

Laboring away another hour for extraction? Let GeneAll help save time and budget!



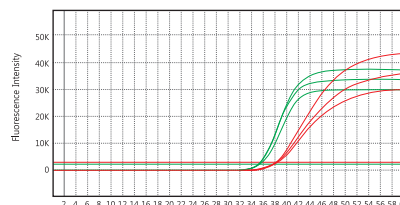
Introduction

Recently, emerging molecular diagnostics of infectious diseases are responding to requirements for speed results with a high level of sensitivity and specificity. To identifying many viruses and determining viral load, the optimal sample preparation needs to take precedence. When Ribospin vRD II is fully involved in purifying viral DNA and RNA, you can move forward to the efficient and reliable finding in detection of nucleic acids.

Features

- Rapid sample preparation in maximum 20 minutes with high sensitivity at low virus titers
- Micro column and Carrier RNA included for the enhancement of viral N/A extraction
- Suitable for novel detection and quantification in a wide range of Real-time PCR assay such as Rota, Adeno, Noro, Influenza, M. tuberculosis, Respiratory Syncytical virus, Rhino, hMPV, Enterovirus, Dengue, Chikungunya, Malaria, Zika, HBV, HCV, HAV, Parvo B19 etc.

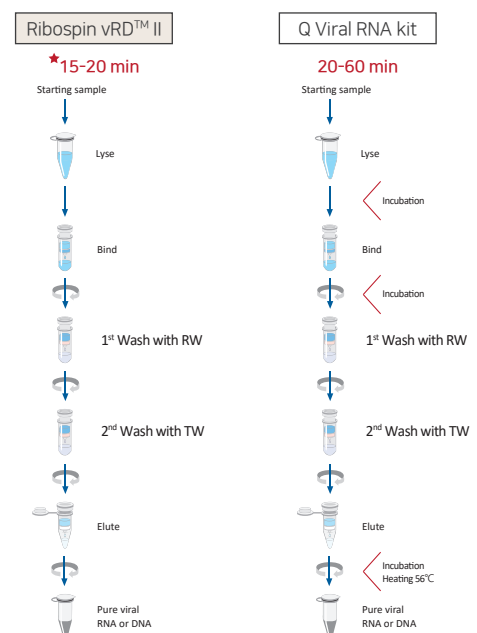
Real-time PCR Amplification



Results from different clinical human serum. The extracted HIV (50 IU / ml, Red) and HBV (50 IU / ml, green) nucleic acids using Ribospin™ vRD II kit were amplified and detected by real-time PCR. Three repeat tests were performed for each sample.

Comparison Table

BRAND	Ribospin vRD™ II	Supplier Q Viral RNA kit
FORMAT	Silica Membrane Column - Safe and easy handling of infectious samples by using spin columns	
Preparation Time	~15 minutes	20~40 minutes
Carrier RNA	340 µg	310 µg (310 µg × 5 for 250 prep)
Elution Volume	20-50 µl	30-50 µl
Applicable Sample Type	Plasma and serum Urine Cell-free body fluid Cell-culture Swab Urine Stool	Fresh or frozen plasma Serum Other cell-free body fluids



Ribospin™ vRD II (cat# 322-150)

-Viral RNA and DNA copurification

Respiratory diseases	Tropical diseases
Influenza virus	Dengue virus
Mycobacterium tuberculosis	Chikungunya virus
Respiratory Syncytial virus	Zika virus
Rhino virus	Malaria
Human metapneumo virus	
Enterovirus	

Blood screening disease	Gastro-Intestinal diseases
Hepatitis B Virus	Rota virus
Hepatitis C Virus	Adeno virus
Hepatitis A Virus	Noro virus
Parvo B19	

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of *Respiratory Syncytial Virus (RSV)*

CONDITION

Starting sample: 150 ul of nasopharyngeal swab

Elution Volume: 40 ul

Real-time PCR: Sensifast (in-house)/ LightCycler® 480 Instrument II (Roche)

PERFORMANCE - REAL TIME PCR for RSV

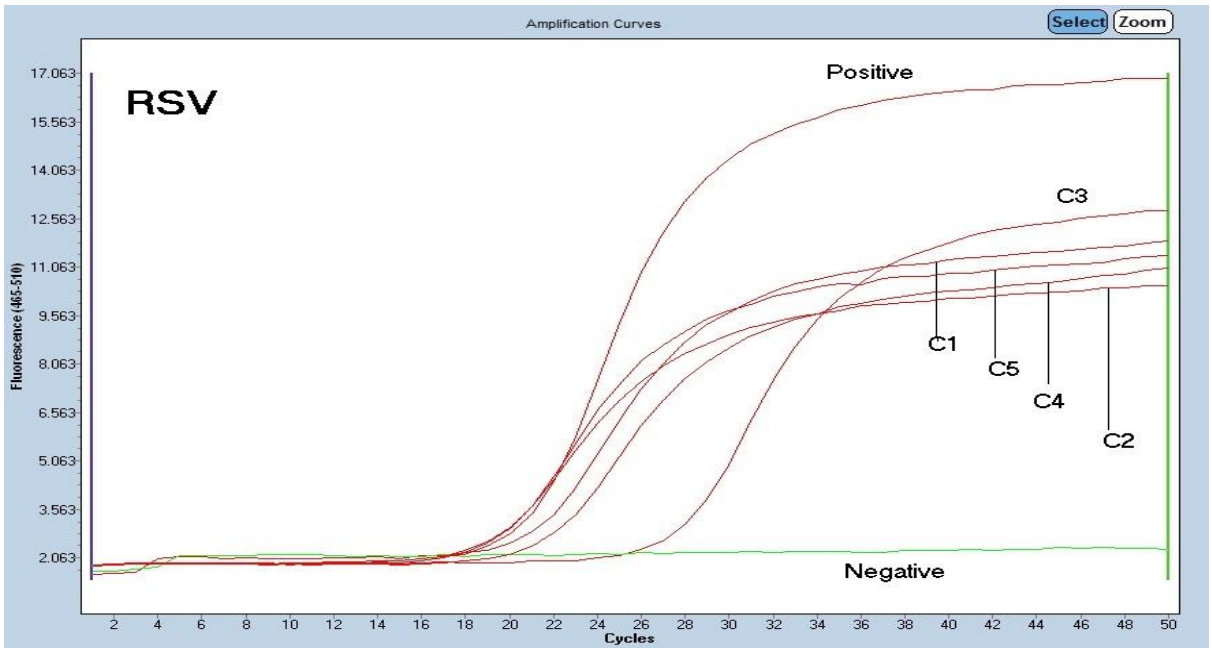


Figure 1. Virus RNA was purified from Respiratory Syncytial Virus (RSV) using Ribospin vRD II Kit. Isolated RSV RNA was detected using an in-house, realtime PCR assay on the Lightcycler 480.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
C1	107	ng/μl	3.55	0.21
C2	103.1	ng/μl	3.54	1.17
C3	74.2	ng/μl	3.15	1.37
C4	99.5	ng/μl	3.49	0.29
C5	90.1	ng/μl	3.59	0.62

Table 1. Respiratory Syncytial Virus (RSV) RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of *Respiratory Syncytial Virus (RSV)*

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of *Rhinovirus*

CONDITION

Starting sample: 150 ul of nasopharyngeal swab

Elution Volume: 40 ul

Real-time PCR: Sensifast (in-house)/ LightCycler® 480 Instrument II (Roche)

PERFORMANCE - REAL TIME PCR for Rhinovirus

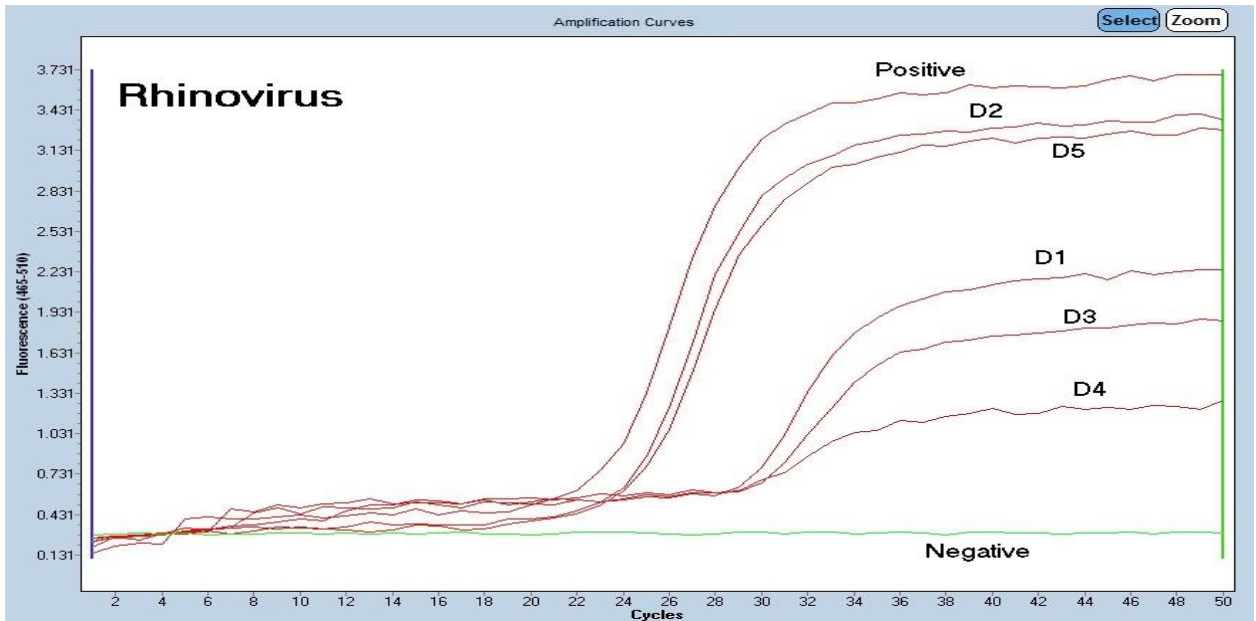


Figure 1. Virus RNA was purified from Rhinovirus using Ribospin vRD II Kit. Isolated Rhinovirus RNA was detected using an in-house real-time RT-PCR assay on the Lightcycler 480.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
D1	153.2	ng/μl	2.23	1.1
D2	64.4	ng/μl	3.39	2.99
D3	91.7	ng/μl	3.32	3.12
D4	93.8	ng/μl	3.54	0.33
D5	124.2	ng/μl	2.7	1.22

Table 1. Rhinovirus RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of *Rhinovirus*

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of Human metapneumovirus (*hMPV*)

CONDITION

Starting sample: 150 ul of nasopharyngeal swab

Elution Volume: 40 ul

Real-time PCR: Sensifast (in-house)/ LightCycler® 480 Instrument II (Roche)

PERFORMANCE - REAL TIME PCR for hMPV

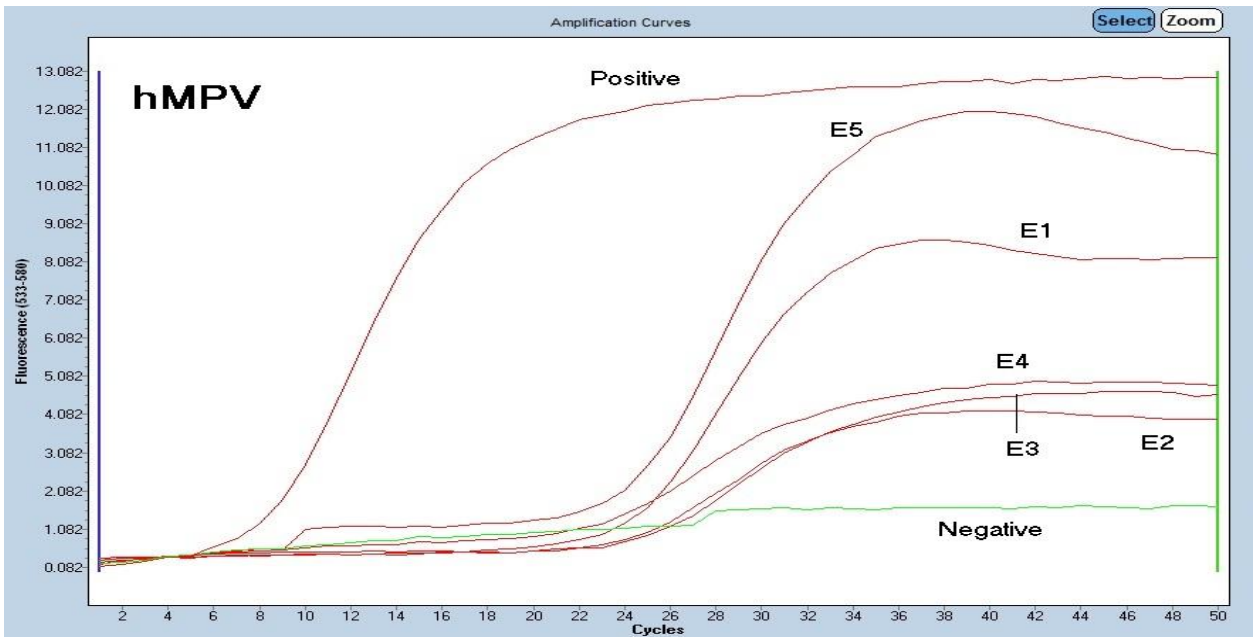


Figure 1. Virus RNA was purified from hMPV using Ribospin vRD II Kit. Isolated hMPV RNA was detected using an in-house real-time RT-PCR assay on the Lightcycler 480.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
E1	96.7	ng/μl	3.32	1.36
E2	78.6	ng/μl	3.49	1.88
E3	113.2	ng/μl	3.5	0.9
E4	103.1	ng/μl	3.44	1.63
E5	92.8	ng/μl	3.51	3.74

Table 1. hMPV RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of Human metapneumovirus (*hMPV*)

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of Influenza virus

CONDITION

Starting sample: 150 ul of nasopharyngeal swab

Elution Volume: 40 ul

Real-time PCR: Sensifast (in-house)/ LightCycler® 480 Instrument II (Roche)

PERFORMANCE - REAL TIME PCR for Influenza Virus

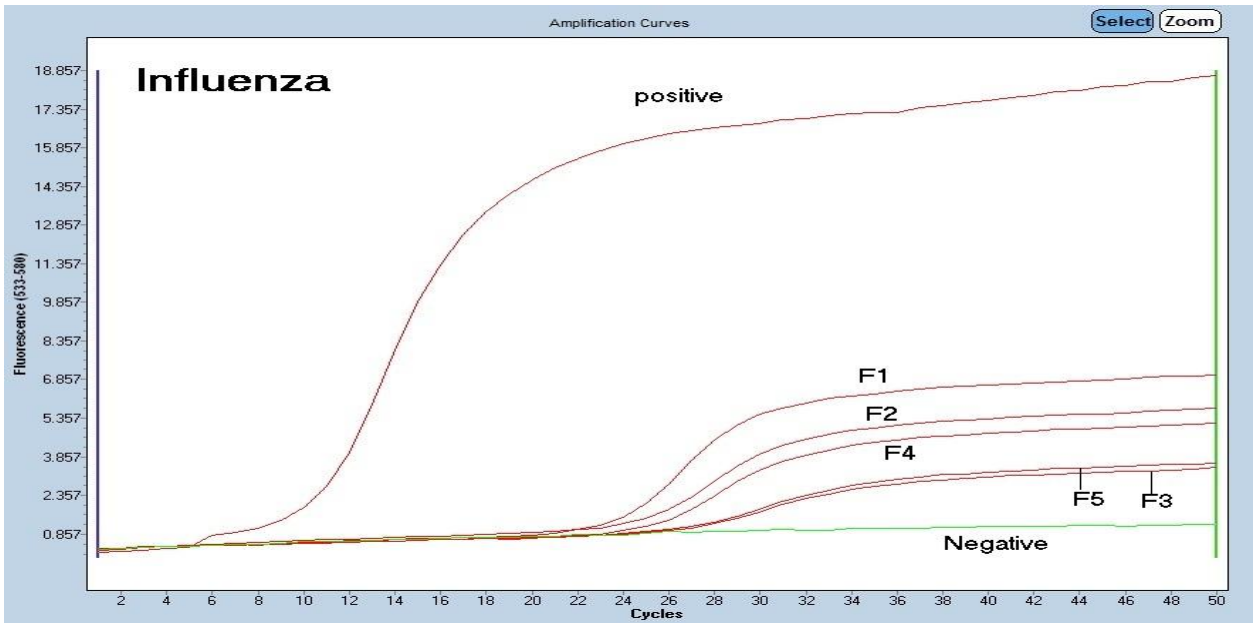


Figure 1. Virus RNA was purified from influenza virus using Ribospin vRD II Kit. Isolated influenza RNA was detected using an in-house real-time RT-PCR assay on the Lightcycler 480.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
F1	86.9	ng/μl	3.53	0.18
F2	92.1	ng/μl	3.63	0.26
F3	104.2	ng/μl	3.16	0.27
F4	93.6	ng/μl	3.47	1.92
F5	107.4	ng/μl	3.29	2.36

Table 1. Influenza RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of Influenza virus

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of Chikungunya Virus

CONDITION

Starting sample: 150 ul of plasma

Elution Volume: 40 ul

Real-time PCR: Sensifast (in-house)/ LightCycler® 480 Instrument II (Roche)

PERFORMANCE - REAL TIME PCR for Chikungunya Virus

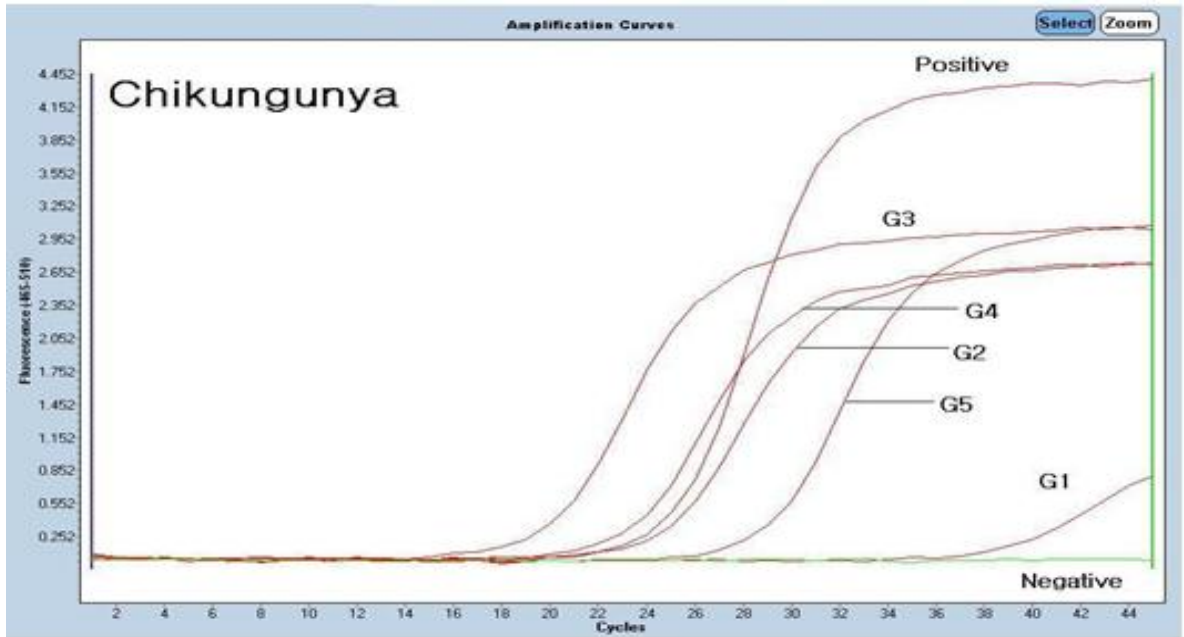


Figure 1. Virus RNA was purified from Chikungunya virus using Ribospin vRD II Kit. Isolated Chikungunya RNA was detected using an in-house real-time RT-PCR assay on the Lightcycler 480.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
G1	2.4	ng/μl	6.02	0.01
G2	2.5	ng/μl	27.76	0.01
G3	5.9	ng/μl	3.03	0.35
G4	2	ng/μl	4.62	0.02
G5	4.6	ng/μl	2.11	0.42

Table 1. Rhinovirus RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of Chikungunya virus

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of Zika

CONDITION

Starting sample: 150 ul of urine

Elution Volume: 40 ul

Real-time PCR: Sensifast (in-house)/ LightCycler® 480 Instrument II (Roche)

PERFORMANCE - REAL TIME PCR for Zika Virus

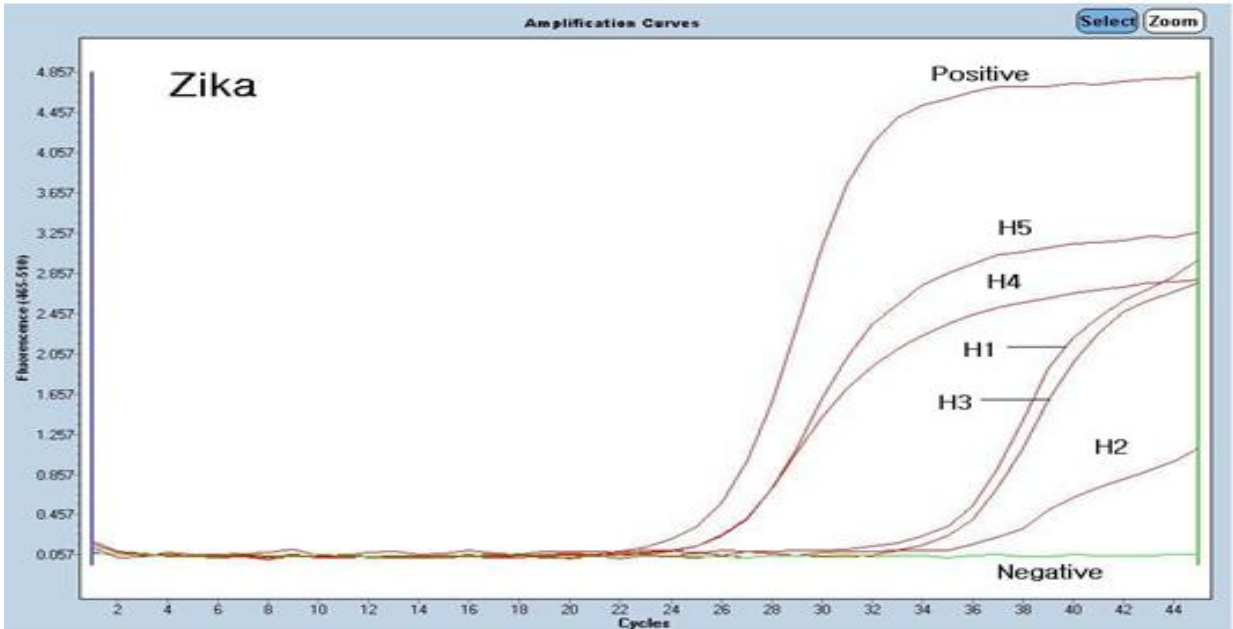


Figure 1. Virus RNA was purified from Zika virus using Ribospin vRD II Kit. Isolated Zika RNA was detected using an in-house real-time RT-PCR assay on the Lightcycler 480.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
H1	104.9	ng/μl	3.05	2.08
H2	3.6	ng/μl	2.58	0.27
H3	140.2	ng/μl	3.06	1.8
H4	2.6	ng/μl	4.93	0.08
H5	105.1	ng/μl	3.49	2.81

Table 1. Zika RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of Zika virus

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of Norovirus

CONDITION

Starting sample: 150 ul of stool

Elution Volume: 40 ul

Real-time PCR: Sensifast (in-house)/ LightCycler® 480 Instrument II (Roche)

PERFORMANCE - REAL TIME PCR for Norovirus

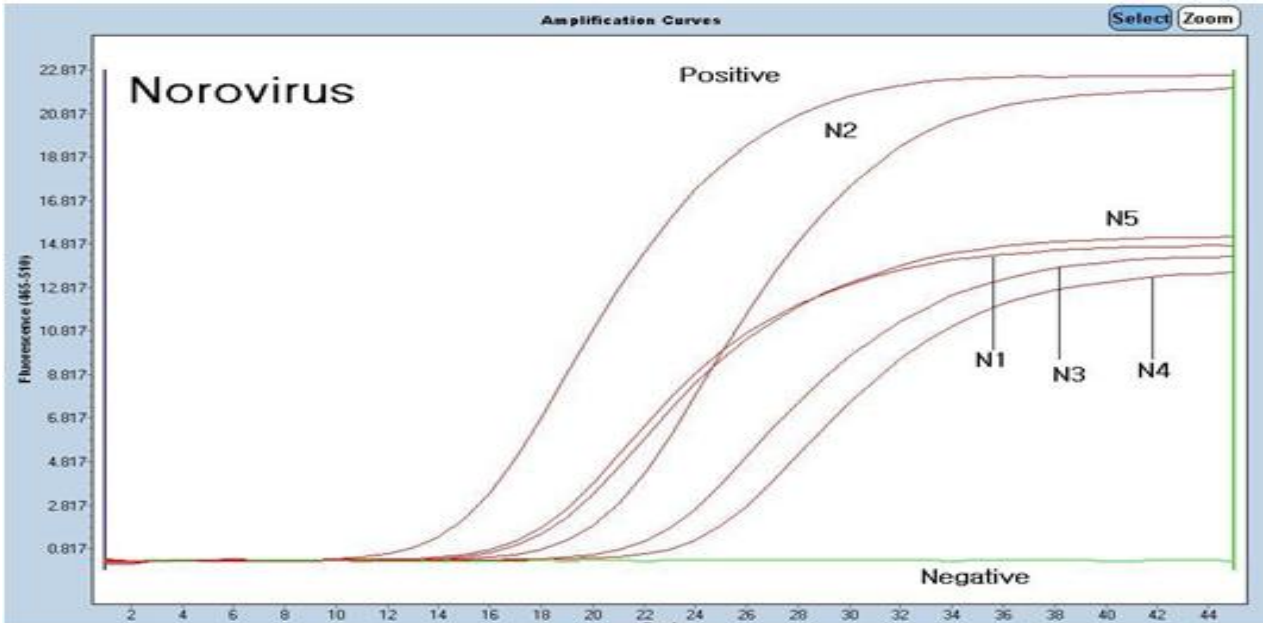


Figure 1. Virus RNA was purified from Norovirus using Ribospin vRD II Kit. Isolated Norovirus RNA was detected using an in-house real-time RT-PCR assay on the Lightcycler 480.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
N1	85.2	ng/μl	2.73	0.21
N2	105.1	ng/μl	2.57	0.54
N3	122.4	ng/μl	3.08	1.74
N4	88.8	ng/μl	3.1	0.27
N5	126.9	ng/μl	3.04	0.37

Table 1. Norovirus RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of Norovirus

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of Enterovirus

CONDITION

Starting sample: 150 ul of throat swab

Elution Volume: 40 ul

Real-time PCR: Sensifast (in-house)/ LightCycler® 480 Instrument II (Roche)

PERFORMANCE - REAL TIME PCR for Enterovirus

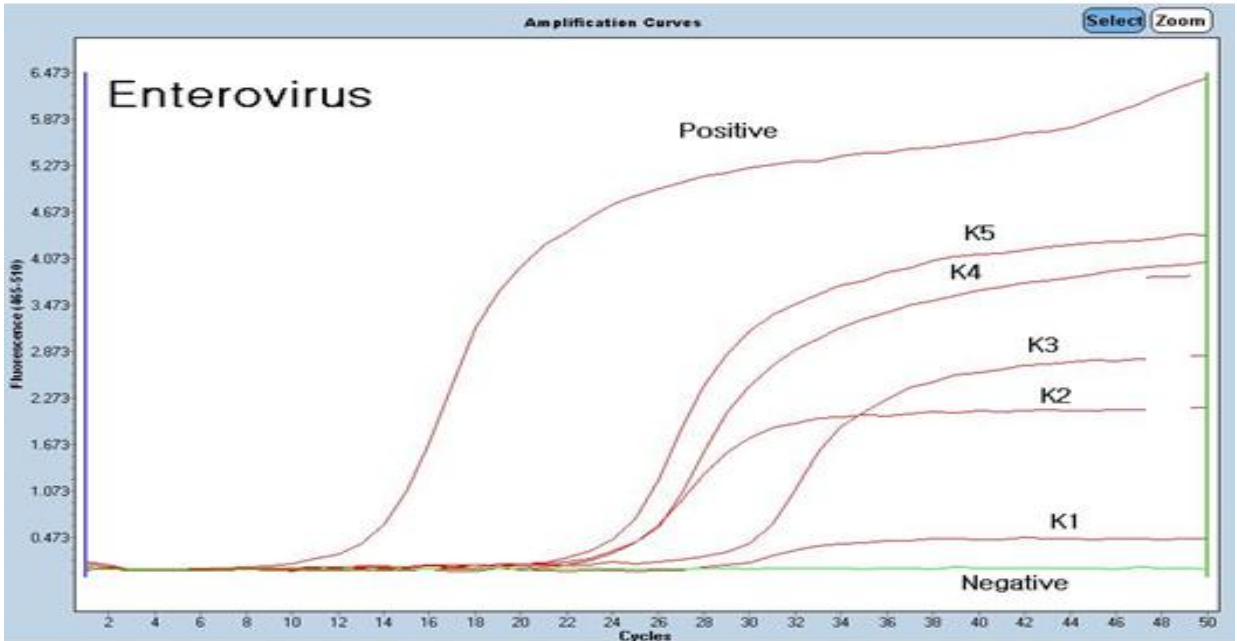


Figure 1. Virus RNA was purified from Enterovirus using Ribospin vRD II Kit. Isolated Enterovirus RNA was detected using an in-house real-time RT-PCR assay on the Lightcycler 480.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
K1	110.2	ng/μl	3.32	0.4
K2	56.2	ng/μl	3.5	1.66
K3	99.3	ng/μl	3.45	3.38
K4	89	ng/μl	3.1	2.49
K5	173.7	ng/μl	2.37	1.41

Table 1. Enterovirus RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of Enterovirus

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of Rotavirus

CONDITION

Starting sample: 150 ul of stool

Elution Volume: 40 ul

cDNA synthesis: ImpromII (in-house)

PERFORMANCE - cDNA synthesis for Rotavirus

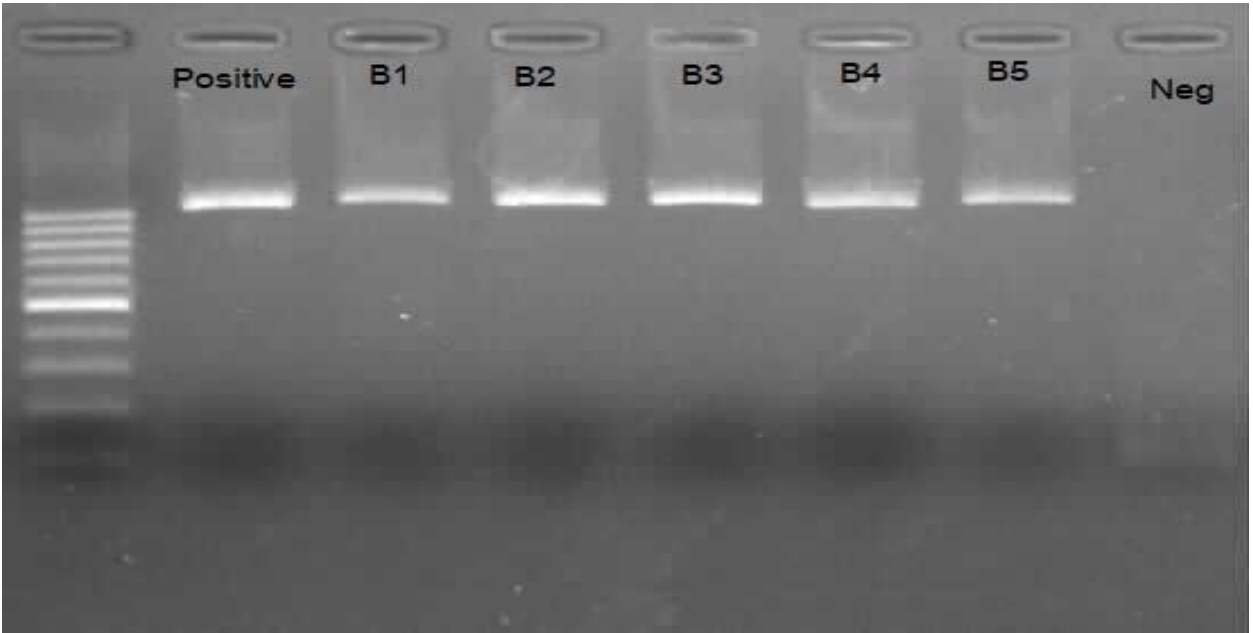


Figure 1. Virus RNA was purified from Rotavirus using Ribospin vRD II Kit. cDNA synthesis was carried out with a 6 ul aliquot of purified RNA.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
B1	79.6	ng/ μ l	2.86	1.01
B2	80.7	ng/ μ l	3.15	0.19
B3	97.8	ng/ μ l	3.4	3.43
B4	99.2	ng/ μ l	3.15	2.75
B5	70.6	ng/ μ l	3.35	0.34

Table 1. Rotavirus RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of Rotavirus

Ribospin™ vRD II (cat# 322-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II in molecular diagnosis of Adenovirus

CONDITION

Starting sample: 150 ul of nasopharyngeal swab

Elution Volume: 40 ul

cDNA synthesis: ImpromII (in-house)

PERFORMANCE - cDNA synthesis for Adenovirus

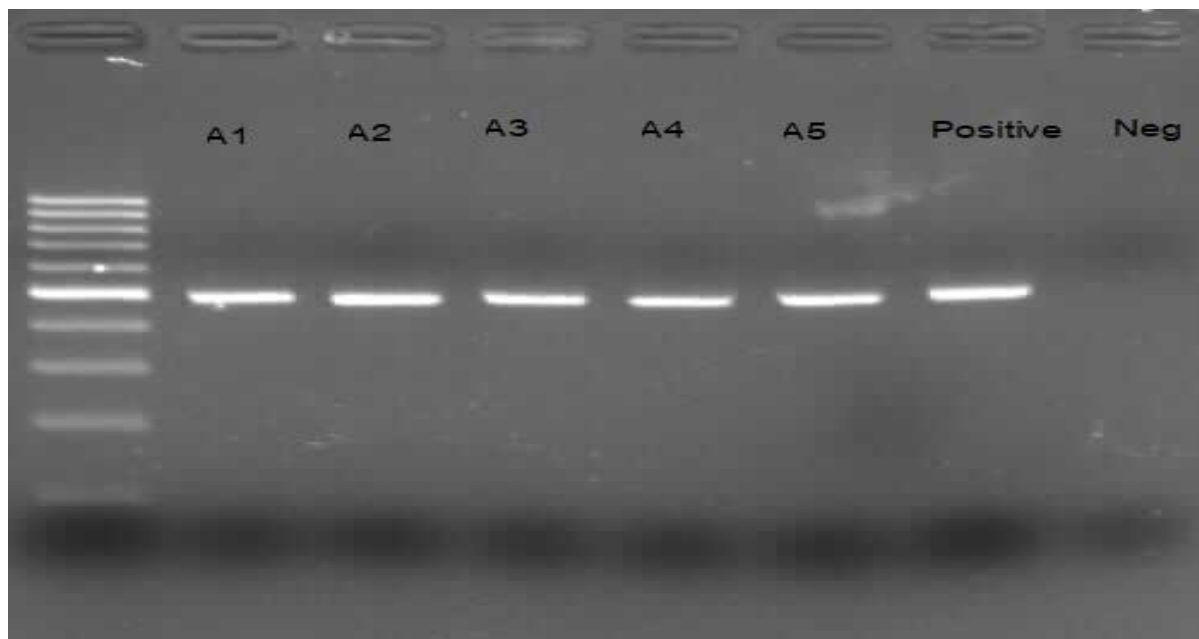


Figure 1. Virus RNA was purified from Adenovirus using Ribospin vRD II Kit. cDNA synthesis was carried out with a 6 ul aliquot of purified RNA.

Sample ID	Nucleic Acid Conc.	Unit	260/280	260/230
A1	60.7	ng/μl	3	1.32
A2	107.3	ng/μl	3.32	0.33
A3	111.5	ng/μl	3.26	2.18
A4	125.2	ng/μl	3.42	0.69
A5	44.2	ng/μl	3.4	1.03

Table 1. Adenovirus RNA was extracted using Ribospin vRD II Kit. The purified RNA was analyzed by optical density measurement .

CONCLUSION

Ribospin vRD II enables efficient performance for nucleic acid extraction of Adenovirus

Ribospin™ vRD II (cat# 322-150)

Exgene viral DNA/RNA (cat# 128-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II and Exgene viral DNA/RNA in molecular diagnosis of HBV compared to company Q

CONDITION

Starting sample: 100ul of Serum

Elution Volume: 50 ul

Real-time PCR: Company B HBV Kit

PERFORMANCE - REAL TIME PCR for HBV

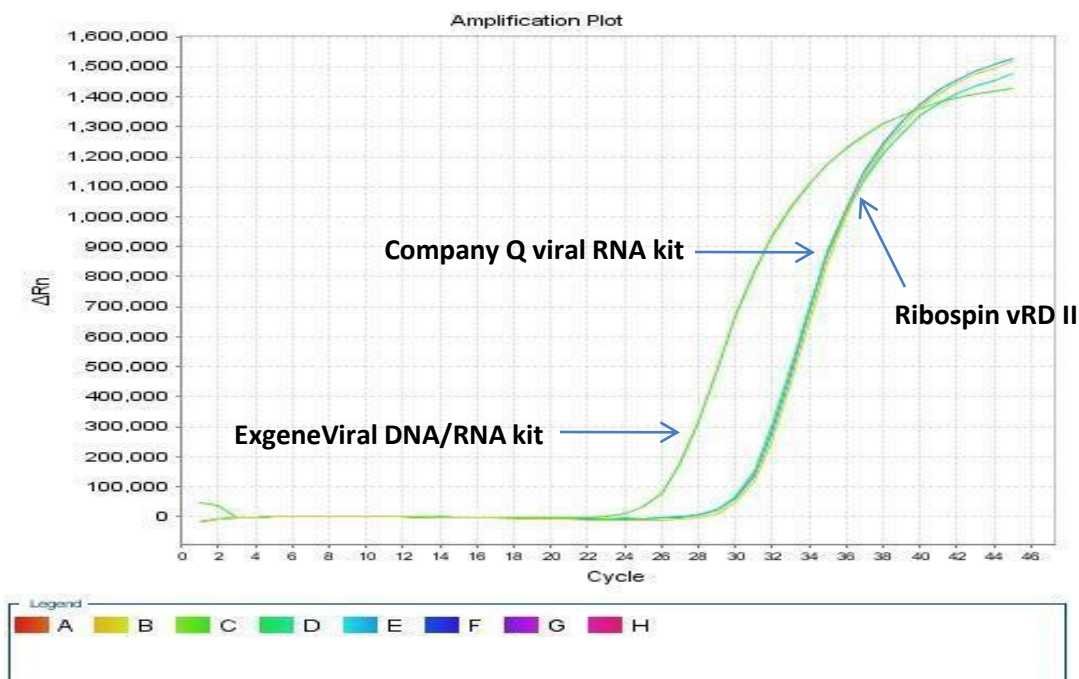


Figure 1. Virus DNA was purified from HBV using Ribospin vRD II and Exgene viral DNA/RNA Kit. Isolated HBV was detected using an company B HBV Kit. The low Ct values indicate a high number of target nucleic acid in the sample.

CONCLUSION

- Exgene viral DNA/RNA results displayed lower Ct values than Ribospin vRD II and Company Q viron RNA Kit due to effectiveness of Proteinase K treatment.
- Ribospin vRD II has industry-standard performance for nucleic acid extraction of HBV.

NOTE

Viral RNA/DNA copurification	Ribospin vRD II	Exgene viral DNA/RNA
Target	RNA & DNA Virus	DNA & RNA Virus
Carrier RNA	O	O
Micro column	O	O
Proteinase K	X	O

Ribospin™ vRD II (cat# 322-150) Exgene viral DNA/RNA (cat# 128-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II and Exgene viral DNA/RNA in molecular diagnosis of Dengue type 3 compared to company Q

CONDITION

Starting sample: 100ul of Serum

Elution Volume: 50 ul

Real-time PCR: Company B DEN4 qPCR I kit

PERFORMANCE - REAL TIME PCR for DENGUE

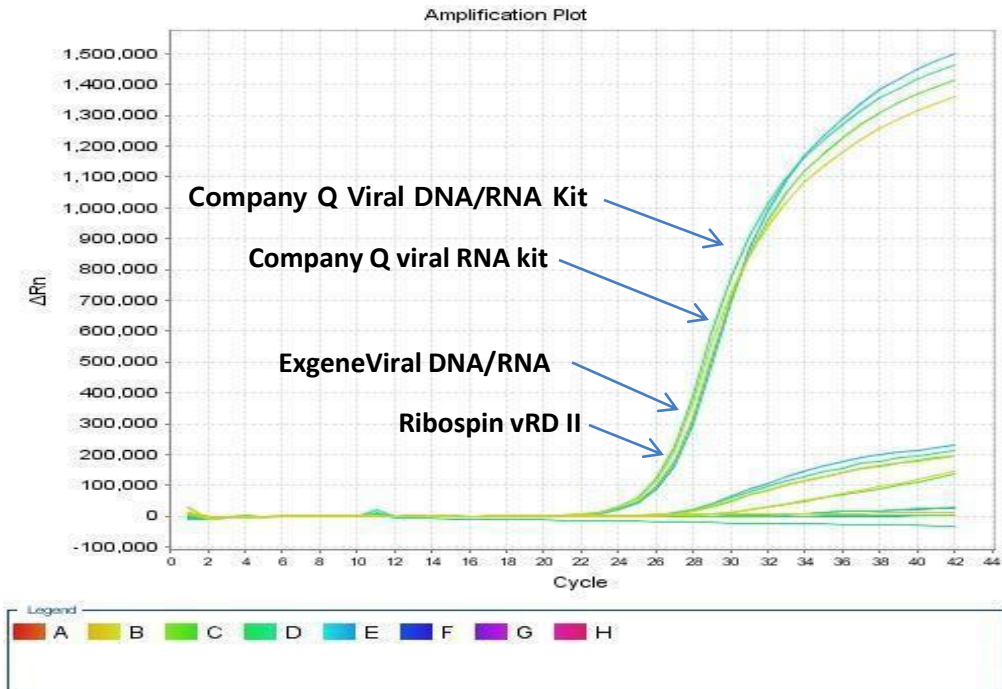
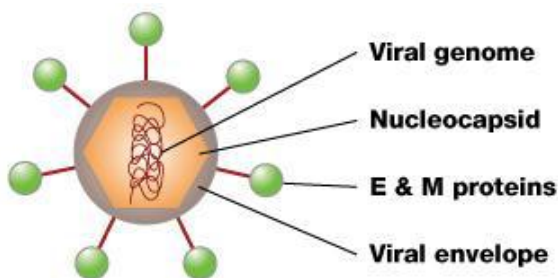


Figure 1. Virus DNA was purified from HBV using Ribospin vRD II and Exgene viral DNA/RNA Kit. Isolated Dengue type 3 was detected using an Company B DEN4 qPCR I kit.

CONCLUSION

- Ribospin vRD II and Exgene viral DNA/RNA have industry-standard performance for nucleic acid extraction of Dengue virus type 3.



3Schematic Drawing of DENV Dane Particle

Ribospin™ vRD II (cat# 322-150) Exgene viral DNA/RNA (cat# 128-150)

PURPOSE

Confirm effectiveness of Ribospin vRD II and Exgene viral DNA/RNA in molecular diagnosis of Dengue type 1&3 compared to company Q

CONDITION

Starting sample: 100ul of Serum

Elution Volume: 50 ul

Real-time PCR: Company B DEN4 qPCR I kit

PERFORMANCE - REAL TIME PCR for DENGUE

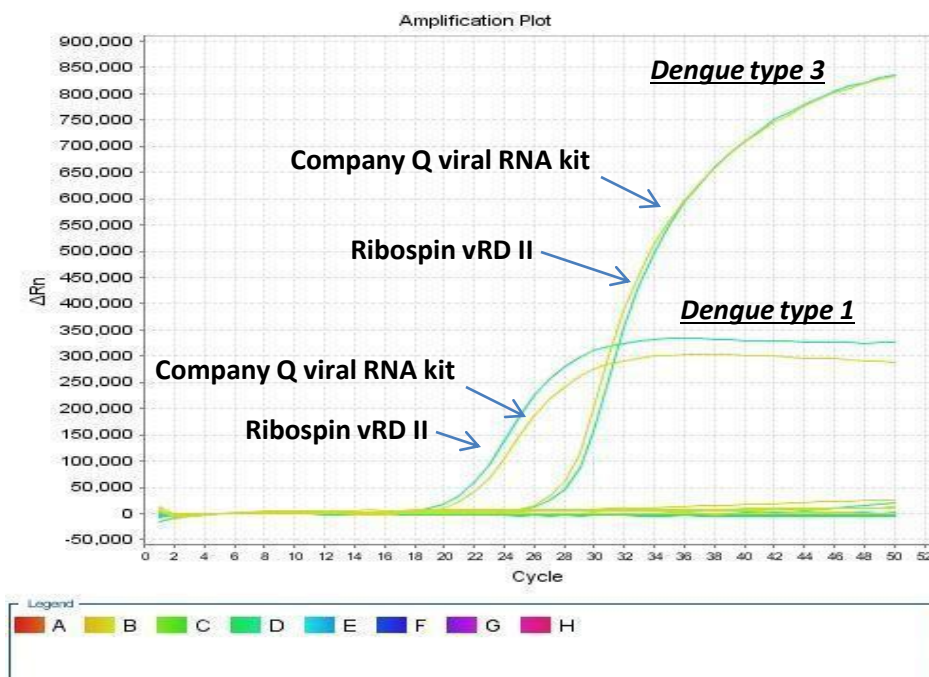


Figure 1. Virus DNA was purified from HBV using Ribospin vRD II and Exgene viral DNA/RNA Kit. Isolated Dengue viurs was detected using an Company B DEN4 qPCR I kit.

CONCLUSION

- Ribospin vRD II and Exgene viral DNA/RNA have industry-standard performance for nucleic acid extraction of Dengue virus especailly DENV-1.

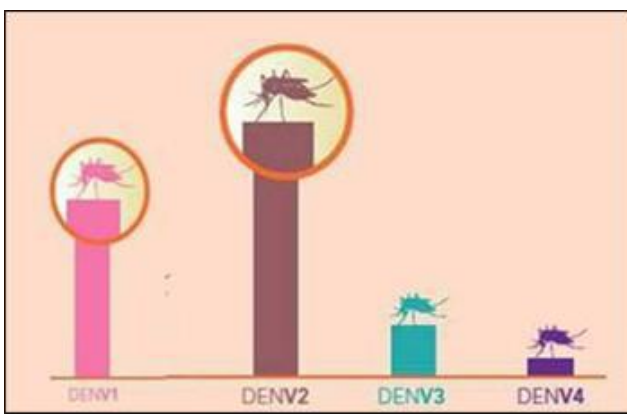


Illustration of Dengue infection in India (2013)
Source : All India Institute of Medical Sciences