

ATOplex SARS-CoV-2 Full Length Genome Panel for Research

Accurate, fast, cost-efficient, sensitive and simple for SARS-CoV-2 detection and full length genome analysis

Highlight

Fast, Simple, Streamlined Workflow

- Three-step workflow converts viral RNA into sequencing-ready libraries in just 5 hours , all amplicons in one tube

Ultra-Sensitive Detection

- Analyze samples with as low as 10copies/ml viral loads;

Accurate Quantification

- The ability to accurately quantify viral load by artificial DNA

Ultra-Sensitive Detection

- It covers >99% of the viral genome and variants in challenging sample

Introduction

ATOplex SARS-CoV-2 Full Length Genome Panel is a two-step multiplex PCR-based targeted sequencing panel for rapid amplifying SARS-CoV-2 full length genome (Table 1). The whole process includes : (1) RT-PCR, (2) 1st PCR, (3) Purification, (4) 2nd PCR, (5) Purification.

Table 1 the Parameter of the ATOplex SARS-CoV-2 Full Length Genome Panel

Parameter	Specification
Product Name	ATOplex SARS-CoV-2 Full Length Genome Panel V1.0
Configuration	96 preps/kit
Sample Types	Throat swabs, BALF, saliva, urine, etc
Automatic Platform Compatibility	MGISP-100, MGISP-960
Application	surveillance, variation and evolution analysis of SARS-CoV-2
Region	SARS-CoV-2 Full length
Amplicons Size	159-199bp(average 189bp)
Amplicons	296 amplicons in one tube
cDNA Input	>10copies genome for full length, 10copies/ml for detection
Variant Types	SNP, InDel
Sample Type	Total nucleic acid from throat swab, BALF, etc
Total time	5.0 hours (sample to library)
Hands-on time	1 hour (sample to library)
Uniformity(0.1X)	95%
On Target Aligned Reads	≥95%
Sequence type	SE200, PE100 for full length genome , SE50 for detection
Total reads	5-10 Mreads

Performance

1 ng of Human gDNA and an artificial DNA with known copy number were added to 6 serial dilutions of a cultured isolate and subjected to direct mPCR-based MPS and RT-PCR (Figure 1).

According to the results (Table 2), mPCR-based MPS can detect samples with 10^{-6} gradient dilutions (about ~10copies/ml).

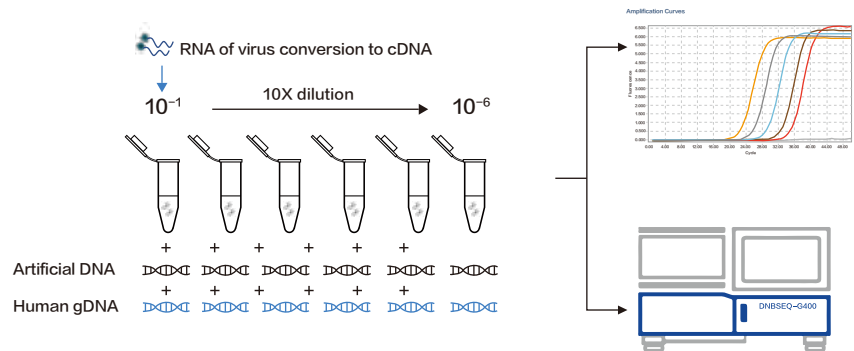


Figure 1. The overview of the study design

Table 2 Comparison of mPCR-based MPS and RT-PCR results

ID	Raw Reads	MPS			qPCR
		SARS-CoV-2 reads	SARS-CoV-2 depth	1XCoverage%	qPCR-Ct Value
Dilution 10^{-1}	3,841,506	3,413,916	36054.7	99.7	21.8
Dilution 10^{-2}	2,836,864	2,454,959	25698.0	99.8	25.5
Dilution 10^{-3}	4,640,806	3,178,230	33132.2	99.7	29.7
Dilution 10^{-4}	10,321,121	2,183,454	22796.5	99.7	32.8
Dilution 10^{-5}	10,132,009	312,440	3242.5	99.5	36
Dilution 10^{-6}	8,960,529	30,928	319.5	95.2	No CT

According to the results (Figure 2), Left, Basic performance statistics, >98% mapped rate (red), >97% targeted rate to three targeted regions (green), >92% 0.2X uniformity (yellow); Right, reproductivity of two repeat tests. x, y-axis are normalized depth of each amplicon in two separate experiments ($R^2=0.97$).

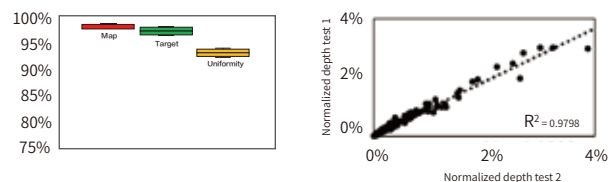


Figure 2. Performance of mPCR-based MPS

Ordering Information

Cat. No.	Product Name	Product Name
1000021178	ATOplex SARS-CoV-2 Full Length Genome Panel V1.0	96preps

Learn more

To learn more about MGI please visit: <https://www.mgitech.cn/>

To learn more about ATOplex platform please visit: <https://www.mgitech.cn/products/atoplex/>



www.rafer.es