



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 



ZYMO RESEARCH

RNA  
Purification  
*Made Simple*

## **Quick-DNA/RNA™ Viral 96 Kit**

Viral DNA & RNA from any biological sample

### Highlights

- Spin-plate (96-well) purification of viral DNA and RNA from plasma, serum, urine, cell culture media, blood, saliva, cellular suspensions, swab, fecal and biopsy samples
- High-quality DNA/RNA is ready for Next-Gen sequencing, RT/qPCR, hybridization, etc.
- DNA/RNA Shield is included for sample collection, inactivation, storage and preservation.

Catalog Numbers:  
D7022, D7023



Scan with your smart-phone camera to  
view the online protocol/video.



[tech@zymoresearch.com](mailto:tech@zymoresearch.com)



[www.zymoresearch.com](http://www.zymoresearch.com)



Toll Free: (888) 882-9682

# Table of Contents

---

<b>Product Contents</b> .....	<b>01</b>
<b>Specifications</b> .....	<b>02</b>
<b>Product Description</b> .....	<b>03</b>
<b>Protocol</b> .....	<b>04</b>
(I) Buffer Preparation .....	<b>04</b>
(II) Sample Preparation.....	<b>05</b>
DNA/RNA Shield Samples, Swabs, Liquids, Tissue	<b>05</b>
(III) DNA/RNA Purification.....	<b>06</b>
<b>Appendices</b> .....	<b>07</b>
DNase I Treatment	<b>07</b>
<b>Ordering Information</b> .....	<b>08</b>
<b>Complete Your Workflow</b> .....	<b>09</b>
<b>Troubleshooting Guide</b> .....	<b>10</b>
<b>Notes</b> .....	<b>11</b>
<b>Guarantee</b> .....	<b>13</b>

# Product Contents

<b>Quick-DNA/RNA™ Viral 96 Kit</b>	<b>D7022</b> (2 x 96 prep)	<b>D7023</b> (4 x 96 prep)
DNA/RNA Shield™ (2X concentrate)	125 ml	125 ml (x2)
Viral DNA/RNA Buffer <sup>1</sup>	100 ml (x2)	100 ml (x4)
Viral Wash Buffer <sup>2</sup> (concentrate)	48 ml	48 ml (x2)
DNase/RNase-Free Water	4 ml	10 ml
Zymo-Spin™ I-96 Plate	2	4
Collection Plate	2	4
Elution Plate	2	4
96-Well Plate Cover Foil	2	4
Instruction Manual	1 pc	1 pc

**Storage Temperature** - Store all kit components (i.e., buffers, columns) at room temperature.

Before use:

1 Add beta-mercaptoethanol (β-Me; user provided) to 0.5% (v/v) i.e., add 500 µl β-Me per 100 ml **Viral DNA/RNA Buffer**.

2 Add 192 ml of 100% ethanol (204 ml of 95% ethanol) to the 48 ml **Viral Wash Buffer** concentrate.

# Specifications

- **Sample Sources** –  $\leq 400 \mu\text{l}$  plasma, serum, saliva, swab, urine, cell culture media, blood, cellular suspension, fecal sample or  $\leq 5 \text{ mg}$  biopsy sample.

For samples in UTM®/VTM®, PBS or saline, see Sample Preparation, page 5.

- **Purity** – DNA/RNA is ready for Next-Gen Sequencing, RT/qPCR, etc.
- **Binding Capacity** –  $10 \mu\text{g}$  DNA/RNA (**Zymo-Spin™ I-96 Plate**).
- **Elution Volume** –  $\geq 10 \mu\text{l}$  **DNase/RNase-Free Water**.
- **Equipment Needed** (user provided) – Beta-mercaptoethanol (b-Me), Ethanol (95-100%), Centrifuge with 96-well plate carrier.
- **Materials** (available separately) –

DNase I Set (E1010; 50 rxns.; 250 U DNase I (lyophilized) supplied w/ DNA Digestion Buffer, 4 ml)

DNA/RNA Prep Buffer (D7010-2-50; 50 ml)

DNA/RNA Wash Buffer (concentrate) (D7010-3-6, 6 ml)

Proteinase K Set (D3001-2-20; 20 mg Proteinase K (lyophilized) supplied w/ Storage Buffer).

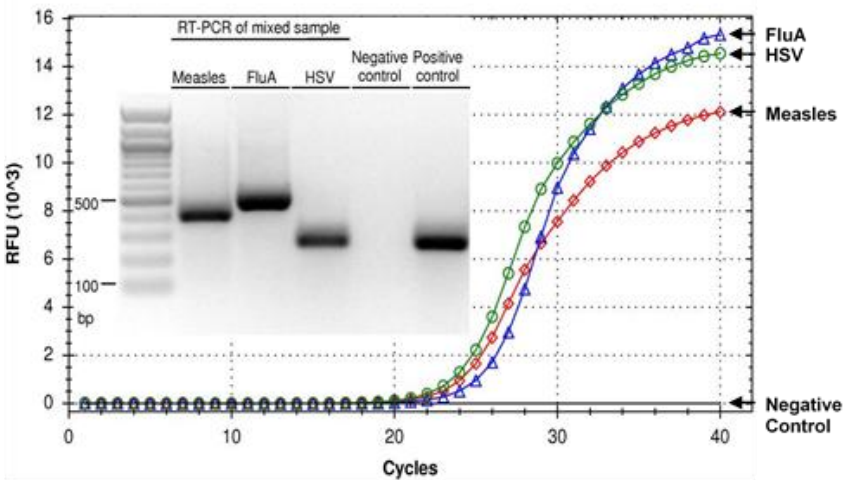
# Product Description

The **Quick-DNA/RNA™ Viral 96 Kit** is a spin-plate (96-well) purification of viral DNA and/or RNA from plasma, serum, urine, cell culture media, blood, saliva, cellular suspensions, biopsies, swab and fecal samples stored in **DNA/RNA Shield™** (for sample collection, nucleic acid preservation and inactivation of pathogens).

The kit also features a buffer system that facilitates complete viral particle lysis for efficient nucleic acid isolation. Small (> 50 nt) and large (> 200 kb) DNA and RNA are bound to each well of the plate, washed and eluted.

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

## Detection of DNA & RNA Viruses from a Mixed Population



Viral nucleic acids were isolated from liquid samples using the **Quick-DNA/RNA™ Viral Kit**. Data shows RT-qPCR Ct values for measles, influenza type A (FluA), and herpes-simplex (HSV) viruses, 23.05 (diamonds), 24.56 (triangles), 22.92 (circles), respectively. Negative control – RT-PCR (no template w/ HSV specific primers). Positive control – PCR (HSV template w/ HSV primers).

# Protocol

The protocol consists of: (I) Buffer Preparation, (II) Sample Preparation and (III) DNA/RNA Purification.

## (I) Buffer Preparation

- ✓ Add beta-mercaptoethanol (user provided) to 0.5% (v/v) i.e., add 500  $\mu$ l  $\beta$ -Me per 100 ml **Viral DNA/RNA Buffer**.
- ✓ Add 192 ml of 100% ethanol (204 ml of 95% ethanol) to the 48 ml **Viral Wash Buffer** concentrate.

## (II) Sample Preparation

- ✓ Perform all steps at room temperature (20-30°C).
- ✓ Depending on sample type, up to 400 µl can be processed per prep (see below).

### **Samples in DNA/RNA Shield™<sup>1,2</sup> collection devices** (swabs, saliva, etc.)

Transfer up to 400 µl and proceed directly with purification, page 6.

### **Swabs** (UTM®/VTM®, PBS, saline, etc.)

Transfer up to 400 µl and proceed directly with purification, page 6.

Optional - To inactivate, store and preserve samples at room temperature prior to further processing, add **DNA/RNA Shield™**. See **Liquids**, below.

### **Liquids** (plasma<sup>2</sup>, serum<sup>2</sup>, CSF, blood, saliva, urine, cell suspension, cell culture media)

Add 200 µl of DNA/RNA Shield™ (2X concentrate) to 200 µl liquid sample (1:1) and mix well. Transfer up to 400 µl of the mixture and proceed with purification, page 6.

### **Tissue**<sup>2</sup> (LCM, needle biopsy)

Add 400 µl **DNA/RNA Shield™** (1X) to a tissue sample (up to 5 mg) and mix well. Proceed with purification, page 6.

Optional - **Proteinase K treatment**<sup>3</sup> (protein-rich samples e.g., plasma, serum, saliva, sputum, tissue, can be treated). Materials sold separately.

Add 1% **Proteinase K** (v/v) at 20 mg/ml directly to a liquid sample. Mix well and incubate at room temperature for 15 minutes. Note: Up to 5% Proteinase K can be added (e.g., tissue). For example: Add 4-20 µl Proteinase K to each 400 µl sample.

---

1 At this point, samples in DNA/RNA Shield™ can be stored at ambient temperature (4-25°C) for a month, 3 days at 37°C, or long-term (> 1 year) -20°C or below.

2 To remove particulate debris or cryoprecipitates (if any), centrifuge and transfer up to 400 µl of the cleared supernatant into a nuclease-free plate/tube (not provided).

3 Prior to use, reconstitute the lyophilized Proteinase K (D3001-2-20) and add 1,040 µl Storage Buffer. Mix well and store frozen aliquots.



### (III) DNA/RNA Purification

- ✓ Perform all steps at room temperature and centrifugation at 3,000-5,000 x g for 5 minutes.
- ✓ The sample input can be scaled up or down, proportionally.
- ✓ Do not use the **96-Well Cover Foil** on the spin-plate during DNA/RNA Purification. If necessary, use an Air Permeable Sealing Cover (#C2011-8); sold separately.

1. Add 800 µl **Viral DNA/RNA Buffer** to each 400 µl sample<sup>1</sup> (2:1) and mix well.
2. Transfer the mixture into each well of the **Zymo-Spin™ I-96 Plate**<sup>2</sup> mounted on a **Collection Plate** and centrifuge. Discard the flow-through from the collection plate.

Optional: At this point, DNase I treatment can be performed (see Appendices, page 7).

3. Add 500 µl **Viral Wash Buffer** to the column, centrifuge and discard the flow-through. Repeat this step.
4. Add 500 µl ethanol (95-100%) to the column and centrifuge. Then mount the spin-plate onto an **Elution Plate**.
5. To elute DNA/RNA, add 15 µl **DNase/RNase-Free Water** directly to the matrix of each well and centrifuge.

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

The eluted DNA/RNA<sup>3</sup> can be used immediately or stored frozen.  
Use the **96-Well Cover Foil** to prevent the eluate from evaporation.

---

1 Up to 400 µl sample (including the volume of DNA/RNA Shield, if added) can be processed per prep.

2 To process > 700 µl, the plate can be reloaded.

3 It is recommended to titrate the DNA/RNA eluate for downstream applications (i.e., RT/qPCR, etc.).

# Appendices

## DNase I Treatment

- ✓ For DNA-free RNA, DNase I treatment can be performed using DNase I Set (E1010; 50 reactions), DNA/RNA Prep Buffer (D7010-2-50) and DNA/RNA Wash Buffer (concentrate) (D7010-3-6); materials sold separately.

For each sample to be treated, prepare **DNase I Reaction Mix** in an RNase-free tube (not provided) and mix by gentle inversion:

<b>DNase I Reaction Mix</b>	
<b>DNA Digestion Buffer</b>	35 $\mu$ l
<b>DNase I</b> (reconstituted; 1 U/ $\mu$ l) <sup>1,2</sup>	5 $\mu$ l

1. Following DNA/RNA binding (page 6, step 2), add 400  $\mu$ l **DNA/RNA Wash Buffer**<sup>3</sup> to each well, centrifuge the plate and discard the flow-through.
2. Add 40  $\mu$ l **DNase I Reaction Mix** directly to the matrix of each well.
3. Incubate at room temperature for (20-30°C) for 15 minutes.
4. Add 500  $\mu$ l **DNA/RNA Prep Buffer** to each well, centrifuge the plate and discard the flow-through.
5. Proceed with DNA/RNA Purification (page 6, step 3).

---

1 Prior to use, reconstitute lyophilized 250 U **DNase I** (E1009-A) to 1U/ $\mu$ l (final concentration) with 275  $\mu$ l nuclease-free water (not provided), mix by gentle inversion and store frozen aliquots.

2 Unit definition – one unit increases the absorbance of a high molecular weight DNA solution at a rate of 0.001 A260 units/ml of reaction mixture at 25°C.

3 Before use, add 24 ml of 100% ethanol (26 ml of 95% ethanol) to the 6 ml **DNA/RNA Wash Buffer** concentrate.

# Ordering Information

Product Description	Catalog No.	Size
<b>Quick-DNA/RNA™ Viral 96 Kit</b>	D7022 D7023	2 x 96 preps. 4 x 96 preps.

Individual Kit Components	Catalog No.	Amount
<b>DNA/RNA Shield™ (2X concentrate)</b>	R1200-25 R1200-125	25 ml 125 ml
<b>Viral DNA/RNA Buffer</b>	D7020-1-25 D7020-1-100	25 ml 100 ml
<b>Viral Wash Buffer (concentrate)</b>	R1034-2-24 R1034-2-48	24 ml 48 ml
<b>Zymo-Spin I-96 Plate</b>	C2004	2
<b>Collection Plate</b>	C2002	2
<b>Elution Plate</b>	C2003	2
<b>DNase/RNase-Free Water</b>	W1001-30 W1001-100	30 ml 100 ml
<b>DNA/RNA Shield™ Fecal Collection Tube</b>	R1101	10
<b>DNA/RNA Shield™ Collection Tube</b>	R1102	50
<b>DNA/RNA Shield™ Lysis Tube (microbe)</b>	R1103	50
<b>DNA/RNA Shield™ Lysis Tube (microbe) w/ swab</b>	R1104	50
<b>DNA/RNA Shield™ Lysis Tube (tissue)</b>	R1105	50
<b>DNA/RNA Shield™ Collection Tube w/ Swab (1 ml fill)</b>	R1106 R1107	10 50
<b>DNA/RNA Shield™ Collection Tube w/ Swab (2 ml fill)</b>	R1108 R1109	10 50
<b>DNA/RNA Shield™ Saliva Collection Kit (2 ml fill)</b>	R1210	1
<b>DNase I Set (250 U DNase I (lyophilized) supplied with DNA Digestion Buffer, 4 ml)</b>	E1010	1
<b>DNA/RNA Prep Buffer</b>	D7010-2-50 D7010-2-200	50 ml 200 ml
<b>DNA/RNA Wash Buffer</b>	D7010-3-6 D7010-3-24	6 ml 24 ml
<b>Proteinase K Set supplied w/ Storage Buffer</b>	D3001-2-5 D3001-2-20	5 mg 20 mg
<b>96-Well Plate Cover Foil</b>	C1007-2 C1007-4	2 4

# Complete Your Workflow

- ✓ For sample collection, inactivation of pathogens, storage and preservation of nucleic acids, use DNA/RNA Shield™ collection devices:

DNA/RNA Shield™ Collection Devices	
DNA/RNA Shield™ Collection Tube w/ Swab (1 ml fill or 2 ml fill) #R1107, R1109	For swab samples of nasal, throat, etc.
DNA/RNA Shield™ Saliva Collection Kit (2 ml fill) #R1210	For saliva, sputum, etc.
DNA/RNA Shield™ Collection Tube DNA/RNA Shield™ Lysis Tube (microbe) DNA/RNA Shield™ Lysis Tube (microbe) w/ swab DNA/RNA Shield™ Lysis Tube (tissue) #R1102-R1105	For microbes, tissue, etc. (2 ml lysis tubes used for bead beating homogenization)

- ✓ For RNA clean-up (purification) from the aqueous phase (e.g., TRIzol, TRI Reagent or similar) or from any enzymatic reaction (e.g., DNase I treated RNA):

RNA Clean & Concentrator	
Microprep #R1013, R1015	DNase I Set included (#R1013)
MagBeads #R1081, R1082	(#R1082)

# Troubleshooting Guide

<b>Problem</b>	<b>Possible Causes and Suggested Solutions</b>
<b>RNA degradation</b>	<p>To prevent RNA degradation:</p> <p>Immediately collect and lyse fresh sample into a stabilization reagent (i.e., DNA/RNA Shield™) to ensure nucleic acid stability. Homogenized samples in DNA/RNA Shield™ can be stored frozen for later processing.</p>
<b>Low nucleic acid content and/or low sensitivity in downstream application</b>	<p>Incomplete deproteinization due to high-protein content in the sample (blood, plasma/serum, tissue etc.):</p> <ul style="list-style-type: none"><li>- Increase the volume of DNA/RNA Shield™ to the sample.</li><li>- Perform Proteinase K treatment (see Sample Preparation, page 4).</li></ul> <p>Increase eluate input:</p> <ul style="list-style-type: none"><li>-Titrate the DNA/RNA eluate for downstream applications (i.e., RT/qPCR).</li></ul>
<b>DNA contamination</b>	<p>To remove DNA:</p> <ul style="list-style-type: none"><li>- Perform DNase I treatment during the purification (page 6) or perform DNase I treatment post-purification (#R1080), then clean-up the treated sample.</li></ul>

For technical assistance, please contact 1-888-882-9682 or email [tech@zymoresearch.com](mailto:tech@zymoresearch.com)







**100% satisfaction guarantee on all Zymo Research products,  
or your money back.**

Zymo Research is committed to simplifying your research with quality products and services. If you are dissatisfied with this product for any reason, please call 1(888) 882-9682.

---

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

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.

<sup>TM</sup> Trademarks of Zymo Research Corporation  
Quick-DNA/RNA<sup>®</sup> is a registered trademark of Zymo Research Corporation. Other trademarks: Ambion<sup>®</sup>, Tecan<sup>®</sup>, Hamilton<sup>®</sup>, Thermo Fisher<sup>®</sup>





ZYMO RESEARCH

The **BEAUTY** of **SCIENCE** is to Make Things **SIMPLE**®



[tech@zymoresearch.com](mailto:tech@zymoresearch.com)



[www.zymoresearch.com](http://www.zymoresearch.com)



Toll Free: (888) 882-9682