ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

INSTRUCTION MANUAL

Quick-RNA™ Viral Kit

Catalog Nos. **R1034** & **R1035**

Highlights

- Quick, spin-column purification of viral RNA from plasma, serum, CSF, cell culture media, cellular suspensions, urine, blood, saliva, swab, fecal, etc.
- RNA is ready for Next-Gen sequencing, RT/PCR, hybridization, *etc*.
- DNA/RNA Shield™ is included for nucleic acid stability during sample storage/transport at ambient temperatures.

Contents

ZYMO RESEARCH CORP.

Phone: (949) 679-1190 ▪ Toll Free: (888) 882-9682 ▪ Fax: (949) 266-9452 ▪ info@zymoresearch.com ▪ www.zymoresearch.com

Satisfaction of all Zymo Research products is guaranteed. If you are dissatisfied with this product, please call 1-888-882-9682.

Product Contents

***Quick*-RNA™ Viral Kit** (Kit Size)	**R1034** (50 Preps)	**R1035** (200 Preps)	**Storage Temperature**
DNA/RNA Shield™ (2X concentrate)	25 ml	125 ml	Room Temp.
Viral RNA Buffer[1]	50 ml	2 x 100 ml	Room Temp.
Viral Wash Buffer[2] (concentrate)	2 x 6 ml	48 ml	Room Temp.
DNase/RNase-Free Water	4 ml	10 ml	Room Temp.
Zymo-Spin™ IC Columns	50	200	Room Temp.
Collection Tubes	100	400	Room Temp.
Instruction Manual	1	1	-

Note - Integrity of kit components are guaranteed for up to one year from date of purchase. Reagents are routinely tested on a lot-to-lot basis to ensure they provide maximal performance and reliability.

[1] Add beta-mercaptoethanol (user supplied) to the **Viral RNA Buffer** to a final dilution of 0.5% (v/v) *i.e.,* 250 µl per 50 ml or 500 µl per 100 ml.
[2] Add 24 ml of 100% ethanol (26 ml of 95% ethanol) to the 6 ml **Viral Wash Buffer** concentrate (R1034) or 192 ml of 100% ethanol (204 ml of 95% ethanol) to the 48 ml **Viral Wash Buffer** concentrate (R1035) before use.

Specifications

- **Sample Type**: Plasma, serum, CSF, cell culture media, cellular suspensions, whole-blood, urine, saliva, swab, fecal and any sample in DNA/RNA Shield™.
- **Sample Input**: Up to 400 µl liquid volume
- **Binding Capacity**: 10 µg RNA (5 µg DNA)
- **Elution Volume**: ≥ 6 µl
- **Purity**: High-quality RNA is ready for Next-Gen sequencing, RT-qPCR, hybridization, *etc.*
- **Equipment Needed**: Microcentrifuge

Notes:

This product is for research use only and should only be used by trained professionals. It is not for use in diagnostic procedures. Some reagents included with this kit are irritants. Wear protective gloves and eye protection. Follow the safety guidelines and rules enacted by your research institution or facility.

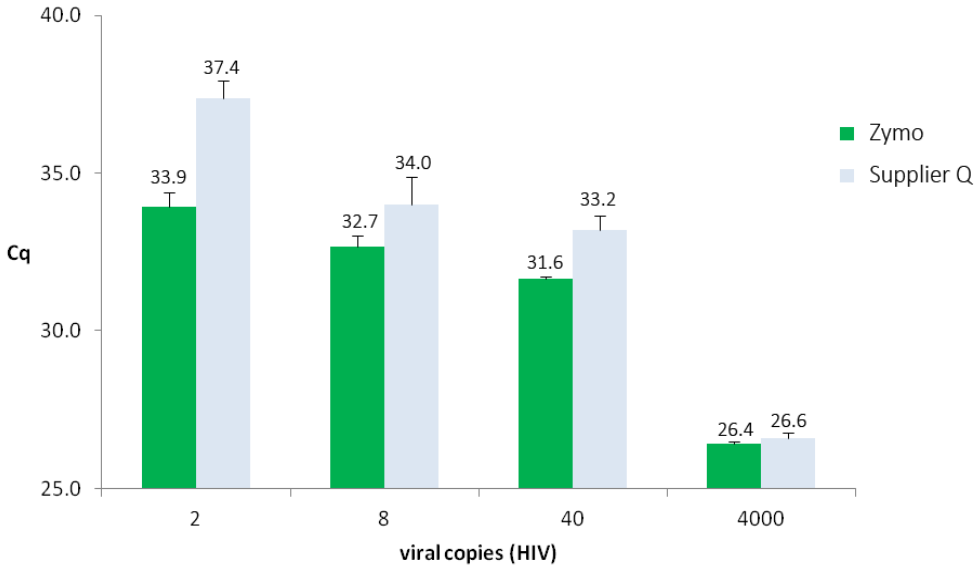
Product Description

The ***Quick*-RNA™ Viral Kit** is a quick, purification system for viral RNA from plasma, serum, cell culture media, cellular suspensions, urine, blood, saliva and any other biological samples stored in **DNA/RNA Shield™**.

DNA/RNA Shield™ ensures nucleic acid stability during sample storage/transport at ambient temperatures (4-25°C). The reagent effectively lyses cells and inactivates nucleases and infectious agents (virus).

The kit also features a specialized buffer system that facilitates complete viral particle lysis for efficient RNA isolation from samples containing enteroviruses, rhinoviruses, coronaviruses, HIV, HCV, influenza A virus, flaviviruses, measles virus, parainfluenza virus, parvovirus (a ssDNA virus), etc. Viral RNA is bound to the column, washed and eluted.

The isolated high-quality viral RNA is ready for all downstream applications such as Next-Gen sequencing, hybridization-based and RT/PCR detection.



The ***Quick*-RNA™ Viral Kit** from Zymo Research ensures high sensitivity viral detection compared to that of Supplier Q. Viral RNA was isolated from plasma samples. Data shows the mean (+/- SD) of triplicate RT-qPCR measurements.

For **Assistance**, please contact Zymo Research Technical Support at 1-888-882-9682 or e-mail tech@zymoresearch.com.

Ensure RNA isolation is performed in an RNase-free environment.

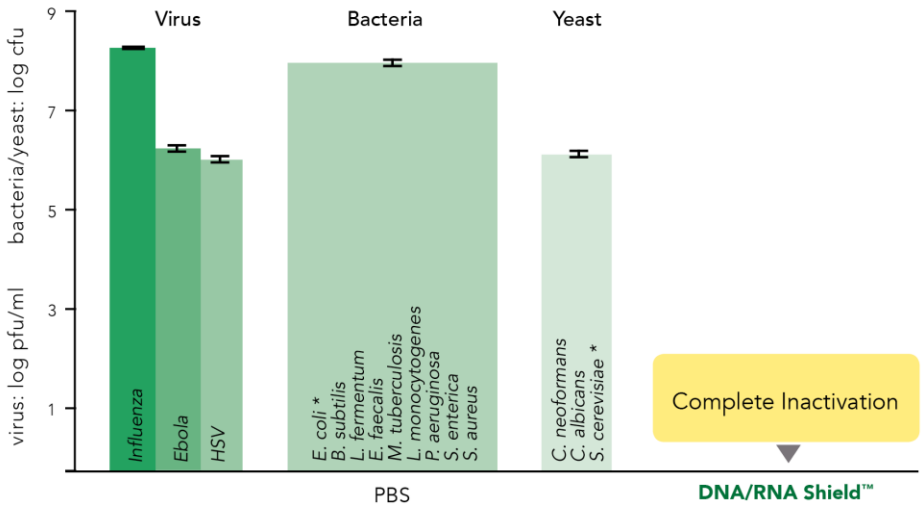
Reagent Preparation

- ✓ Before starting, add beta-mercaptoethanol (user supplied) to the **Viral RNA Buffer** to a final dilution of 0.5% (v/v) *i.e.,* 250 µl per 50 ml or 500 µl per 100 ml.
- ✓ Add 24 ml 100% ethanol (26 ml 95% ethanol) to the 6 ml **Viral Wash Buffer** concentrate (R1034) or 192 ml of 100% ethanol (204 ml of 95% ethanol) to the 48 ml **Viral Wash Buffer** concentrate (R1035).

Sample Storage and Stabilization

DNA/RNA Shield™ ensures nucleic acid stability during sample storage and transport at ambient temperatures (4-25°C). It also preserves genetic integrity and inactivates nucleases and infectious agents (virus).

For sample types high in protein or viscosity, the addition of DNA/RNA Shield™ will help increase lysis efficiency and deproteinization. *See RNA Purification (page 4) for more information.*



Viruses, bacteria and yeast are effectively inactivated by DNA/RNA Shield™. Samples containing the infectious agent (virus, bacteria, yeast) were treated for 5 minutes with DNA/RNA Shield™ or mock (PBS). Titer (PFU) was subsequently determined by plaque assay. Validated by: Influenza A - D. Poole and Prof. A. Mehle, Department of Medical Microbiology and Immunology, University of Wisconsin, Madison; Ebola (Kikwit) - L. Avena and Dr. A. Griffiths, Department of Virology and Immunology, Texas Biomedical Research Institute; HSV-1/2 - H. Oh, F. Diaz and Prof. D. Knipe, Virology Program, Harvard Medical School; *E. coli, L. fermentum, B. subtilis, S. cerevisiae* – Zymo Research).

*Disclaimer: This graph only displays results from *E. coli* inactivation. Each microbe was tested independently and were combined into one graph for brevity. Bacterial cultures were grown between 10^8 - 10^9 cells and yest cultures were grown between 10^7 - 10^8 cells.

RNA Purification

✓ Perform all steps at room temperature and centrifugation at 10,000-16,000 x g.
✓ Sample inputs up to 400 µl can be processed (scale up proportionally).
✓ To remove particulate debris or precipitation in a sample, centrifuge for 1 minute and transfer the cleared supernatant into a nuclease-free tube (not provided).

Start here if you have plasma, serum, CSF, saliva, urine or biological liquids.

1. Add 100 µl **DNA/RNA Shield™** (2X concentrate) to each 100 µl sample. Mix well.

Start here if you have cellular suspension, whole blood or samples already stored/collected in DNA/RNA Shield™ (swab, fecal tube etc.[1]).

2. Add 400 µl **Viral RNA Buffer** to each 200 µl sample. Mix well.

3. Transfer the mixture into a **Zymo-Spin™ IC Column**[2] in a **Collection Tube** and centrifuge for 2 minutes. Transfer the column into a **new** collection tube.

4. Add 500 µl **Viral Wash Buffer**[3] to the column, centrifuge for 30 seconds and discard the flow-through. Repeat this step.

5. Add 500 µl ethanol (95-100%) to the column and centrifuge for 1 minute to ensure complete removal of the wash buffer. Carefully, transfer the column into a nuclease-free tube (not provided).

6. Add 15 µl **DNase/RNase-Free Water** directly to the column matrix and centrifuge for 30 seconds.

   Alternatively, for highly concentrated RNA use ≥6 µl elution.

   The eluted RNA can be used immediately or stored frozen.

Notes:

[1] www.zymoresearch.com/products/collection-stabilization

[2] To process >700 µl, reload the column.

[3] Before starting, add the appropriate volume of ethanol to the wash buffer, see Reagent Preparation page 3.

Ordering Information

Product Description	Kit Size	Catalog No.
***Quick*-RNA™ Viral Kit**	50 Preps 200 Preps	R1034 R1035
***Quick*-RNA™ Viral 96 Kit**	2x 96 Preps 4x 96 Preps	R1040 R1041

For Individual Sale	Amount	Catalog No.
DNA/RNA Shield™ (2X concentrate)	25 ml 125 ml	R1200-25 R1200-125
Viral RNA Buffer	50 ml 100 ml	R1034-1-50 R1034-1-100
Viral Wash Buffer (concentrate)	6 ml 24 ml 48 ml	R1034-2-6 R1034-2-24 R1034-2-48
Zymo-Spin™ IC Columns	50 250	C1004-50 C1004-250
Collection Tubes	50 500 1000	C1001-50 C1001-500 C1001-1000
DNase/RNase-Free Water	10 ml 30 ml	W1001-10 W1001-30

ZYMO RESEARCH

The Beauty of Science is to Make Things Simple