

For Prescription Use and Non-Lab Settings Use.

For In Vitro Diagnostic Use Only



# reOpenTest

## COVID-19 Antigen Rapid Test

(Fluorescence Immunochromatography)



### INTENT OF USE

The reOpenTest COVID-19 Antigen Rapid Test is a lateral flow immunoassay intended to detect N-protein antigen from the SARS-CoV-2 virus that causes COVID-19 in Nasopharyngeal/Oropharyngeal swab, or saliva from individuals age 2 years and older symptomatic individuals who are suspected of COVID-19 by a healthcare provider, or individuals with or without symptoms or other epidemiological reasons to suspect COVID-19 infection.

Persons who test positive with the reOpenTest COVID-19 Antigen Rapid Test should seek follow up care with their physician or healthcare provider as additional testing and public health reporting may be necessary. Positive results do not rule out bacterial infection or co-infection with other viruses. Persons who test negative and continue to experience COVID-19 like symptoms of fever, cough and/or shortness of breath may still have SARS-CoV-2 infection and should seek follow up care with their physician or healthcare provider.

All test results will be reported to healthcare providers and relevant public health authorities in accordance with local, state, and federal requirements, using appropriate LOINC and SNOMED codes, as defined by the Laboratory In Vitro Diagnostics (LIVD) Test Code Mapping for SARS-CoV-2 Tests provided by CDC.

The reOpenTest COVID-19 Antigen Rapid Test is intended for professional-use or, as applicable for a lay user testing another person in a non-laboratory setting and, as applicable for healthcare provider testing of another person in laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), 42 U.S.C 263a to perform moderate or high complexity tests and as applicable, Point of Care (POC) testing at patient care settings operating under a CLIA Certificate of Waiver, Certificate of Compliance, or Certificate of Accreditation.

### SUMMARY AND EXPLANATION

The novel coronaviruses belong to the  $\beta$  genus. SARS-CoV-2, also known as the COVID-19 virus, is an acute respiratory infectious disease. People are generally susceptible. Currently, the patients infected by the novel coronavirus are the main source of infection; asymptomatic infected people can also be an infectious source. Based on the current epidemiological investigation, the incubation period is 1 to 14 days, mostly 3 to 7 days. The main manifestations include fever, fatigue and dry cough. Nasal congestion, runny nose, sore throat, myalgia and diarrhea are found in a few cases.

### PRINCIPLE OF THE TEST

The detection of SARS-COV-2 adopts the principle of double antibody sandwich method and colloidal gold immunochromatography to qualitatively detect SARS-COV-2 antibodies in human Nasal swabs, pharyngeal swabs, sputum, bronchoalveolar lavage fluid, etc., with two highly specific and highly sensitive SARS-COV-2 N antigen monoclonal antibodies, wherein monoclonal antibody I is a capture antibody, fixed in the detection area on the NC membrane, monoclonal antibody II is a colloidal gold-labeled antibody, sprayed on the binding pad, and the NC membrane quality control area C is coated with rabbit anti-mouse IgG antibody. The double antibody sandwich

method is used in the detection area, and the antigen-antibody reaction is used in the quality control area, combined with colloidal gold immunochromatography technology to detect the SARS-COV-2 in the human body. During detection, the sample is chromatographed under the capillary effect. If the tested sample contains SARS-COV-2, the gold-labeled SARS-COV-2 N antigen monoclonal antibody I combines with SARS-COV-2 to form a complex, and combines with the anti-human IgG antibody fixed at the detection line during the chromatography process, which will form the "Anti-antibody I-N antigen antibody II" sandwich, so that a purple band appears in the detection area (T); Otherwise, no magenta bands appear in the detection area (T). Regardless of whether there is a SARS-COV-2 antibody in the sample, the complex will continue to be chromatographed up to the control area (C), and a purple band appears when reacting with the rabbit anti-mouse IgG antibody. The purple-red band presented in the control area (C) is a standard for judging whether the chromatographic process is normal, and also serves as an internal control standard for reagents. Please note that if applicable, an in-silico analysis against available reference protein sequences for different strains of the target pathogen is requested as part of the cross-reactivity evaluation (Section J).

### REAGENTS AND MATERIALS SUPPLIED

#### 25-Test Kit:

- Individually Packaged Test Cassettes (25)
- Reagent Solution Buffer (1): Ampoules with salt solution
- Reagent Tubes with Nozzle Caps (25)
- Nasopharyngeal Swabs (25)
- Package Insert (1)

#### MATERIALS NOT SUPPLIED IN KIT

- Timer or watch or smart mobile phone
- UV light

**Note:** External Negative and Positive Controls are not supplied with this kit. However, external positive and negative controls should be tested in accordance with good laboratory practice to confirm the test procedure and to verify proper test performance. Additional testing may be required according to guidelines or local, state, and/or federal regulations (such as 42 CFR 493.1256) or accrediting organizations. The SARS-COV-2 Ag External Control Kit can be purchased separately. Please contact reOpenTest.com or your distributor for information on purchasing these controls.

### WARNINGS AND PRECAUTIONS

#### Section I

- Please read the instruction manual carefully before use. It requires professionally trained inspectors to operate, and strictly follow the kit instructions for test operations.
- This product is a one-time use in vitro diagnostic product, please use it within the validity period.
- Do not use the aluminum foil bag if it is damaged. **Please use it as soon as possible after opening the aluminum foil bag.**
- Temperature has a greater influence on the test results. The high temperature of the experimental environment should be avoided. The test kit which was stored at low temperature needs to be restored to room temperature before opening to prevent moisture absorption.

#### Section II

- Clinical performance was evaluated with frozen samples, and test performance may be different with fresh samples. Do not use repeatedly freeze-thaw samples. Specimen stability recommendations are based upon stability data from influenza testing and performance may be different with SARS-CoV-2. Users should test specimens as quickly as possible after specimen collection, and within one hour after specimen collection.
- The contents of this kit are to be used for the qualitative detection of COVID-19 Antigens from nasal swab specimens only
- Please use the swab and sample extraction solution provided in this kit

when sampling. Do not mix test cassettes and sample extraction solutions from different batches.

- It indicates an error if no line appears in the quality control area (C) and test area (T). Please retest.
- This device has been evaluated for use with human specimen material only.

#### Section III

- The performance of this test has not been evaluated for use in patients without signs and symptoms of respiratory infection and performance may differ in asymptomatic individuals.
- Positive and negative predictive values are highly dependent on prevalence rates. Positive test results are more likely to represent false positive results during periods of little/no SARS-CoV-2 activity when disease prevalence is low. False negative test results are more likely when prevalence of disease caused by SARS-CoV-2 is high.
- Sensitivity of the test after the first five days of the onset of symptoms has been demonstrated to decrease as compared to a RT-PCR SARS-CoV-2 assay.
- Results from the COVID-19 Antigen Rapid Test should be correlated with the clinical history, epidemiological data, and other data available to the clinician evaluating the patient.
- A false-negative test result may occur if the level of viral antigen in a sample is below the detection limit of the test or if the sample was collected or transported improperly; therefore, a negative test result does not eliminate the possibility of SARS-CoV-2 infection.
- Negative test result should be treated as presumptive and confirmed with an approved molecular assay, if necessary, for clinical management, including infection control. If the test result is negative and there are clinical symptoms, it is recommended to use other clinical methods for testing.
- The validity of the COVID-19 Antigen Rapid Test has not been proven for identification/confirmation of tissue culture isolates and should not be used in this capacity.
- Negative test results are not intended to rule in other non-SARS-CoV-2 viral or bacterial infections.
- Monoclonal antibodies may fail to detect, or detect with less sensitivity, SARS-CoV-2 viruses that have undergone minor amino acid changes in the target epitope region.

#### Section IV

- If you are testing for other people, pay attention to safety measures during operation, such as wearing protective clothes and gloves. Used swabs, test cassettes, extraction tubes, etc. should be decontaminated before disposal. High-pressure steam disinfection is recommended.
- Keep clean, contaminants should be treated as a potential source of infection, the operation should be carried out in accordance with laboratory safety management regulations. Waste disposal shall be carried out in accordance with the WS / T249-2005 "Principles for Waste Disposal in Clinical Laboratories".
- There is desiccant inside the aluminum foil bag. **DO NOT EAT.**

### KIT STORAGE AND STABILITY

Store the kit at room temperature, 2°C to 30°C (36°F to 86°F), out of direct sunlight. Kit contents are stable until the expiration date printed on the outer box. **DO NOT FREEZE.**

### SPECIMEN COLLECTION AND PREPARATION

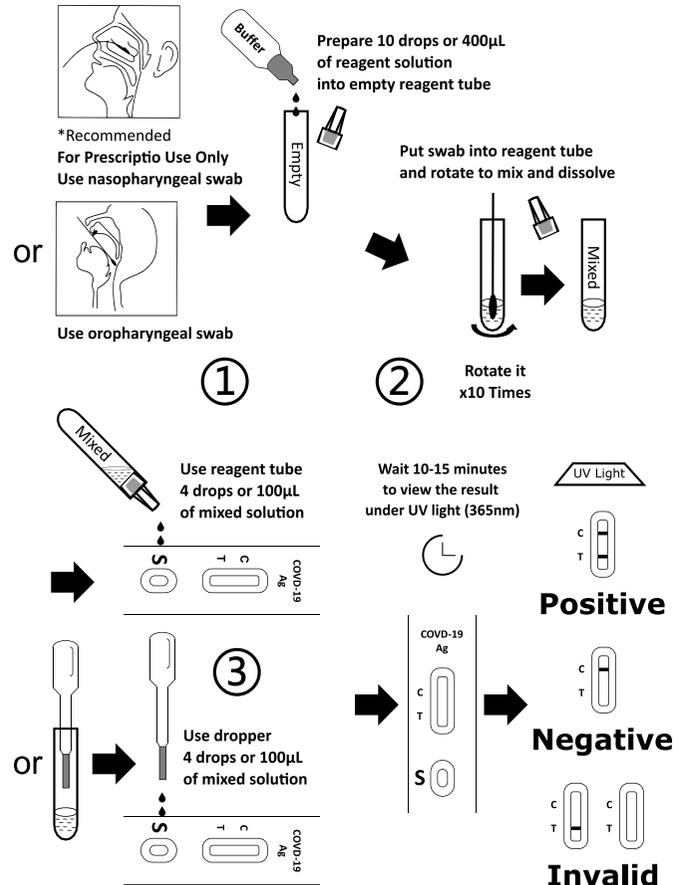
- The applicable sample types of this test reagent: upper respiratory tract specimens (including pharyngeal swabs, nasal swabs, nasopharyngeal extracts); lower respiratory tract specimens (including respiratory tract extracts, bronchial lavage fluid, alveolar lavage Fluid and lung tissue biopsy specimens, deep cough sputum, saliva\*); tissue culture and other

samples. **THE NASOPHARYNGEAL SWABBING IS RECOMMENDED, if use other specimens, sensitivity would be lower.**

- For non-Lab settings use please follow the guide in <http://www.reopentest.com/guide> or scan the QR code below:
- After the sample is collected, the test must be completed on the same day. Otherwise, save according to the following scheme: Store at 2-8° C for no more than 24 hours; Store at -20° C or less than 3 months; Store at -70° C for a long time, but avoid repeated freeze-thaw cycles.



If you are testing in Non-Lab settings, please scan the QR code to follow or report.



### TEST PROCEDURE

#### Specimen extraction

- Drop 10 drops or 400 µL of reagent solution into the reagent tube to prepare. (\*or use 400µL individual buffer pack)
- Put the swab into the prepared reagent tube, and rotate it about 10 times to make the sample dissolve in the solution as much as possible.

#### Detection operations

- Before testing, the unopened reagents should be placed at room temperature to make the temperature of the reagents reach equilibrium.
- Tear the aluminum foil bag along the incision and take the reagent kit

flat on a clean table. Directly drop 4 drops (approximately 100 µL) of the mixed solution into the sample well and start timing.

- Observe the results **under the (365nm) UV light** showed within 10-20 minutes, and the results shown after 30 minutes have no clinical significance.

### INTERPRETATION OF RESULTS

Positive (+): Two red lines appear. One is in the test area (T) and the other is in the quality control area (C).

Negative (-): Only a red line appears in the quality control area (C), and no line appears in the test area (T).

Invalid: No red line displays in the quality control area (C). This indicates that the incorrect operation or the test cassette has deteriorated or damaged.

### LIMITATIONS

The reOpenTest COVID-19 Antigen Rapid Test is designed for the primary test of COVID-19 Antigen and only provided for use by clinical laboratories or to healthcare workers for point-of-care testing, and not for at home testing

### PERFORMANCE CHARACTERISTICS

#### Analytical sensitivity/cross-reactivity

- Detection limit (LoD):  $2.87 \times 10^3$  TCID<sub>50</sub>/mL (heat-inactivated culture fluid).
- Cross-reactivity: There was cross-reactivity of SARS-CoV-1. However, there were no cross-reactivities of MERS-coronavirus, Human coronavirus (NL63), Human coronavirus (229E), Human coronavirus (OC43), Human Adenovirus type 1, Human Adenovirus type 3, Human Adenovirus type 8, Human Adenovirus type 18, Human Adenovirus type 23, Human Adenovirus type 7, Human Adenovirus type 5, Human Adenovirus type 11, Human Parainfluenza virus type 1, Human Parainfluenza virus type 2, Human Parainfluenza virus type 3, Human Parainfluenza virus type 4, Human Rhinovirus type 1, Human Rhinovirus type 14, Human Rhinovirus type 42, Human Metapneumovirus, Respiratory syncytial virus-A, Respiratory syncytial virus-B.

#### Interference

- Not interfered for Whole blood, Mouth wash, Phenylephrine, Acetylsalicylic acid, Beclomethasone, Benzocaine, Flunisolide, Guaiacol glyceryl ether, Menthol, Oxymetazoline, Tobramycin, Zanamivir, Oseltamivir phosphate, mucous.

#### Clinical evaluation

- For the evaluation of diagnostic performance, COVID-19 positive samples from 30 individuals and COVID-19 negative samples from 100 individuals were introduced in this study.

Method	PCR		Total Results	
	Results	Positive		Negative
reOpenTest	Positive	27	2	29
	Negative	3	98	101
<b>Total Result</b>		<b>30</b>	<b>100</b>	<b>130</b>

Sensitivity = 90.0% (95% CI = 73.47% to 97.89%)

Specificity = 98.0% (95% CI = 92.96% to 99.76%)

### REFERENCE

- Templeton, K.E., Scheltinga, S.A., et al. (2004). Rapid and sensitive method using multiplex real-time PCR for diagnosis of infections by influenza A and influenza B viruses, respiratory syncytial virus, and parainfluenza viruses 1, 2, 3 and 4 [J]. Journal of clinical microbiology 42(4): 1564-1569.
- Smith, A.B., Mock, V., et al. (2003). Rapid detection of influenza A and B viruses in clinical specimens by Light Cycler real time RT-PCR [J]. Journal of Clinical Virology 28(1): 51-58.

# reOpenTest

CAT NO. COVG200

### ORDERING

1. Contact reOpenTest's distributors or
2. Visit reOpenTest website: <http://www.reopentest.com>
3. E-mail: [sales@reopentest.com](mailto:sales@reopentest.com)

### CUSTOMER SERVICE

Contact your local representative

or find country-specific contact information with

E-mail: [service@reopentest.com](mailto:service@reopentest.com)



Zhejiang Anji Saianfu Biotech Co., Ltd.  
Add: 2nd Floor, No 3 Factory, No 489 WenYun Road, TangPu Industrial Park, Dipu Subdistrict, Anji county, HuZhou City, ZheJiang Province, China. Tel: +8657187763175



Lotus NL B.V.  
Add: Koningin Julianaplein 10, 1e Verd, 2595AA, The Hague, Netherlands. Tel: +31644168999

### ISO 15223 Symbols



This product fulfils the requirements of the Directive 98/79/EC on in vitro diagnostic medical device



Read instructions for use



Use by



Do not re-use



Do not use if package is damaged



Temperature limit



Keep away from sunlight



Contains sufficient for <n> tests



Authorized Representative in the European Community / European Union



Batch code



In vitro diagnostic medical



Manufacturer



Date of manufacture



Caution