

Bio-Plex Pro Mouse Th17 Assays

IL-17F, IL-21, IL-22, IL-23, IL-31, IL-33, CD40L, MIP-3 α , IL-1 β , IL-6, IL-10, IL-17A, IFN- γ , TNF- α , IL-25/IL-17E, IL-27, ICAM-1, TGF- β 1, TGF- β 2, TGF- β 3

MAGNETIC SEPARATION ENABLED

- Validated in mouse serum, plasma, and tissue culture sample matrices
- Magnetic or vacuum assay separation
- All-in-one kit format
- Flexible ordering options

Confident Multiplex Measurements of the Th17 Cytokines

Bio-Plex Pro Mouse Th17 Assays are magnetic bead-based multiplex assays that offer accurate and reproducible measurements of 20 target molecules in serum, plasma, and tissue culture sample types for mouse models. 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
- Robustness** — validated in serum, plasma, and tissue culture
- Increased productivity** — measure multiple analytes simultaneously in one 3-hr experiment
- Flexible ordering options** — order either a premixed panel, singleplex analytes of interest, or customize your assay with Bio-Plex Assay Builder (bio-rad.com/assaybuilder)
- Option to use a magnetic wash station** — simplify your assay workflow and improve data consistency among experiments
- Compatible with Bio-Plex 200, Bio-Plex 3D, and MAGPIX Systems**

Benefits of Magnetic Bead-Based Assays

Magnetic bead-based assays allow optional magnetic separation during wash steps using an automated magnetic bead washer. This innovation greatly simplifies assay processing and eliminates the need for a vacuum manifold. Many users also see significantly improved reproducibility.

Assay Performance Definitions

- Assay working range** — the range of concentrations within which the assay is precise and accurate. Boundaries of the assay working range are defined by the lower and upper limits of quantification (LLOQ/ULOQ)
- Precision** — the percentage coefficient of variation (%CV) at concentrations within the assay working range
- Accuracy (recovery)** — percentage of the observed concentration relative to the expected concentration of a known amount of spiked analyte within the assay working range
- Sensitivity (limit of detection [LOD])** — the concentration of analyte for which the fluorescence intensity signal is 2 standard deviations above the background signal

Assay Validation

All Bio-Plex Pro Assays are put through a rigorous evaluation that includes the following assay parameters:

- Specificity and cross-reactivity testing
- Accuracy evaluation in key sample matrices
- Inter- and intra-assay precision
- Sensitivity (LOD)
- Assay range evaluation (LLOQ/ULOQ)
- Linearity of dilution
- Parallelism and matrix effect validation
- Sample analysis ensuring normal and disease samples fall within the assay range



Table 1 provides representative assay performance. Figures 1 and 2 are examples of linearity of dilution and confirmation of samples falling within the assay range, representing the careful work that was done to ensure the most accurate results possible.

Table 1. Representative assay working ranges, sensitivity, and precision.

Target	Assay Working Range, pg/ml		Assay Sensitivity, pg/ml	Assay Precision	
	LLOQ	ULOQ	LOD	Intra-Assay %CV	Inter-Assay %CV
10-Plex					
IL-17F	25	86,159	8.3	5.9	1.7
IL-21	30	31,793	7.1	4.4	3.2
IL-22	1	21,071	0.5	4.7	1.4
IL-23	80	273,553	31.8	4.5	1.7
IL-25/IL-17E	5	71,463	2.8	2.8	1.4
IL-27	4	60,530	0.9	2.7	0.4
IL-31	86	1,452,700	36.1	3.0	2.0
IL-33	43	170,779	22.4	3.9	2.7
CD40L	8	136,300	4.4	2.8	1.9
MIP-3 α	1	5,499	0.7	2.7	2.9
ICAM-1*	81	90,319	14	3.0	5.0
6-Plex					
IL-1 β	10.36	60,631	9.4	4	7
IL-6	0.74	12,053	0.2	3	16
IL-10	2.95	12,066	1.0	4	5
IL-17A	2.65	43,337	0.8	3	10
IFN- γ	1.84	30,164	1.2	4	6
TNF- α	5.8	59,626	1.4	3	6
TGF-β 3-Plex					
TGF- β 1	1.69	27,616	3.9	4.5	4.9
TGF- β 2	14.7	30,080	1.9	6.3	9.1
TGF- β 3	2.8	15,031	0.5	6.9	8.2

The LLOQ, ULOQ, LOD, and inter-assay precision %CV are mean data determined from three independent multiplex assays in a serum-based matrix. Intra-assay %CV is derived from one representative assay. LLOQ and ULOQ are defined as the boundary standard curve points in which the performance specifications of individual standard points were met for 10% intra-assay CV, 15% inter-assay CV, and 70–130% recovery. Data were generated using the magnetic workflow with the Bio-Plex Pro II Wash Station.

* ICAM-1 was measured as a singleplex assay.

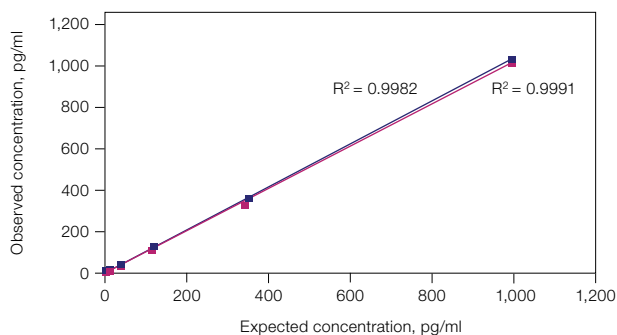


Fig. 1. Linearity of dilution determines the suitability of a standard curve for reflecting relative quantities of IL-22 analyte in a complex matrix. Linearity of dilution was assessed by spiking a known quantity of recombinant antigen into native mouse serum and plasma matrices. The observed and expected concentrations within the assay working range were plotted. The correlation coefficient R^2 value reflects the linearity of dilution for the assay. Representative results from IL-22 are shown. Mouse serum (■); mouse plasma (■).

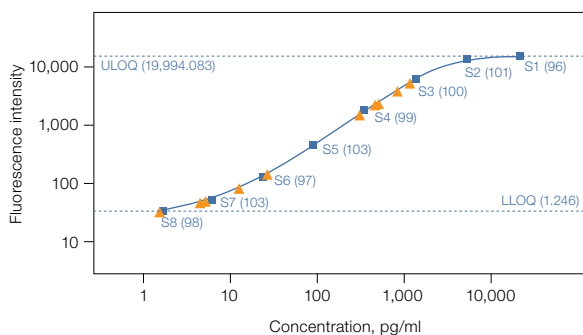


Fig. 2. IL-22 analyte data show eight standard points (■) and detection in ten lipopolysaccharide-treated serum and plasma samples (▲). All sample types fall within the ULOQ and LLOQ. These limits are calculated by and displayed from Bio-Plex Manager Software 6.0.

Ordering Information

Catalog #	Description	Catalog #	Description
Bio-Plex Pro Mouse Th17 Cytokine Premixed Assays		Bio-Plex Pro TGF-β Assays	
M600007NY	Bio-Plex Pro Mouse Cytokine Th17 Panel A 6-Plex Group I , 1 x 96-well, includes mouse detection antibody diluent HP, standard diluent, sample diluent, assay buffer, wash buffer, streptavidin-phycoerythrin, flat bottom plate, and sealing tape, for the detection of 6 cytokine biomarkers (IL-1 β , IL-6, IL-10, IL-17A, IFN- γ , TNF- α)	171W4001M	Bio-Plex Pro TGF-β 3-Plex Assay , 1 x 96-well, includes coupled magnetic beads, detection antibodies, standards, buffers, diluents, streptavidin-phycoerythrin, flat bottom plate, sealing tape; all-in-one kit for the detection of TGF- β 1, TGF- β 2, and TGF- β 3
12010828	Bio-Plex Pro Mouse Th17 Cytokine 10-Plex Panel , 1 x 96-well, includes mouse detection antibody diluent HP, standard diluent, sample diluent, assay buffer, wash buffer, streptavidin-phycoerythrin, flat bottom plate, and sealing tape, for the detection of 10 cytokine biomarkers (CD40L, IL-17F, IL-21, IL-22, IL-23, IL-31, IL-33, MIP-3 α , IL-25/IL-17E, IL-27)	171V4001M	Bio-Plex Pro TGF-β1 Set , 1 x 96-well, includes coupled magnetic beads and detection antibodies for detecting TGF- β 1, requires reagent kit (#171304070M) and standards (#171X40001)
Bio-Plex Pro Mouse Cytokine Th17 Group I Singleplex Sets*		171V4002M	Bio-Plex Pro TGF-β2 Set , 1 x 96-well, includes coupled magnetic beads and detection antibodies for detecting TGF- β 2, requires reagent kit (#171304070M) and standards (#171X40001)
171G5002M	Bio-Plex Pro Mouse Cytokine IL-1β Set 1 x 96-well, includes coupled magnetic beads and detection antibodies for IL-1 β , requires reagent kit (#12002798) and standards (#171I50001)	171V4003M	Bio-Plex Pro TGF-β3 Set , 1 x 96-well, includes coupled magnetic beads and detection antibodies for detecting TGF- β 3, requires reagent kit (#171304070M) and standards (#171X40001)
171G5007M	Bio-Plex Pro Mouse Cytokine IL-6 Set 1 x 96-well, includes coupled magnetic beads and detection antibodies for IL-6, requires reagent kit (#12002798) and standards (#171I50001)	Bio-Plex Pro TGF-β Standards	
171G5009M	Bio-Plex Pro Mouse Cytokine IL-10 Set 1 x 96-well, includes coupled magnetic beads and detection antibodies for IL-10, requires reagent kit (#12002798) and standards (#171I50001)	171X40001	Bio-Plex Pro TGF-β Standards , pkg of 1 vial, standard for detecting 3 TGF- β analytes
171G5013M	Bio-Plex Pro Mouse Cytokine IL-17A Set 1 x 96-well, includes coupled magnetic beads and detection antibodies for IL-17A, requires reagent kit (#12002798) and standards (#171I50001)	171X40501	Bio-Plex Pro TGF-β Standards , pkg of 50 lot-matched vials, standard for detecting 3 TGF- β analytes
171G5017M	Bio-Plex Pro Mouse Cytokine IFN-γ Set 1 x 96-well, includes coupled magnetic beads and detection antibodies for IFN- γ , requires reagent kit (#12002798) and standards (#171I50001)	Bio-Plex Pro Reagent Kits	
171G5023M	Bio-Plex Pro Mouse Cytokine TNF-α Set 1 x 96-well, includes coupled magnetic beads and detection antibodies for TNF- α , requires reagent kit (#12002798) and standards (#171I50001)	12002798	Bio-Plex Pro Reagent Kit V , 1 x 96-well, includes assay buffer, 10x wash buffer, detection antibody diluent HP, streptavidin-phycoerythrin, flat bottom plate, sealing tape, standard diluent, sample diluent; for magnetic separation methods
Bio-Plex Pro Mouse Cytokine Group I Standards		12005847	Bio-Plex Pro Reagent Kit V , 10 x 96-well, includes assay buffer, 10x wash buffer, detection antibody diluent HP, streptavidin-phycoerythrin, flat bottom plate, sealing tape, standard diluent, sample diluent; for magnetic separation methods
171I50001	Bio-Plex Pro Mouse Cytokine Standards Group I , pkg of 1 vial, standard for detecting 23 mouse cytokines	171304080M	Bio-Plex Pro High Dilution Reagent Kit , 1 x 96-well, includes assay buffer, wash buffer, detection antibody diluent, streptavidin-phycoerythrin, flat bottom plate, filter plate, sealing tape, standard diluent, sample diluent; for use with the magnetic or vacuum workflow
171I10501	Bio-Plex Pro Mouse Cytokine Standards Group I , pkg of 50 lot-matched vials, standard for detecting 23 mouse cytokines	Bio-Plex Pro Wash Stations and Accessories	
Bio-Plex Pro Mouse Th17 Cytokine Standards		30034376	Bio-Plex Pro Wash Station , includes magnetic plate carrier, waste bottle, 2 buffer bottles
171IA0001	Bio-Plex Pro Mouse Th17 Cytokine Standards , pkg of 1 vial, standard for detecting 11 mouse cytokines	171304502	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
171IA0501	Bio-Plex Pro Mouse Th17 Cytokine Standards , pkg of 50 lot-matched vials, standard for detecting 11 mouse cytokines	171025001**	Bio-Plex Pro Flat Bottom Plates , 40 x 96-well plates
		171304500	Bio-Plex Wash Buffer , 1.5 L
		171020100	Bio-Plex Handheld Magnetic Washer , includes magnetic washer and adjustment hex tools for use in manual wash steps for all Bio-Plex Magnetic Assays

* Singleplex sets include coupled beads and detection antibodies. Reagent kits and standards are required to run an assay.

** Required for washing Bio-Plex Pro Assays or other magnetic bead-based assays using the Bio-Plex Pro Wash Station.

Visit bio-rad.com/bio-plex for more information.

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