



**Bio-Plex™**

System Tools

A Solid Foundation

**BIO-RAD**

## Build Reliable Results

Reliable and reproducible multiplex assays require an instrument with proper optical alignment, reporter performance, and fluidics integrity. Only the Bio-Plex system includes tools to ensure that all system parameters are within specifications and that the signal output has been calibrated. Performing system validation and reader calibration is the best way to ensure the precision of your assay results and to make comparisons between data sets with confidence. System calibration and validation results are documented in the Bio-Plex Manager™ database from the date of installation for system performance monitoring. The validation and calibration protocols are automated by Bio-Plex Manager software using the Bio-Plex maintenance, calibration, and validation (MCV) plate.



# Tools for Optimal Assay

## System Performance Verification Simplified

Central to the validation and calibration kits is the Bio-Plex MCV plate. The MCV plate is a specially designed microplate that holds the reagents required for validation and calibration as well as the wash solutions. With Bio-Plex Manager software and the MCV plate, system tool processes are automated. Simply load the kit reagents and wash solutions for walk-away performance. The MCV plate also functions as a general tool when operating the Bio-Plex system and greatly reduces the time and labor required for routine operations. Use the MCV plate for:

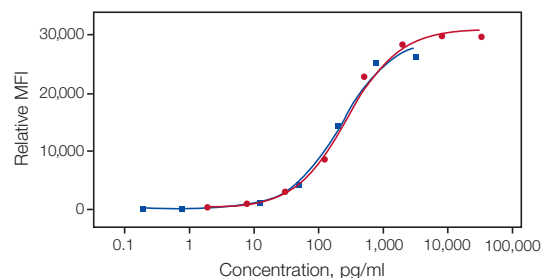
- Automated calibration and validation protocol
- Automated system startup and shutdown routines
- Automated washes between assay plates
- Easy adjustment of sample needle height



## Assay Reporter Signals Standardized

Daily calibration with the Bio-Plex calibration kit ensures optimal assay reproducibility and facilitates comparison of data both within and across laboratories. Calibration is also an important tool for monitoring instrument reliability. Perform daily calibration to:

- Standardize daily signal output
- Optimize laser output for low range sensitivity or broad range detection
- Monitor laser life



Concentration ranges for Bio-Plex human IL-1 $\beta$  high-sensitivity (■) and broad range (●) standards. The Bio-Plex calibration kit allows calibration at a high photomultiplier tube (PMT) target value for high-sensitivity standards or a low target value for broad range standards to maximize the % recovery for each standard point. Use the high-sensitivity standards for low range detection and broad range standards for detection over a broader dynamic range.



## Bio-Plex Validation Kit 4.0 Specifications

Parameter	At High PMT Target Value	At Low PMT Target Value
<b>Optics Validation</b>		
DD median	4,774–6,593	4,774–6,593
CL1 median	3,383–4,135	3,383–4,135
CL1 CV*%	2.0–7.0%	2.0–7.0%
CL2 median	3,520–4,302	3,520–4,302
CL2 CV%	3.0–8.0%	3.0–8.0%
RP1 median	15,205–18,583	3,509–4,290
RP1 CV%	4.0–10.0%	4.0–10.0%
<b>Fluidics Validation</b>		
% Carryover	≤4.0%	≤4.0%
<b>Reporter Validation</b>		
Dynamic range	4.19–4.39	4.33–4.45
Linearity	>0.995	>0.995
Slope	127.3–207.0	33.9–39.4
Accuracy	>90.0%	>90.0%
Instrument threshold	<20 MFI	<6 MFI
<b>Classify Validation</b>		
Bead A (region 1)	>80.0%	>80.0%
Bead B (region 4)	>80.0%	>80.0%
Bead C (region 40)	>80.0%	>80.0%
Bead D (region 54)	>80.0%	>80.0%
Bead E (region 100)	>80.0%	>80.0%
Doublet discrimination efficiency	≥75.0%	≥75.0%

\* Coefficient of variation.

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For technical service, call your local Bio-Rad office,  
or in the US, call 1-800-4BIORAD (1-800-424-6723).

## Ordering Information

Catalog #	Description
171-203001	<b>Bio-Plex Validation Kit 4.0</b> , includes optics validation, reporter validation, classify validation, and fluidics validation bead sets for approximately 50 validation routines using Bio-Plex Manager version 4.0 and Bio-Plex MCV plate III.
171-203032	<b>Bio-Plex MCV Plate III</b> , for use with Bio-Plex Manager version 4.0 software
171-203060	<b>Bio-Plex Calibration Kit</b> , includes Cal1 and Cal2 calibration beads for approximately 50 daily calibration routines



**BIO-RAD**

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