Platelia SARS-CoV-2 Total Ab Assay

Immuoassay to screen for total anti-nucleocapsid antibodies (IgM, IgA, IgG) to coronavirus SARS-CoV-2
Total Antibody Solution for COVID-19

Platelia SARS-CoV-2 Total Ab Assay

Total Antibody Detection in One Test

The Platelia SARS-CoV-2 Total Ab assay screens for total anti-nucleocapsid antibodies IgM, IgA and IgG against coronavirus SARS-CoV-2, the virus associated with COVID-19. This serological assay enables clinicians to identify individuals with an adaptive immune response to SARS-CoV-2, indicating recent or prior infection, and complements Bio-Rad’s extensive portfolio of COVID-19 solutions.

Aids in Diagnosis & Patient Surveillance

The Platelia SARS-CoV-2 Total Ab assay detects total antibodies against SARS-CoV-2 to help aid in diagnosing new infections as well as provide a more complete understanding of infection rates.

Total Antibody Detection

The Total Ab immunoassay format is based on the detection of total antibodies – IgM, IgA and IgG – against the nucleocapsid protein (N) of SARS-CoV-2, all in just one test.

The antibodies IgM and IgA are detectable in the case of acute SARS-CoV-2 infection while IgG is detectable in the recovery phase or post infection. Combining the results from these phases delivers a Total Antibody positive result.

Antibody Detection Over the Course of SARS-CoV-2 Infection

Disclaimer: This serological profile is based on projections from other well-known infections and may not fully reflect the course of SARS-CoV-2 infection.
Platelia SARS-CoV-2 Total Ab Assay Performance

Performance You Expect

Confidence in results that are true negative or true positive is what clinicians and the world seek. In clinical tests, the Bio-Rad Platelia SARS-CoV-2 Total Ab test demonstrated >99% specificity for SARS-CoV-2 while showing no cross-reactivity to non-SARS coronaviruses or other medical conditions. In a study of PCR-positive patients, the assay detected antibodies in 100% of patients that were collected and tested between 9 and 22 days after onset of symptoms.

High Specificity
>99%

Testing of 600 specimens
(Blood donors and hospitalized patients)

No Cross-Reactivity

Testing of 168 specimens
(Specimens positive for the 4 most common coronaviruses, EBV, CMV, RSV, flu vaccine and upwards of 25 other medical conditions)

High Sensitivity
≤8 days*: 92%
>8 days*: 100%

Testing of 50 patients

*Post onset of symptoms

Thanks to Total Ab detection, the Platelia SARS-CoV-2 Total Ab assay is associated with earlier detection of seroconversion and consistent detection of the patient’s adaptive immune response over time. With just one test, the Platelia SARS-CoV-2 Total Ab assay reliably detects patients that have been exposed to SARS-CoV-2.

Distribution of Negative Test Ratios

500 negative blood donor specimens screened with the SARS-CoV-2 Total Ab assay (specificity: 99.6%)

When negative specimens are tested with the Platelia SARS-CoV-2 Total Ab assay, strongly negative values are obtained. The high discrimination between negative and positive values is associated with accuracy and reliability of the results.
Why Target the Nucleocapsid Protein?

The Nucleocapsid protein (N-protein) is the most abundant coronavirus SARS-CoV-2 protein and is a significant marker for diagnostic testing assays. Studies in 2020 show that anti-nucleocapsid antibodies (IgM and IgG) can be produced at higher levels and detected very early in the acute infection in comparison to anti-spike antibodies. In addition, ELISA detection of anti-nucleocapsid antibodies is associated with higher sensitivity by comparison to IgM or IgG detection only.

The Value of Total Ab Detection Including IgA

Following SARS-CoV-2 infection, IgA and IgM are produced first, while IgG antibodies are detectable later. In a study by Guo et al., 2020, the median time to detect IgM and IgA antibodies was 5 days and to detect IgG was 14 days after symptom onset. The data suggests that IgA detection is associated with better sensitivity, by comparison to notably, IgM detection alone.

“...IgA antibodies could be valuable diagnostic markers that show strong signals early after onset of mild COVID-19 associated symptoms.”
- Dahlke et al., 2020

Total Anti-Nucleocapsid Antibody Detection

Total Ab Detection vs. Single Ab Detection

Studies by Zhao et al., 2020 demonstrated that total antibody detection with antibodies like IgM, IgA and IgG is associated with better sensitivity, regardless of the time after symptom onset, by comparison to IgM or IgG detection only.
As a leader and contributor in the fight against COVID-19, Bio-Rad offers this Total Antibody assay to complement our other SARS-CoV-2 testing and research solutions including our RT-qPCR solutions and SARS-CoV-2 Standards for COVID-19 research along with our ddPCR systems and FDA EUA SARS-CoV-2 ddPCR kit.
Platelia SARS-CoV-2 Total Ab Assay

The Platelia SARS-CoV-2 Total Ab assay uses a 1-step antigen capture format requiring just 90 minutes incubation time. The kit features 96-well breakable testing strips with ready-to-use reagents and visual control of sample dilution and reagent addition.

Sandwich ELISA Procedure

The Platelia SARS-CoV-2 Total Ab assay uses a sandwich format to “capture” the target nucleocapsid antibodies – IgM, IgA, or IgG – between two complementary proteins.

REFERENCES


Ordering Information

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