# SARS-CoV-2 Antibody Pairs

## For Rapid COVID-19 Antigen Assays

In May 2020, the FDA announced the approval of the first antigen test to help in the rapid detection of the virus that causes COVID-19. The performance of a rapid antigen test is limited by the sensitivity of the antibodies used.

Meridian's antibodies are highly sensitive for the detection of SARS-CoV-2 and they are ideal for developing reliable and sensitive rapid antigen assays for the detection of active COVID-19 infections. Meridian's novel monoclonal antibody pair to trimeric SARS-CoV-2 S1 protein is capable of recognizing the spike 1 (S1) protein in saliva samples regardless of its confirmation state (e.g. "up" or "down"). The antibodies bind to a linear epitope on the S1 protein that is distinct from the RBD protein which has epitopes that are conformation-dependent. Recent studies have shown that linear epitopes on the S1 protein are able elicit neutralizing antibodies in COVID-19 patients and have potent antigenicity, making them prime targets for diagnostic, therapeutic and vaccine targets.

Li, Y., Lai, D., Zhang, H. *et al.* Linear epitopes of SARS-CoV-2 spike protein elicit neutralizing antibodies in COVID-19 patients. *Cell Mol Immunol* (2020).

## NUCLEOCAPSID ANTIBODIES

- Highly sensitive antibody pairs currently used in commercial diagnostic kits worldwide
- Cat# 9548/9547 achieves an LOD of 0.25 TCID50/mL and detects variant strains Alpha B.1.1.7, Beta B.1.351, Gamma P.1/P.2 and Delta B.1.617.2
- Manufactured in multigram quantities weekly
- No cross-reaction with other respiratory pathogens, e.g., MERS-Coronavirus, Human Coronavirus (NL63, 229E and OC43), Influenza A, Influenza B, Respiratory Syncytial Virus (RSV) (A and B), Streptococcus A, Mycoplasma, Human Adenovirus (Types 1, 3, 5, 7, 8, 11, 18, and 23), Human Parainfluenza Virus (Types 1, 2, 3 and 4), Human Rhinovirus (Types 1, 14 and 42) and Human Metapneumovirus

**Capture Antibody:**

| | |
|---|---|
| **Cat# 9548** | MAb to SARS-CoV-2 NP |

*pairs with both detection antibodies 9547 and 9549

**Detection Antibody:**

| | |
|---|---|
| **Cat# 9547** | MAb to SARS-CoV-2 NP |
| **Cat# 9549** | MAb to SARS-CoV-2 NP |

Cat# 9548/9547 detects variant strains **Alpha B.1.1.7, Beta B.1.351, Gamma P.1/P.2** and **Delta B.1.617.2**

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# TRIMERIC SPIKE ANTIBODIES

- For use in lateral flow antigen detection COVID-19 assays
- Designed to work on saliva samples (no lysis required)
- Novel antibody pair to the trimeric form of the Spike 1 surface glycoprotein, recognizes both the G614 and D614G strains
- Using a mixture of detection antibodies Cat# 9565 and #9551 in a 1:1 ratio creates a synergistic effect that increases assay sensitivity in ELISA
- Recognizes a linear epitope - binding is not conformation-dependent
- Sensitivity of approx. 300 pg/mL in ELISA
- Does not cross-react with SARS-CoV, HCoV-229E, HCoV-HKU1, HCoV-NL63 and HCoV-OC43

**Capture Antibody:**

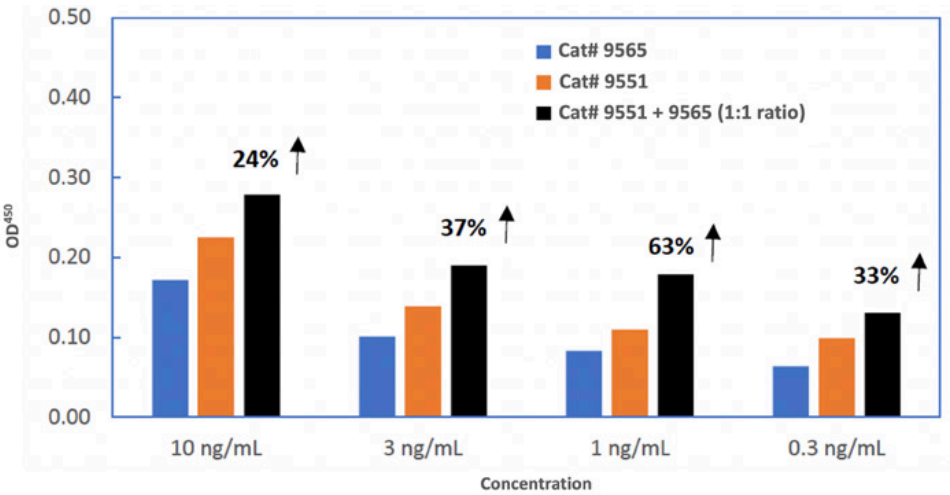
| | |
|---|---|
| **Cat# 9550** | MAb to SARS-CoV-2 S1 (Trimeric) |

**Detection Antibody:**

| | |
|---|---|
| **Cat# 9551** | MAb to SARS-CoV-2 S1 (Trimeric) |
| **Cat# 9565** | MAb to SARS-CoV-2 S1 (Trimeric) |

*9551 and 9565 can be used together in a 1:1 ratio to increase assay sensitivity in ELISA

SYNERGISTIC EFFECT OF CAT# 9551 AND 9565 ENHANCES DETECTION OF SARS-COV-2 TRIMERIC SPIKE PROTEIN




MAb sandwich ELISAs were compared for their ability to detect recombinant SARS-CoV-2 across 4 serial dilutions (10 ng/mL – 0.3 ng/mL). One assay used Cat# 9550 as the capture and Cat# 9551 as the detection antibody a second assay used Cat# 9550 as the capture and Cat# 9565 as the detection antibody and a third assays used Cat#9550 as the capture and Cat#9551 and Cat#9565 together in a 1:1 ratio as the detection antibodies. Using Cat# 9551 and 9565 in combination creates a synergistic effect that results in an enhanced detection of SARS-CoV-2 Trimeric Spike protein across all concentrations.

## FAQ's for Trimeric Spike Antibodies

→ How were these antibodies generated?
They were generated from mice immunized with rec S1 protein and screened against the trimeric full-length spike protein.

→ Have the binding epitopes been mapped?
9550 and 9551 have been mapped to the RBD domain and 9565 has been mapped to the C-terminal of S1.

→ Have their binding properties been characterized?
Not yet determined.


## Ordering information:

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