



Bio-Plex™

Cytokine Assays

Field of Choice

BIO-RAD

The Broadest Selection Available

Bio-Plex Cytokine Assays

Bio-Plex cytokine assays are multiplexable, bead-based assays that quantitate human, mouse, or rat cytokines in diverse matrices, including cell culture supernatants, serum, and plasma. Utilizing a 96-well microplate format, Bio-Plex cytokine assays are optimized for the Bio-Plex system, which uses xMAP detection technology.

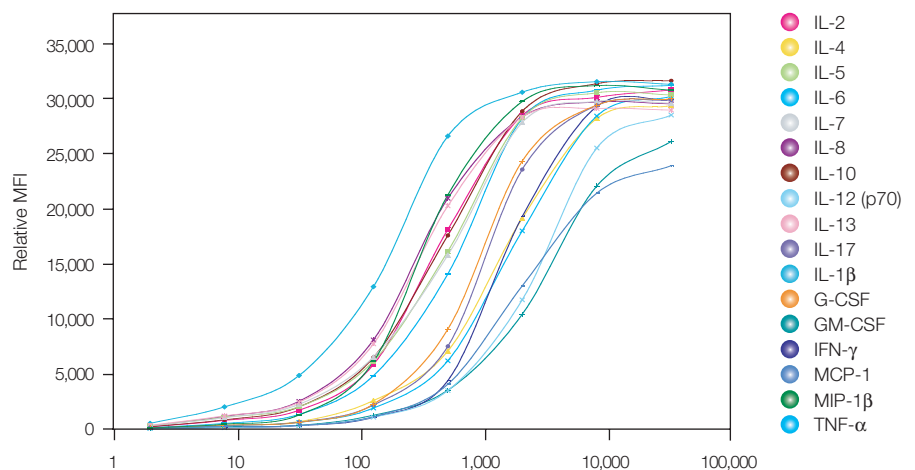
A Multitude of Choices

Load your testing palette with as many as 27 human, 23 mouse, or 9 rat cytokines — and test them all in a single well. By leveraging the power of multiplexing, as little as 12 μ l of sample enables you to test our full range of cytokines at the same time — saving precious sample as well as time.

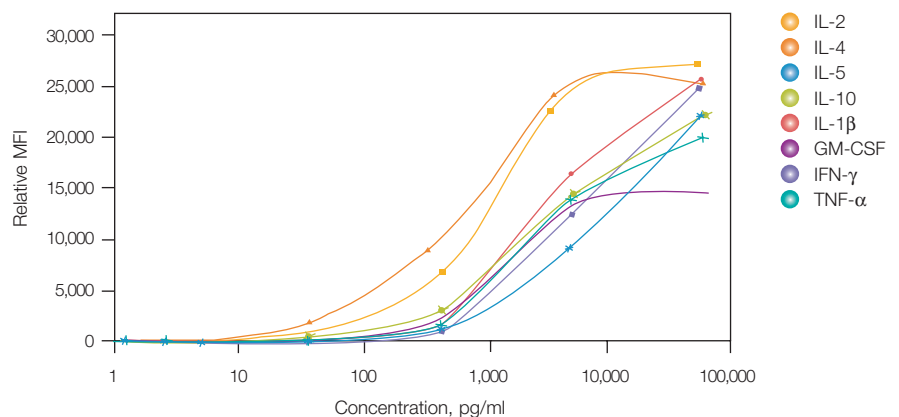
Bio-Plex Cytokine Assay Advantages

- Quantitate cytokines over a broad dynamic range (~0–32,000 pg/ml) and eliminate the need for repetition or dilution of high-concentration samples
- Simplify assay preparation, minimize the possibility of error, and save time with premixed beads and premixed detection antibody
- Maximize sample space on your plates when you use Bio-Rad's premixed cytokine standards to generate standard curves for each cytokine target

17-plex human cytokine panel



8-plex mouse cytokine panel



Premixed standards are included with each cytokine assay panel. Examples shown are panels performed in mouse serum diluent. MFI, median fluorescence intensity.

of Cytokine Assays

Kits and Configurations That Maximize Your Flexibility

To maximize your flexibility, Bio-Rad offers both singleplex assays and premixed multiplex panels of cytokines for testing. Select the universal cytokine reagent kit to run a singleplex assay or premixed panel. If serum or plasma samples are to be tested, Bio-Rad recommends diluting standards with species-specific diluent kits for optimum recovery. For tissue culture samples and standards, simply dilute in tissue culture medium.

Choose Your Format

- Individual singleplex cytokine assays
- Premixed multiplex cytokine panels
- x-Plex™ custom-premixed panels that you design utilizing Bio-Rad's x-Plex ordering system*

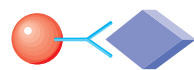
* Online at www.bio-rad.com/bio-plex/x-plex/



Cytokine Assay Methodology

1. Prepare tissue culture, serum, or plasma sample.

2. Incubate antibody-coupled beads with sample (standard or unknown): ~30 min.



3. Wash, then incubate with biotinylated detection antibody: ~30 min.



4. Wash, then incubate with streptavidin-PE: ~10 min.



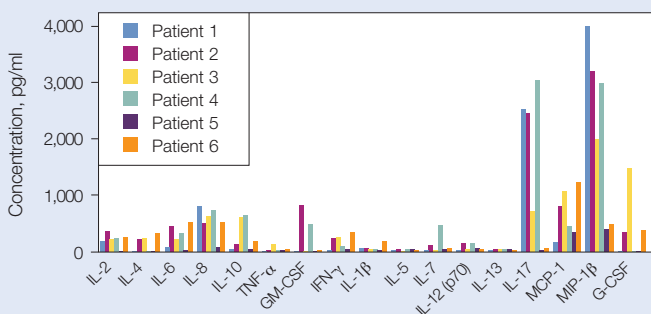
5. Read on the Bio-Plex suspension array system: ~30 min.



Superior Results and Specifications

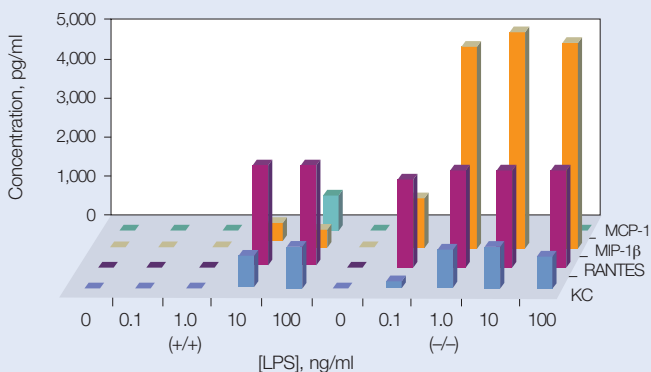
Get a Global View of Signal Transduction Pathways

Simultaneously quantitate up to 27 different cytokines in a single microplate well. By multiplexing with the Bio-Plex system, you can dramatically increase the amount of useful information from rare or volume-limited samples such as mouse and rat serum, and decipher complex interrelationships among proteins involved in signal transduction pathways.

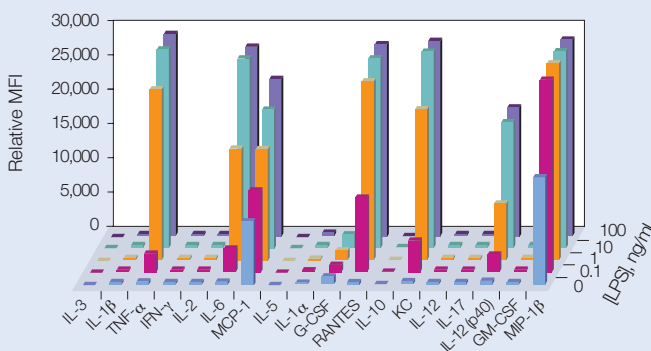


Analysis of cytokines in serum samples from six cancer patients.

Cytokines were tested using the Bio-Plex human cytokine 17-plex panel. Serum samples were diluted 1:4 in Bio-Plex human serum sample diluent.



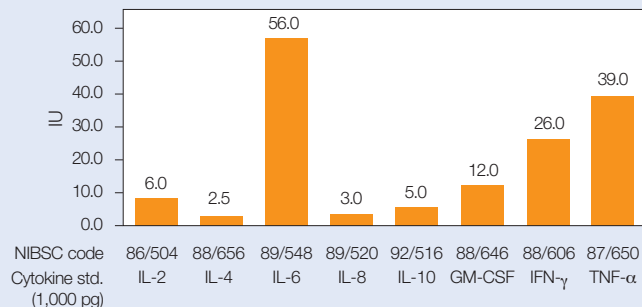
Chemokine secretion from mouse astrocytes following stimulation with lipopolysaccharide (LPS). IL-6 (+/+) and IL-6 (-/-) primary mouse astrocytes were stimulated with LPS for 18 hr. Data provided by Laurel M Bolin, The Parkinson's Institute, Sunnyvale, CA USA.



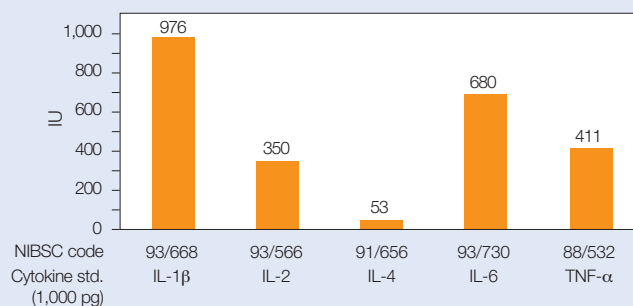
Simultaneous analysis of 18 different secreted cytokines and chemokines.

The Bio-Plex suspension array system detected an LPS dose-response at 6 hr in IL-6 (+/+) primary mouse astrocyte supernatants. Data provided by Laurel M Bolin, The Parkinson's Institute, Sunnyvale, CA USA.

Human cytokine standards



Mouse cytokine standards



Assignment of international units (IU) for Bio-Plex cytokine standards.

The National Institute for Biological Standards and Control (NIBSC) cytokine standards are recognized by the World Health Organization (WHO) as international biological standards and are assigned potency values in IU. These standards allow data to be compared among different commercial ELISA kits and different bioassays. Samples spiked with 1,000 pg of selected Bio-Plex human or mouse cytokine standards were tested using NIBSC standards and the appropriate Bio-Plex assay. The IU assigned for each 1,000 pg of Bio-Plex standard, as shown, was calculated based on standard curves generated from the NIBSC/WHO standards.

Specifications*

Sensitivity	~10 pg/ml (based on detectable signal >2 SD above background)
Precision	Inter-assay CV: <30% Intra-assay CV: <20%
Recovery	Serum: 70–130% Cell culture: 80–120%
Cross-reactivity	Negligible
Matrices	Serum, plasma, and tissue culture media
Storage	2–8°C
Stability	6 months from receipt

* See bulletins 3156 and 3157 for specific information.

Bio-Rad Cytokine Preconfigured Panels and Custom-Premixed x-Plex Assays*

Assays	Human						Mouse					Rat	
	8-Plex A Panel 171-A11080	9-Plex B Panel 171-A11100	Th1/Th2 Panel 171-A11081	17-Plex Panel 171-A11171	27-Plex Panel 171-A11127	Available x-Plex Targets**	8-Plex A Panel 171-F11080	10-Plex B Panel 171-F11100	Th1/Th2 Panel 171-F11081	23-Plex Panel 171-F11241	Available x-Plex Targets**	9-Plex A Panel 171-K11070	Available x-Plex Targets**
IL-1 α								●		●	●	●	●
IL-1 β		●		●	●	●	●				●	●	●
IL-1ra					●	●							
IL-2	●		●	●	●	●	●		●	●	●	●	●
IL-3								●			●		
IL-4	●		●	●	●	●	●		●	●	●	●	●
IL-5		●	●	●	●	●	●		●	●	●		
IL-6	●			●	●	●		●		●	●	●	●
IL-7		●		●	●	●							
IL-8	●			●	●	●							
IL-9					●	●			●	●			
IL-10	●		●	●	●	●	●		●	●	●	●	●
IL-12 (p40)								●		●	●		
IL-12 (p70)		●	●	●	●	●		●	●	●	●		
IL-13		●	●	●	●	●			●	●			
IL-15					●	●							
IL-17		●		●	●	●		●		●	●		
Eotaxin					●	●			●	●			
Basic FGF					●	●							
G-CSF		●		●	●	●		●		●	●		
GM-CSF	●		●	●	●	●	●		●	●	●	●	●
IFN- γ	●		●	●	●	●	●		●	●	●	●	●
IP-10					●	●							
KC								●		●	●		
MCP-1 (MCAF)		●		●	●	●			●	●	●		
MIP-1 α					●	●		●		●	●		
MIP-1 β		●		●	●	●			●	●			
PDGF-BB					●	●							
RANTES					●	●		●		●	●		
TNF- α	●		●	●	●	●	●		●	●	●	●	●
VEGF					●	●							

* All cytokine assays and panels are optimized for the Bio-Plex system but can also be run on any Luminex 100 reader.

** Custom-premixed x-Plex assays can be ordered with any combination of available analytes.



Ordering Information

Catalog #	Description	Catalog #	Description
Bio-Plex Premixed Human Cytokine Panels*			
171-A11080	Bio-Plex Human Cytokine 8-Plex A Panel , 1 x 96-well, includes IL-2, IL-4, IL-6, IL-8, IL-10, GM-CSF, IFN- γ , TNF- α	Bio-Plex Mouse Cytokine Assays*	
171-A11100	Bio-Plex Human Cytokine 9-Plex B Panel , 1 x 96-well, includes IL-1 β , IL-5, IL-7, IL-12 (p70), IL-13, IL-17, G-CSF, MCP-1 (MCAF), MIP-1 β	171-G15253	Bio-Plex Mouse IL-1α Assay , 1 x 96-well
171-A11081	Bio-Plex Human Cytokine Th1/Th2 Panel , 1 x 96-well, includes IL-2, IL-4, IL-5, IL-10, IL-12 (p70), IL-13, GM-CSF, IFN- γ , TNF- α	171-G12819	Bio-Plex Mouse IL-1β Assay , 1 x 96-well
171-A11171	Bio-Plex Human Cytokine 17-Plex Panel , 1 x 96-well, includes IL-1 β , IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-10, IL-12 (p70), IL-13, IL-17, G-CSF, GM-CSF, IFN- γ , MCP-1 (MCAF), MIP-1 β , TNF- α	171-G10136	Bio-Plex Mouse IL-2 Assay , 1 x 96-well
171-A11127	Bio-Plex Human Cytokine 27-Plex Panel , 1 x 96-well, includes IL-1 β , IL-1ra, IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12 (p70), IL-13, IL-15, IL-17, eotaxin, basic FGF, G-CSF, GM-CSF, IFN- γ , IP-10, MCP-1 (MCAF), MIP-1 α , MIP-1 β , PDGF-BB, RANTES, TNF- α , VEGF	171-G15518	Bio-Plex Mouse IL-3 Assay , 1 x 96-well
Bio-Plex Human Cytokine Assays*			
171-B12832	Bio-Plex Human IL-1β Assay , 1 x 96-well	171-G10432	Bio-Plex Mouse IL-4 Assay , 1 x 96-well
X5000B6AZ1	Bio-Plex Human IL-1ra Assay , 1 x 96-well	171-G12552	Bio-Plex Mouse IL-5 Assay , 1 x 96-well
171-B10138	Bio-Plex Human IL-2 Assay , 1 x 96-well	171-G10738	Bio-Plex Mouse IL-6 Assay , 1 x 96-well
171-B10452	Bio-Plex Human IL-4 Assay , 1 x 96-well	X6000063YT	Bio-Plex Mouse IL-9 Assay , 1 x 96-well
171-B12533	Bio-Plex Human IL-5 Assay , 1 x 96-well	171-G11356	Bio-Plex Mouse IL-10 Assay , 1 x 96-well
171-B10719	Bio-Plex Human IL-6 Assay , 1 x 96-well	171-G15876	Bio-Plex Mouse IL-12 (p40) Assay , 1 x 96-well
171-B13174	Bio-Plex Human IL-7 Assay , 1 x 96-well	171-G13758	Bio-Plex Mouse IL-12 (p70) Assay , 1 x 96-well
171-B11054	Bio-Plex Human IL-8 Assay , 1 x 96-well	X60000ZFVB	Bio-Plex Mouse IL-13 Assay , 1 x 96-well
X5000MCLD2	Bio-Plex Human IL-9 Assay , 1 x 96-well	171-G14072	Bio-Plex Mouse IL-17 Assay , 1 x 96-well
171-B11356	Bio-Plex Human IL-10 Assay , 1 x 96-well	X60002RSW9	Bio-Plex Mouse Eotaxin Assay , 1 x 96-well
171-B13475	Bio-Plex Human IL-12 (p70) Assay , 1 x 96-well	171-G14354	Bio-Plex Mouse G-CSF Assay , 1 x 96-well
171-B13751	Bio-Plex Human IL-13 Assay , 1 x 96-well	171-G11673	Bio-Plex Mouse GM-CSF Assay , 1 x 96-well
X50019P7Q4	Bio-Plex Human IL-15 Assay , 1 x 96-well	171-G11934	Bio-Plex Mouse IFN-γ Assay , 1 x 96-well
171-B14076	Bio-Plex Human IL-17 Assay , 1 x 96-well	171-G16157	Bio-Plex Mouse KC Assay , 1 x 96-well
X5000063YT	Bio-Plex Human Eotaxin Assay , 1 x 96-well	X60000C7YN	Bio-Plex Mouse MCP-1 (MCAF) Assay , 1 x 96-well
X50000ZFVB	Bio-Plex Human Basic FGF Assay , 1 x 96-well	171-G16477	Bio-Plex Mouse MIP-1α Assay , 1 x 96-well
171-B14357	Bio-Plex Human G-CSF Assay , 1 x 96-well	X60005KMTI	Bio-Plex Mouse MIP-1β Assay , 1 x 96-well
171-B11634	Bio-Plex Human GM-CSF Assay , 1 x 96-well	171-G16755	Bio-Plex Mouse RANTES Assay , 1 x 96-well
171-B11921	Bio-Plex Human IFN-γ Assay , 1 x 96-well	171-G12221	Bio-Plex Mouse TNF-α Assay , 1 x 96-well
X5002JFFH8	Bio-Plex Human IP-10 Assay , 1 x 96-well	Bio-Plex Premixed Rat Cytokine Panel*	
171-B14653	Bio-Plex Human MCP-1 (MCAF) Assay , 1 x 96-well	171-K11070	Bio-Plex Rat Cytokine 9-Plex A Panel , 1 x 96-well, includes IL-1 α , IL-1 β , IL-2, IL-4, IL-6, IL-10, GM-CSF, IFN- γ , TNF- α
X50053UUYG	Bio-Plex Human MIP-1α Assay , 1 x 96-well	Bio-Plex Cytokine Reagent Kits**	
171-B14918	Bio-Plex Human MIP-1β Assay , 1 x 96-well	171-304000	Bio-Plex Cytokine Reagent Kit , 1 x 96-well, includes 75 ml assay buffer, 150 ml wash buffer, 15 ml detection antibody diluent, 70 μ l streptavidin-PE, 96-well filter plate, 4 rolls sealing tape, instructions
X50001DVXM	Bio-Plex Human PDGF-BB Assay , 1 x 96-well	171-304001	Bio-Plex Cytokine Reagent Kit , 10 x 96-well, includes 750 ml assay buffer, 1,500 ml wash buffer, 150 ml detection antibody diluent, 700 μ l streptavidin-PE, ten 96-well filter plates, 24 rolls sealing tape, instructions
X500A7QQXW	Bio-Plex Human RANTES Assay , 1 x 96-well	Bio-Plex Human Serum Diluent Kits***	
171-B12236	Bio-Plex Human TNF-α Assay , 1 x 96-well	171-305000	Bio-Plex Human Serum Diluent Kit , 1 x 96-well, includes 15 ml sample diluent, 10 ml standard diluent
X50005KMTI	Bio-Plex Human VEGF Assay , 1 x 96-well	171-305001	Bio-Plex Human Serum Diluent Kit , 10 x 96-well, includes 150 ml sample diluent, 100 ml standard diluent
Bio-Plex Premixed Mouse Cytokine Panels*			
171-F11080	Bio-Plex Mouse Cytokine 8-Plex A Panel , 1 x 96-well, includes IL-1 β , IL-2, IL-4, IL-5, IL-10, GM-CSF, IFN- γ , TNF- α	Bio-Plex Mouse Serum Diluent Kits***	
171-F11100	Bio-Plex Mouse Cytokine 10-Plex B Panel , 1 x 96-well, includes IL-1 α , IL-3, IL-6, IL-12 (p40), IL-12 (p70), IL-17, G-CSF, KC, MIP-1 α , RANTES	171-305004	Bio-Plex Mouse Serum Diluent Kit , 1 x 96-well, includes 15 ml sample diluent, 10 ml standard diluent
171-F11081	Bio-Plex Mouse Cytokine Th1/Th2 Panel , 1 x 96-well, includes IL-2, IL-4, IL-5, IL-10, IL-12 (p70), GM-CSF, IFN- γ , TNF- α	171-305005	Bio-Plex Mouse Serum Diluent Kit , 10 x 96-well, includes 150 ml sample diluent, 100 ml standard diluent
171-F11241	Bio-Plex Mouse Cytokine 23-Plex Panel , 1 x 96-well, includes IL-1 α , IL-1 β , IL-2, IL-3, IL-4, IL-5, IL-6, IL-9, IL-10, IL-12 (p40), IL-12 (p70), IL-13, IL-17, eotaxin, G-CSF, GM-CSF, IFN- γ , KC, MCP-1 (MCAF), MIP-1 α , MIP-1 β , RANTES, TNF- α	Bio-Plex Rat Serum Diluent Kit***	
171-305008 Bio-Plex Rat Serum Diluent Kit , 1 x 96-well, includes 15 ml sample diluent, 10 ml standard diluent			

* Each 96-well bead panel or assay includes antibody-conjugated beads, detection antibody, and 2 vials cytokine standard.

** Required for running any cytokine assay.

*** Recommended for serum and plasma samples.

For a list of publications that refer to Bio-Plex cytokine assays, contact your local Bio-Rad sales representative or visit us on the Web at discover.bio-rad.com to obtain bulletin 5297.

xMAP is a trademark of Luminex Corporation. The Bio-Plex suspension array system includes fluorescently labeled microspheres and instrumentation licensed to Bio-Rad Laboratories, Inc. by the Luminex Corporation.



**Bio-Rad
Laboratories, Inc.**

Life Science
Group

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