

Bio-Plex Pro™ TGF-β Assays

MAGNETIC SEPARATION ENABLED

TGF-β1, TGF-β2, TGF-β3

- Validated on human, mouse, and rat sample matrices for serum, plasma, urine, and milk
- Magnetic or vacuum assay separation
- All-in-one kit format
- Flexible ordering options



Confident Multiplex Measurement of TGF-β Signaling

Bio-Plex Pro TGF-β assays are magnetic bead-based multiplex assays that offer accurate and reproducible measurements of TGF-β1, TGF-β2, and TGF-β3 in human and animal models. These assays have been developed to provide reliable performance with the flexibility required to meet all of your research needs.

- Multi-species assay panel — validated on human, mouse, and rat samples
- Robust — validated in serum, plasma, urine, and milk matrices
- Increases productivity — measure one, two, or three isoforms of TGF-β in <5 hr
- Option to use a magnetic wash station — simplify assay workflow and improve data consistency between experiments
- Flexible ordering options — order either a premixed panel or just the singleplex analytes of interest
- 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 by using an automated magnetic bead washer. This innovation greatly simplifies assay processing, eliminating the need for a vacuum manifold. Many users also see significantly improved reproducibility.

Assay Validation

All Bio-Plex Pro assays are put through a rigorous evaluation that includes these assay parameters:

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

Figures 1 and 2 are examples of confirmation of experimental samples falling in the assay range and linearity of dilution, representing the careful work that is done to ensure you get the most accurate results possible. Table 1 shows representative assay performance.

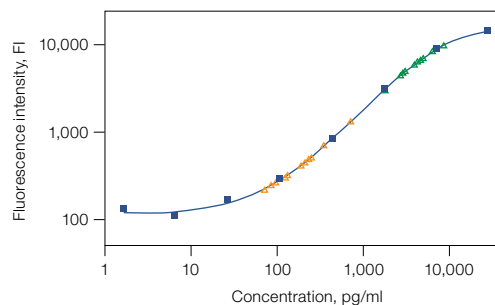


Fig. 1. TGF-β1 standard curves with human serum samples. △, normal serum; ▲, serum from breast and colon cancer patients. Data were analyzed using Bio-Plex Manager™ software version 6.0 using the standard curve optimization function. Recovery range specification was set to 80–120%.



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

Targets	Assay Working Ranges, pg/ml		Assay Sensitivity, pg/ml	Assay Precision	
	LLOQ	ULOQ	LOD	Intra-assay %CV	Inter-assay %CV
Premixed 3-Plex Assay					
TGF-β1	1.69	27,616	3.9	4.5	4.9
TGF-β2	14.7	30,080	1.9	6.3	9.1
TGF-β3	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 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 recovery range of 80–120%. Data were generated using the magnetic workflow with the Bio-Plex Pro II wash station.

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 limit of quantitation (LLOQ) and the upper limit of quantitation (ULOQ)

Precision — the coefficient of variation (%CV) at concentrations within the assay working range

Accuracy — ratio of the observed concentration versus 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 two standard deviations above the background signal

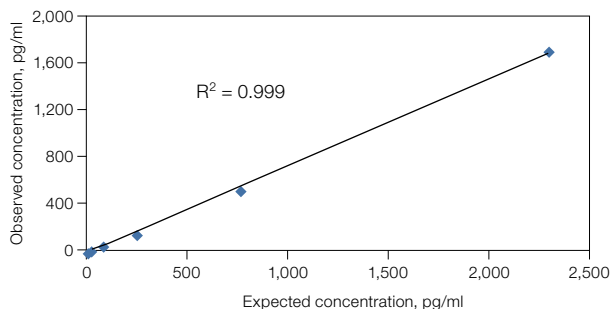


Fig. 2. Linearity of dilution of TGF-β1 in human serum. Linearity of analyte measurements in either serum or plasma (3-fold dilution series) was examined using linear regression analysis. Result is shown for the TGF-β1 assay diluted in human serum. R² value was >0.99 within the assay working range for TGF-β1, TGF-β2, and TGF-β3 assays in both serum and plasma.

Ordering Information

Catalog # Description

Bio-Plex Pro TGF-β Premixed Assay

171-W4001M **Bio-Plex Pro TGF-β 3-Plex Assay**, 1 x 96-well, includes premixed coupled magnetic beads and detection antibodies, standard, assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, filter plate, flat bottom plate, sealing tape, standard diluent, sample diluent, and instructions for the detection of TGF-β1, TGF-β2, and TGF-β3

Bio-Plex Pro TGF-β Singleplex Sets*

171-V4001M **TGF-β1 Set**, 1 x 96-well, includes coupled magnetic beads and detection antibodies for TGF-β1; requires reagent kit and standards

171-V4002M **TGF-β2 Set**, 1 x 96-well, includes coupled magnetic beads and detection antibodies for TGF-β2; requires reagent kit and standards

171-V4003M **TGF-β3 Set**, 1 x 96-well, includes coupled magnetic beads and detection antibodies for TGF-β3; requires reagent kit and standards

Catalog # Description

Bio-Plex Pro Reagent Kit

171-304070 **Bio-Plex Pro Reagent Kit**, 1 x 96-well, includes assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, filter plate, sealing tape, standard diluent, sample diluent

171-304070M **Bio-Plex Pro Reagent Kit with flat bottom plate**, 1 x 96-well, includes assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, flat bottom plate, sealing tape, standard diluent, sample diluent

Bio-Plex Pro TGF-β Standards

171-X40001 **Bio-Plex Pro TGF-β Standards**, 3-plex, 1 vial of 3 analytes

171-X40501 **Bio-Plex Pro TGF-β Standards**, 3-plex, 50 vials of 3 analytes

Bio-Plex Pro Wash Stations and Accessories

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

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

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

* 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.

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



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Laboratories, Inc.**

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