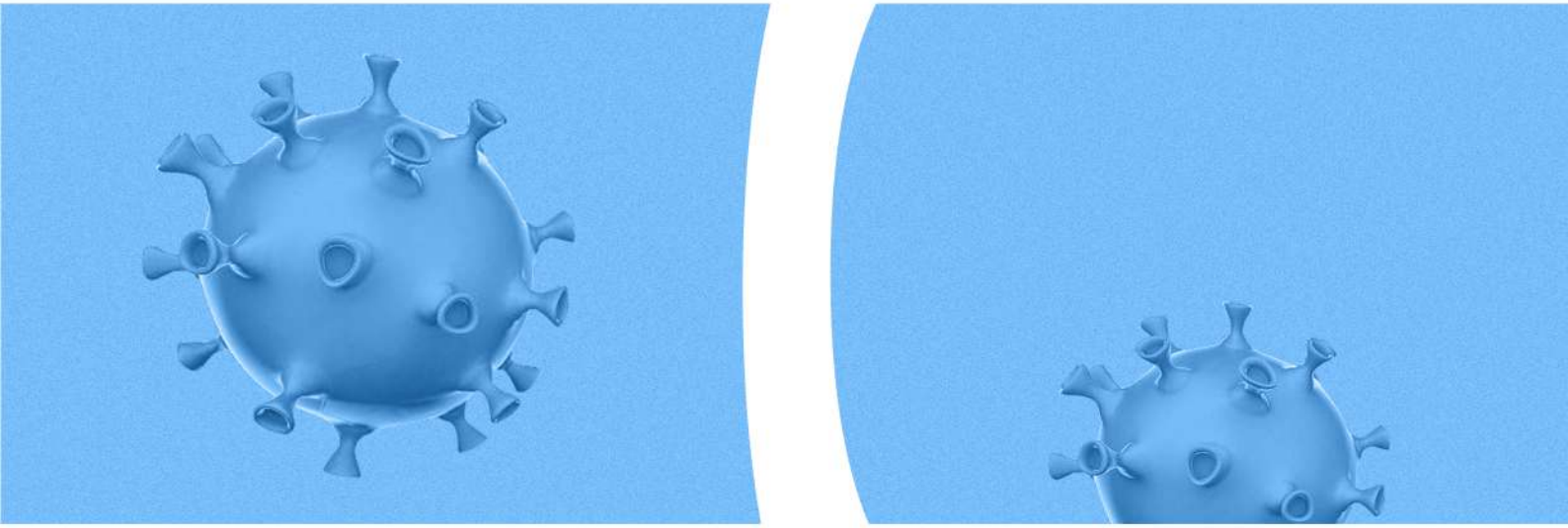
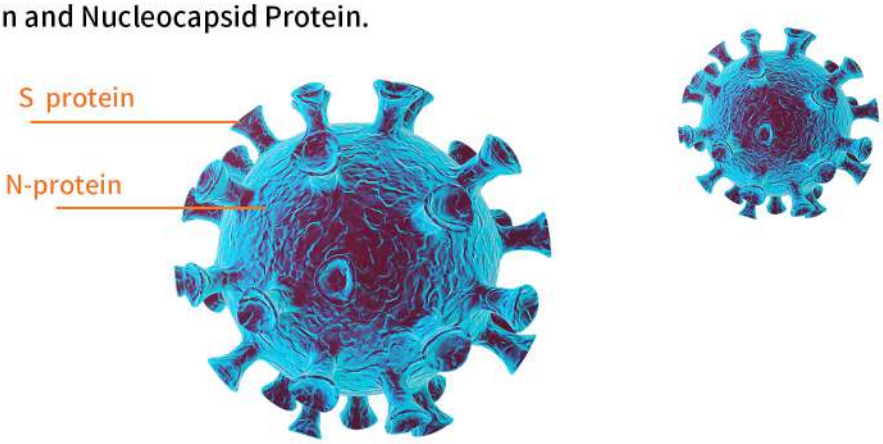
COVID-19 Antigen Rapid Test Cassette



Hangzhou Clongene Biotech Co., Ltd.

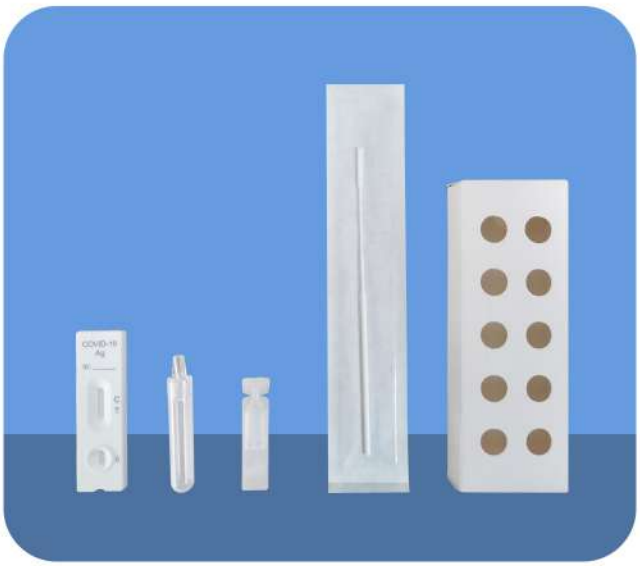
COVID-19 & SARS-CoV-2

COVID-19 is an acute respiratory infectious disease caused by novel coronavirus (SARS-CoV-2), and people are generally susceptible. Based on the current epidemiological investigation, the incubation period is 1 to 14 days, mostly 3 to 7 days. Novel coronavirus includes four typical structural proteins: Spike Protein, Envelope Protein, Membrane Protein and Nucleocapsid Protein.



Nucleocapsid (N) protein is the most abundant protein with highly conserved in SARS-CoV-2. N protein is used as the core raw material of rapid diagnostic reagent for immunology in the market.

Clongene has developed the COVID-19 Antigen Rapid Test Cassette. The COVID-19 Antigen Rapid Test is a lateral flow immunoassay intended for the qualitative detection SARS-CoV-2 nucleocapsid antigens in nasopharyngeal swab and oropharyngeal swab from individuals who are suspected of COVID-19 by their healthcare provider.



LUNGENE®

Kit Contents

ICOV5002-100569


Work Station


Test Cassette


Extraction reagents

Sterilized Swab


Extraction Tube & Dropper Tip

ICOV5002-100596


Work Station


Test Cassette


Extraction reagents

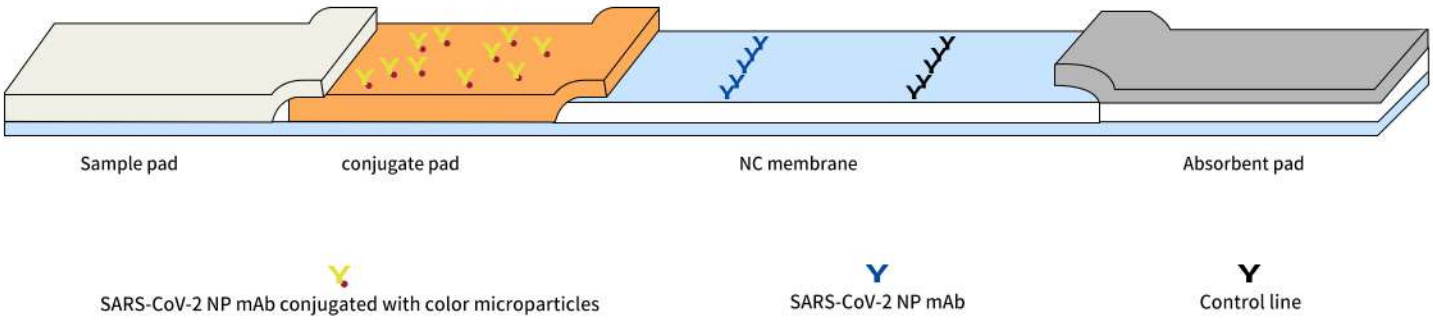
Sterilized Swab


Extraction Tube & Dropper Tip

Product Features

- CE Marked
- Instant result at 15 minutes
- Easy to collect samples
- Results are clearly visible
- No equipment required
- Suitable for large-scale rapid screening

Principle

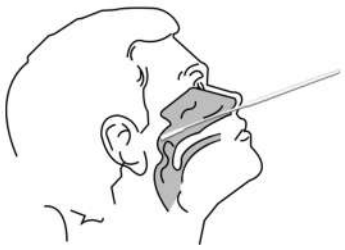


The COVID-19 Antigen Rapid Test is a lateral flow immunoassay based on the principle of the double-antibody sandwich technique. If the specimen contains SARS-CoV-2 antigen, a colored test line (T) would be visible in the result window. Absence of the T line suggests a negative result. The control line (C) is used for procedural control, and should always appear if the test procedure is performed properly.

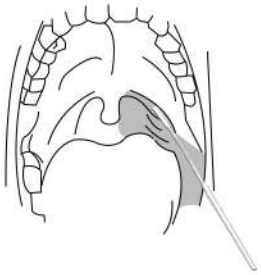
Specimens

The detect specimens include nasopharyngeal swab and oropharyngeal swab.

Nasopharyngeal swab



Oropharyngeal swab



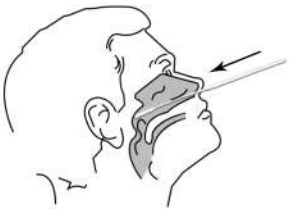
Inadequate specimen collection, improper specimen handling and/or transport may yield false results; therefore, training in specimen collection is highly recommended due to the importance of specimen quality to obtain accurate test results.

Test Procedure

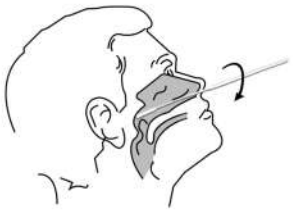
Take nasopharyngeal swab for example.

1. Put an extraction tube on the work station. Add all of the extraction reagent into an extraction tube.

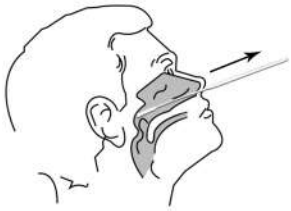
2. Tilt patient's head back about 70°. Insert sterilized swab through the nostril parallel to the palate.



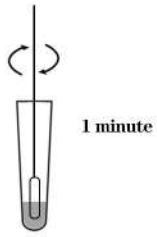
3. Gently rub and roll the swab, and leave swab in place for several seconds to absorb secretions.



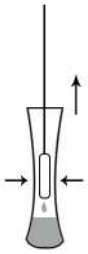
4. Slowly remove swab while rotating it.



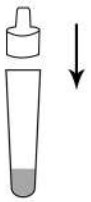
5. Insert the swab specimen into the extraction tube. Roll the swab at least 5 times and leave the swab in the extraction tube for one minute.



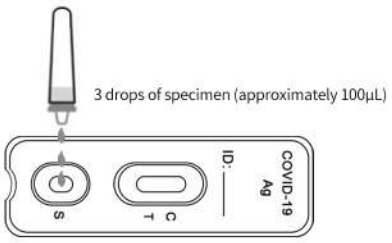
6. Remove the swab while squeezing the sides of the tube to extract the liquid from the swab.



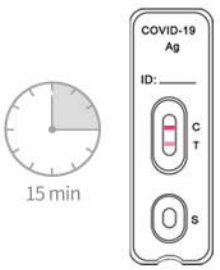
7. Cover the extraction tube with a dropper tip tightly.



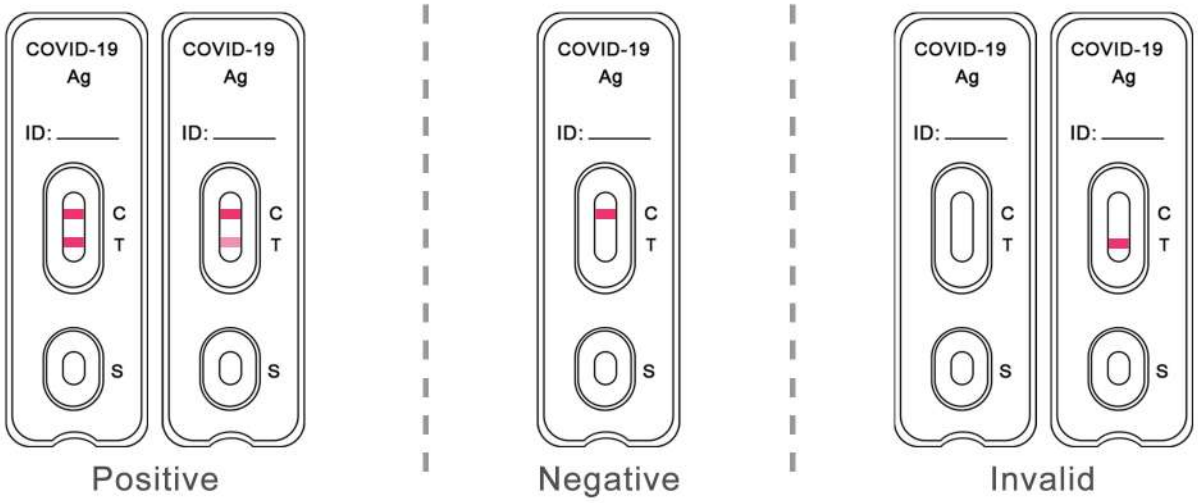
8. Transfer 3 drops (approximately 100µL) to the specimen well of the test cassette.



9. Interpret the test results at 15 minutes. Do not read results after 20 minutes.



Interpretation of Results



Performance Characteristics

Clinical Performance

285 nasopharyngeal swabs were detected by COVID-19 Antigen Rapid Test and the RT-PCR.

COVID-19 Antigen		RT-PCR		Total
		Positive	Negative	
CLUNGENE®	Positive	64	0	64
	Negative	6	215	221
Total		70	215	285

Sensitivity (PPA)= 91.4% (64/70), (95%CI: 82.5%~96.0%)

Specificity (NPA)= 100% (215/215), (95%CI: 98.2%~100%)

The 6 discordant specimens had Ct values of 34, 36, 35.5, 34, 35, 33

The PPA is 98.5% (64/65) (95%CI: 91.8%~99.7%) with specimens of a Ct count ≤33

Limit of Detection (Analytical Sensitivity)

The study used cultured SARS-CoV-2 virus, which is β-propiolactone and heat inactivated and spiked into nasopharyngeal swab specimen. The Limit of Detection (LoD) is $5\times10^{2.67}$ $TCID_{50}$/mL.

Cross Reactivity (Analytical Specificity)

We have evaluated 32 commensal and pathogenic microorganisms that may be present in the nasal cavity and no cross-reactivity was observed.

High-dose Hook Effect

The COVID-19 Antigen Rapid Test was tested up to $1.0\times10^{5.67}$ $TCID_{50}$/mL of inactivated SARS-CoV-2 and no high-dose hook effect was observed.