

DETECT & QUANTIFY ANALYTES WITH ENHANCED SENSITIVITY

ELISA Kits for Immunology Research

For over forty years, the enzyme-linked immunosorbent assay (ELISA) has remained a widely used, quantitative, and highly sensitive method for detecting analytes, such as cytokines, hematological factors, hormones, peptides, and immunoglobulins, in biological samples. Today, this proven technology continues to have important applications in research areas for immunological conditions, inflammatory responses, and disease states.

Analyze the activation and/or differentiation of your immune cell of interest using STEMCELL Technologies ELISA Kits, which can measure human and mouse cytokine or immunoglobulin concentrations present in fluids such as serum, plasma, and cell culture supernatants. Conveniently packaged with all the necessary standards, substrates and solutions, our complete, ready-to-use ELISA Kits reduce assay time and variability and are available in either 2 or 10 pre-coated plate options. Alternatively, choose from our selection of ELISA Antibody Pair Kits that include an analyte standard in addition to optimized and matched quantities of capture and detection antibodies.

Why Use Our ELISA Kits?

SENSITIVE. Highly specific antibodies quantify analytes in the low pg/mL range.

ACCURATE. Included standards are calibrated against international references (NIBSC, NIAID).

REPRODUCIBLE. Low intra- and inter-assay variability ensures consistency within and between experiments.

CONVENIENT. Complete, ready-to-use kits include pre-coated 96-well strip microplates for a selection of human and mouse analytes.

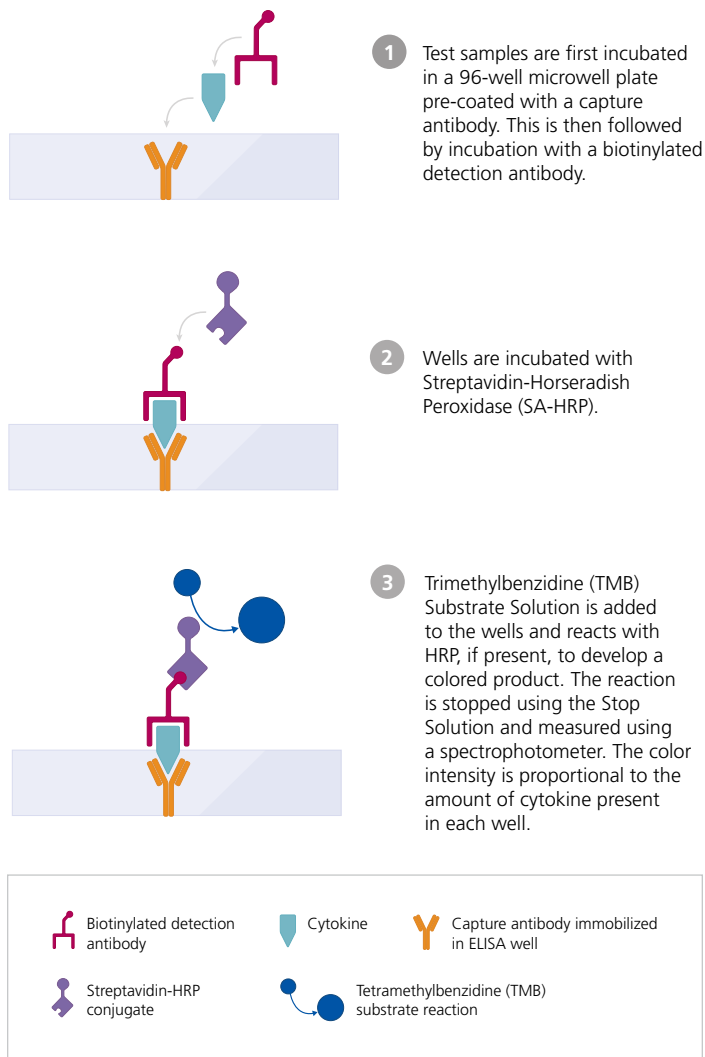


Figure 1. Procedure for the Detection of Cytokines Using Complete, Ready-to-Use ELISA Kits

Immunology ELISA Kits Compatible with Your Workflow

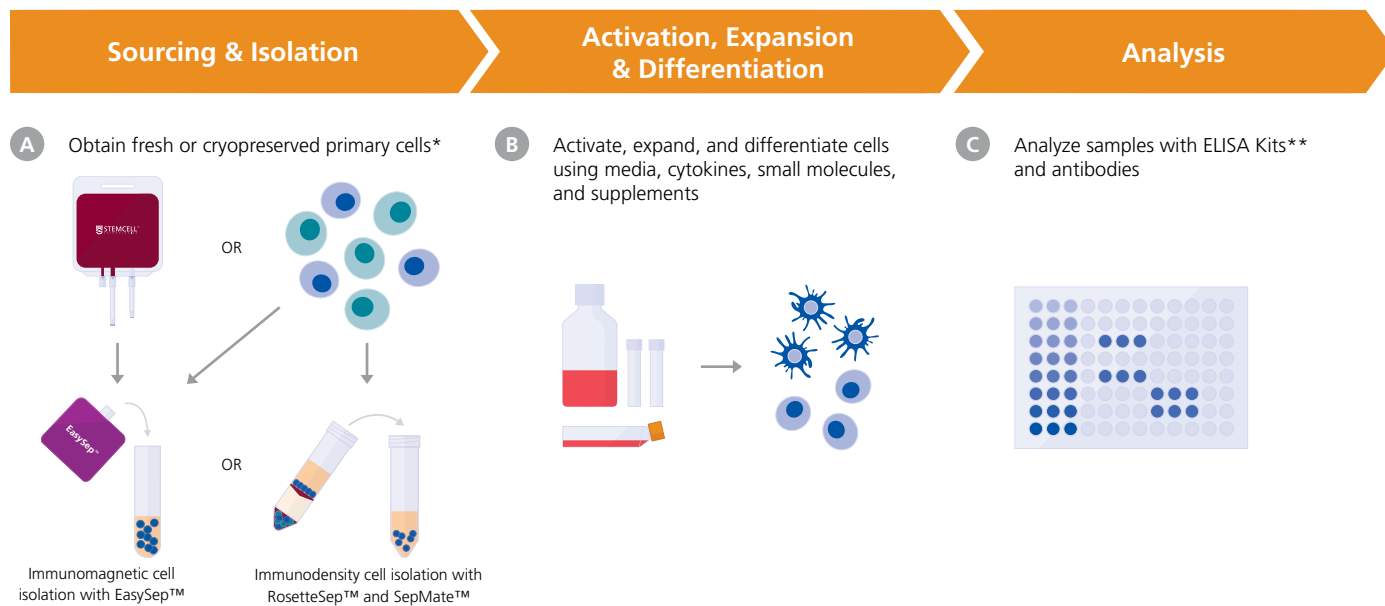


Figure 2. Integrated Workflow for the Analysis of Secreted Cytokines or Immunoglobulins Using ELISA Kits

(A) Obtain fresh blood samples or ready-to-use primary cells and isolate your immune cells of interest using EasySep™ or RosetteSep™ cell separation kits. (B) Expand, differentiate, and activate cells using cell culture media enriched with cytokines, small molecules, and other supplements. (C) Analyze secreted cytokine or immunoglobulin concentrations using ELISA Kits; assess surface expression by flow cytometry using antibodies.

*Certain products are only available in select territories. Please contact Product & Scientific Support (techsupport@stemcell.com) for further information.

**See page 4.

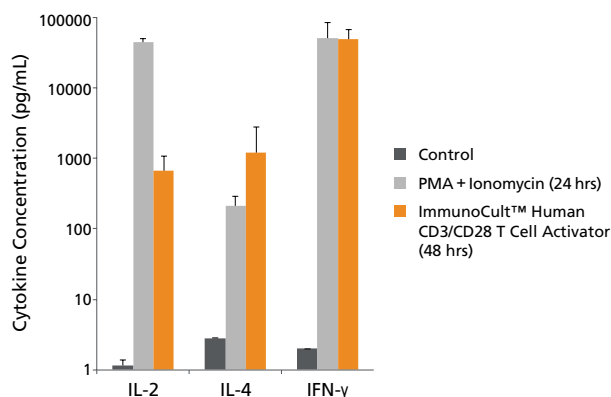


Figure 3. ELISA Kits Measure IL-2, IL-4, and IFN-γ Secreted by Activated Human T Cells

T cells were isolated from human apheresed blood using EasySep™ Human T Cell Isolation Kit and cultured in either RPMI Medium supplemented with 10% FBS, with or without 40 ng/mL PMA and 1 µg/mL Ionomycin, or ImmunoCult™-XF T Cell Expansion Medium, with or without ImmunoCult™ Human CD3/CD28 T Cell Activator. Supernatants were collected, and concentrations of secreted cytokines were determined using the Human IL-2 ELISA Kit, Human IL-4 ELISA Kit, and Human IFN-γ ELISA Kit. All three cytokines were highly expressed by the activated cells compared to unstimulated control cultures.

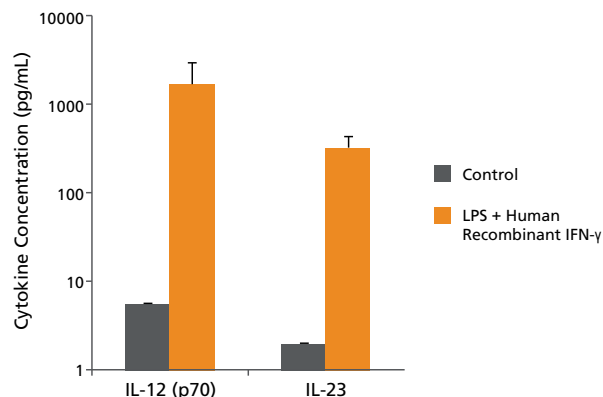


Figure 4. ELISA Kits Measure IL-12 (p70) and IL-23 Secreted by Activated Dendritic Cells (DCs)

Monocytes were isolated from human PBMCs using EasySep™ Human Monocyte Isolation Kit. Cells were cultured for 6 days in RPMI Medium supplemented with 10% FBS (control) or the same media with the addition of 500 U/mL Human Recombinant IL-4 and 1000 U/mL Human Recombinant GM-CSF to induce differentiation to dendritic cells (DCs). DCs were then cultured for 2 days in RPMI Medium supplemented with 10% FBS (control) or the same medium with the addition of 10 ng/mL LPS and 500 U/mL Human Recombinant IFN-γ. Supernatants were collected on day 8, and concentrations of secreted cytokines were determined using Human IL-12 (p70) ELISA Kit and Human IL-23 ELISA Kit. Both cytokines were highly expressed by the activated cells compared to non-activated control cultures.

Evaluating ELISA Kit Performance

STEMCELL Technologies ELISA Kits use highly specific antibodies that enhance the sensitivity and precision of the assay, allowing accurate detection of analytes present in your samples.

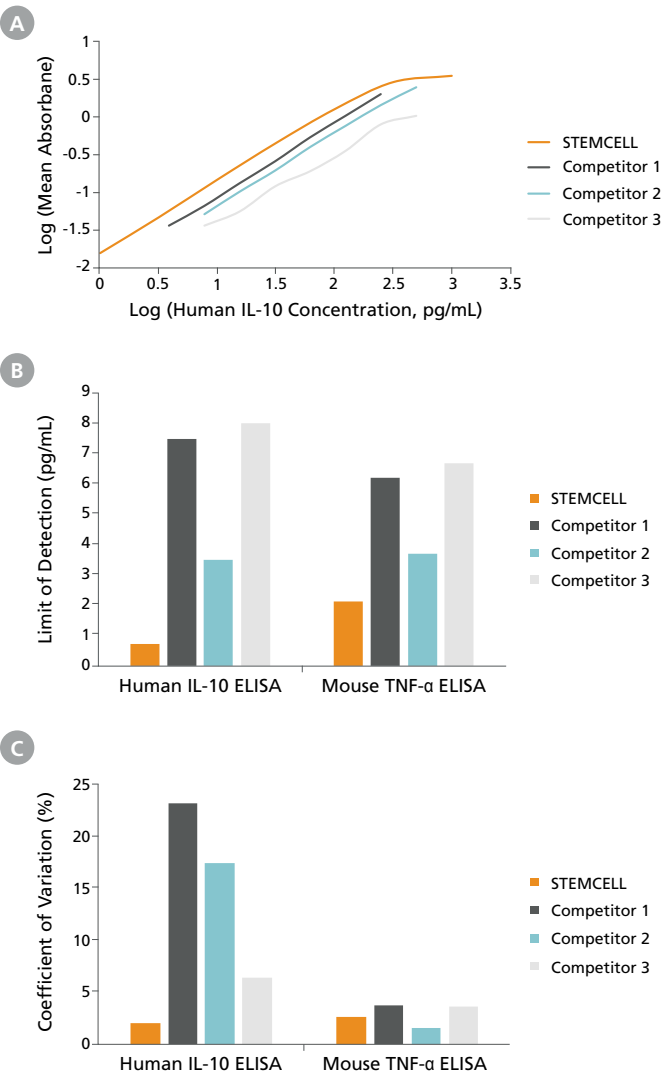


Figure 5. STEMCELL ELISA Kits Show Higher Performance Compared to Competitors

(A) The standard curve of the Human IL-10 ELISA Kit shows the broadest range of linearity, compared to that of Competitors 1 - 3, resulting in the widest working range in which IL-10 concentrations can be accurately and precisely measured. (B) The lower limit of detection (LOD) values for the Human IL-10 and Mouse TNF- α ELISA Kits demonstrate their greater sensitivity compared to Competitors 1 - 3. LOD was determined by measuring absorbance values from $n = 18$ replicates of 0 pg/mL standard, determining the mean value and standard deviation (SD), and calculating the LOD concentration as the mean + 3 SD interpolated from the standard curve. (C) The lower coefficient of variation (CV) for the Human IL-10 and Mouse TNF- α ELISA Kits demonstrates their high precision compared to Competitors 1 - 3. Intra-assay precision was determined by measuring $n = 15$ replicates of a 30 pg/mL of human IL-10 or 100 pg/mL of mouse TNF- α sample, determining the mean value and standard deviation (SD), and calculating the coefficient of variation as SD/mean.

Products Compatible with ELISA Kits

Product	Catalog #
Human Primary Cells	
Human Peripheral Blood Leukopak, Fresh	70500
Human Peripheral Blood Mononuclear Cells	70025
Human Peripheral Blood Monocytes	70034
Human Peripheral Blood Pan-T Cells	70024
Immunomagnetic Cell Isolation	
EasySep™ Human Monocyte Isolation Kit	19359
EasySep™ Human Monocyte Enrichment Kit without CD16 Depletion	19058
EasySep™ Direct Human Monocyte Isolation Kit	19669
EasySep™ Human T Cell Isolation Kit	17951
EasySep™ Mouse CD4 Positive Selection Kit II	18952
Density Gradient and Freezing Media	
Lymphoprep™ Density Gradient Medium	07801
Cell Culture Media, Cytokines, Small Molecules, and Supplements	
Human Recombinant GM-CSF	78015
Human Recombinant IFN- γ	78020
Human Recombinant IL-2	78036
Human Recombinant IL-4	78045
Human Recombinant M-CSF	78057
ImmunoCult™-SF Macrophage Medium	10961
ImmunoCult™ Dendritic Cell Culture Kit	10985
ImmunoCult™ Human CD3/CD28 T Cell Activator	10971
ImmunoCult™ Human CD3/CD28/CD2 T Cell Activator	10970
ImmunoCult™-XF T Cell Expansion Medium	10981
Ionomycin	73722
RPMI 1640 Medium	36750
Recommended Antibodies	
Anti-Human CD3 Antibody, Clone SK7	60127
Anti-Human CD3 Antibody, Clone UCHT1	60011
Anti-Human CD14 Antibody, Clone MoP9	60124
Anti-Human CD14 Antibody, Clone M5E2	60004
Anti-Human CD83 Antibody, Clone HB15e	60107

For a complete list of related products compatible with our cell isolation reagents and cell culture media products for immunology research, please visit www.stemcell.com/immune or contact us at techsupport@stemcell.com.

Product Listing

Human ELISA Kits

Product	Catalog #	
Complete Kits	With 2 Plates	With 10 Plates
Human IFN- α ELISA Kit	02000	02001
Human IFN- γ ELISA Kit	02002	02003
Human IgE ELISA Kit	02032	02033
Human IL-1 β ELISA Kit	02004	02005
Human IL-2 ELISA Kit	02006	02007
Human IL-4 ELISA Kit	02008	02009
Human IL-5 ELISA Kit	02010	02011
Human IL-10 ELISA Kit	02012	02013
Human IL-12 (p70) ELISA Kit	02014	02015
Human IL-13 ELISA Kit	02034	02035
Human IL-17A ELISA Kit	02036	02037
Human IL-23 ELISA Kit	02016	02017
Human Latent TGF- β 1 ELISA Kit	02018	02019
Antibody Pair Kits ¹	For 6 Plates	
Human IgA ELISA Antibody Pair Kit	01992	
Human IgE ELISA Antibody Pair Kit	01993	
Human IgG ELISA Antibody Pair Kit	01994	
Human IgM ELISA Antibody Pair Kit	01995	

Mouse ELISA Kits

Product	Catalog #	
Complete Kits	With 2 Plates	With 10 Plates
Mouse IFN- γ ELISA Kit	02020	02021
Mouse IL-2 ELISA Kit	02022	02023
Mouse IL-4 ELISA Kit	02038	02039
Mouse IL-5 ELISA Kit	02024	02025
Mouse IL-12 (p70) ELISA Kit	02026	02027
Mouse IL-12/23 (p40) ELISA Kit	02028	02029
Mouse TNF- α ELISA Kit	02030	02031
Antibody Pair Kits ¹	For 6 Plates	
Mouse IgA ELISA Antibody Pair Kit	01996	
Mouse IgE ELISA Antibody Pair Kit	01997	
Mouse IgG ELISA Antibody Pair Kit	01998	
Mouse IgM ELISA Antibody Pair Kit	01999	

ELISA Plates and Reagents

Product	Size	Catalog #
Corning® 96-Well High-Binding Flat-Bottom Microplates	6 Plates	38019
ELISA Diluent ²	2 x 120 mL	01916
pNPP ELISA Substrate ³	120 mL	01917

1. Antibody Pair Kits include matched antibody pairs and analyte standard.
2. ELISA Diluent is required for use with the Human IgE ELISA Antibody Pair Kit (Catalog #01993) when serum or plasma samples are used.
3. pNPP (para-nitrophenyl phosphate) ELISA Substrate is for use with STEMCELL's ELISA Antibody Pair Kits.



Complete ELISA Kits Include:

- 96-well strip microplates pre-coated with capture antibody
- Biotinylated detection antibody
- Streptavidin-HRP conjugate
- Analyte standard
- Assay buffer and diluents
- Wash buffer
- TMB substrate solution
- Stop solution
- Adhesive plate covers

ELISA Antibody Pair Kits Include:

- Capture antibody
- Biotinylated detection antibody and Streptavidin-ALP conjugate or ALP-conjugated detection antibody
- Analyte standard

For more information or to view the complete ELISA product listing, please visit www.stemcell.com/ELISA.

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