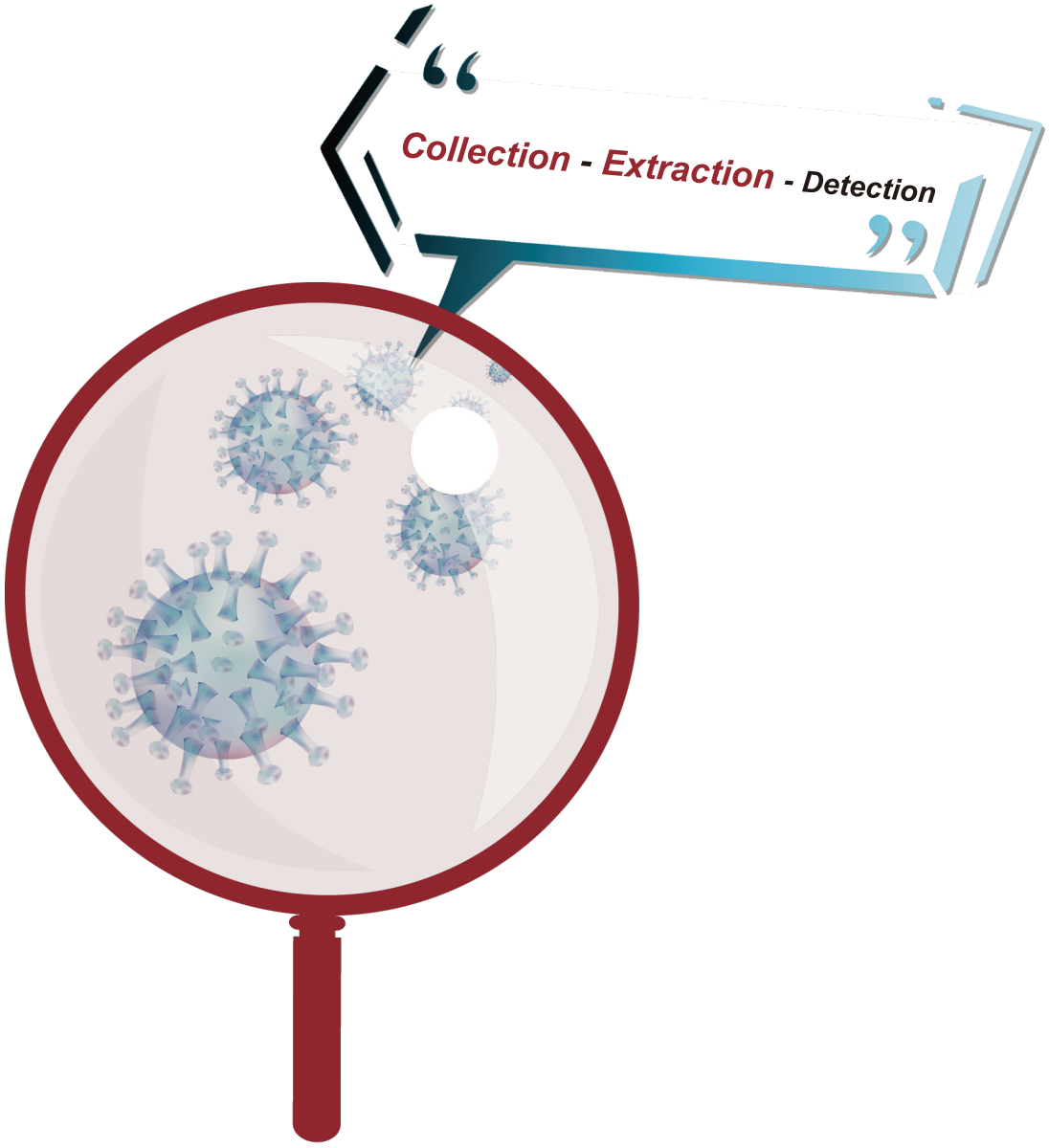
BEAVER



Viral Nucleic Acid Test
Sample Processing Solution

BEAVER Biomedical Engineering Co., Ltd.

Sample Collection and Storage

Sample Collection Kit

The Sample Collection Kit is designed for collection, transportation and short-time storage of virus specimen. Typically, samples are taken by a swab from Throat or Nasal. The stored samples can be used in subsequent molecular experiments such as DNA/RNA extraction, PCR testing or sequencing.

This product has been qualified as Class One of Medical instrument and registered in the ***United States FDA***. It also has ***European Union CE certificate.***

Sample Collection Kit (Cat. #43903)

Application Case

Using 2019-nCOV Pseudotyped Virus (1010cope/mL) (Zeesan Biotech, Cat. ZS-JL-NP-001), BeaverBeads™ Viral DNA/RNA Kit (Cat. #70406), and PrimeDirect™ Probe RT-qPCR Mix (Takara, #RR650A), 2019-nCOV N Gene Primer and Probe (GENEWIZ) and ABI-7500Fast (Applied Biosystems)

Table 1: Data of different viral samples placed for 5 days using storage tubes from different brands

Samplet Conc./ Ct	10^2	10^3	10^4	10^5
BEAVER (-20°C)	35.54	32.08	28.9	25.38
BEAVER (RT)	35.15	32.53	28.99	25.63
Competitor (-20°C)	35.22	32.57	28.35	25.96
Competitor (RT)	36.06	32.86	28.82	25.22

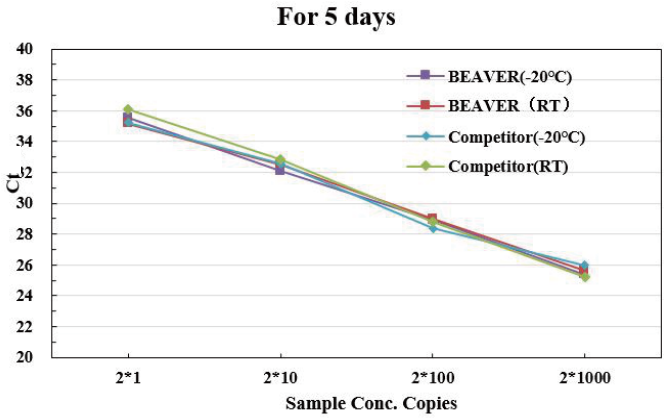


Figure 1: Data of different viral samples placed for 5 days using storage tubes from different brands

Viral RNA samples stored in the preservative did not degrade much at RT for 5 days compared with stored at -20C. Compared with competitors, BEAVER virus storage tubes show better results, especially in low copies samples (10^2-10^3 copies/mL) storage. Ct values by RT-qPCR increase by 0.3.

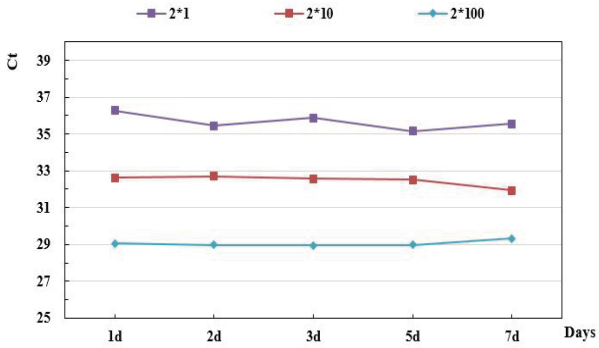


Figure 2: Change of Ct value of low copies (10^2-10^4 copies/mL) virus in storage tubes

After 7 days of storage, data of viral nucleic acid detected by RT-qPCR remain stable. The concentrations of viral samples did not change much.

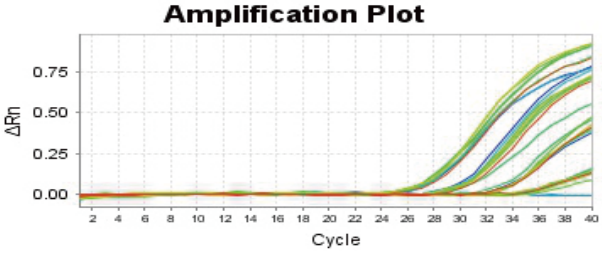


Figure 3: Curves of qPCR Test for 5 days at RT and -20C

Viral RNA samples stored in the preservative remained highly stable at RT for 5 days compared with stored at -20C. For the sensitivity analysis, viral sample concentration as low as 100 copies/mL and corresponding 2 copies tested using RT-qPCR can be detected.

Product List

Sample Collection Kit

Cat. No.
 # 43903

I: Sterile preservative with surfactant

II: Sterile preservative with guanidine salt

Sample Collection Kit (VTM)

Cat. No.
 # 43904

VTM preservative

Cell Free DNA Tube

Cat. No.
 # 43803

With preservative for cell free DNA

Saliva Collector

Cat. No.
 # 43805

Cat. No.
 # 43806

 # 43805: One-piece

 # 43806: Separate version

Swab Collection Kit

(A)

Cat. No.
 # 44001

(B)

Cat. No.
 # 44001

(A): Single / Double Dry Swab

(B): Nasopharyngeal swab / oropharyngeal swab

Sample Processing

BeaverBeads™ Viral DNA / RNA Kit

This product (#70406) is composed of superparamagnetic magnetic beads as microcarriers for nucleic acid separation and extraction when used with high-efficiency biological reagent. It is suitable for the extraction of viral DNA and RNA from fresh or frozen samples of plasma, serum, urine, secretion, virus concentrate, virus preservation fluid, cell culture supernatant, or acellular body fluids. The purified samples can be directly used for PCR detection, digestion and other nucleic acid detection tests. This product can be adapted to various models of nucleic acid extraction instruments and automatic extraction workstation. One single batch is able to complete the extraction process in 9 minutes. This product has been qualified as Class One of Medical instrument and has ***European Union CE certificate***.

High Yield

Automatable

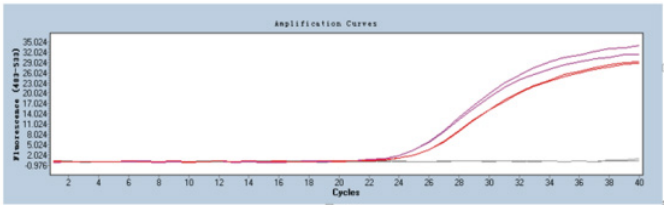
High Purity

Rapid Extraction within 9 min

Application Case

1. Viral DNA Extraction Performamce

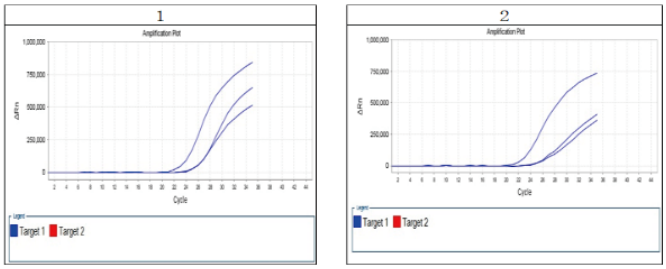
Sample	BEAVER	Competitor
HBV Serum	24.55	25.21



Test data show BeaverBeads™ Viral DNA/RNA Kit extracts DNA more efficiently than competitor's on HBV sample extraction since Ct value (obtained by RT-qPCR) of the sample extracted by BEAVER product is 0.6 less than that by competitor's.

2. Viral RNA Performance

HCV Serum Sample Viral Concentration	BEAVER (Ct)	Competitor (Ct)
300	24.08	24.08
1000	24.21	24.38
10000	21.52	21.00



Test data show BeaverBeads™ Viral DNA/RNA Kit extracts DNA as efficient as competitor on HBV sample extraction with close Ct value.

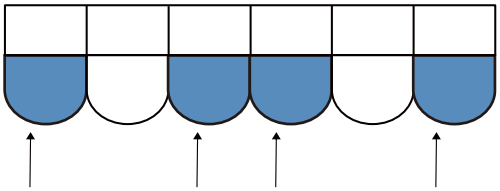
9min Rapid Viral Nucleic Acid Extraction

Leading level in the industry
Extraction in 4 holes can be completed within 9 min
Breakthrough in time and efficiency

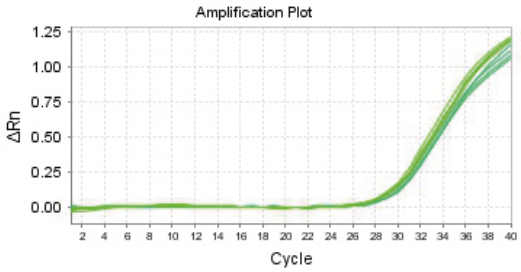
BeaverDevice™ Rosetta 32 automated extraction instrument with BeaverBeads™ Viral DNA/RNA Kit (prefilling) can extract samples within 9 min automatically

BeaverBeads™ Viral DNA/RNA Kit (prefilling)

BeaverDevice™ Rosetta 32



32-person Kit, Hole Placement Illustration



Samplet / Ct	Automatic Operation (9min)	Manual Operation (About 40min)
1	30.08	29.86
2	30.19	30.25
3	30.68	30.59
4	30.33	30.67

Specification

Cat. NO.	Product Name	Specification
70406 - 32FV	BeaverBeads™ Viral DNA/RNA Kit	32rxns，Deep Well Plates，V bottom
70406 - 32FU		32rxns，Deep Well Plates，U bottom
70406 - 48FV		48rxns，Deep Well Plates，V bottom
70406 - 48FU		48rxns，Deep Well Plates，U bottom
70406 - 96FV		96rxns，Deep Well Plates，V bottom
70406 - 100		Bottled

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