

AditxtScore™ for COVID-19 Immune Monitoring

— *Identifying Unprotected Individuals*

September 02, 2021
Dr. Ralph Alvarado
Kentucky

Aditxt is a biotech innovation company with a mission to improve the health of the immune system by developing technologies focused on immune reprogramming and monitoring.



Strategically Located



Mountain View, CA



Hub of product
discovery and
innovation



Richmond, VA



CLIA-certified, high complexity
AditxtScore[™] Center, led by lab
scientists trained at prestigious
institutions such as Mayo Clinic and
Stanford University



New York, NY



Hub of capital markets,
investor and media relations,
and business development

AditxtScore™ Immune Monitoring



Immune Intelligence

for data-driven, personalized medicine



As we move through the next phase of the pandemic that expands availability of COVID vaccines, protective immunity status will be key to returning to normalcy. The ability for people to discover and evaluate a meaningful view of their immune system provides the best chance for them to make informed personal health and safety decisions."



AMRO ALBANNA

Co-founder and CEO of Aditxt, Inc.



AditxtScore™ Immune Monitoring Platform



Built upon innovative technology originally developed by world-leading research institutions. AditxtScore™ provides personalized, quantitative data to identify indications of protective immunity status.

Multi-multiplex antibody detection



Capable of detecting and monitoring multiple host biomarkers against multiple target stimuli; expandable to include variants

Neutralizing Antibody detection



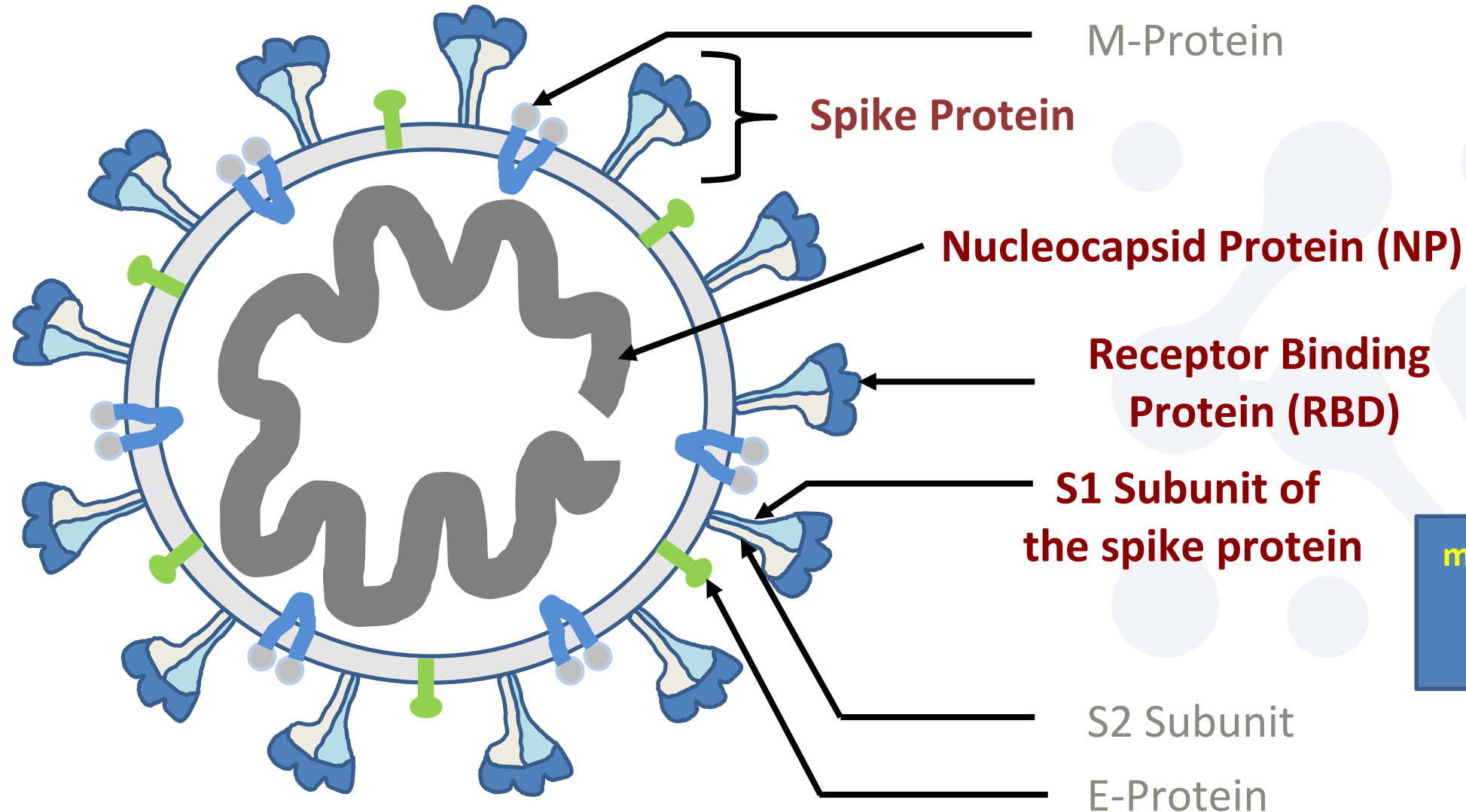
Neutralizing antibody assay has been validated against the gold standard (bioassay) by independent group in a blind manner showing 100% concordance

Reporting algorithm



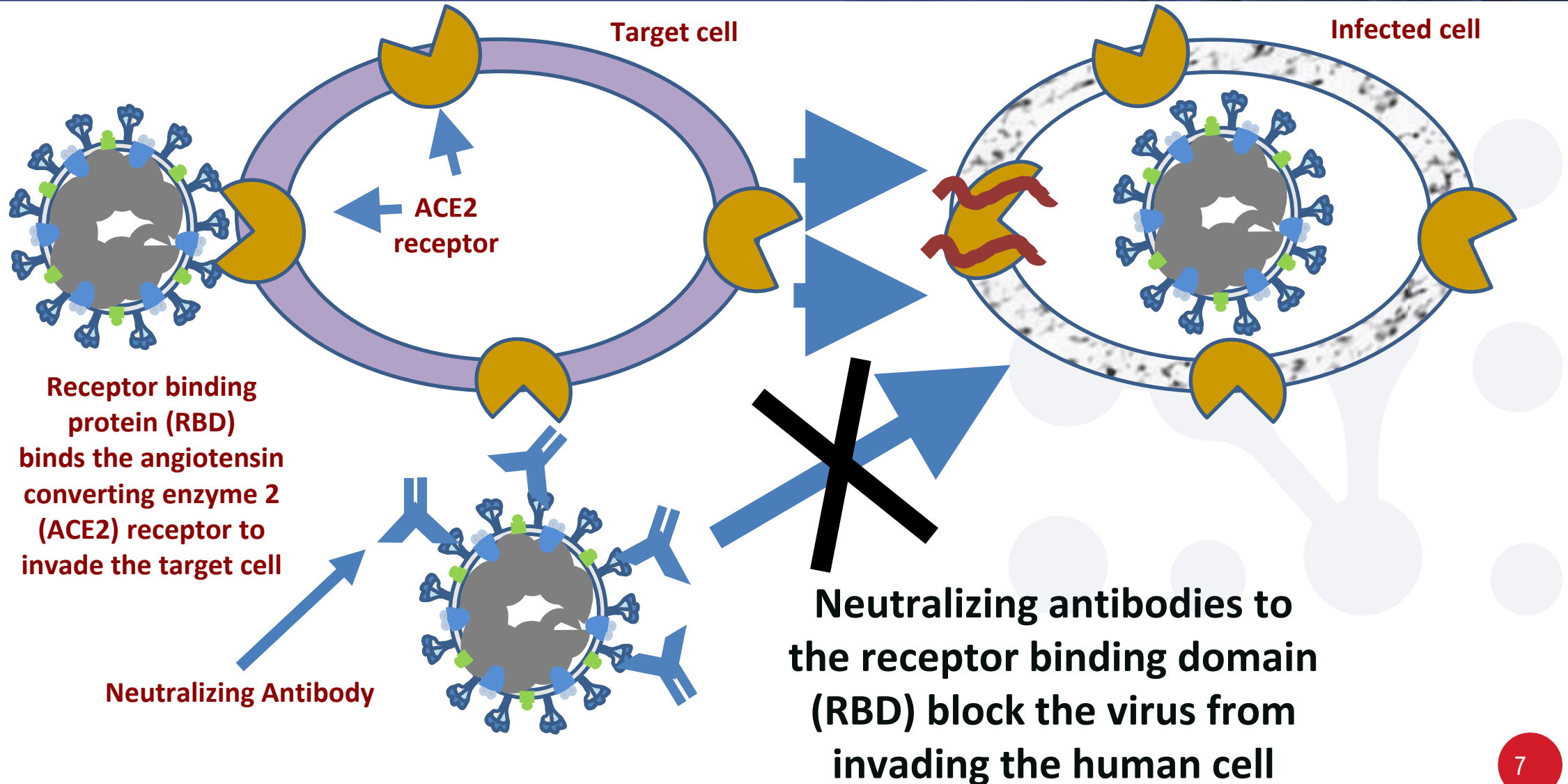
Proprietary algorithm digests large number of data points to provide easy to understand reporting with educational component

SARS-COV-2 Antigens of Interest



**mRNA Vaccines only
encode for the
spike protein**

Neutralizing antibodies as correlates of protection



AditxtScore™ for COVID-19 Report Format



Immune Monitoring for COVID-19*

- | | |
|--|-----|
| • Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine? | YES |
| • Is there evidence that a robust immune response developed? | YES |
| • Is there evidence this immune response may be protective against COVID-19? | YES |

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	<1600	66888 ≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	<2300	8872 ≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	<600	10970 ≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	<600	50142 ≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	<600	4523 ≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	<500	4925 ≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	<6700	16788 ≥6700	
Anti-SARS-CoV-2 - NP IgM (MFI)	3979 <7900	≥7900	
Anti-SARS-CoV-2 - NP IgA (MFI)	1973 <3400	≥3400	

Comments

Antibodies against SARS-CoV-2 were detected, indicating that your body's immune system has been activated and has mounted a response to the COVID-19 virus. Your antibody response is robust, as demonstrated by the number of different types of antibodies and their magnitude.

Neutralizing Antibodies

	Undetected	Detected	Previous Results
SARS-CoV-2 Neutralizing Activity (%)	<30	85 ≥30	

Comments

Neutralizing antibody activity was detected. The presence of neutralizing antibodies in your sample infers a high likelihood that you have developed protective immunity.

Additional Information

SARS-CoV-2 antibodies were detected, indicating a likely prior exposure to or vaccination for the SARS-CoV-2 virus. The presence of these antibodies suggests you have developed an immune response and are likely protected against COVID-19. In most cases, antibodies against the SARS-CoV-2 virus develop within the first few days-to-weeks of an infection. In many patients there is a window of several days when an infection could still be transmissible even in the presence of these antibodies. If you have not done so, consider testing for the SARS-CoV-2 virus (by PCR) to rule out an active infection.

In addition, these results show that you have developed a positive immune response to the SARS-CoV-2 virus or vaccine for all antibody types tested, IgG, IgM, and IgA. This indicates that your body's immune system has been activated and has mounted a response to the COVID-19 virus. IgA antibodies play a significant role in mucosal immunity, including in the upper respiratory tract. Evidence suggests they are important in the early response to SARS-CoV-2, particularly during the first month, and contribute to preventing respiratory viral infections. IgM antibodies typically increase early in response to exposure (or vaccination) and diminish after the first couple of months. IgG antibodies often take longer to develop than IgM but tend to remain elevated for longer periods of time (six months or longer).

The neutralizing antibody test found evidence that your antibodies can block the SARS-CoV-2 virus' mechanism for invading cells in your body. The presence of neutralizing antibodies in your sample infers a high likelihood that you have developed protective immunity.

Immune responses may develop against many different parts of the SARS-CoV-2 virus - the specific sites targeted by antibodies are referred to as viral antigens. In your sample, antibodies directed against all three tested antigens were detected. Two of these, the S1 subunit (S1) and the receptor binding domain (RBD), are sites on the spike protein which are critically involved with the virus' ability to infect your cells. The nucleocapsid protein (NP) is an important internal protein involved in viral replication and other host-pathogen interactions. Having antibodies against multiple targets on the virus likely improves your immune system's ability to fight off future infections.

If an active infection is suspected, take steps to protect yourself and others. We encourage you to follow CDC recommendations. If an active infection has been ruled out (by PCR) and you are currently experiencing symptoms, you should keep monitoring them and seek medical advice about staying home and/or getting tested again. Take measures to support your own immune system and to prevent transmission of other potential respiratory illnesses. If you have symptoms such as cough, congestion, sneezing, fever, headache, or gastrointestinal upset even in the absence of a positive PCR test, you should consider measures such as:

- Get plenty of rest and stay well hydrated.
- Separate yourself from other people.
- Monitor your symptoms.
- Wear a cloth covering over your nose and mouth.
- Cover your coughs and sneezes and wash your hands often.
- Avoid sharing personal and household items.
- Clean all "high-touch" surfaces everyday.
- If symptoms persist or worsen, consider repeat testing for SARS-CoV-2 virus and/or testing for the influenza virus. For more information regarding the influenza virus, please refer to www.cdc.gov/flu/symptoms/flu-vs-covid19.htm.

Possible Outcomes for Immune Status

No Previous Vaccine
And
No Previous Infection
Or
No Response

Unprotected

Require monitoring for virus
Vaccination recommended
Wear protective mask
Maintain 6 ft distance

Previous Vaccine or
Previous Infection
With Suboptimal Immune
Response

Unprotected

Require monitoring for virus
Vaccination recommended
Wear protective mask
Maintain 6 ft distance

Previous Infection
And
No Previous Vaccine
With Robust Immune
Response

Likely Protected

If Neutralizing Antibodies
detected
Test for memory B cells for
long term immunity status

Vaccinated
And
No Previous Infection
With Robust Immune
Response

Likely Protected

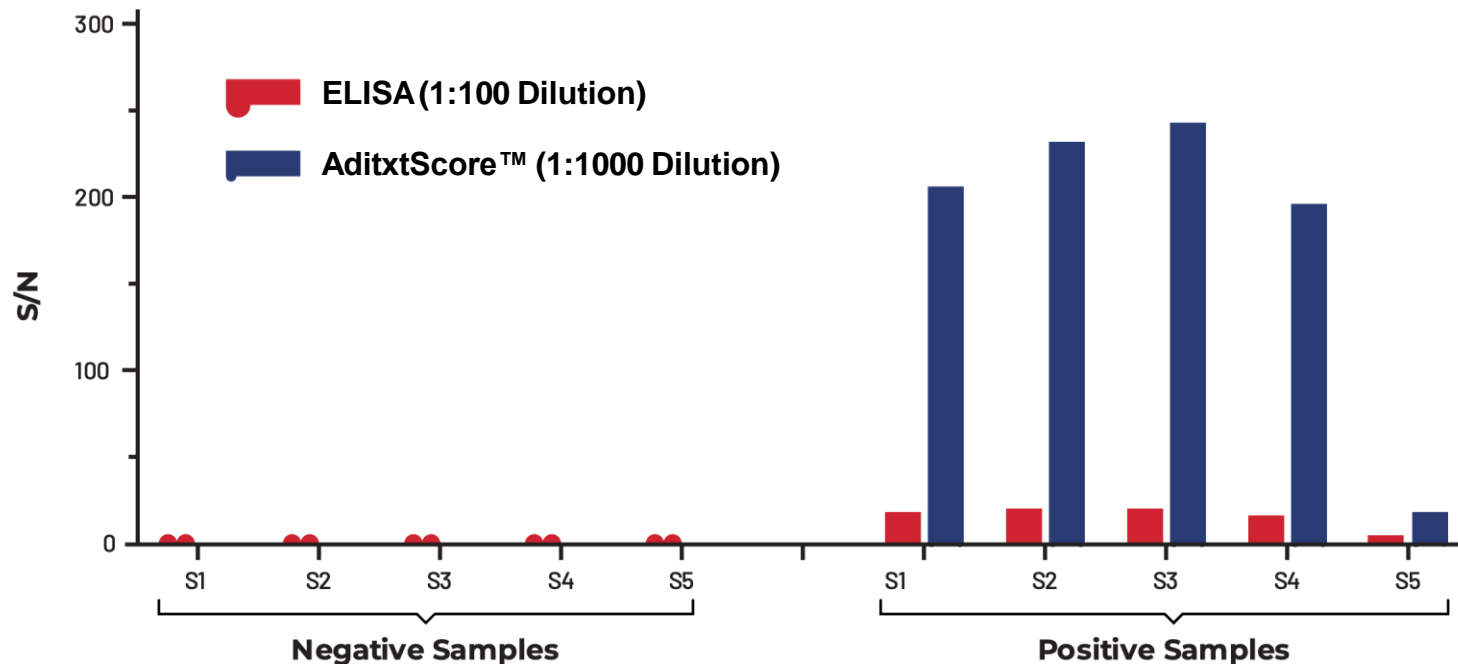
If Neutralizing antibodies
detected
Test for memory B cells for
long term immunity status

Vaccinated
And
Previous Infection
With Robust Immune
Response

Likely Protected

If Neutralizing antibodies
detected
Test for memory B cells for
long term immunity status

Reduce false positives/negatives



- AditxtScore™ has 20-fold increased signal to noise ratio even at higher dilution
- Enhanced sensitivity for detection over background signal

AditxtScore™ Validation Results



Sensitivity, Specificity, Positive and Negative Values for Each Individual Analyte Result

79 Negative Samples for SARS-CoV-2 (collected 2017&2018)
and 30 Positive samples for SARS-CoV-2 by PCR

Analyte	IgG to S1	IgM to S1	IgA to S1	IgG to RBD	IgM to RBD	IgA to RBD	IgG to NP	IgM to NP	IgA to NP
True Pos	29	29	29	30	30	29	30	19	28
False Neg	1	1	1	0	0	1	0	11	2
True Neg	78	78	79	78	78	78	78	79	77
False Pos	1	1	0	1	1	1	1	0	2
Sensitivity	96.7%	96.7%	96.7%	100.0%	100.0%	96.7%	100.0%	63.3%	97.5%
Specificity	98.7%	98.7%	100.0%	98.7%	98.7%	98.7%	98.7%	100.0%	97.5%
PPV	96.7%	96.7%	100.0%	96.8%	96.8%	96.7%	96.8%	100.0%	93.3%
NPV	98.7%	98.7%	98.8%	100.0%	100.0%	98.7%	100.0%	87.8%	97.5%

Overall Assessment

Detection of Multiple Isotypes to Multiple Antigens Increases Both Sensitivity and Specificity Over Any Individual Analyte Result

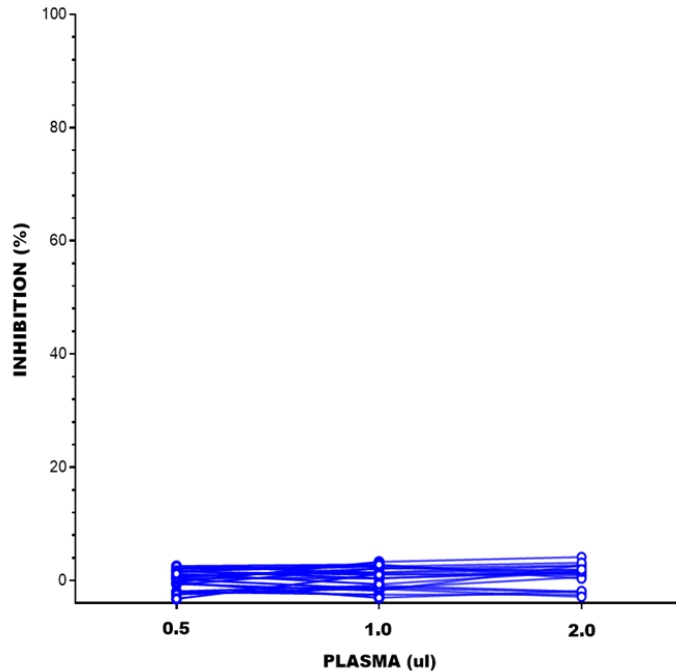
An Overall Positive Result for any individual patient requires values above the cut-point for at least one immunoglobulin isotype against at least two antigens (e.g., IgG detected to S1 and RBD antigens) or at least two immunoglobulin isotypes to at least one antigen (e.g., IgG and IgM detected to the RBD antigen). If neither of the above criterion is met, the patient sample is reported as no evidence of exposure to SARS-CoV-2.

Overall Clinical Evaluation for AditxtScore™ Serology Testing

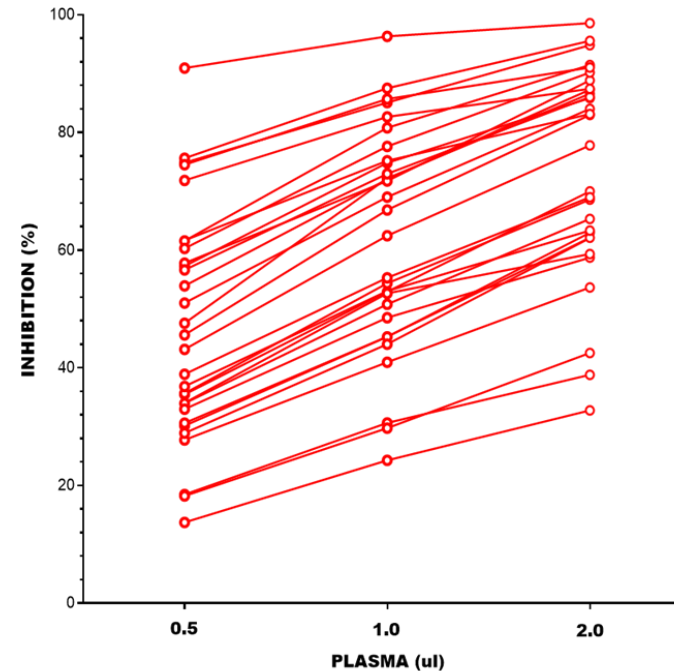
Clinical Status Predicate	SARS-COV-2 Positive by PCR	SARS-CoV-2 Negative (2017-18)
Total Number of Samples	N = 30	N = 79
AditxtScore™: Pos	30	0
AditxtScore™: Neg	0	79
Overall Sensitivity, Specificity Positive Predictive Value and Negative Predictive Value for the method	Total Results	109
	Concordant Results	109
	Discordant Results	0
	Sensitivity	100%
	Specificity	100%
	Positive Predictive Value	100%
	Negative Predictive Value	100%

AditxtScore™ for detection of neutralizing antibodies

SARS-COV-2 Neutralization Ab Detection
(Negative Plasma Inhibition; N=20)



SARS-COV-2 Neutralization Ab Detection
(Positive Plasma Inhibition; N=30)



Evaluation of protective immunity



Sensitivity and specificity



Has potential to incorporate additional targets (e.g., other variants or viruses)

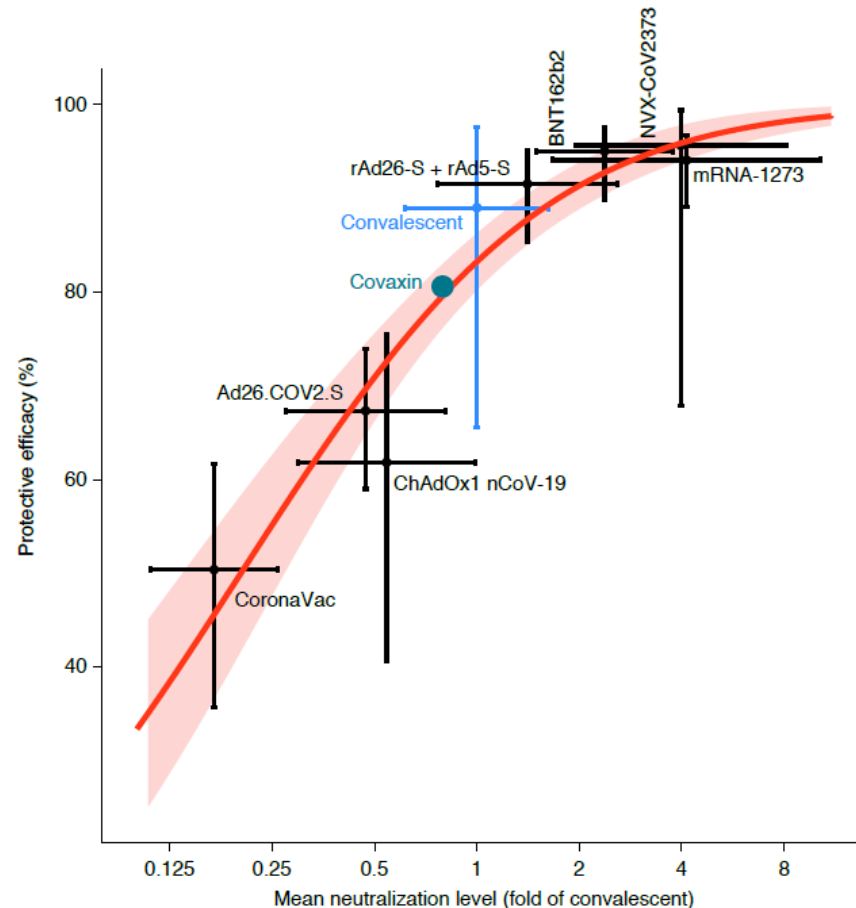


Detection of NAb levels before and after immunization



100% correlation with bioassay

Robust correlation between vaccine efficacy against symptomatic disease & mean neutralizing antibody



- Suggests 54 IU/ml as correlate of protection (20% of mean convalescent titer)
- Threshold of protection against severe disease is lower (3% of mean convalescent titer), less affected by vaccine differences
- For variants, 5-fold lower neutralizing titer predicted to reduce efficacy from 95% to 77% in high efficacy vaccine, or from 70% to 32% for lower efficacy vaccine

Khoury et al. Nature Medicine (2021)

Neutralizing antibodies as correlates of protection

By now it's clear that neutralizing antibody numbers do correspond pretty well with protection—the more neuts someone has, the more likely it is that they're safe from disease. “As far as I’m concerned, the data are clear,” Stanley Plotkin, a vaccine expert at the University of Pennsylvania, told me. “Neutralizing antibodies are it.”

Client Staff Study: 30 Staff Members

Possible Outcomes for Immune Status

No Previous Vaccine
And
No Previous Infection
Or
No Response

Unprotected

Require monitoring for virus
Vaccination recommended
Wear protective mask
Maintain 6 ft distance

Previous Vaccine or
Previous Infection
With Suboptimal Immune
Response

Unprotected

Require monitoring for virus
Vaccination recommended
Wear protective mask
Maintain 6 ft distance

Previous Infection
And
No Previous Vaccine
With Robust Immune
Response

Likely Protected

If Neutralizing Antibodies
detected
Test for memory B cells for
long term immunity status

Vaccinated
And
No Previous Infection
With Robust Immune
Response

Likely Protected

If Neutralizing antibodies
detected
Test for memory B cells for
long term immunity status

Vaccinated
And
Previous Infection
With Robust Immune
Response

Likely Protected

If Neutralizing antibodies
detected
Test for memory B cells for
long term immunity status

30 Adults Participated in Study

- Blood (serum) Drawn Prior and Plasma analyzed
- Aditxt Score for Antibodies: 9 Analytes Quantitated
 - IgG, IgM, and IgA each to S1 subunit of spike protein (S1), receptor binding domain (RBD) and Nucleocapsid Protein (NP)
- AditxtScore for Neutralizing Antibodies Performed.
 - Age Range: 22 – 79 Years
 - Average Age: 44 Years

Immune Monitoring for COVID-19*

- Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine?
- Is there evidence that a robust immune response developed?
- Is there evidence this immune response will protect against COVID-19?

NO
NO
NO

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	313 <1600	≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	1106 <2300	≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	170 <600	≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	113 <600	≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	28 <600	≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	328 <500	≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	1022 <6700	≥6700	
Anti-SARS-CoV-2 - NP IgM (MFI)	1020 <7900	≥7900	
Anti-SARS-CoV-2 - NP IgA (MFI)	440 <3400	≥3400	

Comments

SARS-CoV-2 antibodies were not detected, suggesting no prior infection with the COVID-19 virus.

No Vaccination

No Previous Infection
With SARS-CoV-2

Unprotected

2 Staff Members

Case example – vaccinated – suboptimal response

Previous Vaccination

Sub-optimal response

Unprotected

2 Staff Members

Immune Monitoring for COVID-19*

- Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine? YES
- Is there evidence that a robust immune response developed? NO
- Is there evidence this immune response may be protective against COVID-19? NO

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	<1600	10876 ≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	2133 <2300	≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	247 <600	≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	<600	5274 ≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	406 <600	≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	359 <500	≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	1400 <6700	≥6700	
Anti-SARS-CoV-2 - NP IgM (MFI)	2427 <7900	≥7900	
Anti-SARS-CoV-2 - NP IgA (MFI)	523 <3400	≥3400	

Comments

Mild elevations of antibodies to SARS-CoV-2 were observed, suggesting that you have been exposed to or vaccinated for SARS-CoV-2, but that at this time you are not displaying evidence of a robust immune response and you may not be fully protected from future exposures.

Neutralizing Antibodies

SARS-CoV-2 Neutralizing

Neutralizing Antibodies
Undetected

Undetected	Detected	Previous Results
29 <30	≥30	

AditxtScore™ Results Characterization

Previously Infected
With SARS-CoV-2

Not Vaccinated

Likely Protected: NAb +

7 Staff Members

Infection was
9 months prior
to testing

Immune Monitoring for COVID-19*

- Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine? YES
- Is there evidence that a robust immune response developed? YES
- Is there evidence this immune response may be protective against COVID-19? YES

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	<1600	21211 ≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	<2300	17515 ≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	<600	724 ≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	<600	12649 ≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	<600	7387 ≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	<500	512 ≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	<6700	21186 ≥6700	
Anti-SARS-CoV-2 - NP IgM (MFI)	2345 <7900	≥7900	
Anti-SARS-CoV-2 - NP IgA (MFI)	487 <3400	≥3400	

Comments

Antibodies against SARS-CoV-2 were detected, indicating that your body's immune system has been activated and has mounted a response to the COVID-19 virus. Your antibody response is robust, as demonstrated by the number of different types of antibodies and their magnitude.

Neutralizing Antibodies

	Undetected	Detected	Previous Results
SARS-CoV-2 Neutralizing Activity (%)	<30	62 ≥30	

Neutralizing Antibodies
Suggest Protection

AditxtScore™ Results Characterization

Vaccinated

**No Previous Infection
With SARS-CoV-2**

**Likely Protected: NAb +
7 Staff Members**

Immune Monitoring for COVID-19*

- Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine? YES
- Is there evidence that a robust immune response developed? YES
- Is there evidence this immune response may be protective against COVID-19? YES

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	<1600	93001 ≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	<2300	2624 ≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	<600	1060 ≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	<600	65480 ≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	<600	1001 ≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	<500	805 ≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	542 <6700		
Anti-SARS-CoV-2 - NP IgM (MFI)	807 <7900		
Anti-SARS-CoV-2 - NP IgA (MFI)	422 <3400		

**Vaccination: only
RBD and S1 are elevated**

**No previous infection
NP antibodies undetected**

Comments

Antibodies against SARS-CoV-2 were detected, indicating that your body's immune system has been activated and has mounted a response to the COVID-19 virus. Your antibody response is robust, as demonstrated by the number of different types of antibodies and their magnitude.

Neutralizing Antibodies

SARS-CoV-2 Neutralizing Activity

**Neutralizing Antibodies
Suggest Protection**

Undetected	Detected	Previous Results
<30	84 ≥30	

AditxtScore™ Results Characterization

Previously Infected
With SARS-CoV-2
And
Vaccinated

Likely Protected: NAb +

12 Staff Members

Immune Monitoring for COVID-19*

- Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine? YES
- Is there evidence that a robust immune response developed? YES
- Is there evidence this immune response may be protective against COVID-19? YES

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	<1600	90559 ≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	<2300	19758 ≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	<600	1979 ≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	<600	83739 ≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	<600	10517 ≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	<500	1466 ≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	<6700	68952 ≥6700	
Anti-SARS-CoV-2 - NP IgM (MFI)	<7900	16013 ≥7900	
Anti-SARS-CoV-2 - NP IgA (MFI)	<3400	6332 ≥3400	

Comments

Antibodies against SARS-CoV-2 were detected, indicating that your body's immune system has been activated and has mounted a response to the COVID-19 virus. Your antibody response is robust, as demonstrated by the number of different types of antibodies and their magnitude.

Neutralizing Antibodies

	Undetected	Detected	Previous Results
SARS-CoV-2 Neutralizing Activity (%)	<30	80 ≥30	

Neutralizing Antibodies
Suggest Protection

30 Adults: 22-79 years, Average 44

AditxtScore™ Results

Likely Protected: N= 26 (86.6%)

Likely Unprotected: N = 4 (13.3%)

- Number with undetectable antibodies; No vaccine and no exposure
 - **N = 2 6.7%**
- Number with vaccine and suboptimal response
 - **N = 2 6.7%**
- Number with exposure but no vaccine and robust immune response
 - **N = 7 23.3%**
- Number with vaccine and no exposure with robust immune response
 - **N = 7 23.3%**
- Number with exposure and vaccine with robust immune response
 - **N = 12 40.0%**

99 Adults Scheduled to Receive Booster Vaccination

- Blood (serum) Drawn Prior to Booster Shot Administration
- Aditxt Score for Antibodies: 9 Analytes Quantitated
 - IgG, IgM, and IgA each to S1 subunit of spike protein (S1), receptor binding domain (RBD) and Nucleocapsid Protein (NP)
- AditxtScore for Neutralizing Antibodies Performed.
 - Age Range: 63 – 99 Years
 - Average Age: 85 Years
 - Number of Females: 83
 - Number of Males: 16

Immune Monitoring for COVID-19*

- Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine? **NO**
- Is there evidence that a robust immune response developed? **NO**
- Is there evidence this immune response may be protective against COVID-19? **NO**

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	1138 <1600	≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	599 <2300	≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	163 <600	≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	<600	751 ≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	119 <600	≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	339 <500	≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	1216 <6700	≥6700	
Anti-SARS-CoV-2 - NP IgM (MFI)	3682 <7900	≥7900	
Anti-SARS-CoV-2 - NP IgA (MFI)	485 <3400	≥3400	

Comments

An overall SARS-CoV-2 antibody response was not detected, suggesting no prior infection with the COVID-19 virus.

Neutralizing Antibodies

	Undetected	Detected	Previous Results
SARS-CoV-2 Neutralizing Activity (%)	0 <30	≥30	

No Significant Response

Unprotected

N= 8

Vaccination

And/Or

Previous Infection
With SARS-CoV-2 with
Suboptimal Response

Unprotected

N = 25

Immune Monitoring for COVID-19*

- Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine? YES
- Is there evidence that a robust immune response developed? NO
- Is there evidence this immune response may be protective against COVID-19? NO

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	<1600	4245 ≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	<2300	5045 ≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	207 ≤600	≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	<600	2072 ≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	370 ≤600	≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	348 ≤500	≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	3989 ≤6700	≥6700	
Anti-SARS-CoV-2 - NP IgM (MFI)	<7900	13135 ≥7900	
Anti-SARS-CoV-2 - NP IgA (MFI)	<3400	11824 ≥3400	

Comments

Mild elevations of antibodies to SARS-CoV-2 were observed, suggesting that you have been exposed to or vaccinated for SARS-CoV-2, but that at this time you are not displaying evidence of a robust immune response and you may not be fully protected from future exposures.

Neutralizing Antibodies

SARS-CoV-2 Neutralizing Activity

Neutralizing Antibodies
Undetected

Undetected	Detected	Previous Results
11 ≤30	≥30	

Vaccination

No Previous Infection
With SARS-CoV-2

Protected

N = 17

Immune Monitoring for COVID-19*

- Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine? YES
- Is there evidence that a robust immune response developed? YES
- Is there evidence this immune response may be protective against COVID-19? YES

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	<1600	43936 ≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	<2300	18644 ≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	<600	1453 ≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	<600	32309 ≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	<600	7136 ≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	<500	798 ≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	5148 ≥6700		
Anti-SARS-CoV-2 - NP IgM (MFI)	2101 ≥7900		
Anti-SARS-CoV-2 - NP IgA (MFI)	444 ≥3400		

Vaccination: only
RBD and S1 are elevated

No previous infection
NP antibodies undetected

Comments

Antibodies against SARS-CoV-2 were detected, indicating that your body's immune system has been activated and has mounted a response to the COVID-19 virus. Your antibody response is robust, as demonstrated by the number of different types of antibodies and their magnitude.

Neutralizing Antibodies

	Undetected	Detected	Previous Results
SARS-CoV-2 Neutralizing Activity (%)	<30	84 ≥30	

Neutralizing Antibodies
Suggest Protection

Vaccination
And
Previous
Exposure/Infection
With SARS-CoV-2
Protected
N = 49

Immune Monitoring for COVID-19*

- Is there evidence of prior exposure to the SARS-CoV-2 virus or vaccine? YES
- Is there evidence that a robust immune response developed? YES
- Is there evidence this immune response may be protective against COVID-19? YES

* This report represents a snapshot of your current immune status and may change over time. We recommend regular monitoring of your immunity status every 3-6 months

Antibodies directed against different SARS-CoV-2 antigen

	Undetected	Detected	Previous Results
Anti-SARS-CoV-2 - RBD IgG (MFI)	<1600	66888 ≥1600	
Anti-SARS-CoV-2 - RBD IgM (MFI)	<2300	8872 ≥2300	
Anti-SARS-CoV-2 - RBD IgA (MFI)	<600	10970 ≥600	
Anti-SARS-CoV-2 - S1 IgG (MFI)	<600	50142 ≥600	
Anti-SARS-CoV-2 - S1 IgM (MFI)	<600	4523 ≥600	
Anti-SARS-CoV-2 - S1 IgA (MFI)	<500	4925 ≥500	
Anti-SARS-CoV-2 - NP IgG (MFI)	<6700	16788 ≥6700	
Anti-SARS-CoV-2 - NP IgM (MFI)	3979 <7900	≥7900	
Anti-SARS-CoV-2 - NP IgA (MFI)	1973 <3400	≥3400	

Low IgM and IgA
Suggest Infection
was > 1-2 Month Ago

Comments

Antibodies against SARS-CoV-2 were detected, indicating that your body's immune system has been activated and has mounted a response to the COVID-19 virus. Your antibody response is robust, as demonstrated by the number of different types of antibodies and their magnitude.

Neutralizing Antibodies

	Undetected	Detected	Previous Results
SARS-CoV-2 Neutralizing Activity (%)	<30	85 ≥30	

Neutralizing Antibodies
Suggest Protection

Adult Living Center Study



**99 Adults Scheduled to Receive Booster Vaccination: 63-99 years, Average 85
Blood Drawn Prior to Booster Shot Administration for Aditxt Score**

AditxtScore™ Results

Likely Protected: N= 66 (66.7%)


Likely Unprotected: N = 33 (33.3%)


- Number with undetectable antibodies; no immune response
 - **N = 8 8.1%**
- Number with vaccine and/or exposure with suboptimal response
 - **N = 25 25.2%**
- Number with vaccine and no exposure with robust immune response
 - **N = 17 17.2%**
- Number with exposure and vaccine with robust immune response
 - **N = 49 49.5%**



Contact:

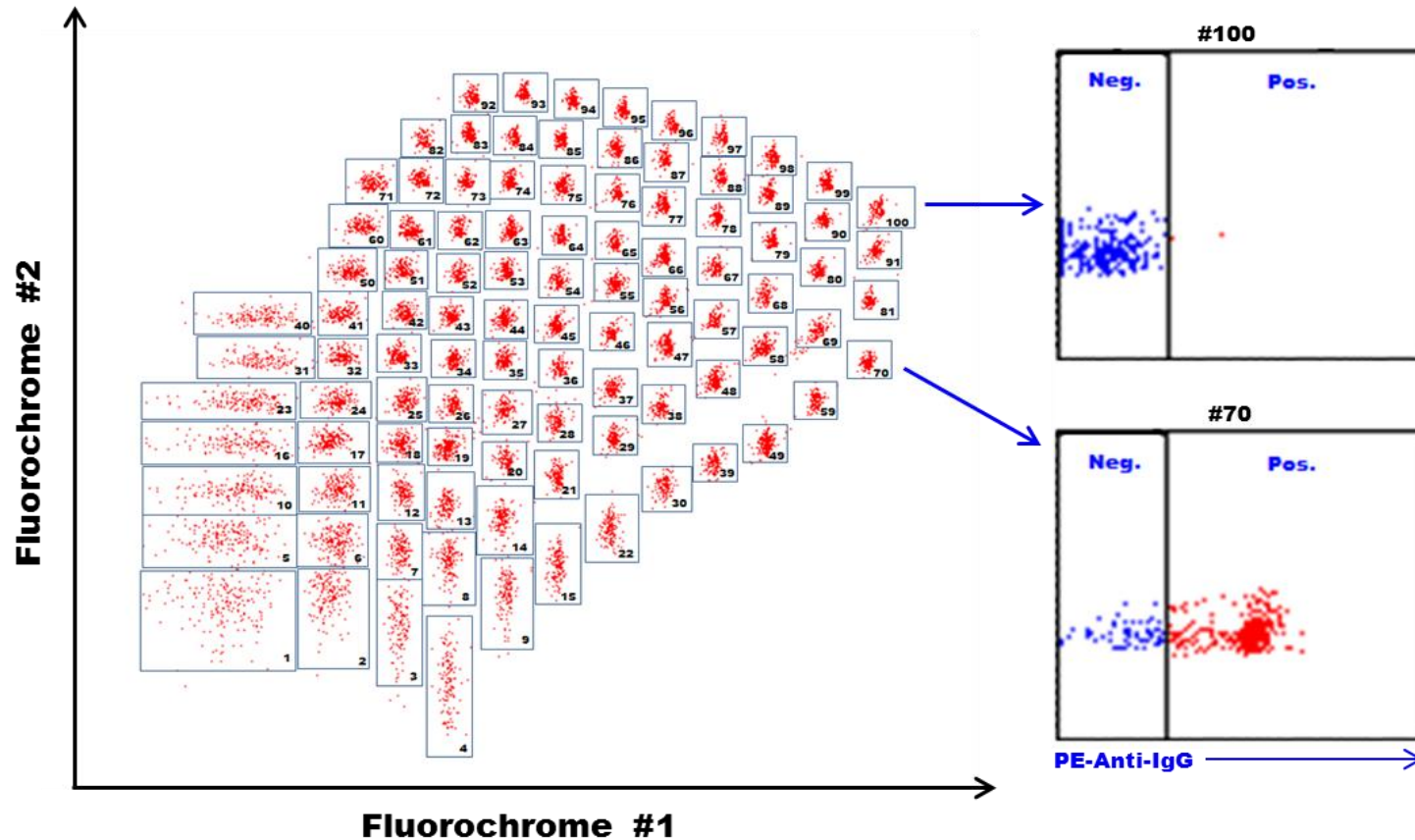
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AditxtScore™ Cellular Immunity Assessment

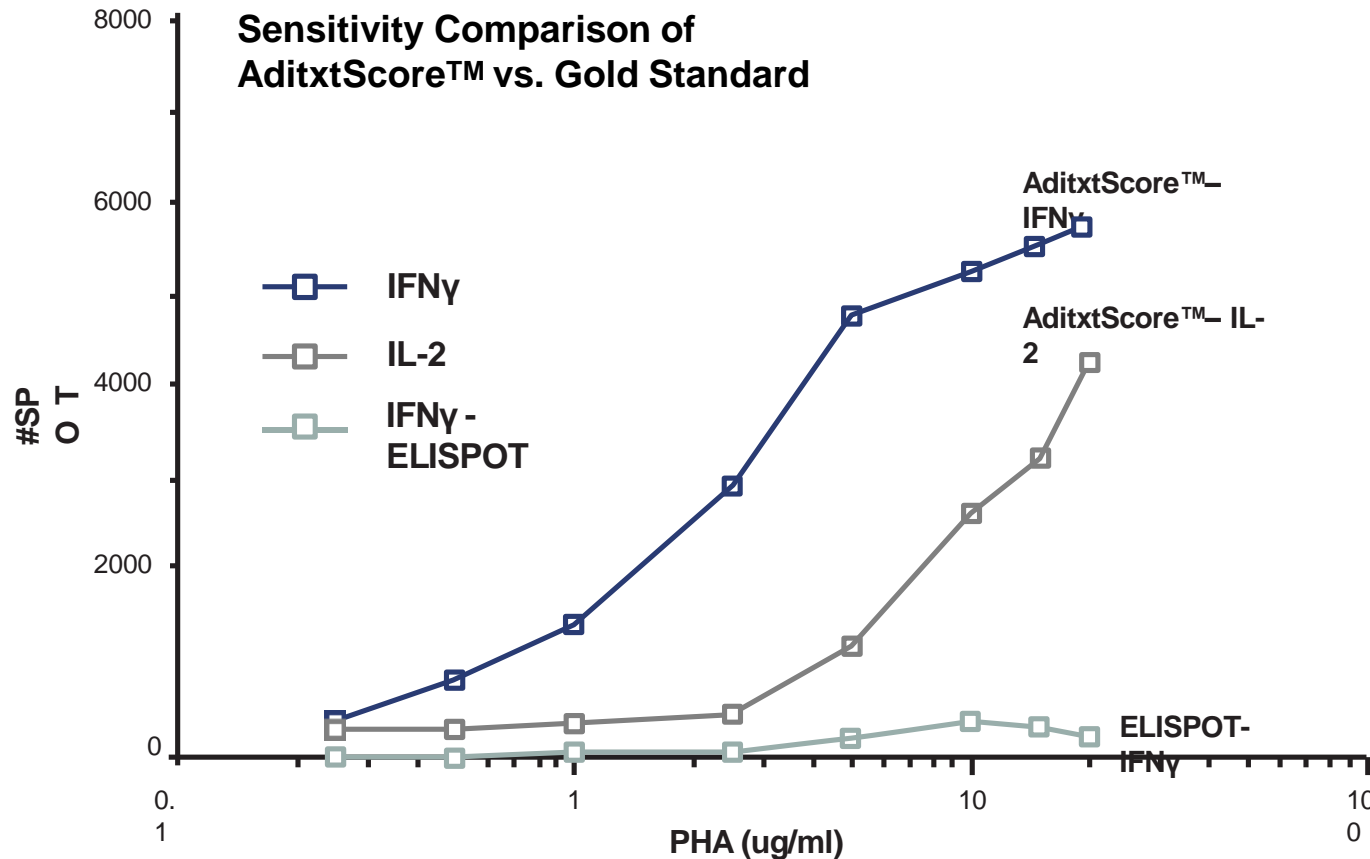


Evaluation of memory B cell response (v. 2.0)

- Can detect 100 different targets
- Four-hour assay
- Sensitivity = 1 / 10⁶ cells

Chen G, Liu H, Tyan D. FlowSpot: Real time prediction and monitoring of cellular immune profiles for responses to pathogens, vaccines, therapeutics, and transplantation. *Manuscript submitted for publication.*

AditxtScore™ Cellular Immunity Assessment



Comprehensive evaluation of T cell response (v. 2.0)

- Can detect multiple cytokines in a single test with high sensitivity
- Determines and differentiates between various types of humoral & cellular immune responses
- Simultaneous monitoring of cell activation and levels of cytokine release (e.g., cytokine storms)

Chen G, Little T, et al. FlowSpot: Real time prediction and monitoring of cellular immune profiles for responses to pathogens, vaccines, therapeutics, and transplantation. *Manuscript submitted for publication.*

Isreal Study: Comparing SARS-CoV-2 natural immunity to vaccine-induced immunity



- 673,676 Fully vaccinated SARS-CoV-2-naïve individuals
- 62,883 previously infected unvaccinated individuals
- 42,099 previously infected and single-dose vaccinees

Conclusions:

This study demonstrated that natural immunity confers longer lasting and stronger protection against infection, symptomatic disease and hospitalization caused by the Delta variant of SARS-CoV-2, compared to the BNT162b2 two-dose vaccine-induced immunity. Individuals who were both previously infected with SARS-CoV-2 and given a single dose of the vaccine gained additional protection against the Delta variant.

