ZYMO RESEARCH
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INSTRUCTION MANUAL

Quick-DNA/RNA™ Viral 96 Kit

Catalog Nos. **D7022** & **D7023**

Highlights

- Quick, high-throughput (96-well spin-plate) purification of viral DNA and RNA from plasma, serum, CSF, cell culture media, cellular suspensions, urine, blood, saliva, swab, fecal, etc.
- DNA and RNA are 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.

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

Product Contents

***Quick*-DNA/RNA™ Viral 96 Kit** (Kit Size)	**D7022** (2x 96 Preps)	**D7023** (4x 96 Preps)	**Storage Temperature**
DNA/RNA Shield™ (2X concentrate)	125 ml	2 x 125 ml	Room Temp.
Viral DNA/RNA Buffer[1]	2 x 100 ml	4 x 100 ml	Room Temp.
Viral Wash Buffer[2] (concentrate)	48 ml	2 x 48 ml	Room Temp.
DNase/RNase-Free Water	4 ml	10 ml	Room Temp.
Zymo-Spin™ I-96 Plate	2	4	Room Temp.
Collection Plate	2	4	Room Temp.
Elution Plate	2	4	Room Temp.
Cover Foil	2	4	Room Temp.
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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 DNA/RNA Buffer** to a final dilution of 0.5% (v/v) *i.e.,* 500 µl per 100 ml.
[2] Add 192 ml of 100% ethanol (204 ml of 95% ethanol) to the 48 ml **Viral Wash Buffer** concentrate before use.

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.

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**: 5 µg DNA and 10 µg RNA
- **Elution Volume**: ≥ 10 µl
- **Purity**: High-quality nucleic acids are ready for Next-Gen sequencing, RT/qPCR, hybridization, *etc.*
- **Equipment Needed**: Centrifuge with 96-well plate carrier

Product Description

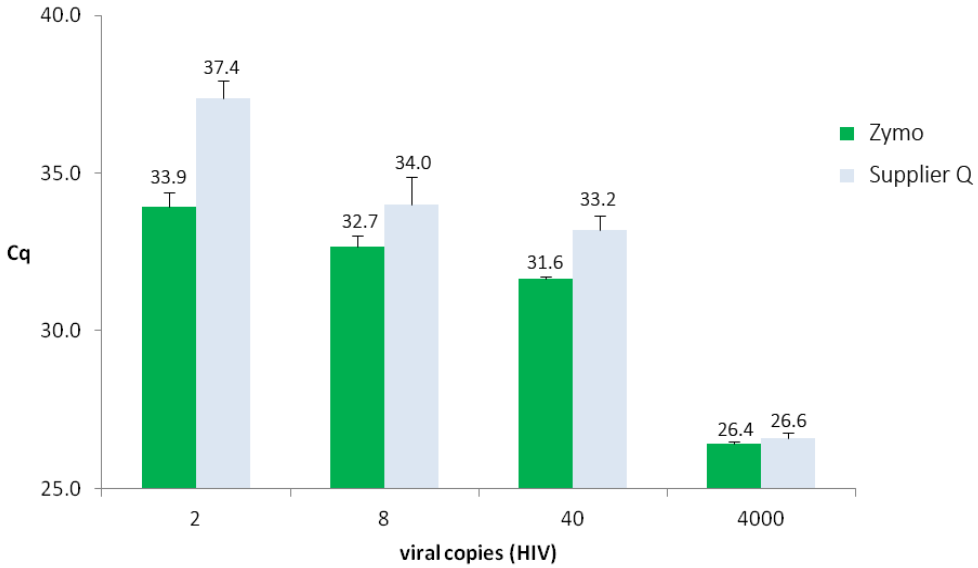
The ***Quick*-DNA/RNA™ Viral Kit** provides for rapid, large scale isolation of viral DNA and RNA from plasma, serum, cell culture media, cellular suspensions, urine, blood, saliva and any other biological samples stored in **DNA/RNA Shield™**.

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

The kit also features a buffer system that facilitates complete viral particle lysis for efficient DNA/RNA isolation. Viral DNA/RNA is bound to each well of the spin-plate, washed and eluted.

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

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



The ***Quick*-DNA/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.

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

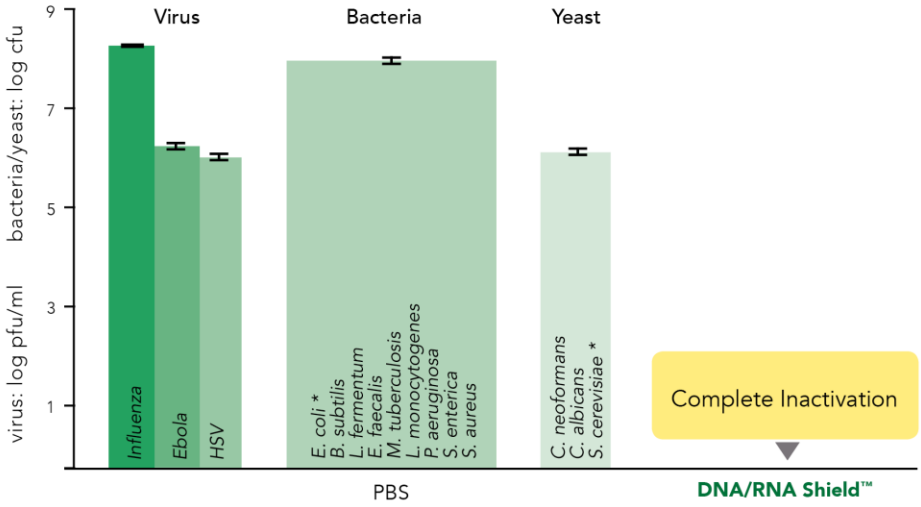
Reagent Preparation

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

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 DNA/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.

DNA/RNA Purification

✓ Perform all steps at room temperature and centrifugation at 3,000-5,000 x g for 5 minutes.
✓ Sample inputs up to 400 µl can be processed (scale up proportionally).
✓ To remove particulate debris or precipitation in a sample, centrifuge 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 DNA/RNA Buffer** to each 200 µl sample. Mix well.

3. Transfer the mixture into each well of the **Zymo-Spin™ I-96 Plate** mounted on a **Collection Plate** and centrifuge. Discard the flow-through from the collection plate.

4. Add 500 µl **Viral Wash Buffer**[2] to each well and centrifuge. Discard the flow-through from the collection plate. Repeat this step.

5. Add 500 µl ethanol (95-100%) to each well and centrifuge. Mount the plate onto an **Elution Plate**.

6. To elute DNA/RNA[3], add 15 µl **DNase/RNase-Free Water** directly to the matrix of each well and centrifuge.

   Alternatively, for highly concentrated RNA use ≥10 µl elution.

   The eluted DNA/RNA can be used immediately or stored frozen.
   Use **Cover Foil** on the elution plate to prevent evaporation.

Notes:

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

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

[3] For 96-well RT/PCR, viral RNA can be eluted directly from the Zymo-Spin™I-96 Plate into a 96-well PCR plate. Simply, mount your 96-well PCR plate between the Zymo-Spin™I-96 Plate and an empty Collection Plate then elute the DNA/RNA as described above.

Ordering Information

Product Description	Kit Size	Catalog No.
***Quick*-DNA/RNA™ Viral Kit**	50 Preps 200 Preps	D7020 D7021
***Quick*-DNA/RNA™ Viral 96 Kit**	2 x 96 Preps 4 x 96 Preps	D7022 D7023
***Quick*-DNA/RNA™ Viral MagBead**	1x 96 Preps 4x 96 Preps	R2140 R2141

For Individual Sale	Amount	Catalog No.
DNA/RNA Shield™ (2X concentrate)	25 ml 125 ml	R1200-25 R1200-125
Viral DNA/RNA Buffer	25 ml 100 ml	D7020-1-25 D7020-1-100
Viral Wash Buffer (concentrate)	6 ml 24 ml 48 ml	R1034-2-6 R1034-2-24 R1034-2-48
Zymo-Spin™ I-96 Plate	2	C2004
Collection Plate	2	C2002
Elution Plate	2	C2003
96-Well Plate Cover Foil	2 6	C2007-2 C2007-6
DNase/RNase-Free Water	10 ml 30 ml	W1001-10 W1001-30

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