can also be used to identify antigenic peptides and create vaccination strategies. Validated **ELISpot** assays are highly reliable, reproducible and predictive. They can successfully measure antigenspecific T or B cells on a single cell level with results that closely mirror *in vivo* conditions and eliminate the need for long-term *in vitro* cell cultures.

New **MultiScreen®$_{HTS}$** filter plates are specifically optimized for 96-well **ELISpot** assays and are built to new specifications for improved performance.

Improved Spot Recovery and Spot Definition

MultiScreen®$_{HTS}$ filter plates are available with validated Immobilon®-P (PVDF) for superior results. Plates with HA (mixed cellulose esters) are also available. Both provide membranes with dense uniform pore structures to promote antibody binding and increase sensitivity for better, sharper spot definition.

Optimized Plate Design

MultiScreen®$_{HTS}$ filter plates are designed for high performance **ELISpot** assays. The plate design is optimized for improved membrane flatness to enhance in-well imaging. The plates are provided sterile and are constructed of low protein binding plastic. Each well is isolated and individually sealed to eliminate the occurance of cross talk.

The plates are automation compatible and are in full compliance with ANSI/SBS standards. The plate design also features a removable underdrain for access to the membrane. Consistent results are seen within the plate and in plate-to-plate comparisons.

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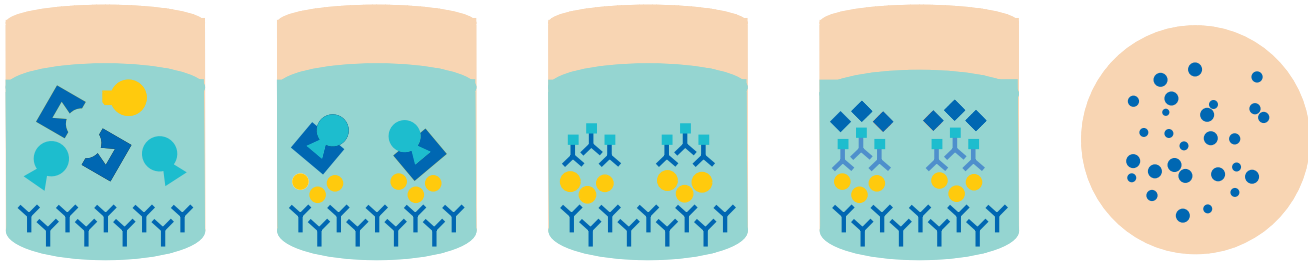
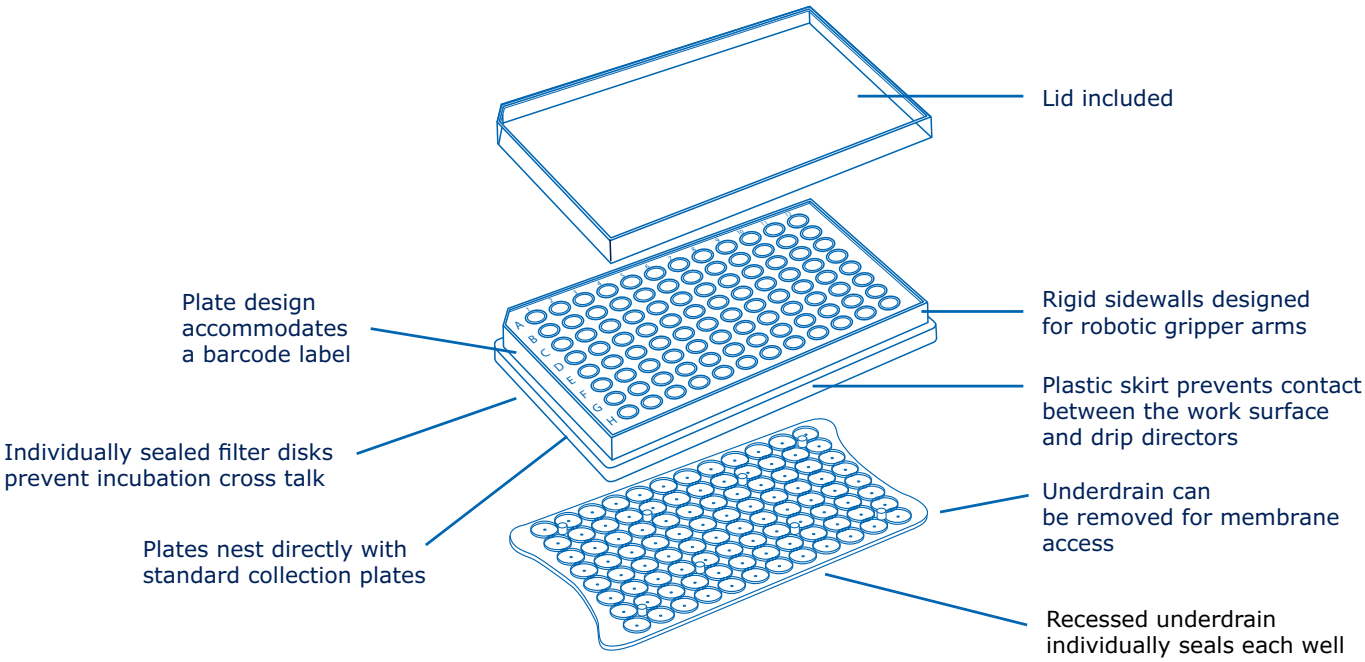
Protocol

ELISpot Assay Procedure for the Detection of Cytokine in Response to a Stimulus



1. Coat membrane with antibodies. Add immune cells and incubate.
2. Responding cells produce cytokines. The cytokine of interest is then bound by the antibody.
3. Wash to remove cells. Add biotinylated antibodies which bind to the cytokine-antibody complex.
4. Add avidin-enzyme conjugate.
5. Add enzyme substrate and each responding cell will result in one spot.

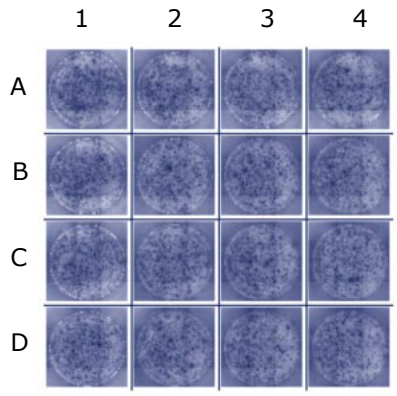
Improved Plate Design

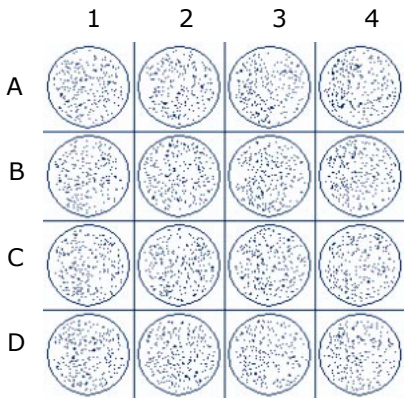


Performance

Uniform and Reproducible Spots

Optimized Membrane Gives Consistent Results Even in Corner and Edge Wells





	1	2	3	4
A	599	601	649	605
B	509	649	631	598
C	584	607	609	618
D	619	550	605	625

Figure 1. These images represent the number of cells secreting IFN- in response to PHA-L stimulation of Human Peripheral Blood Mononuclear cells (HPBMC). The wells were seeded with 50,000 cells and developed using BCIP/NBTplus substrate. The wells were imaged with the Zeiss KS **ELISpot** imaging system. Typical **MultiScreen**®$_{HTS}$-IP filter plate variability expressed by %CV* is less than 10%.

* %CV = (SD/mean)*100

Consistent Assay Results

Validated ELISpot Assays Demonstrate Consistent Results Plate to Plate

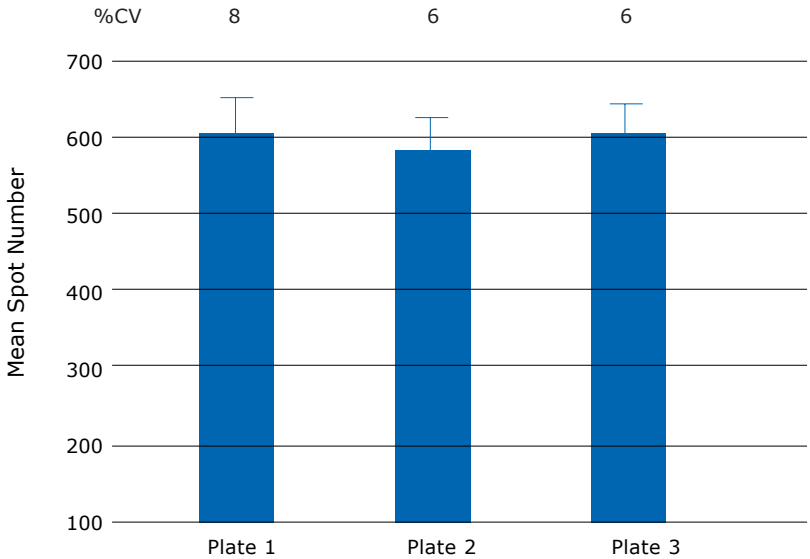


Figure 2. Three plates of MultiScreen®$_{HTS}$-IP were run side by side in an **ELISpot** assay using the same donor. The graph depicts the mean number of cells (HPBMC) per well that secreted IFN- in response to PHA-L stimulation (12 to 16 wells were tested per plate). The variability within each plate is shown and expressed as %CV.

Ordering Information

MultiScreen®$_{HTS}$ Filter Plates					
Description	**Sterile (yes/no)**	**Plate Material**	**Plate colour**	**Qty/Pk**	**Cat No.**
MultiScreen®$_{HTS}$-IP Filter Plate with **Immobilon®**-P membrane	Yes Yes	Acrylic Acrylic	Clear White	10 10	**MSIPS4510** **MSIPS4W10**
MultiScreen®$_{HTS}$-HA filter plate with MCE/ nitrocellulose membrane	Yes	Styrene	Clear	10	**MSHAS4510**
MultiScreen®-IP Filter Plate with **Immobilon®**-P membrane	Yes Yes	Acrylic Acrylic	Clear White	10 10	**MAIPS4510** **S2EM004M99**
MultiScreen®-HA filter plate with MCE membrane	Yes	Styrene	Clear	10	**MAHAS4510**
Plate sealing tape			Clear	100	**MATAHCL00**

Custom MultiScreen® Filter Plates

In need of customized plates? We'll create the perfect plate for your assay, with a combination of filter membrane, housing material and other required specifications.

For more information about MultiScreen® filter plates, please visit: **SigmaAldrich.com/multiscreen**

To place an order or receive technical assistance

In the U.S. and Canada, call toll-free 1-800-645-5476
For other countries across Europe and the world, please visit: **SigmaAldrich.com/offices**
For Technical Service, please visit: **SigmaAldrich.com/techservice**

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