One Step RT-qPCR kit for SARS-CoV-2 (COVID-19) Detections

Intact Genomics®

Catalog #	4223	4225
Package Size	100 Reactions	500 Reactions

Description:

Intact Genomics (ig®) COVID-19 or SARS-CoV-2 Coronavirus detection kit is used for in vitro detection of SARS-CoV-2 using Real-Time quantitative PCR (RT-qPCR). SARS-CoV-2 is the virus that causes coronavirus disease 2019 (COVID-19), the respiratory illness responsible for the COVID-19 pandemic.. Coronavirus detection kit allows efficient cDNA synthesis and qPCR in a single tube. This probe based one step RT-qPCR 2x master mix contains Reverse Transcriptase, Taq DNA polymerase, RNase inhibitor, MgCl2, dNTPs, stabilizers and low ROX reference dye with proprietary buffer providing improved RT-qPCR efficiency, wider dynamic range, superior sensitivity and specificity. In addition, the kit contains CDC recommended primers/ probe sets. This kit can be used to detect SARS-CoV-2 in respiratory specimens such as sputum, nasopharyngeal, oropharyngeal aspirates, washes or swabs and tracheal aspirates.

Intact Genomics Reverse Transcriptase is a recombinant MMLV reverse transcriptase with reduced RNase H activity, increased thermostability and can produce cDNA from small amount of total RNA for real-time RT-qPCR analysis and other applications. Taq DNA Polymerase is a thermostable DNA polymerase that possesses a 5′→3′ polymerase (1, 2) and a 5′→3′ exonuclease activity (3, 4). The amplification step features a high quality Taq DNA Polymerase which offers robust, reliable and better amplification.

Product Includes:

- RT-qPCR 2x Master Mix
- CDC recommended primer/probe sets
- COVID-19 positive control (PTC)

Protocol:

1. Place kit components and RNA samples on ice.
2. Mix and then centrifuge briefly to collect contents at the bottom of the tube.
3. Prepare a master mix for each reaction and control plus 10% extra to allow for pipetting error, according to the following table:

PCR Reaction Set Up:	
RNA template	1.0-5.0 µl
Primers/probe mix	1.5 µl
One step RT–qPCR 2x Master Mix	10 µl
H_2O up to	20.0 µl

4. Mix the reaction mixture thoroughly.
5. Program the thermal cycler according to the manufacturer's instructions.
6. A typical PCR cycling program is outlined in the following table:

PCR Cycling Conditions			
Steps	**Temp.**	**Time**	**Cycles**
First strand cDNA synthesis	42ºC	15-30 min	1
Initial denaturation/ RT inactivation	95ºC	3 min	1
Denaturation	95ºC	10 sec	40
Annealing/ Extension*	55ºC	30 sec	

7. Place the PCR tubes in the thermal cycler and start the cycling program.
8. Analyze the data according to manufacturer protocol.

**For 3 step cycling protocols, anneal at optimal annealing temperature for 30 sec followed by the minimum time required for data acquisition at 72 ºC according to instrument guidelines.*

Quality Control:

Functionally tested in RT-qPCR based on CDC recommended probe for activity, processivity, efficiency and sensitivity.

Safety Statement:

This kit is intended for **Research Use Only (RUO)**. It has not been tested and validated by any public health agency.

References:

1. Chien, A., Edgar, D. B. and Trela, J. M. (1976). *J. Bact.* 127, 1550-1557.
2. Lawyer, F. C. et al. (1993). *PCR Methods and Appl.* 2, 275- 287.
3. Longley, M. J., Bennett, S. E. and Mosbaugh D. W. (1990). *Nucleic Acids Res.*18, 7317-7322.
4. Lyamichev, V., Brow, M. A. and Dahlberg, J. E. (1993). *Science*. 260, 778-783.

Related Products

- FastAmp® Viral and Cell Solution for Covid-19 Testing (Cat.# 4631)
- igScript™ Probe-Based qPCR 2x master mix (Cat.# 4233, 4235, 4237)

Technical Support

Intact Genomics is committed to supporting the worldwide scientific research community by supplying the highest quality reagents. Each new lot of our products is tested to ensure they meet the quality standards and specifications designated for the product. Please follow the instructions carefully and contact us if additional assistance is needed. We appreciate your business and your feedback regarding the performance of our products in your applications.