

# Bio-Plex Pro™ Mouse Cytokine, Chemokine, and Growth Factor Assays

MAGNETIC SEPARATION ENABLED

Mouse Group I, Mouse Group II, Mouse Group III, and Mouse Th17 Panels

- Automated or vacuum-based wash steps
- All-in-one kit format
- Flexible ordering options



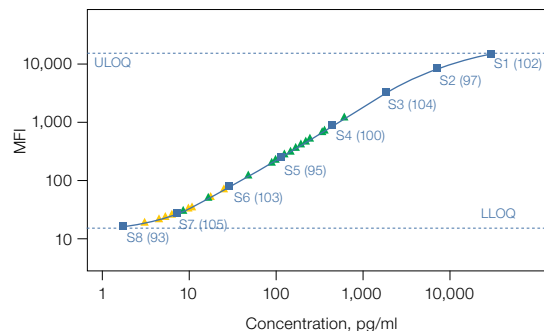
## Confident Multiplex Measurements of Key Mouse Cytokines

The Bio-Plex Pro mouse cytokine, chemokine, and growth factor assays are magnetic bead-based multiplex assays that offer performance for the detection of multiple biomarkers in a single experiment, using as little as 12.5 µl of serum, plasma, or other fluids. These assays have been developed to provide reliable performance with the flexibility required to meet all of your research needs.

- **Broad assay range**—optimized to detect analyte levels in normal and diseased samples
- **Convenient one-stop ordering**—all assay reagents and buffers are now available in a single kit
- **New custom ordering options**—you can order from our premixed kit offerings, have your select targets custom-blended, or order your select targets custom-shipped and mix them yourself

## Benefits of Magnetic Bead-Based Assays

Magnetic bead-based assays enable automation of wash steps with a Bio-Plex Pro series or similar wash station. This innovation greatly simplifies assay processing and eliminates the need for a vacuum manifold. After adopting the magnetic assay workflow, many users experience improved assay precision, in particular with viscous samples.



**Fig. 1. Demonstration of assay working range.** IL-23p19 analyte measured in 9 unstimulated (▲) and 21 LPS-stimulated (▲) wild-type mouse serum samples. All sample types fall within the upper and lower limits of quantitation. These limits are calculated by and displayed from Bio-Plex Manager™ software 6.0.



## Assay Performance Definitions

**Assay working range** — the range of concentration in which the assay is both precise and accurate. Boundaries of the range are the lower limit of quantitation (LLOQ) and the upper limit of quantitation (ULOQ) (see sample data for IL-23p19 in Figure 1). The intra-assay %CV and the inter-assay %CV provided in the fourth and fifth columns of Table 1 represent the highest %CV obtained within the assay working range.

## Sensitivity (limit of detection or LOD) —

the concentration of analyte on the standard curve for which the corresponding signal value is above the background value plus 2 standard deviations. Note that the definition of sensitivity is different from that of the LLOQ.

## Assay Performance Characteristics

**Table 1. Representative working assay range\*, sensitivity, and precision\*\*.** Values were experimentally determined from five assay runs.

Target	Assay Range, pg/ml	Sensitivity, pg/ml	Intra-Assay, %CV	Inter-Assay, %CV
<b>Mouse Group I: 23-plex panel</b>				
IL-1 $\alpha$	1.84–21,093	0.2	3	29
IL-1 $\beta$	10.36–60,631	9.4	4	7
IL-2	3.72–51,857	0.6	3	19
IL-3	1.55–21,632	0.2	2	15
IL-4	6.98–9,372	2.1	3	20
IL-5	3.57–13,315	0.3	4	14
IL-6	0.74–12,053	0.2	3	16
IL-9	6.89–28,208	12.5	4	9
IL-10	2.95–12,066	1.0	4	5
IL-12 (p40)	1.53–25,024	0.4	2	7
IL-12 (p70)	1.62–26,507	2.3	3	7
IL-13	47.2–57,011	38.7	4	5
IL-17A	2.65–43,337	0.8	3	10
Eotaxin	257.9–4,636	147.4	4	5
G-CSF	5.1–84,244	0.6	3	12
GM-CSF	21.2–3,401	5.6	3	24
IFN- $\gamma$	1.84–30,164	1.2	4	6
KC	3.2–18,202	0.3	3	30
MCP-1	22.4–41,873	3.7	5	7
MIP-1 $\alpha$	256.2–15,565	36.3	3	11
MIP-1 $\beta$	3.33–24,798	0.8	3	8
RANTES	2.78–8,759	0.6	4	4
TNF- $\alpha$	5.8–59,626	1.4	3	6
<b>Mouse Group II: 9-plex panel</b>				
IL-15	5.7–37,501	6.6	6	3
IL-18	81.4–29,761	31.8	8	18
Basic FGF	4.8–35,500	2.2	8	8
LIF	3.5–57,366	0.6	4	12
M-CSF	1.5–24,221	0.4	4	14
MIG	183–46,393	3.4	5	21
MIP-2	32–8,574.2	0.4	5	13
PDGF-BB	10.4–36,939	4.3	5	10
VEGF	27.2–32,771	1.6	4	15
<b>Mouse Group III</b>				
CD40L	3.6–11,245	0.4	4	14
IL-17F	1–6,362	0.1	5	5
IL-21	6–8,207	2.8	3	15
IL-22	0.5–8,433	0.1	4	5
IL-23p19	3.4–55,764	0.7	5	6
IL-25***	168–98,266	9.0	9	12
IL-27p28***	63.4–117,521	29.2	9	6
IL-31	2.5–41,313	5.2	6	6
IL-33	0.5–7,343	0.2	5	12
ICAM-1†	2.9–23,723	0.78	4	8
MIP-3 $\alpha$	0.7–1,660	0.3	6	13
<b>Mouse Growth Factors</b>				
TGF- $\beta$ 1	1.69–27,616	3.9	4.5	4.9
TGF- $\beta$ 2	14.7–30,080	1.9	6.3	9.1
TGF- $\beta$ 3	2.8–15,031	0.5	6.9	8.2

\* Assay range is LLOQ and ULOQ calculated from five independent assays.

\*\* Data were generated using vacuum manifold. %CV is expected to be lower with magnetic bead washer.

\*\*\* IL-25 and IL-27p28 were measured as a 2-plex.

† ICAM-1 was measured as a singleplex.

## Available Mouse Cytokine, Chemokine, and Growth Factor Assays

Mouse Group I	8-Plex Panel (M60-00007A)	Th1 7-Plex Panel (L60-00004C6)	Th2 7-Plex Panel (L60-000UKVT)	23-Plex Panel (M60-009RDPD)	Th1/Th2 Panel (M60-00003J7)	Th17 6-Plex (M60-00007NY)	Singleplex/x-Plex™ Bead Regions*
IL-1 $\alpha$				•			• 53
IL-1 $\beta$	•	•		•		•	• 19
IL-2	•	•	•	•	•		• 36
IL-3				•			• 18
IL-4	•		•	•	•		• 39
IL-5	•		•	•	•		• 52
IL-6		•	•	•		•	• 38
IL-9			•	•			• 33
IL-10	•	•	•	•	•	•	• 56
IL-12 (p40)				•			• 76
IL-12 (p70)		•		•	•		• 78
IL-13			•	•			• 37
IL-17A				•		•	• 72
Eotaxin				•			• 74
G-CSF				•			• 54
GM-CSF	•			•	•		• 73
IFN- $\gamma$	•	•		•	•	•	• 34
KC				•			• 57
MCP-1 (MCAF)				•			• 51
MIP- $\alpha$				•			• 77
MIP-1 $\beta$				•			• 75
RANTES				•			• 55
TNF- $\alpha$	•	•		•	•	•	• 21

Mouse Group II	9-Plex Panel (MD0-00000EL)	Singleplex/x-Plex Bead Regions*
IL-15	•	• 42
IL-18**	•	• 20
Basic FGF	•	• 25
LIF	•	• 45
M-CSF	•	• 26
MIG	•	• 44
MIP-2	•	• 27
PDGF-BB	•	• 35
VEGF	•	• 47

Mouse Group III	Th17 8-Plex Panel (171-FA001M)	Singleplex/x-Plex Bead Regions*
CD40L	•	• 30
IL-17F	•	• 28
IL-21	•	• 14
IL-22	•	• 15
IL-23p19	•	• 61
IL-25 (IL-17E)		• 67
IL-27p28		• 43
IL-31	•	• 29
IL-33	•	• 13
ICAM-1		• 22
MIP-3 $\alpha$	•	• 12

\* You can design a custom assay with a combination of different targets. See ordering options. For more information, go to [www.bio-rad.com/assaybuilder](http://www.bio-rad.com/assaybuilder) or contact your local Bio-Rad sales representative.

\*\* IL-18 is not available as a singleplex assay.

### Ordering Options

#### Premixed Panels

Four premixed panels are available in the new all-in-one kit format.\*

#### x-Plex Assay

Custom premixed assay panels in the new all-in-one kit format are available as 1 x 96 kits. Minimum order of two kits applies if ordering a 6-plex or less. Go to [www.bio-rad.com/assaybuilder](http://www.bio-rad.com/assaybuilder) for details.

#### Express Assay

Select your singleplex targets of interest in the new all-in-one kit format and mix them yourself for faster delivery and a lower price than the custom blending service. Available as 1 x 96 kits only for up to a 10-plex maximum. Go to [www.bio-rad.com/assaybuilder](http://www.bio-rad.com/assaybuilder) for details.

#### Individual Components

Separate catalog numbers are also available for:

- Singleplex sets of coupled magnetic beads and detection antibodies
- Standards
- Reagent kits containing assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, 96-well filter plate, sealing tape, standard diluent, and sample diluent

\* Includes coupled magnetic beads, detection antibodies, standards, assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, 96-well filter plate, sealing tape, standard diluent, and sample diluent.

## Ordering Information

Catalog # Description

### Assays

#### Bio-Plex Pro Premixed Mouse Cytokine Panel All-In-One Kits

Premixed panels include reagents, diluents, one 96-well filter plate, and one flat bottom plate. For 10-pack sizes, please go to [www.bio-rad.com/assaybuilder](http://www.bio-rad.com/assaybuilder) for more information.

M60-000007A	<b>Bio-Plex Pro Mouse Cytokine 8-Plex Assay,</b> 1 x 96-well for the detection of IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-10, GM-CSF, IFN- $\gamma$ , TNF- $\alpha$
M60-00003J7	<b>Bio-Plex Pro Mouse Cytokine Th1/Th2 Assay,</b> 1 x 96-well for the detection of IL-2, IL-4, IL-5, IL-10, IL-12(p70), GM-CSF, IFN- $\gamma$ , TNF- $\alpha$
M60-009RDPD	<b>Bio-Plex Pro Mouse Cytokine 23-Plex Assay,</b> 1 x 96-well for the detection of IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-3, IL-4, IL-5, IL-6, IL-9, IL-10, IL-12 (p40), IL-12 (p70), IL-13, IL-17A, eotaxin, G-CSF, GM-CSF, IFN- $\gamma$ , KC, MCP-1 (MCAF), MIP-1 $\alpha$ , MIP-1 $\beta$ , RANTES, TNF- $\alpha$
MD0-00000EL	<b>Bio-Plex Pro Mouse Cytokine 9-Plex Assay,</b> 1 x 96-well for the detection of IL-15, IL-18, basic FGF, LIF, M-CSF, MIG, MIP-2, PDGF-BB, VEGF
M60-00007NY	<b>Bio-Plex Pro Mouse Cytokine Th17 Panel A 6-Plex Group I,</b> 1 x 96-well for the detection of IL-1 $\beta$ , IL-6, IL-10, IL-17A, IFN- $\gamma$ , TNF- $\alpha$
171-FA001M	<b>Bio-Plex Pro Mouse Cytokine Th17 Panel B 8-Plex Group III,</b> 1 x 96-well for the detection of IL-17F, IL-21, IL-22, IL-23p19, IL-31, IL-33, CD40L, MIP-3 $\alpha$
L60-00004C6	<b>Bio-Plex Pro Mouse Cytokine Th1 7-plex Panel,</b> 1x96-well for the detection of IL-1 $\beta$ , IL-2, IL-6, IL-10, IL-12 (p70), IFN- $\gamma$ , TNF- $\alpha$
L60-000UKVT	<b>Bio-Plex Pro Mouse Cytokine Th2 7-plex Panel,</b> 1x96-well for the detection of IL-2, IL-4, IL-5, IL-6, IL-9, IL-10, IL-13
171-W4001M	<b>Bio-Plex Pro TGF-<math>\beta</math> 3-Plex Assay,</b> 1 x 96-well, for the detection of TGF- $\beta$ 1, TGF- $\beta$ 2, and TGF- $\beta$ 3

#### Bio-Plex Pro Mouse Cytokine Singleplex Sets, 1 x 96-well, Group I\*

Up to 10 singleplex assays can be mixed.

171-G5001M	<b>IL-1<math>\alpha</math> Set</b>
171-G5002M	<b>IL-1<math>\beta</math> Set</b>
171-G5003M	<b>IL-2 Set</b>
171-G5004M	<b>IL-3 Set</b>
171-G5005M	<b>IL-4 Set</b>
171-G5006M	<b>IL-5 Set</b>
171-G5007M	<b>IL-6 Set</b>
171-G5008M	<b>IL-9 Set</b>
171-G5009M	<b>IL-10 Set</b>
171-G5010M	<b>IL-12 (p40) Set</b>
171-G5011M	<b>IL-12 (p70) Set</b>
171-G5012M	<b>IL-13 Set</b>
171-G5013M	<b>IL-17A Set</b>
171-G5014M	<b>Eotaxin Set</b>
171-G5015M	<b>G-CSF Set</b>
171-G5016M	<b>GM-CSF Set</b>
171-G5017M	<b>IFN-<math>\gamma</math> Set</b>
171-G5018M	<b>KC Set</b>
171-G5019M	<b>MCP-1 (MCAF) Set</b>
171-G5020M	<b>MIP-1<math>\alpha</math> Set</b>
171-G5021M	<b>MIP-1<math>\beta</math> Set</b>
171-G5022M	<b>RANTES Set</b>
171-G5023M	<b>TNF-<math>\alpha</math> Set</b>

Catalog # Description

#### Bio-Plex Pro Mouse Cytokine Singleplex Sets, 1 x 96-well, Group II\*

Up to 10 singleplex assays can be mixed.

171-G6001M	<b>IL-15 Set</b>
171-G6002M	<b>Basic FGF Set</b>
171-G6003M	<b>LIF Set</b>
171-G6004M	<b>M-CSF Set</b>
171-G6005M	<b>MIG Set</b>
171-G6006M	<b>MIP-2 Set</b>
171-G6007M	<b>PDGF-BB Set</b>
171-G6008M	<b>VEGF Set</b>

#### Bio-Plex Pro Mouse Cytokine Singleplex Sets, 1 x 96-well, Group III\*

Up to 10 singleplex assays can be mixed.

171-GA001M	<b>CD40L Set</b>
171-GA002M	<b>IL-17F Set</b>
171-GA003M	<b>IL-21 Set</b>
171-GA004M	<b>Cytokine IL-22 Set</b>
171-GA005M	<b>IL-23p19 Set</b>
171-GA006M	<b>IL-25 Set</b>
171-GA007M	<b>IL-27p28 Set</b>
171-GA008M	<b>IL-31 Set</b>
171-GA009M	<b>IL-33 Set</b>
171-GA010M	<b>ICAM-1 Set**</b>
171-GA011M	<b>MIP-3<math>\alpha</math> Set</b>

#### Bio-Plex Pro TGF- $\beta$ Assays Singleplex Sets, 1 x 96-well

Includes premixed coupled magnetic beads and detection antibodies, standards, buffers, diluents, streptavidin-PE, filter plate, sealing tape requires reagent kit (#171-304070 for vacuum workflow or 171-304070M for magnetic workflow) and standards (#171-X40001).

171-V4001M	<b>Bio-Plex Pro TGF-<math>\beta</math>1 Set</b>
171-V4002M	<b>Bio-Plex Pro TGF-<math>\beta</math>2 Set</b>
171-V4003M	<b>Bio-Plex Pro TGF-<math>\beta</math>3 Set</b>

\* Each singleplex set includes coupled magnetic beads and detection antibodies for the detection of the specified analyte (reagent kits and standards are offered separately).

\*\* ICAM-1 requires Bio-Plex Pro High dilution reagent kit (171-304080M). All other singleplex sets mentioned here require the Bio-Plex Pro Reagent Kit.

## Ordering Information (contd.)

Catalog # Description

### Ordering by Individual Components

The following are required for ordering singleplex sets. One reagent kit and one vial of standards are required for one 96-well experiment.

#### Standards

##### Bio-Plex Pro Mouse Cytokine Group I Standards

171-I50001 **Bio-Plex Pro Mouse Cytokine Standards, Group I**, pkg of 1 vial, cytokine standard for detecting 23 mouse cytokines

171-I10501 **Bio-Plex Pro Mouse Cytokine Standards, Group I**, pkg of 50 lot-matched vials, cytokine standard for detecting 23 mouse cytokines

##### Bio-Plex Pro Mouse Cytokine Group II Standards

171-I60001 **Bio-Plex Pro Mouse Cytokine Standards, Group II**, pkg of 1 vial, cytokine standard for detecting 9 mouse cytokines

171-I10502 **Bio-Plex Pro Mouse Cytokine Standards, Group II**, pkg of 50 lot-matched vials, cytokine standard for detecting 9 mouse cytokines

##### Bio-Plex Pro Mouse Cytokine Group III Standards

171-IA0001 **Bio-Plex Pro Mouse Standard Group III**, pkg of 1 vial, cytokine standard for detecting 11 mouse cytokines

171-IA0501 **Bio-Plex Pro Mouse Standard Group III**, pkg of 50 lot-matched vials, cytokine standard for detecting 11 mouse cytokines

##### Bio-Plex Pro TGF- $\beta$ Standards

171-X40001 **Bio-Plex Pro TGF- $\beta$  Standards**, pkg of 1 vial, standard for detecting 3 TGF- $\beta$  analytes

171-X40501 **Bio-Plex Pro TGF- $\beta$  Standards**, pkg of 50 lot-matched vials, standard for detecting 3 TGF- $\beta$  analytes

Catalog # Description

### Reagents

Includes assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, flat bottom plate, sealing tape, standard diluent, sample diluent.

171-304070 **Bio-Plex Pro Reagent Kit**, 1 x 96-well, filter plate

171-304071 **Bio-Plex Pro Reagent Kit**, 10 x 96-well, filter plate

171-304070M **Bio-Plex Pro Reagent Kit with Flat Bottom Plate**, 1 x 96-well, for use with magnetic workflow

171-304080M **Bio-Plex Pro High Dilution Reagent Kit**, 1 x 96-well, flat bottom plate for use with magnetic workflow

### Bio-Plex Pro Wash Stations and Plates

300-34376 **Bio-Plex Pro Wash Station**, includes magnetic plate carrier, waste bottle, 2 buffer bottles

300-34377 **Bio-Plex Pro II Wash Station**, includes magnetic plate carrier, vacuum manifold plate carrier, waste bottle, 2 buffer bottles

171-025001\*\*\* **Bio-Plex Pro Flat Bottom Plates**, 40 x 96-well plates

### Bulk Buffer

171-304500 **Bio-Plex Wash Buffer**, 1.5 L

### Accessories

171-020100 **Bio-Plex Handheld Magnetic Washer**, includes magnetic washer and adjustment hex tools for use in manual wash steps for all Bio-Plex magnetic assays

171-304502 **Filter Plate**, pkg of 1, 96-well plate, with clear plastic lid and tray, for Bio-Plex assays using the vacuum wash method, sealing tape not included

### Software

171-001510 **Bio-Plex Data Pro™ Software with Bio-Plex Manager Software**, Bio-Plex Data Pro software (5 seats), for multi-experiment analysis and advanced data visualization, and Bio-Plex Manager software (5 seats), for instrument data evaluation and optimization. CDs and security HASP key included

171-001513 **Bio-Plex Data Pro Software**, (5 seats), for multi-experiment analysis and advanced data visualization

171-STND01 **Bio-Plex Manager Software**, includes 1 user desktop license, to analyze Bio-Plex data and generate protocols, does not operate the instrument

HASP is a trademark of Aladdin Knowledge Systems, Ltd.

MagPlex 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.

\*\*\* Required for washing Bio-Plex Pro assays or other magnetic bead-based assays using the magnetic bead washer.



**BIO-RAD**

**Bio-Rad  
Laboratories, Inc.**

*Life Science  
Group*

**Web site** [www.bio-rad.com](http://www.bio-rad.com) **USA** 800 424 6723 **Australia** 61 2 9914 2800 **Austria** 01 877 89 01 **Belgium** 09 385 55 11 **Brazil** 55 11 5044 5699  
**Canada** 905 364 3435 **China** 86 21 6169 8500 **Czech Republic** 420 241 430 532 **Denmark** 44 52 10 00 **Finland** 09 804 22 00  
**France** 01 47 95 69 65 **Germany** 089 31 884 0 **Greece** 30 210 9532 220 **Hong Kong** 852 2789 3300 **Hungary** 36 1 459 6100 **India** 91 124 4029300  
**Israel** 03 963 6050 **Italy** 39 02 216091 **Japan** 03 6361 7000 **Korea** 82 2 3473 4460 **Mexico** 52 555 488 7670 **The Netherlands** 0318 540666  
**New Zealand** 64 9 415 2280 **Norway** 23 38 41 30 **Poland** 48 22 331 99 99 **Portugal** 351 21 472 7700 **Russia** 7 495 721 14 04  
**Singapore** 65 6415 3188 **South Africa** 27 861 246 723 **Spain** 34 91 590 5200 **Sweden** 08 555 12700 **Switzerland** 061 717 95 55  
**Taiwan** 886 2 2578 7189 **Thailand** 800 88 22 88 **United Kingdom** 020 8328 2000