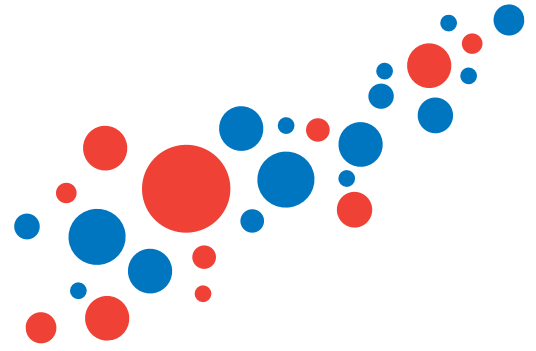
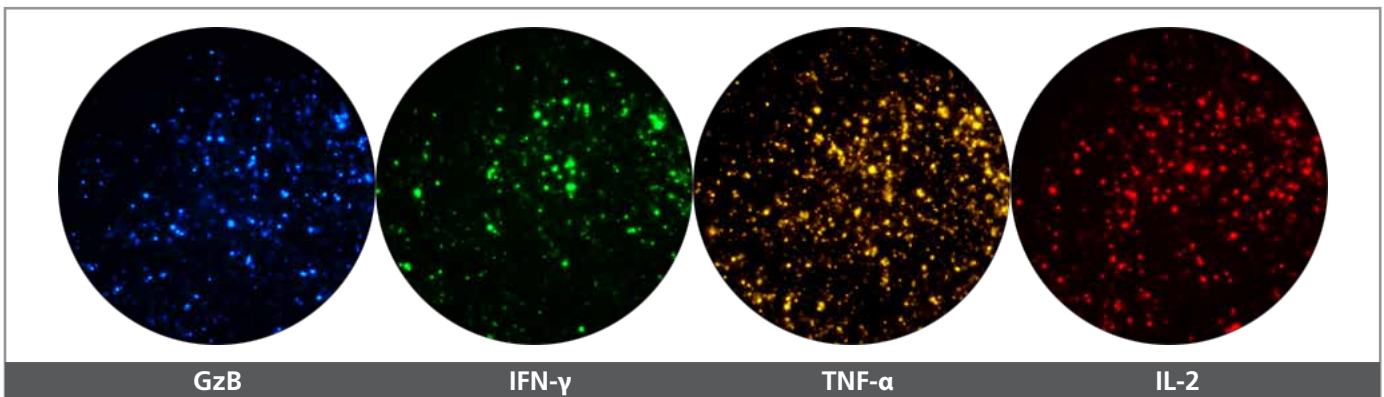
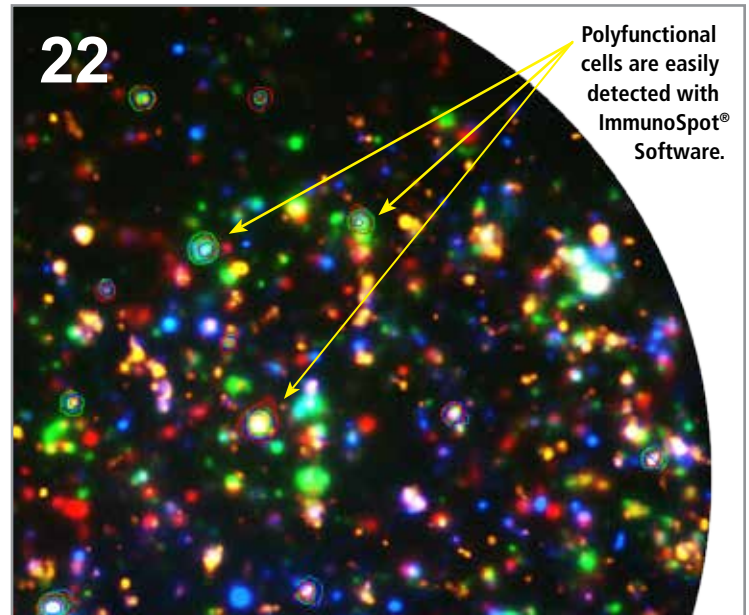
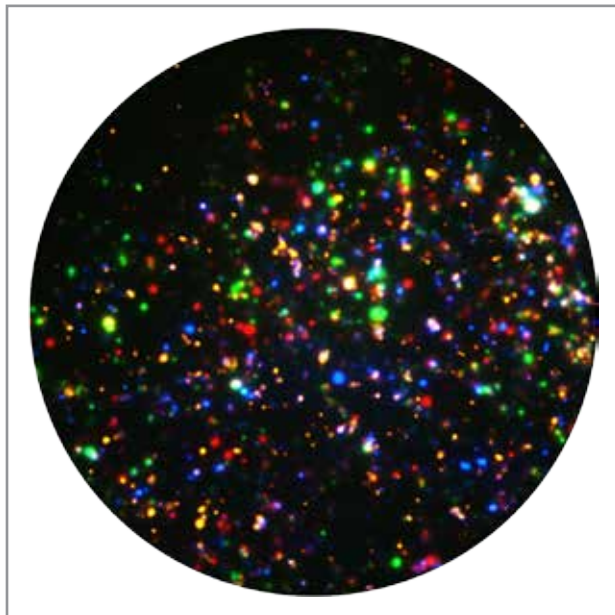


IMMUNOSPOT®

Elevating T Cell Multiplexing to New Heights with Four-Color FluoroSpot



Optimized ELISPOT/FluoroSpot assays can reliably detect antigen-specific T cells even if they occur in frequencies of 0.0001% within PBMC. That's a single analyte-secreting T cell that can be reliably identified within one million bystander cells. To further increase the use of precious cell material, we offer the most comprehensive portfolio of multicolor ELISPOT kits available on the market, including two-, three-, and now the **first-ever four-color T cell kit**. Multiplexing analytes not only helps economize cell utilization but it also enables the detection of polyfunctional T cells.



GzB

IFN- γ

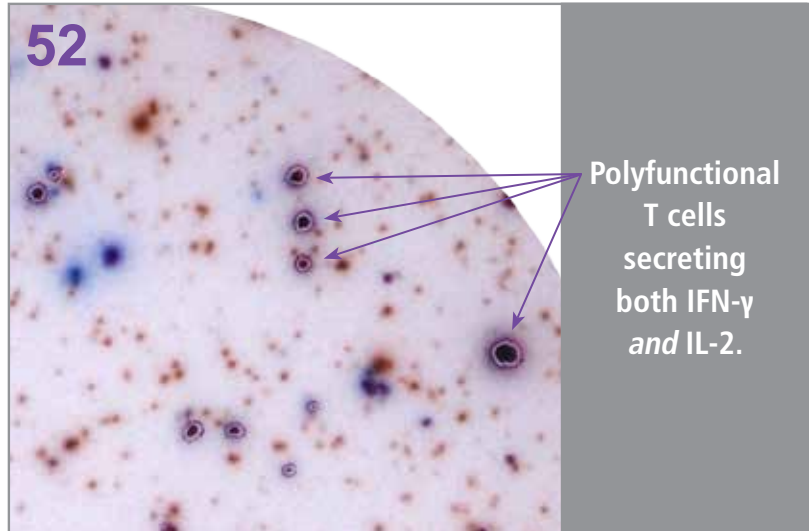
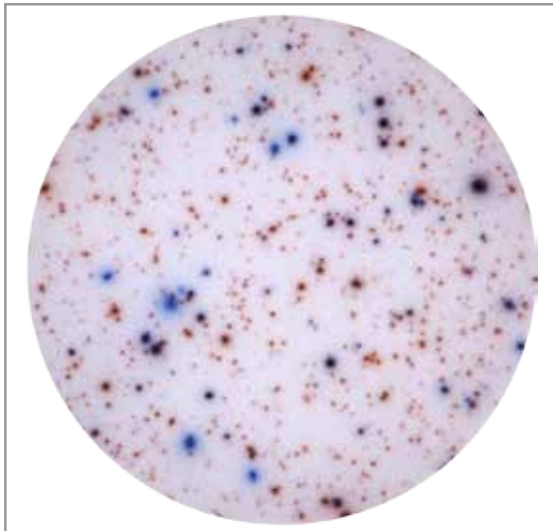
TNF- α

IL-2

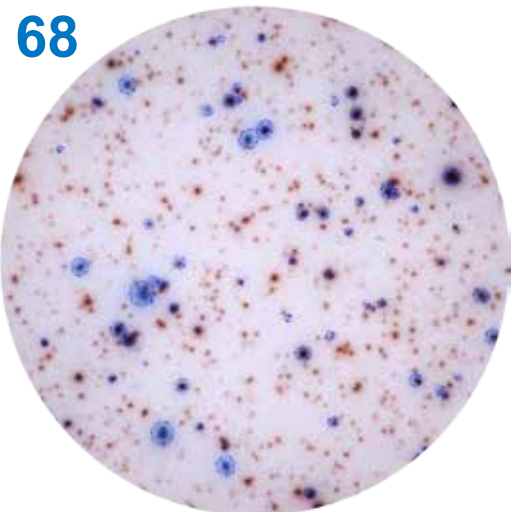
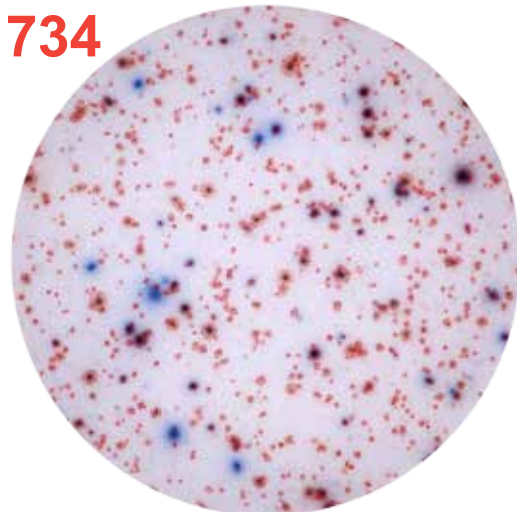
The reagents included in the fluorescent ImmunoSpot® Kits have been tailored to shorten and simplify the assay procedure. Kits contain low auto-fluorescent plates, diluents, serum-free media, antibodies, and most importantly, tertiary antibodies labeled with fluorochromes that have separate emission spectrums to easily and accurately detect up to four cytokines. ELISPOT assays have never been faster and easier!

The First Step in Multiplexing: Double-Color Kits

CTL is taking multiplexing of T cell assays even further with the only double-color enzymatic ELISPOT Kit on the market that can reliably and accurately count polyfunctional cells. ELISPOT is known to be able to detect a single secreting cell within a million bystander cells. All ImmunoSpot® Kits, human, non-human primate, mouse, and porcine kits, are quality-controlled to meet this exquisite sensitivity threshold.



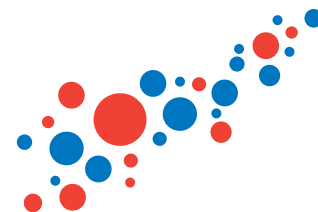
IFN-γ spots counted in red and IL-2 spots counted in blue.



ImmunoSpot® Kits were designed to minimize common assay problems associated with unspecific enhancement or suppression. CTL-Test™ Medium is a standardized, serum-free alternative to the lot-to-lot variation experienced with serum-containing media, which is known to interfere with the reliability of test results. ImmunoSpot® Kits can be used in conjunction with ePBMC® Reference Sample QC Sets™ to reduce the intra- and inter-laboratory variability.

Double-Color Enzymatic Kits come with two substrates that precisely resolve the quantity of analyte produced by

each cell, permitting accurate gating and data analysis. The CTL substrate technology prevents overdevelopment, which allows adjacent spots in the most crowded wells to be resolved. This critical component enables fixed development times, avoiding the subjective judgment calls as to the best time to stop the reaction when using common substrates. Most importantly, Double-Color ImmunoSpot® Kits come with two substrates, CTL-TrueBlue™ and CTL-TrueRed™, which are far enough apart on the RGB color spectrum to detect single-color spots as well as double-color polyfunctional spots.



It's ***THE ONLY*** Complete Kit

ImmunoSpot® Kits contain everything needed to reliably detect cell secretions. Every Kit contains CTL Serum-free Media, plates, antibodies, and diluents. Enzymatic ImmunoSpot® Kits have tertiaries and substrates with established development times, and double-color kits have two substrates with RGB color values on opposite ends of the spectrum, all in order to allow optimal analysis of double-secreting cells. Fluorescent ImmunoSpot® Kits have fluorescently-labelled tertiaries that are conjugated to fluorochromes with separate emission spectrums. This allows both single analyte-secreting cells and polyfunctional cells to be easily detected.

SINGLE-COLOR ENZYMATIC KITS AND SINGLE-COLOR FLUORESCENT KITS:

HUMAN						
IFN-γ	IL-1β	IL-2	IL-4	IL-5	IL-6	IL-10
IL-12	IL-13	IL-17	TNF-α	GzB	Perforin	
MOUSE						
IFN-γ	IL-2	IL-4	IL-5	IL-17		
PORCINE						
IFN-γ						
NHP						
IFN-γ	IL-2	IL-10	IL-12	IL-13	IL-17	TNF-α

DOUBLE-COLOR ENZYMATIC KITS AND DOUBLE-COLOR FLUORESCENT KITS:

HUMAN						
IFN-γ / IL-1β	IFN-γ / IL-2	IFN-γ / IL-4	IFN-γ / IL-5	IFN-γ / IL-6	IFN-γ / IL-10	IFN-γ / IL-12
IFN-γ / IL-13	IFN-γ / IL-17	IFN-γ / TNF-α	IFN-γ / GzB	IFN-γ / Perforin	IL-10 / IL-12	IL-10 / IL-12
MOUSE						
IFN-γ / IL-2	IFN-γ / IL-4	IFN-γ / IL-5	IFN-γ / IL-17			
PORCINE						
IFN-γ / IgA						
NHP						
IFN-γ / IL-2	IFN-γ / IL-10	IFN-γ / IL-12	IFN-γ / IL-13	IFN-γ / IL-17	IFN-γ / TNF-α	
IL-10 / IL-12	IL-10 / IL-17					

THREE-COLOR FLUORESCENT KITS AND FOUR-COLOR FLUORESCENT KITS:

HUMAN					
IFN-γ / TNF-α / GzB	IFN-γ / TNF-α / IL-2	IFN-γ / IL-2 / GzB	IFN-γ / IL-10 / IL-12	IFN-γ / IL-10 / IL-17	IFN-γ / IL-5 / IL-10
IFN-γ / TNF-α / Perforin	IFN-γ / IL-2 / IL-5 / GzB		IFN-γ / IL-2 / TNF-α / GzB		
NHP					
IFN-γ / TNF-α / IL-2	IFN-γ / IL-10 / IL-17	IFN-γ / IL-10 / IL-12			

IMMUNOSPOT® Multiplexing T Cell FluoroSpot and ELISPOT

ImmunoSpot® Kits versus the Competition

Features and Benefits	ImmunoSpot®	COMPETITOR 1	COMPETITOR 2	COMPETITOR 3	COMPETITOR 4	COMPETITOR 5
96-well plate option	✓	✓	✓	✓	✓	✓
Strip-plate option	✓	✓				
384-well plate option	✓					
Low auto-fluorescence plate option	✓	✓	✓			
Pre-coated plate option	✓	✓			✓	✓
Serum-free media	✓					
Diluents	✓		✓			
Wash buffer concentrate			✓	✓		
Coating antibody	✓	✓	✓	✓	✓	✓
Detection antibody	✓	✓	✓	✓	✓	✓
Tertiary	✓	✓	✓	✓	✓	✓
Single-color substrate	✓	✓	✓	✓	✓	✓
Optimally calibrated substrates for double-color enzymatic assays	✓					
No blocking step	✓					
No artificial fluorescent enhancers	✓					
T cell and B cell kit formats	✓	✓	✓			
Single-color enzymatic T cell kits	✓	✓	✓	✓		✓
Single-color enzymatic B cell kits	✓	✓	✓	✓		
Double-color enzymatic T cell kits	✓		✓		✓	✓
Double-color enzymatic B cell kits	✓		✓			
Single-color fluorescent kits	✓					
Double-color fluorescent kits (T cell and B cell)	36	25	6	10	9	8
Triple-color fluorescent kits (T cell and B cell)	9	3	0	0	0	0
4-color fluorescent kits (T cell and B cell)	5	0	0	0	0	0
Mitogenic positive control	coming soon	✓	✓			
Characterized PBMC for antigen-specific controls	✓					
Kit developed by same company manufacturing ELISPOT reader	✓					
Scientific and technical support for assay, analyzer, software and kits	✓					

CTL.

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