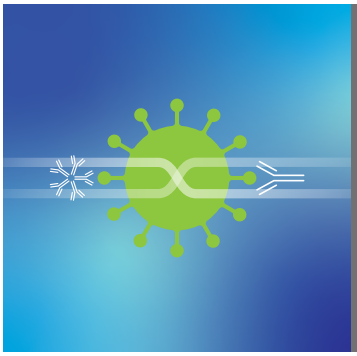
Multiplex Suspension Array



Bio-Plex Pro Human SARS-CoV-2 N/RBD/S1/S2 4-Plex Panel

High-Performance Multiplex SARS-CoV-2 Serology Assays for Antibody Response Profiling

MAGNETIC SEPARATION ENABLED

IgG antibodies against four SARS-CoV-2 proteins:

Nucleocapsid

Receptor binding domain

Spike 1

Spike 2

- Acute Phase Response
- Cancer
- Cardiovascular Disease
- Cytokines, Chemokines, and Growth Factors
- Neurology
- Toxicology
- Infectious Disease
- Immunoglobulin Isotyping
- Serology Assays
- Signal Transduction

Researchers are interested in measuring antibodies specific to SARS-CoV-2 to determine the exposure rates to the virus in a population, the humoral response to COVID-19 vaccines, and the immune response over time of patients with COVID-19 who have different levels of disease severity. The novelty of symptoms related to COVID-19 inspires a need to understand how long the humoral and cellular adaptive immune response lasts.

New Challenges, New Solution

These assays provide an efficient way to simultaneously profile isotype-specific antibody responses to four SARS-CoV-2 proteins: nucleocapsid, receptor binding domain, spike 1, and spike 2. These qualitative multiplexed immunoassays have been developed and validated to ensure high precision, specificity, and sensitivity.

A negative and a positive control are provided. Sample interpretation guidelines offer median fluorescence intensity (MFI) cutoff values that indicate which samples are positive for antibodies to a specific SARS-CoV-2 protein. The cutoff values provided were based on 282 SARS-CoV-2–negative samples that were collected before December 2015. An isotype-specific positive control with recombinant antibodies specific to the SARS-CoV-2 proteins is included and can be used to compare MFI values across plates.

Assay Features

- Reduced turnaround time
- Reproducible results
- Specific and sensitive for SARS-CoV-2
- Flexible assay configurations
- Antigen-coupled beads and reagents for multispecies studies

Rigorous Assay Validation

- Specificity (cross-reactivity)
- Inter- and intra-assay precision
- Correlation with COVID-19 and healthy serum and plasma samples

For research use only.
Not for use in diagnostic procedures.

Visit bio-rad.com/SARS-CoV-2Serology for more information.

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Representative assay characteristics.

Parameter	Characteristic
Reactive species	Human
Analytical specificity, % analyte cross-reactivity	<5%
Intra-assay precision, %CV	<10%
Inter-assay precision, %CV	<15%
Clinical specificity* (n = 282)	N = 99%, RBD = 96%, S1 = 99%, S2 = 95%,
Clinical sensitivity** (n = 65)	N = 100%, RBD = 100%, S1 = 98%, S2 =100%
Compatible sample matrices	Serum, plasma

* Clinical specificity was determined by testing 282 SARS-CoV-2–negative samples that were collected earlier than December 2015.

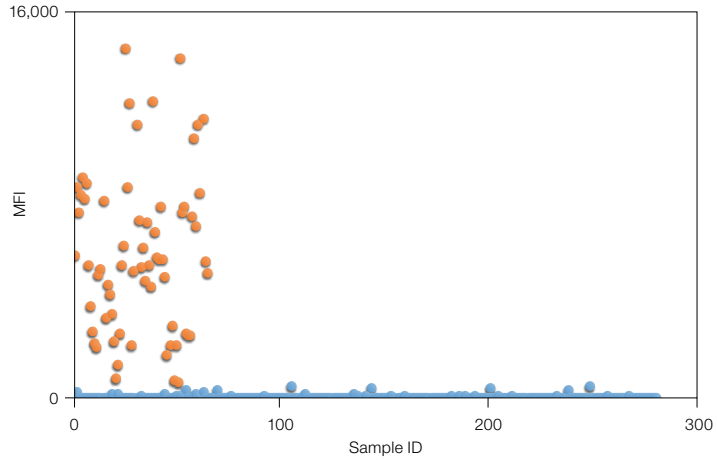
** Clinical sensitivity was determined by running 65 SARS-CoV-2–positive serum and plasma samples that were confirmed to be human IgG anti-SARS-CoV-2 positive.

CV, coefficient of variation; n, number of samples run.

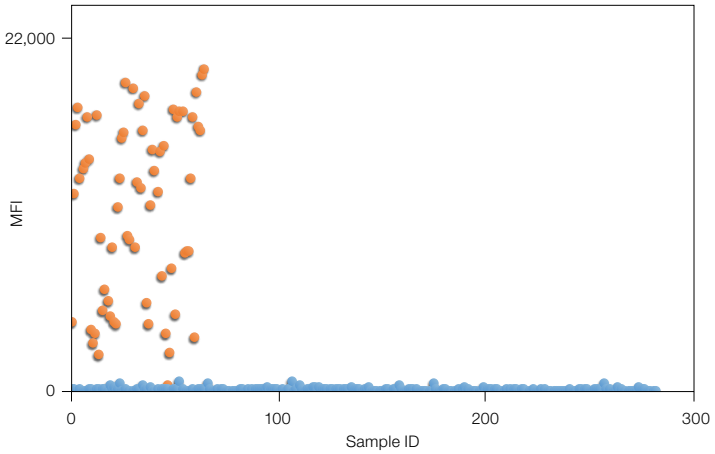
Cross-reactivity results.

Antibody Positive Sera	Number of Samples	Positive	Negative
CMV	3	0	3
EBV	1	0	1
Hepatitis B	1	0	1
Hepatitis C	1	0	1
HIV	1	0	1
HSV	1	0	1
HTLV	1	0	1
Influenza A	2	0	2
Influenza B	2	0	2
RSV	2	0	2
TOXO	1	0	1
WNV	1	0	1

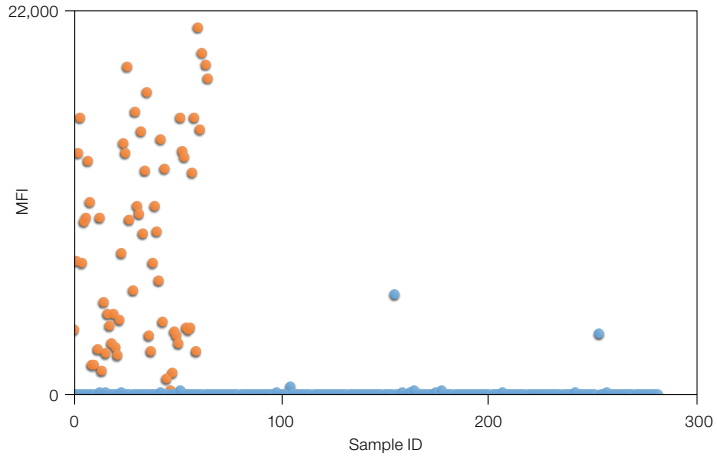
Nucleocapsid



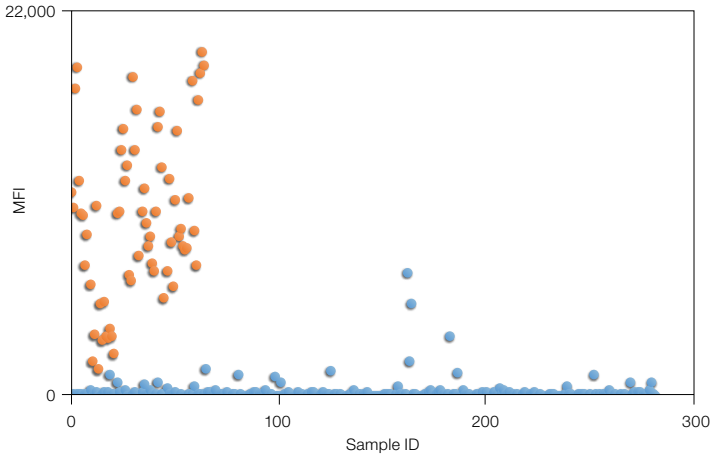
Receptor binding domain



Spike 1



Spike 2



Antibody profile of healthy and diseased samples in COVID-19 infection. The diseased samples (n = 65) were obtained from donors who were SARS-CoV-2 positive (confirmed by PCR testing). The healthy samples (n = 282) were collected from healthy donors prior to December 2015. Both serum and plasma samples were included in the study. Healthy (●); diseased (●).

Ordering Information

Catalog #	Description
Multiplex Assays	
12014634	**Bio-Plex Pro Human IgG SARS-CoV-2 N/RBD/S1/S2 4-Plex Panel**, 1 x 96-well
Singleplex Items	
12014667	**Bio-Plex Pro SARS-CoV-2 N/RBD/S1/S2 4-Plex Coupled Beads**
12014773	**Bio-Plex Pro SARS-CoV-2 Nucleocapsid Coupled Beads**
12015406	**Bio-Plex Pro SARS-CoV-2 Receptor Binding Domain Coupled Beads**
12014771	**Bio-Plex Pro SARS-CoV-2 Spike 1 Coupled Beads**
12014772	**Bio-Plex Pro SARS-CoV-2 Spike 2 Coupled Beads**
12014668	**Bio-Plex Pro Human IgG Detection Antibody**
12014774	**Bio-Plex Pro Human IgG SARS-CoV-2 Positive and Negative Controls**
12014777	**Bio-Plex Pro Human Serology Reagent Kit**

Visit bio-rad.com/SARS-CoV-2Serology for more information.

Bio-Rad Laboratories, Inc.

Life Science Group

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Canada *1 905 364 3435* ***China*** *86 21 6169 8500* ***Czech Republic*** *00 800 00 24 67 23* ***Denmark*** *00 800 00 24 67 23* ***Finland*** *00 800 00 24 67 23*
France *00 800 00 24 67 23* ***Germany*** *00 800 00 24 67 23* ***Hong Kong*** *852 2789 3300* ***Hungary*** *00 800 00 24 67 23* ***India*** *91 124 4029300* ***Israel*** *0 3 9636050*
Italy *00 800 00 24 67 23* ***Japan*** *81 3 6361 7000* ***Korea*** *82 2 3473 4460* ***Luxembourg*** *00 800 00 24 67 23* ***Mexico*** *52 555 488 7670*
The Netherlands *00 800 00 24 67 23* ***New Zealand*** *64 9 415 2280* ***Norway*** *00 800 00 24 67 23* ***Poland*** *00 800 00 24 67 23* ***Portugal*** *00 800 00 24 67 23*
Russian Federation *00 800 00 24 67 23* ***Singapore*** *65 6415 3188* ***South Africa*** *00 800 00 24 67 23* ***Spain*** *00 800 00 24 67 23* ***Sweden*** *00 800 00 24 67 23*
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