

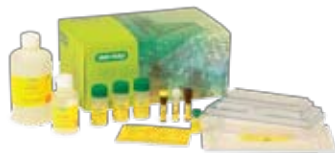
Acute Phase Response
Cancer
Cardiovascular Disease
Cytokine Chemokines...
Diabetes
Gene Expression
Genotyping
Immunoglobulin Isotyping
MicroRNA
Signal Transduction
Toxicology

Bio-Plex Pro™ Mouse Diabetes Assay

MAGNETIC SEPARATION ENABLED

Adiponectin, Ghrelin, GIP, GLP-1, Glucagon, Insulin, Leptin, PAI-1, Resistin

- Fast time to results
- Convenient All-in-One kit format
- Available as premixed panels or singleplex assays
- Automatable wash steps
- Mixable with Bio-Plex Pro cytokine, chemokine, and growth factor assays



Reliable Performance, Convenient Format for Mouse Diabetes and Obesity Markers

Bio-Plex Pro mouse diabetes assays are magnetic bead-based multiplex assays that offer best-in-class performance for the detection of multiple diabetes and obesity biomarkers in a single experiment, using as little as 12.5 μ l of sample. These assays have been developed to deliver accurate and reproducible measurements with complete flexibility to meet all of your research needs.

- Increased productivity—measure up to 8 diabetes and obesity markers in 3 hours
- Option to simplify the assay preparation workflow with magnetic wash steps
- Flexible ordering options—order a premixed kit or select only desired biomarkers to multiplex
- Broad assay working ranges
- Option to expand your biomarker profile by multiplexing with Bio-Plex Pro cytokine, chemokine, and growth factor assays
- Tested for robustness in serum and plasma matrices

Refer to Table 1 for representative assay performance characteristics.

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

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.

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

Targets	LLOQ	ULOQ	LOD	Intra-assay %CV	Inter-assay %CV
Adiponectin*	38.0	62,043	8.4	4	3
8-Plex Assays					
Ghrelin	3.1	7,296	0.8	5	4
GIP	13.4	14,999	2.3	4	10
GLP-1	3.4	1,969	0.8	6	11
Glucagon	24.0	3,067	7.0	6	6
Insulin	93.4	47,815	22.0	6	4
Leptin	17.1	69,900	6.2	4	3
PAI-1	0.7	2,922	0.5	5	2
Resistin	125.9	257,870	32.0	4	4

The LLOQ, ULOQ, LOD, and inter-assay precision %CV are the mean data determined from three independent multiplex assays in a serum-based matrix. LLOQ and ULOQ are defined as the boundary standard curve points for which the performance specifications 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.

* Due to the different dilution scheme, adiponectin was assayed as a single assay.

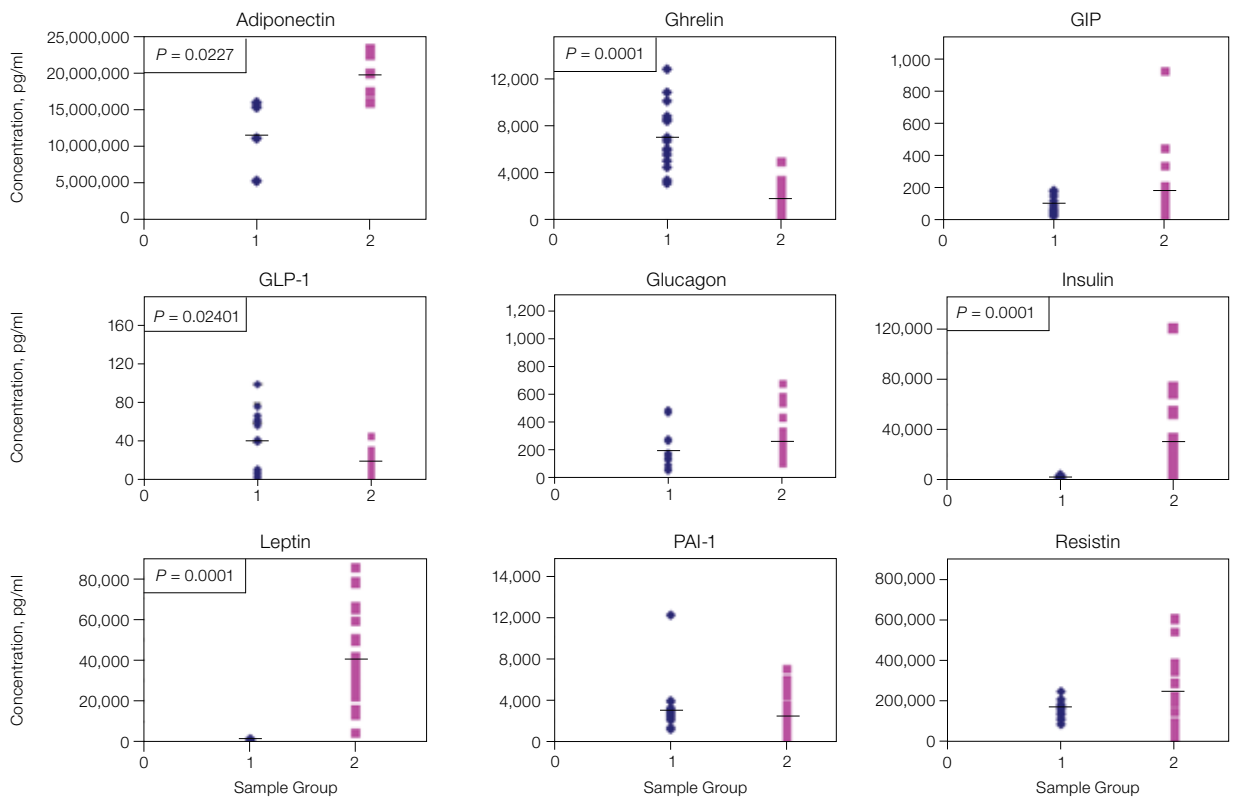


Fig. 1. Levels of biomarkers of normal (◆) and diabetic (■) groups. A student's *t*-test was used to determine statistical significance between groups. Black lines denote mean values; *P* values are indicated for diabetes markers that were significantly different from normal samples (*P* < 0.05).

Assay Validation

All Bio-Plex Pro assays are put through a rigorous evaluation that includes these 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 analyses ensuring normal and disease samples fall within the assay range

Figures 2 and 3 are examples of linearity of dilution and confirmation of samples falling in the assay range, representing the careful work that is done to ensure you get the most accurate results possible.

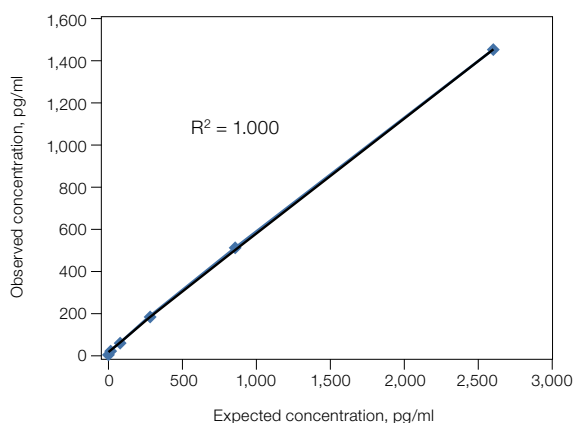


Fig. 2. Linearity of dilution. Linearity of analyte measurements in either serum or plasma (3-fold) were measured using linear regression analysis. Result is shown for the GLP-1 assay diluted in serum. R^2 value was 0.99 or higher within the assay working range for all 9 assays in both serum and plasma.

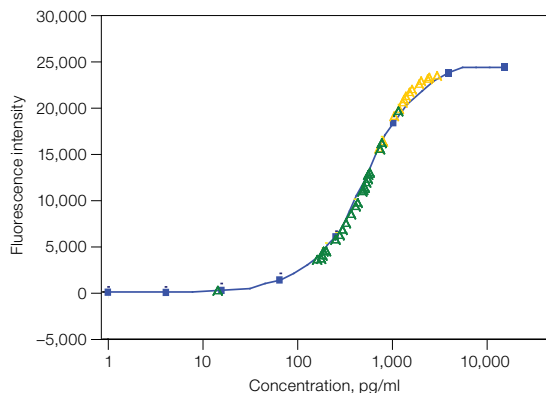


Fig. 3. Assay working ranges span the measured concentration ranges of a typical set of unknown samples. Data were analyzed using Bio-Plex Manager™ software version 6.0, using the standard curve optimization function. Recovery range specification was set to 80–120%. Measured values of a total of 39 wild type and diabetic serum and plasma samples, including fasting and fed, are shown. ■, standard points; ▲, diabetes samples; △, normal samples. Result is shown for ghrelin.

Flexible Ordering Options

Premixed 8-plex Panel

Ghrelin, GIP, GLP-1, glucagon, insulin, leptin, PAI-1, and resistin are available as a premixed 8-plex panel in an All-in-One kit format. Bead and detection reagents are supplied at a 20x concentration, enabling the user to multiplex with up to nine mouse assays from the magnetic Bio-Plex Pro cytokine assay product line. Refer to the Bio-Plex Pro diabetes assays instruction manual and bulletin 5975 for details.

Adiponectin

Adiponectin requires a 1,600-fold sample dilution and thus is available as a single assay in an All-in-One kit format with sufficient diluent for the higher sample dilutions.

Express Assay Service

Select your singleplex assays of interest by using the online Assay Builder. Assays arrive in the All-in-One kit format ready for you to combine yourself. Access the Assay Builder at www.bio-rad.com/bio-plex/x-plex.

Individual Components

For your convenience, individual components, such as singleplex assay sets of magnetic beads and detection antibodies, lyophilized standards, and reagent kits, are also available. To run an assay, singleplex sets require standards and reagent kits. Catalog numbers are provided in the ordering section.

Ordering Information

Catalog # Description

Bio-Plex Pro Mouse Diabetes All-in-One Kits

171-F7001M*	Bio-Plex Pro Mouse Diabetes 8-Plex Assay , 1 x 96-well, includes premixed coupled magnetic beads and detection antibodies, standards, assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, filter plate, sealing tape, standard diluent, sample diluent for the detection of ghrelin, GIP, GLP-1, glucagon, insulin, leptin, PAI-1, resistin
171-F7010M*	Bio-Plex Pro Mouse Diabetes 8-Plex Assay , 10 x 96-well, includes premixed coupled magnetic beads and detection antibodies, standards, assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, filter plates, sealing tape, standard diluent, sample diluent for the detection of ghrelin, GIP, GLP-1, glucagon, insulin, leptin, PAI-1, resistin
171-F7002M	Bio-Plex Pro Mouse Diabetes Adiponectin Assay , 1 x 96-well, includes coupled magnetic beads, detection antibodies, standards, assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, filter plate, sealing tape, serum-based diluent for the detection of adiponectin

Catalog # Description

Bio-Plex Pro Mouse Diabetes Singleplex Sets**

Catalog #	Description	Catalog #	Description
171-G7002M	Ghrelin Set , 1 x 96-well	171-G7102M	Ghrelin Set , 10 x 96-well
171-G7003M	GIP Set , 1 x 96-well	171-G7103M	GIP Set , 10 x 96-well
171-G7004M	GLP-1 Set , 1 x 96-well	171-G7104M	GLP-1 Set , 10 x 96-well
171-G7005M*	Glucagon Set , 1 x 96-well	171-G7105M*	Glucagon Set , 10 x 96-well
171-G7006M	Insulin Set , 1 x 96-well	171-G7106M	Insulin Set , 10 x 96-well
171-G7007M	Leptin Set , 1 x 96-well	171-G7107M	Leptin Set , 10 x 96-well
171-G7008M	PAI-1 Set , 1 x 96-well	171-G7108M	PAI-1 Set , 10 x 96-well
171-G7009M	Resistin Set , 1 x 96-well	171-G7109M	Resistin Set , 10 x 96-well

Catalog # Description

Bio-Plex Pro Mouse Diabetes Reagent Kits***

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
171-304071	Bio-Plex Pro Reagent Kit , 10 x 96-well, includes assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, filter plates, sealing tape, standard diluent, sample diluent

Bio-Plex Pro Mouse Diabetes Standards

Standards are for the detection of adiponectin, ghrelin, GIP, GLP-1, glucagon, insulin, leptin, PAI-1, resistin

171-I70001	Bio-Plex Pro Mouse Diabetes Standards , 1 vial of 9 analytes
171-I70050	Bio-Plex Pro Mouse Diabetes Standards , 50 vials of 9 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

* Coming soon

** Singleplex sets include coupled beads and detection antibodies. Reagent kits and standards are required to run an assay. Due to the different dilution scheme, adiponectin is offered in an All-in-One format only.

***Same reagent kit can be used for both diabetes and cytokine assays.

† Required when 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.



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