Product Profile

Ribospin™ vRD, Ribospin™ vRD II, Ribospin™ Pathogen TNA,
Exgene™ Viral DNA/RNA, GENTi™ Advanced Viral DNA/RNA

GeneAll® virus kits

GeneAll provides a variety of viral kits for rapid and efficient isolation of high-quality viral nucleic acids from a wide range of samples to streamline the detection of DNA and RNA viruses.

Ribospin™ vRD, Ribospin™ vRD II, Ribospin™ Pathogen TNA, and Exgene™ Viral DNA/RNA Kits utilize the unique GeneAll silica-membrane to yield pure viral DNA and RNA.
Various samples are lysed in optimized buffer containing detergent and lytic enzyme. Under adjustment of binding condition, DNA in the lysate binds to silica membrane and contaminants are completely removed in 2nd wash steps. Finally pure viral DNA and RNA are eluted, ready for use in downstream applications.

GENTi™ Advanced Viral DNA/RNA Kit can be fully automated on the GENTi™ Advanced. Proven GeneAll magnetic bead separation technology enables rapid isolation of viral DNA and RNA in 17 minutes. The automated purification procedure helps to eliminate tedious work, repeated actions and human errors, providing efficient purification and concentrations of viral nucleic acid.

Selecting the optimal kit depending on Sample and Application

Powerful Sample Lysis
Ultra-Sensitive Results

Fast Preparation
Minimum Handling

Sample type	GENTi™ Advanced Viral DNA/RNA	Ribospin™ vRD	Ribospin™ vRD II	Ribospin™ Pathogen TNA	Exgene™ Viral DNA/RNA
Plasma, serum, body fluid Saliva, swab	●	●	●	◑	●
Whole blood	●	◑	◑	●	●
Stool	●	●	●	●	●
Tissue	●	◑	◑	●	●
Dried blood spot	●	◑	●	●	●
Sputum	●	◑	●	●	◑
Urine	●	●	●	◑	●
Raw milk	●	◑	◑	●	●

● Optimized ◑ Suitable with supplemental protocol

Application	GENTi™ Advanced Viral DNA/RNA	Ribospin™ vRD	Ribospin™ vRD II	Ribospin™ Pathogen TNA	Exgene™ Viral DNA/RNA
Host genomic DNA/RNA	◑	◑	◑	●	●
Viral DNA	●	◑	●	●	●
Viral RNA	●	●	●	●	◑

● Highly Optimized ◑ Optimized

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Ribospin™ vRD

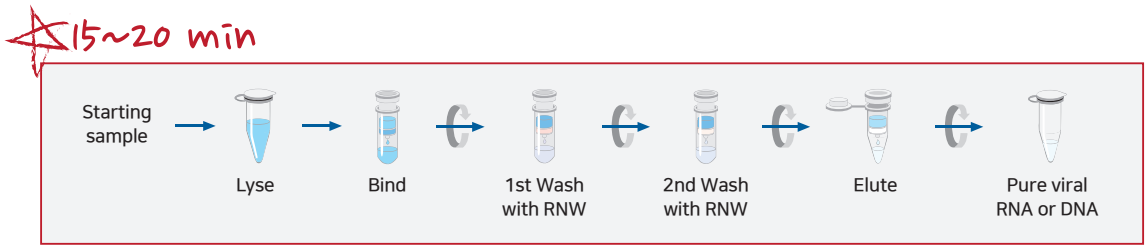
Fast and easy isolation of viral RNA and DNA

Ribospin™ vRD greatly simplifies the isolation of viral RNA and DNA from cell-free body fluid and swab with fast spin-column.

Benefits of the Ribospin™ vRD :

- Rapid isolation of high-quality viral RNA and DNA in 15 minutes
- Fast procedure and easy handling without enzymatic treatment
- No Carrier RNA cross-contamination
- Ready-to-use DNA and RNA for PCR, RT-PCR, real-time PCR and other analytical procedures

High-quality DNA and RNA in minute



A short workflow enables viral nucleic acid extraction in less than 20 minutes. The extracted DNA and RNA is of high quality (Fig. 1) and suitable for a wide range of downstream applications, including real-time PCR and qRT-PCR. (Fig. 2, Fig. 3)

Figure 1

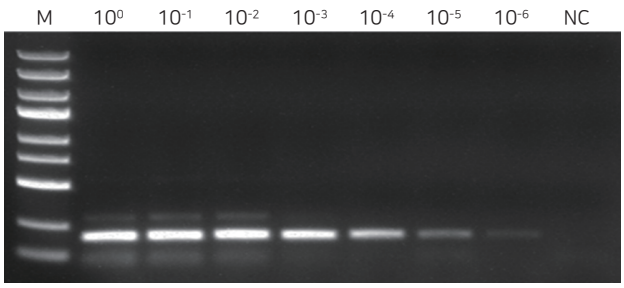


Figure 1. Sensitive detection of Respiratory Syncytial Virus (RSV). RNA from a serial dilution of live Respiratory Syncytial Virus (RSV) was purified using Ribospin™ vRD. All eluates were analyzed by PCR and confirmed by electrophoresis.

Figure 2

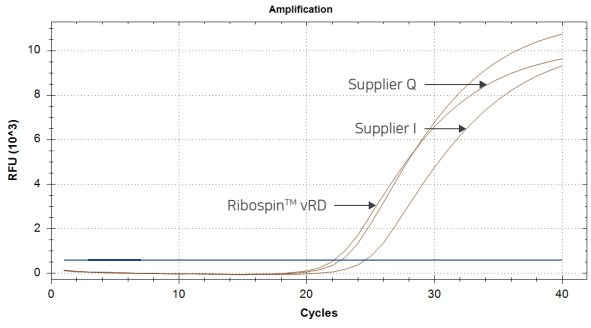


Figure 3

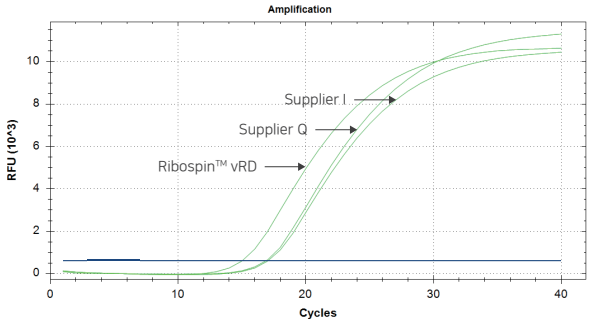


Figure 2 & 3. Comparison of qPCR result of stool (Fig. 2) and swab (Fig. 3) samples with spiked-in live Infectious Bronchitis virus (IBV) using Ribospin™ vRD, Supplier Q's viral RNA kit and Supplier I's Pathogen kit.

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Ribospin™ vRD II

Rapid and efficient isolation of viral RNA and DNA

Ribospin™ vRD II utilizes unique designed Micro spin column to concentrate viral nucleic acids from diverse clinical samples.

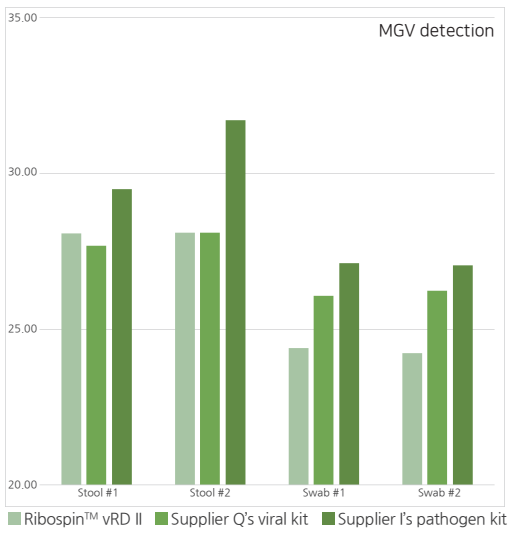
Benefits of the Ribospin™ vRD II :

- Rapid and reliable isolation of high-quality viral RNA and DNA
- Micro column and Carrier RNA included for the enhancement of viral nucleic acid extraction
- Wash buffers reduce solvent carryover, resulting in absence PCR inhibitors
- Suitable for novel detection and quantification in a wide range of Real-time PCR assay

Efficient purification of viral nucleic acids

Ribospin™ vRD II uses well-established technology for purification of viral nucleic acids. Micro spin column provided is optimized to bind low viral load specimen, while contaminants pass through the column. This kit also features a specialized buffer system that facilitates complete viral particle lysis for efficient viral nucleic acid extraction from samples containing Rota, Adeno, Noro, Influenza, M.tuberculosis, Respiratory Syncytical virus, Rhino, hMPV, Enterovirus, Dengue, Chikungunya, Malaria, Zika, HBV, HIV, HCV, HAV, Parvo B10 etc..

Figure 1



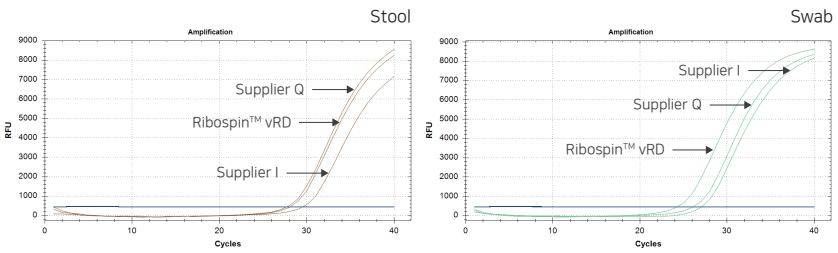


Figure 1. Efficient purification of viral nucleic acid.
Stool and swab samples were spiked with Mycoplasma gallisepticum (MGV). Two replicates for each sample were processed with Ribospin™ vRD II, Supplier Q's viral kit and Supplier I's pathogen kit. Isolated viral DNA were used as a template for real-time PCR assay. The amplification data for the purification duplicates demonstrates comparable isolation efficiency and linearity.

Figure 2

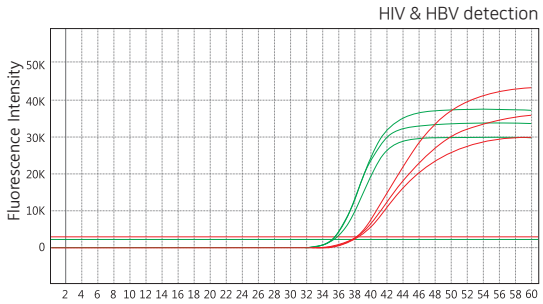


Figure 2. Efficient purification of viral nucleic acid.
HIV (50 IU/ml, red) and HBV (50 IU/ml, green) nucleic acids was purified from serum using Ribospin™ vRD II. Real-time PCR was performed. The amplification data shows that isolation of viral DNA and RNA was successful.

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Ribospin™ Pathogen TNA

Simple and versatile isolation of pathogen nucleic acids

Ribospin™ Pathogen TNA simplifies isolation of high-quality host genomic DNA, gram-positive/negative bacteria, and viral DNA/RNA from a variety sample types, such as : whole blood, body fluids, tissue, stool and raw milk.

Benefits of Ribospin™ Pathogen TNA :

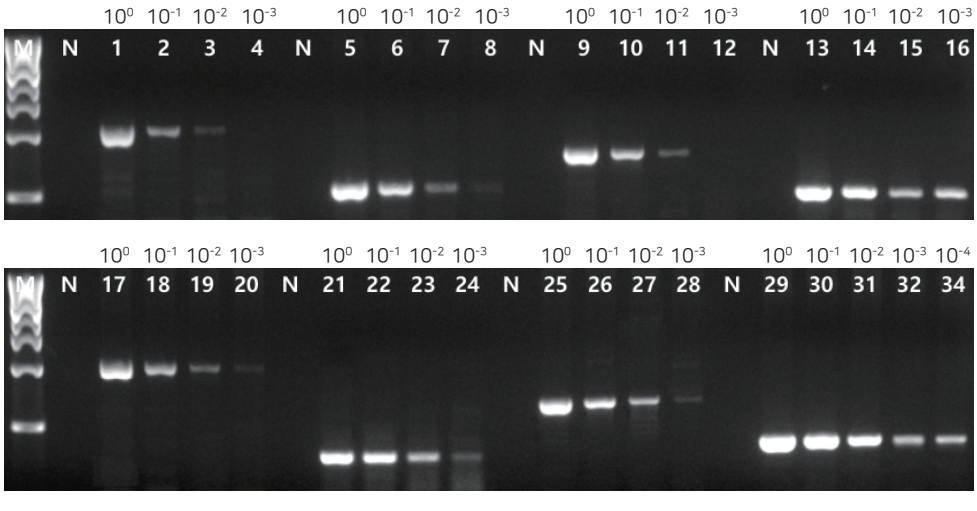
- Same protocol for host genomic DNA, viral DNA, viral RNA, and bacterial DNA
- Isolates nucleic acid from undiluted whole blood
- Suitable for difficult fibrous tissues such as heart, brain, intestine and etc.
- Rapid and standard protocols available
- Suitable for a wide range of downstream applications for animal pathogen identification, animal pathogen genotyping, infectious disease research

Optimized, qualified protocol

Ribospin™ Pathogen TNA provides easy process even for challenging sample types. Most common fluid samples can be directly processed. For blood and dried blood spot, provided Buffer BL allows for safe and rapid nucleic acid extraction eliminating the need for phase separation. The use of newly designed Buffer KL and Column Type P meets the requirements to handle tricky fibrous tissues and milk.

Figure 1. Sensitive isolation of pathogen DNA/RNA from various samples.
Various samples were spiked with serially diluted different types of pathogen each, and pathogen DNA/RNA was purified using Ribospin™ Pathogen TNA. PCR amplification was performed. The PCR data shows that isolation of pathogen DNA/RNA was successful in all cases.

Figure 1



Lane 1~4 : Stool spiked with PED,
Lane 5~8 : Saliva spiked with IBV,
Lane 9~12 : CHO spiked with BRV,
Lane 13~16 : Serum spiked with JEV

Lane 17~20 : Instestine spiked with PED,
Lane 21~24 : Brain spiked with RV,
Lane 25~28 : Brain spiked with ***E.coli***,
Lane 29~34 : Raw milk spiked with MG

Figure 2

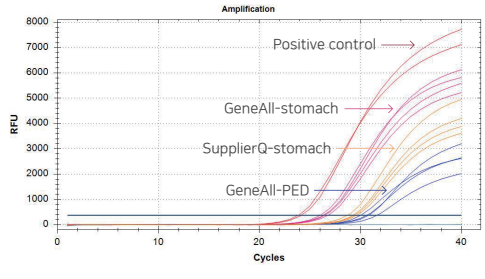


Figure 2. Comparison of detection of Porcine Epidemic Diarrhea Virus (PEDv).
Swine stomach tissues were spiked with PEDv (<5 x 10^4 copies). Two replicates for each sample were processed with Ribospin™ Pathogen TNA and Supplier Q's pathogen kit. Isolated RNA was subsequently amplified using PED primers and compared.

Average Ct_stomach by GeneAll : 26.4
Average Ct_stomach by Q : 30.78
Average Ct_PED by GeneAll : 29.25
Average Ct_PED by Q : Not detected

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Exgene™ Viral DNA/RNA

High-throughput, high-quality isolation of viral DNA/RNA

Exgene™ Viral DNA/RNA offers extremely effective, high-yield purification of viral nucleic acids from whole blood, body fluids, swab and stool samples.

Benefits of Exgene™ Viral DNA/RNA :

- Concentrated nucleic acid for increased extraction efficiency
- Micro column and Carrier RNA included for the enhancement of viral N/A extraction
- Proteinase K provided for efficient DNA and RNA virus lysis
- Purification of DNA and RNA with high sensitivity

Effectively and reproducibly extracting high-quality purified nucleic acids from a variety of target types

Exgene™ Viral DNA/RNA utilizes GeneAll's Micro S columns with Carrier RNA to enhance the binding capacity especially in the case of very few target nucleic acids in the samples. Furthermore, the inclusion of Proteinase K and optimized buffer chemistry of the kit allow addressing a wide variety of sample types without the need of supplemental protocols.

Figure 1 & 2. High quality viral RNA and viral DNA purification.
Blood, stool and swab samples were spiked with Infectious Bronchitis virus (IBV) (Fig. 1) and Metagenomic Gut virus (MGV) (Fig. 2). Two replicates for each sample were processed with Exgene™ Viral DNA/RNA, Supplier Q's viral kit and Supplier I's pathogen kit. Isolated viral RNA and viral DNA were used as a template for real-time PCR assay. Exgene™ Viral DNA/RNA kit results displayed lowest Ct values than the other kits.

Figure 1

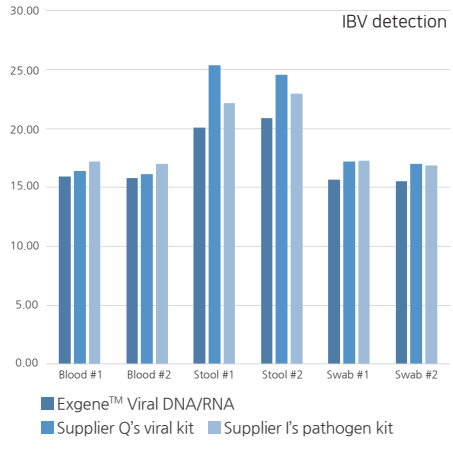

Figure 2

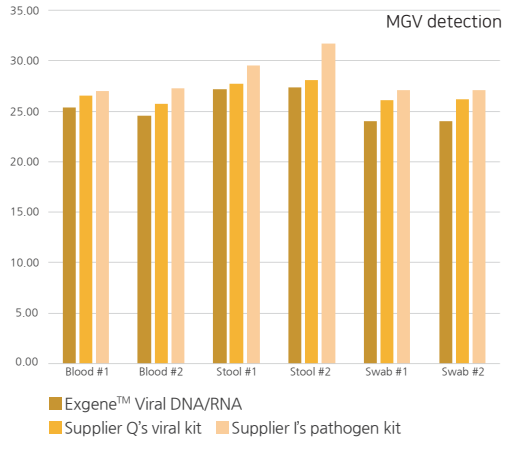

Figure 3

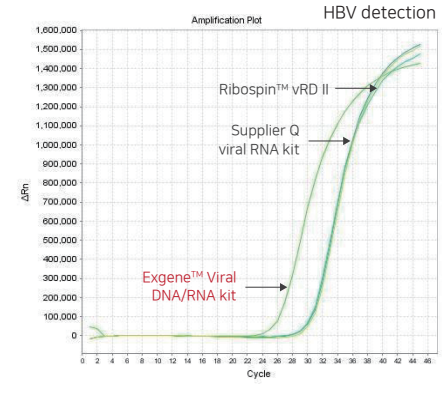

Figure 3. Real-time PCR analysis was conducted to amplify isolated DNA from HBV serum by Exgene™ Vrial DNA/RNA, and Ribospin™ vRD II and Supplier Q's viral kit. Exgene™ Viral DNA/RNA kit exhibits lowest Ct values than the other kits.

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GENTi™ Advanced Viral DNA/RNA

Isolate viral DNA and RNA from a broad range of sample materials for in vitro diagnostic uses

GENTi™ Advanced Viral DNA/RNA Kit, in combination with the GENTi™ Advanced, is designed for the rapid and reliable isolation of viral RNA and viral DNA from a wide range of clinical samples including plasma, serum, saliva, urine, blood, cell culture media, swab, VTM, fecal samples.

Benefits of GENTi™ Advanced Viral DNA/RNA :

- Extraction of 1~32 samples in just 17 minutes
- Rapid, standard and high performance protocols available
- Novel, pre-filled reagent cartridges of ease of use
- High nucleic acid quality for all downstream applications including PCR/qPCR and NGS

Qualified magnetic bead based technology and buffer system facilitates ultrapure nucleic acid extraction

GENTi™ Advanced Viral DNA/RNA Kit is magnetic-bead based kits. GeneAll double coated beads allow efficient and ultrapure nucleic acids extraction within 17 minutes. This qualified lysis buffer system that facilitate viral particle lysis and the impurities are wash away by three different washing buffers. At last, pure RNA and DNA are eluted by DNase/RNase-free water.
The purified nucleic acids are suitable for use in various downstream application, including sensitive detection assays using quantitative, real-time PCR or RT-PCR.

Figure 1

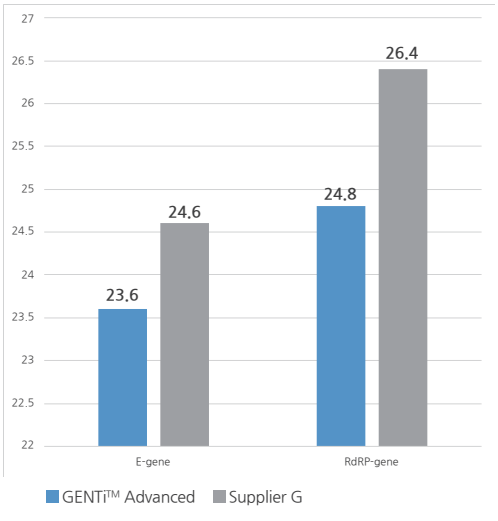

Figure 1. Comparative analysis of Ct value.
E-gene and RdRp-genes Ct value analysis of SARS-CoV-2 detection in nasopharyngeal swab using GENTi™ Advanced Viral DNA/RNA Kit on GENTi™ Advanced and Supplier G's viral kit on Supplier G system shows that GENTi™ Advanced exhibits higher nucleic acid extraction efficiency.

Figure 2

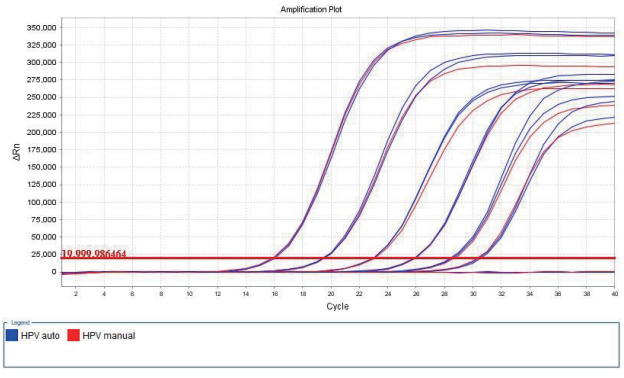

Figure 2. Comparison of automated and manual purification of HPV DNA from urine sample.
HPV virus was spiked into 200 µl of urine sample. Viral nucleic acid was isolated with GENTi™ Viral DNA/RNA extraction kit and with GeneAll manual HPV mini kit.
Equivalent amounts of RNA each kit were analyzed by Tapman probe qPCR reaction. The results confirmed that HPV DNA virus can be successfully extracted and detected from HPV clinical sample using both GENTi™ Advanced Viral DNA/RNA kit and manual HPV mini kit.