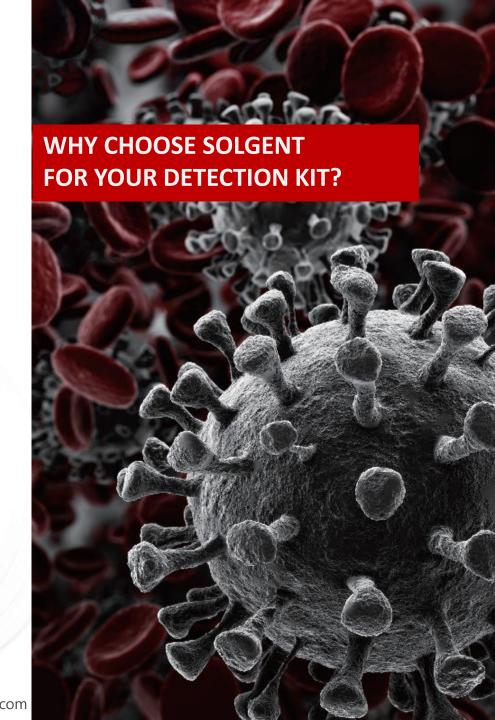


SolGent *DiaPlexQ*™ Novel Coronavirus (2019-nCoV)Detection Kit

Real-Time One-Step RT-PCR based assay system for detection of SARS-CoV-2



25-May-2020 www.SolGent.com

PANDEMIC: GLOBAL STATUS OF COVID-19 DETECTION KITS



1. Insufficient supply due to few numbers of production countries

- · Only about 10 countries manufacture detection kits worldwide
- Most countries depend on import

2. Global supply shortage of detection kits

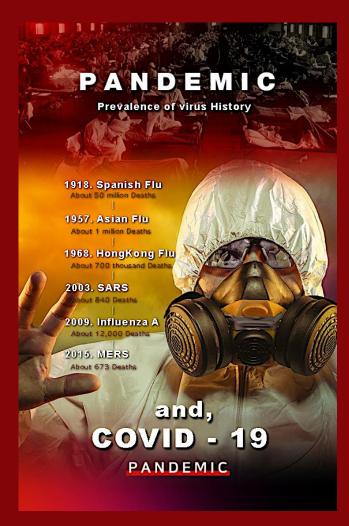
- · Tests for symptoms are challenging due to lack of supply
- Shortcomings of diagnosis and quarantine measures
- · Implementing detection kits ration: priority use for high-risk group

3. US CDC's detection kits show faulty results

 US CDC reputation for 74 years of history plunged. "even plain water tested positive to COVID-19"

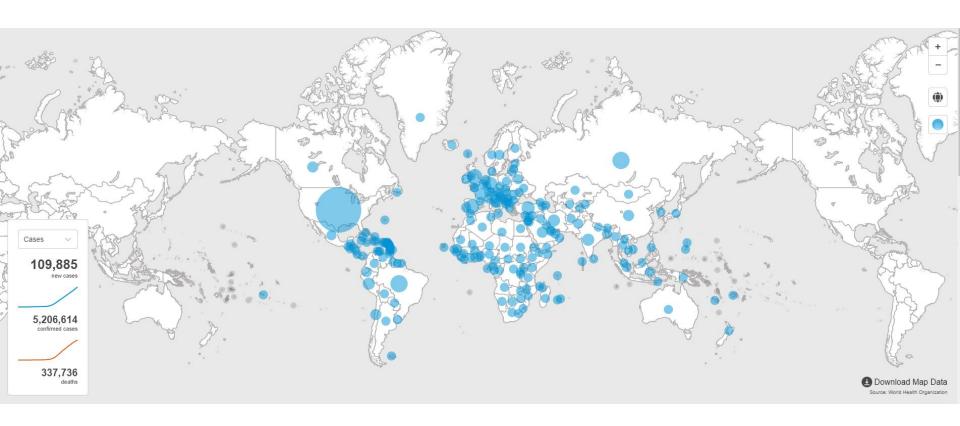
4. Chinese detection kits, 'piles of faulty products'

- Over 50% of detection kit manufacturers worldwide is Chinese company
- Severely inaccurate results from contaminated reagents caused by poor management and production
- Chinese detection kits rejected overseas including Czech, Spain, Turkey,
 Philippines, UK, USA and others
- Czech: 200,000 of faulty detection kits
- Slovakia: 1.2 mil of faulty detection kits
- Spain: Only 30% of accuracy showed by Chinese imported kits
- Turkey: Only 35% of accuracy showed by Chinese imported kits
- Italy: 75% of Chinese relief goods were defective
- Netherlands: withdraw 600,000 of Chinese masks



WHO Coronavirus Disease (COVID-19) Dashboard





Globally, as of 7:07pm CEST, 24 May 2020, there have been 5,206,614 confirmed cases of COVID-19, including 337,736 deaths, reported to WHO.

Supply of "SolGent COVID-19 Test Kit" is **urgent** worldwide

Ref: https://covid19.who.int/

DiaPlexQ™ Novel Coronavirus (2019-nCoV) Detection Kit

DiaPlexQ™ Novel Coronavirus (2019-nCoV) Detection Kit



1. Features

- Multiplex OneStep qRT-PCR
- Hot Start PCR system by using optimized Hot Start polymerase
- · Commercial Real-time PCR Instrument available
- High specificity: simultaneous detection of ORF1a and N gene.

2. Detection Targets

- Simultaneous Detection of ORF1a / N gene
- CDC 2019-Novel Coronavirus (2019-nCoV) Real-time qRT-PCR Panel Primers and Probes High specific targets were selected based on the Chinese CDC and US CDC.

1. KIT HS Code: 3822.00.10

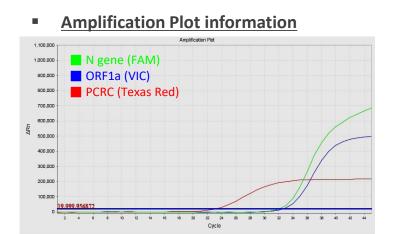
2. Kit Specification: Kit Box (100test) Size: 95 * 55 * 60mm

3. kit require special storage: Required refrigeration (-25 ~ -15 °C)

4. Expiration Length: Validity 1 year

5. Time to extract results: 1 hour 45 minutes

<u>DiaPlexQ™ Novel Coronavirus (2019-nCoV) Detection Kit</u>

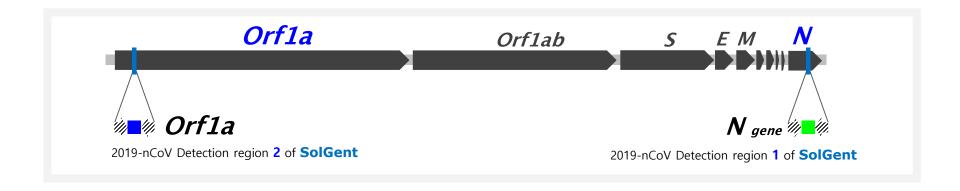


FAM JOE CAL RED 610

Fluorescence information

Target	5` Fluorophore	3` Quencher
N gene	FAM	ВНQ1
ORF1a	VIC / JOE*	BHQ1
PCR control	Texas Red/ Cal Fluor Red 610*	внQ2

^{*}ABI 7500 / 7500 Fast: JOE, Texas Red | Bio Rad CFX96™: VIC, Cal Fluor Red 610



DiaPlexQ™ Novel Coronavirus (2019-nCoV) Detection Kit

DiaPlexQ™ Novel Coronavirus (2019-nCoV) Detection Kit

Interpretation of Results

Ct Value			Interpretation
N Gene	ORF1a	PCRC	
≤ 40	Any	Any	Positive
Any	≤ 40	Any	Positive
≤ 40	≤ 40	Any	Positive
> 40	None	Any	Inconclusive ¹
None	> 40	Any	Inconclusive ¹
> 40	> 40	Any	Inconclusive ¹
None	None	≤ 26	Negative
None	None	> 26 or None	Invalid ²

Result Interpretation for Patient Samples

- 1 Repeat RT-PCR
- 2 Repeat extraction and RT-PCR

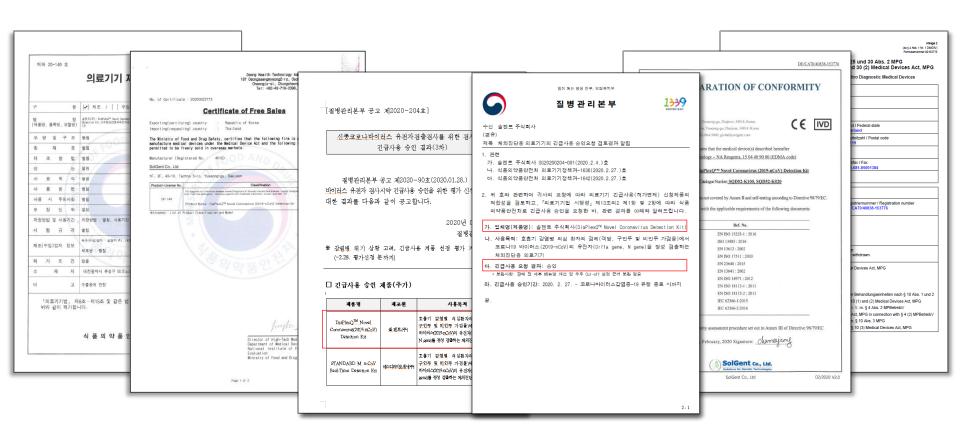
Note:

- •Even if the target is detected (Ct ≤40) and the PCRC is not detected, the result is still valid because:
 - 1.If the sample is high concentration, PCRC may not amplify.
 - 2.If PCR inhibitors are present, the PCRC may not amplify.
- •When the Non-Template Control test result is positive, all samples must be retested.

X PCRC (PCR Control)

Erroneous results may occur due to a variety of factors - for example, PCR mixture mix error, PCR condition error, PCR equipment use error etc. The PCR control is intended to monitor for the success of the PCR process. If the PCRC fails unexpectedly all experimental procedures and steps should be checked.

Certifications of DiaPlexQ™ Novel Corona Detection kit



CFS of KFDA

Approved at third by KFDA-EUA (Issued on 27th Feb.2020)

CE-IVD (Issued on 27th Feb.2020)

U. S FDA- Emergency Use Authorizations (EUA) Approval



Coronavirus

Disease 2019

(COVID-19)



U.S FDA EUA (Issued on 21th May. 2020)



May 21 2020

Do-Su Seok CEO of SolGent Co., Ltd. 3F, 32, Techno 6-ro, Yuseong-gu Daejeon, 34014, South Korea

DiaPlexQ Novel Coronavirus (2019-nCoV) Detection Kit Device:

Company SolGent Co., Ltd.

Indication Qualitative detection of nucleic acid from SARS-CoV-2 in nasopharyngeal swabs, oropharyngeal (throat) swabs, anterior

nasal swabs, mid-turbinate nasal swabs, nasal aspirates, nasal washes, bronchoalveolar lavage (BAL) fluid and sputum from individuals suspected of COVID-19 by their healthcare provider. Emergency use of this test is limited to authorized laboratories.

Authorized Laboratories: Laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), 42 U.S.C. §263a, to perform high

complexity tests

Dear Do-Su Seok

This letter is in response to your 1 request that the Food and Drug Administration (FDA) issue an Emergency Use Authorization (EUA) for emergency use of your product,2 pursuant to Section 564 of the Federal Food, Drug, and Cosmetic Act (the Act) (21 U.S.C. §360bbb-3).

On February 4, 2020, pursuant to Section 564(b)(1)(C) of the Act, the Secretary of the Department of Health and Human Services (HHS) determined that there is a public health emergency that has a significant potential to affect national security or the health and security of United States citizens living abroad, and that involves the virus that causes COVID-19. Pursuant to Section 564 of the Act, and on the basis of such determination, the Secretary of HHS then declared that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection and/or diagnosis of the virus that causes COVID-19 subject to the terms of any authorization issued under Section 564(a) of the Act.3

3rd Company approved by S. Korea & U.S FDA-EUA

FACT SHEET FOR HEALTHCARE PROVIDERS

DiaPlexQ COVID-19 Detection Kit - SolGent Co., Ltd. May 21, 2020 (COVID-19)

Coronavirus Disease 2019

potential risks and benefits of the emergency use of the DiaPlexQ Novel Coronavirus (2019-nCoV) Detection Kit.

The DiaPlexQ COVID-19 Detection Kit is authorized for use on respiratory specimens collected from individuals suspected of COVID-19 by their healthcare provider.

All nationts whose enecimens are tested with this assay will receive the Fact Sheet for Patients: DiaPlexQ COVID-19 Detection Kit.

What are the symptoms of COVID-19? What are the symptoms of COVID-19? Many patients with confirmed COVID-19 have developed fever and/or symptoms of acute respiratory illness (e.g., cough, difficulty breathing). The current information available to characterize the spectrum of clinical illness. avariable to characteze the spectrum of clinical limites associated with COVID-19 suggests that symptoms include cough, shortness of breath or dyspnea, fever, chillis, myalgias, headache, sore threat or new loss of taste or smell. Based on what is known about the virus that causes COVID-19, signs and symptoms may appear any time from 2 to 14 days after exposure to the virus. Based on preliminary data, the median incubation period is approximately 5 days, but may range 2-14

Public health officials have identified cases of COVID-19 infection throughout the world, including the United States, which may pose risks for public health. Please check the CDC webpage for the most up to date

What do I need to know about COVID-19 testing? Current information on COVID-19 for healthcare providers is available at CDC's webpage, Information for Healthcare Professionals (see links provided in "Where can I go for updates and more information" section).

The DiaPlexQ COVID-19 Detection Kit can be used to test nasopharyngeal swabs, oropharyngeal (throat) swabs, anterior nasal swabs, mid-turbinate nasal swahs nasal aspirates nasal washes bronchoalveolar lavage (BAL) fluid and sputum

This test is to be performed only using respiratory specimens collected from indiv suspected of COVID-19 by their healthcare

- be ordered for the detection of COVID-19 from individuals suspected of COVID-19 by their healthcare provider
- The DiaPlayO COVID-19 Detection Kit test is only authorized for use in laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), 42 U.S.C. §263a, to perform high

Specimens should be collected with appropriate infection control precautions. Current guidance for COVID-19 infection control precautions are available at the CDC's

Use appropriate personal protective equipment when collecting and handling specimens from individuals suspected of having COVID-19 as outlined in the CDC Interim Laboratory Biosafety Guidelines for Handling and imens Associated with Coronavirus Processing Specimens Associated with Coronavirus Disease 2019 (COVID-19). For additional information, refer to CDC Interim Guidelines for Collecting, Handlin, and Testing Clinical Specimens from Persons Under Investigation (PUIs) for Coronavirus Disease 2019 (COVID-19) (see links provided in "Where can I go for updates and more information" section).

What does it mean if the specimen tests positive for the virus that causes COVID-19?
A positive test result for COVID-19 indicates that RNA from SARS-CoV-2 was detected, and the patient is infected with the virus and presumed to be contagious. Laboratory test results should always be considered in the context of clinical observations and epidemiological data in making a final diagnosis and patient management decisions. Patier follow current CDC guidelines cisions. Patient management should

Report Adverse events, including problems with test performance or results, to MedWatch by submitting the online FDA Form 3500 (https://www.accessdata.fda.gov/iscripts/medwatch/index.clm?action=reporting.home) or by calling 1-800-FDA-1088

FACT SHEET FOR PATIENTS

DiaPlexQ COVID-19 Detection Kit - SolGent Co., Ltd. May 21, 2020

You are being given this Fact Sheet because your

sample(s) was tested for the Coronavirus Disease 2019 (COVID-19) using the DiaPlexQ COVID-19 Detection This Fact Sheet contains information to help you

understand the risks and benefits of using this test for the diagnosis of COVID-19. After reading this Fact Sheet, if you have questions or would like to discuss the information provided, please talk to your healthcare provider.

. For the most up to date information on COVID-19 please visit the CDC Coronavirus Disease 2019 (COVID-19) webpage:

https://www.cdc.gov/COVID19

What is COVID-19?

COVID-19 is caused by the SARS-CoV-2 virus. The virus can cause mild to severe respiratory illness and has spread globally, including the United States. The current information available to characterize the spectrum of clinical illness associated with COVID-19 suggests that symptoms include cough, shortness of breath or difficulty breathing, fever, chills, muscle pain. headache, sore throat or new loss of taste or smell.

What is the DiaPlexQ COVID-19 Detection Kit? The test is designed to detect the virus that causes COVID-19 in respiratory specimens, for example nasal Why was my sample tested?

You were tested because your healthcare provider believes you may have been exposed to the virus that causes COVID-19 based on your signs and symptoms (e.g., fever, cough, difficulty breathing), and/or because

- You live in or have recently traveled to a place where transmission of COVID-19 is known to occur, and/or
- You have been in close contact with an individual suspected of or confirmed to have COVID-19.

Testing of the samples will help find out if you may have

What are the known and potential risks and benefits of the test?

Potential risks include:

- Possible discomfort or other complications that can happen during sample collection.
- Possible incorrect test result (see below for more

- . The results, along with other information, can help your healthcare provider make informed recommendations about your care.
- The results of this test may help limit the spread of COVID-19 to your family and others in your

What does it mean if I have a positive test result?

If you have a positive test result, it is very likely that you have COVID-19. Therefore, it is also likely that you may be placed in isolation to avoid spreading the virus to others. There is a very small chance that this test can

Letter of Authorization

HCP Fact Sheet

Fact Sheet for patients

Ref: https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policyframework/emergency-use-authorization#covidinvitrodev

¹ For ease of reference, this letter will use the term "you" and related terms to refer to SolGent Co., Ltd.

² For ease of reference, this letter will use the term "your product" to refer to the DiaPlexQ Novel Coronavirus

⁽²⁰¹⁹⁻nCoV) Detection Kit used for the indication identified above.

³ U.S. Department of Health and Human Services, Determination of a Public Health Emergency and Declaration that Circumstances Exist Justifying Authorizations Pursuant to Section 564(b) of the Federal Food, Drug, and

License Approval status by country



European , CANADA, Thailand, Philippines



SolGent co., Ltd.

SolGent Co., Ltd.

02/2020 V2.0

F-OP-21-2(2)

FDA Canada (Issued on 5th Ap<u>r. 2020)</u>

FDA Thailand (Issued on 27th Mar. 2020) FDA Philippines (Issued on 19th Mar. 2020)



FDA Advisory No. 2020-409 || List of Approved COVID-19 Test Kits for Commercial Use As the Philippine Government continues to exhaust all efforts to respond to the current COVID-19 pandemic, the Food and Drug Administration (FDA) - Philippines hereby provides an initial list of approved COVID-19 Test Kits for commercial use. The kits in the list below have complied with the requirements as per FDA Memorandum No. 2020-006 entitled, "Issuance of Special Certification for Imported Test Kits of COVID-19." These are PCR based kits used in laboratories, and not point-of-care kits. PRODUCTNAME Nuclaic acid detection kit for 2019 neov Shanghai GenoeDx Biotech Co., LTD-Shanghai, Novel coronavirus 2019-noov nucleic acid detection kit. Beijing Applied Biological Technologies Co., Ltd. (fluorescence PCR Changping District 102206 Beijing PR AllplexTM 2019-nCdV Assay Seegene Inc. -Seoul, Republic of Korea SOLGENT DiaPlaxQ^{rs} Noval Coronavirus (2019-nCoV) Solgent Co., Ltd-3F, 32, Techno 6-ro, Yuseong-gu, Daejeon, South Korea This list shall be regularly updated. For reference please click the link. https://drive.google.com/poer? d=1Dk8K/bCzk8e92HvdWDRve8K-ATo7e8ez To report any sale or distribution of COVID-19 test kits not included in the list, email us at ereport@fda.gov.ph. March 19, 2020 / In Uncatagorized / By Administrator / Comments Off

In Progress

USA (FDA EUA), Brazil (ANVISA), Australia (TGA), Malaysia, Indonesia etc.

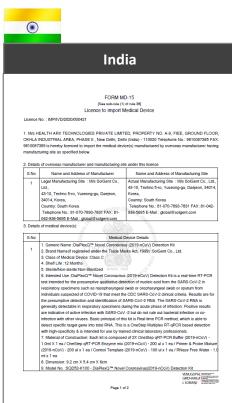
Registration status by Country



Malaysia, India, Mexico, Taiwan







Import registered (CDSCO)

Mexico y Promoción de la Salud cción General de Epidemiología Listado de pruebas moleculares útiles para el diagnóstico de SARS-CoV-2 durante la contingencia de COVID-19 en México Nombre Prueba REFERENCIA REALIZADA EN EL INDRE Y EN LA RED NACIONAL DE ABORATORIOS DE SALUD PÚBLIC. SQD52-K100 SolGent Co., Ltd. (2019-nCoV) Detection Kit DIDAR GENE SADS-CoV-2 DIJO DC6815DUO D-Biopharm AG COVID-19 Real Time PCR Kit. HBRT-COVID-19 09N77-080 "Abbott Real Time SARS-CoV-2", Abbott Molecular Inc. itegrated DNA Technologies, Inc CDC 2019-Novel Coronavirus (2019-nCoV) (CDC) A6121 Promega Corporation Accupower® SARS-CoV-2 Real Time SCV-2122 Bioneer Corporation SARS-CoV-2, RealTime PCR Kit RTPCR001 Vircell, S.L. Aliniex™ 2019-nCoV Assav DD10244V Seegene INC OSANG HEALTHCARE LTD Kit para Coronavirus 2019 Logix Smart™ (COVID-19) LightMix® Modular SarbecoV E-gene COVID-K-00 CO-DIAGNOSTICS, INC EAV, SARS-CoV (COVID19) N-gene y SARS-CoV-2 (COVID-19) RdRP. TIR MOLBIOLILLO

Quality approval (COFFRIS)

Import registered (FDA)

Taiwan

衛生福利部 函

主旨:有關貴公司因嚴重特殊傳染性肺炎防疫需求,申請輸入

一、依據本部食品藥物管理署案陳貴公司109年3月12日業(立)

二、贵公司因應緊急公共衛生情事之需要,依據藥事法第48-

2條及特定藥物專案核准製造及輸入辦法第4條規定,提

出專案輸入醫療器材,本部同意專案核准分批輸入產

品,答案文件编號:DHS00000902301, 輸入期間自發文日

起至中央流行疫情指揮中心解散日止。產品資訊如下:

(一)品名:DiaPlexQ™新型冠狀病毒2019n-CoV核酸檢測試

劑盒(型號:SQD52-K100、規格:100人份/盒),數量:10

盒(KIT),製造廠名:Solgent Co.,Ltd,製造廠址:

1F,2F,43-10,Techno 5-ro,Yuseong-gu,Daejeon,34014,

劑盒(型號:SQD52-K020、規格:20人份/盒),數量:100

盒(KIT),製造廠名:Solgent Co.,Ltd,製造廠址: Z-頁(共二頁)

(二)品名:DiaPlexQTM新型冠狀病毒2019n-CoV核酸檢測試

急公共衛生使用一案,復如說明段,請查照。

DiaPlexQTM新型冠狀病毒2019n-CoV核酸檢測試劑盒供緊

聯絡人及電話:何先生

機關地址:11558 台北市南港區总孝東路六段488號

正本

新平市新兹医五十数07益9被9律

密等及解密條件或保密期限:

說.明

受文者:立場國際有限公司

發文日期:中華民國109年5月5日 發文字號:衛授食字第1090007948號

字第20200302號函辦理。

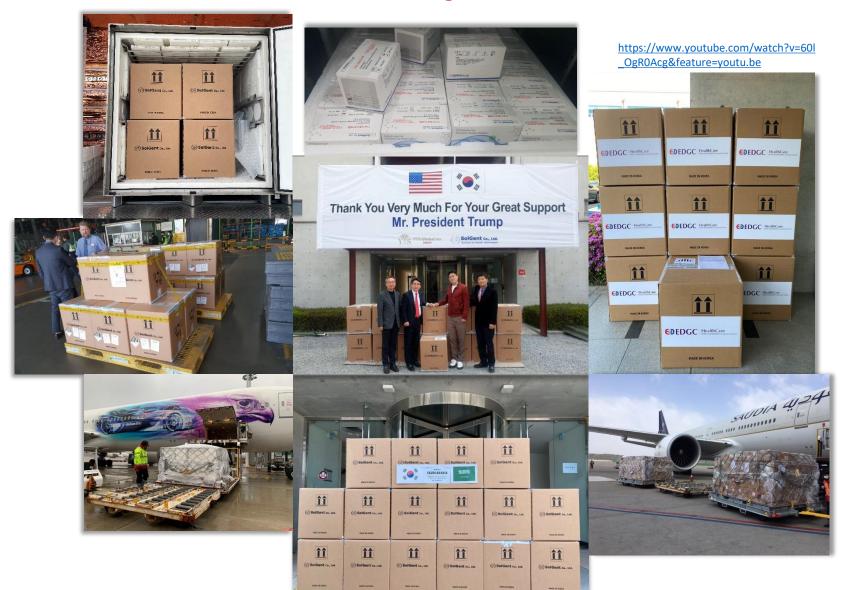
Korea,產地:韓國(Korea)。

In Progress

UK, Vietnam, Peru, Singapore, Russia, Indonesia, Thai etc.



Supply to 50 countries other than the Poland, USA(Colorado), Saudi Arabia, Belgium, Estonia







The United States is turning to South Korea — a country with an aggressive testing regime that President Donald Trump previously downplayed — to bring approximately 750,000 more coronavirus tests to the US, according to the Federal Emergency Management Agency.

FEMA, an agency within the US Department of Homeland Security, awarded contracts to manufacturers in South Korea last week to provide approximately 750,000 tests, according to a FEMA spokesperson and federal records.

Over the weekend, the first shipment of 150,000 tests were delivered to the US by SolGent. The next shipment of 600,000 tests will arrive by April 15. They are being provided by two South Korea-based companies, SD Biosensor and Osang Healthcare.

The intent, the FEMA spokesperson said, is to move the tests to a cold storage facility in Louisville, Kentucky, for distribution. Urgent needs will be given priority, according to a FEMA advisory obtained by CNN.

The Trump administration has waffled on its praise of South Korea's testing canabilities







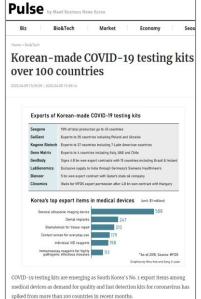


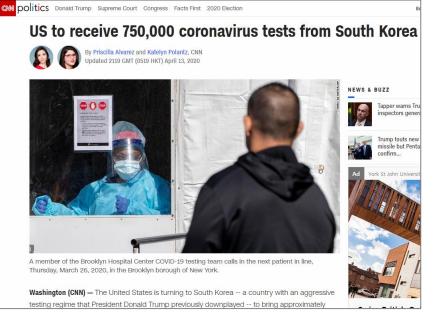
"A plane carrying 100,000 PCR tests produced by SolGent to detect COVID-19 has arrived from Seoul (the Republic of Korea). Caremille has conducted the delivery for the needs of the health care system of Ukraine." the statement reads.

It notes that after passing the customs procedures on registration the test kits will be delivered to the infectious laboratories of all regions of the country, which have proper storage conditions.

According to the statement, the SolGent test kit contains all the necessary components for a polymerase chain reaction. Therefore, when used, there is no need for additional reagents. Testing lasts from 105 to 120 minutes.

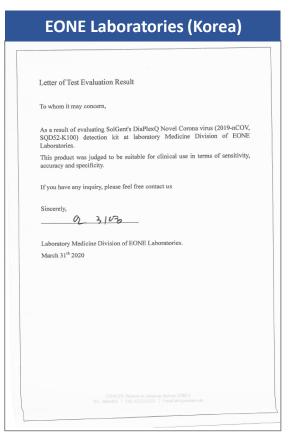
The cargo was shipped to Ukraine on the initiative of the Office of the President. The delivery was coordinated by Ukraine's Ambassador to South Korea Oleksandr Horin.

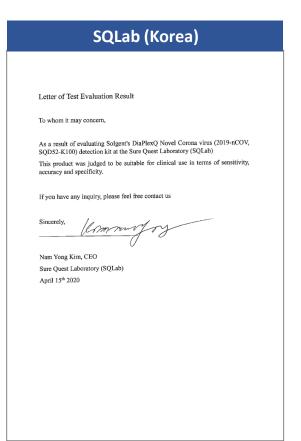




Letter from clients as evidence for the performance

SYNLAB (Estonia) SYNLAB To: United Nations Registration Office 11.05.2020 Reference Letter Herewith we confirm that SYNLAB Estonia has evaluated and thereafter been using DiaPlex TM Novel Corona virus (2019-nCOV) detection kit from Solgent in clinical practice for detection of SARS-CoV-2 in patient samples. Use of Solgent's DiaPlex TM Novel Corona virus (2019 nCov) detection kit requires compliance with the manufacturer's instructions, suitable facilities and equipment as well as trained and competent personnel. By making the above statement SYNLAB does assume any liability related to Solgent's DiaPlex TM Novel Corona virus (2019 nCov) detection kit. Sincerely Rainar Aamisepp CEO, SYNLAB Northern Europe and CEMEA SYNLAB Eesti OU - Reg nr. 11107913 - Veerenni 53a, 13113 Tallinn Tet: +372 640 8210 - Faks: +372 640 8218 - E-post: synlab@synlab.ee - www.synlab.ee





THANK YOU!

www.solgent.com

SolGent co., Ltd. (Research Reagents & Molecular diagnostic Expert) Address: 43-10 Techno 5-ro, Yuseong-Gu, Daejeon, Republic of Korea Tel. +82-(0)70-7893-7831

Fax. +82-(0)/0-/893-/831

E-Mail: global@solgent.com