



INSTRUCTION MANUAL

Quick-DNA/RNA™ Viral MagBead

Catalog Nos. R2140 & R2141

Highlights

- High-throughput, magnetic-bead based 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 ready for Next-Gen sequencing, RT-qPCR, hybridization, *etc.*
- DNA/RNA Shield™ for sample collection, inactivation and storage provided

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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 MagBead (Kit Size)	R2140 (96 preps)	R2141 (4x 96 preps)	Storage Temperature
DNA/RNA Shield™ (2X concentrate) ¹	25 ml	125 ml	Room Temp.
Viral DNA/RNA Buffer ²	100 ml	4 x 100 ml	Room Temp.
Proteinase K ³ (lyophilized) w/ Storage Buffer Set	2 x 5 mg	2 x 20 mg	Room Temp.
MagBinding Beads	3 ml	12 ml	Room Temp.
MagBead DNA/RNA Wash 1 (concentrate) ⁴	30 ml	120 ml	Room Temp.
MagBead DNA/RNA Wash 2 (concentrate) ⁵	20 ml	80 ml	Room Temp.
DNase/RNase-Free Water	30 ml	3 x 100 ml	Room Temp.
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Note - 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 maximal performance and reliability.

¹ To prepare DNA/RNA Shield (1X), dilute the **2X concentrate** with an equal volume of **DNase/RNase-Free Water**.

² Add beta-mercaptoethanol to 0.5% (v/v) *i.e.*, add 500 µl or 1 ml per 100 ml or 200 ml **Viral DNA/RNA Buffer**, respectively.

³ Add 260 µl or 1,040 µl **Proteinase K Storage Buffer** to reconstitute per 5 mg or 20 mg lyophilized **Proteinase K**, respectively. Vortex to dissolve and store frozen aliquots.

⁴ Add 20 mL (R2140) or 80 ml (R2141) of isopropanol to the **MagBead DNA/RNA Wash 1** concentrate.

⁵ Add 30 mL (R2140) or 120 ml (R2141) of isopropanol to the **MagBead DNA/RNA Wash 2** concentrate.

Specifications:

- **Sample Type:** ≤400 µl plasma, serum, urine, cell culture media, blood, saliva, cellular suspension, swab, fecal sample or ≤5 mg biopsy sample.
- **Purity:** High-quality DNA/RNA ready for Next-Gen sequencing, RT/PCR, hybridization, *etc.*
- **Binding Capacity:** 10 µg DNA/RNA per 20 µl magnetic beads
- **Size:** 50 nt to ~200 kb
- **Elution Volume:** ≥50 µl DNase/RNase-Free Water
- **Materials** (available separately):
 - ZR-96 MagStand (P1005)
 - Collection Plate (C2002; capacity 1.2 ml/well)
 - 96-Well Block (P1001; capacity 2 ml/well)
 - Elution Plate (C2003; capacity 0.35 ml/well)
 - Cover Foil (C2007; 2, 6, 12 or 24 pack)

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.

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Product Description

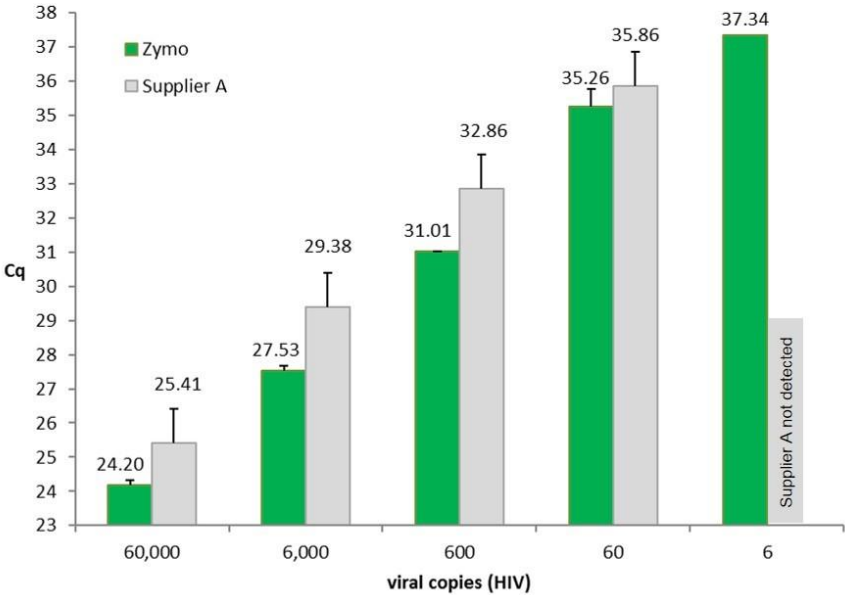
Quick-DNA/RNA™ Viral MagBead kit is designed for high-throughput purification of viral DNA and/or RNA from plasma, serum, urine, cell culture media, blood, saliva, cellular suspensions, biopsies, swab and fecal samples stored in **DNA/RNA Shield™**.

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 magnetic beads, washed and eluted.

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

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

High-Sensitivity Viral Detection at Low Titer



Viral RNA isolated from plasma samples using the *Quick-DNA/DNA™* Viral MagBead kit. Image shows average Cq values (in duplicate; +/- SD) from RT-qPCR in comparison to Supplier A.

Automation Scripts:

Quick-DNA/RNA™ Viral MagBead kit is compatible with any automated platform. For automation scripts and related technical support, email automation@zymoresearch.com. In the subject line, please include “Automation Scripts”, instrument used and the product catalog number.

Reagent Preparation:

- ✓ Add 500 µl or 1 ml beta-mercaptoethanol (user supplied) per 100 ml or 200 ml **Viral DNA/RNA Buffer**, respectively, (final concentration 0.5% (v/v)).
- ✓ Add 20 mL (R2140) or 80 ml (R2141) of isopropanol to the **MagBead DNA/RNA Wash 1** concentrate.
- ✓ Add 30 mL (R2140) or 120 ml (R2141) of isopropanol to the **MagBead DNA/RNA Wash 2** concentrate.
- ✓ Add 260 µl or 1,040 µl **Proteinase K Storage Buffer** to reconstitute per 5 mg or 20 mg lyophilized **Proteinase K**, respectively. Vortex to dissolve and store frozen aliquots.
- ✓ To prepare DNA/RNA Shield™ (1X), dilute the **2X concentrate** with an equal volume of **DNase/RNase-Free Water**.

Protocol:

The following procedure should be performed at room temperature (15-30°C), unless specified.

Sample preparation

1. Add **DNA/RNA Shield™** to the sample as recommended (see table below) and mix well.

		add DNA/RNA Shield™	
		1X	2X concentrate
plasma, serum, urine, saliva, culture media (whole blood, cell suspension)	200 µl	-	200 µl
swab (skin, nasal, fecal, vaginal, ear, eye)	-	400 µl	-
tissue (needle biopsy)	up to 5 mg	400 µl	-
DNA/RNA Shield™ collection devices (Cat. Nos. #R1107, R1109, R1104)	400 µl	-	-

Notes:

¹ Up to 400 µl sample can be processed per prep.

2. To remove particulate debris or precipitation, centrifuge at 12,000 x g for 1 minute and transfer up to 400 µl of the cleared supernatant¹ into a nuclease-free tube or well/plate (not provided).

DNA/RNA Purification

3. Add 4 μ l **Proteinase K** to each 400 μ l cleared sample¹ and mix well².
4. Add 800 μ l **Viral DNA/RNA Buffer** and mix well².
5. Add 20 μ l **MagBinding Beads** and mix well² for 10 minutes.
Important: MagBinding Beads settle quickly, ensure that beads are kept in suspension while dispensing.
6. Transfer the plate to a magnetic stand until beads have pelleted, then aspirate³ and discard the cleared supernatant.
7. Add 500 μ l **MagBead DNA/RNA Wash 1** and mix well².
8. Transfer the plate to a magnetic stand until beads have pelleted, then aspirate³ and discard the cleared supernatant.
9. Add 500 μ l **MagBead DNA/RNA Wash 2** and mix well².
10. Transfer the plate to a magnetic stand until beads have pelleted, then aspirate³ and discard the cleared supernatant.
11. Add 500 μ l ethanol (95-100%) and mix well².
12. Transfer the plate to a magnetic stand until beads have pelleted, then aspirate³ and discard the cleared supernatant.
13. Repeat steps 11 and 12.
14. Dry the beads at room temperature for 10 minutes or until fully dry⁴.
15. To elute DNA/RNA from the beads, add 50 μ l **DNase/RNase-Free Water** and mix well².
16. Transfer the plate to a magnetic stand until beads have pelleted, then aspirate³ and dispense the eluted DNA/RNA to a nuclease-free tube or elution plate (not provided).

The eluted DNA/RNA can be used immediately or stored frozen.

Notes:

¹ Up to 400 μ l sample can be processed per prep.

² For all buffer additions and to ensure beads are properly in suspension, **mix well** by pipetting up and down several times and/or by shaking (vortexing) at ~1,300 rpm.

³ Some beads will adhere to the sides of the well. When removing the supernatant, aspirate slowly to allow these beads to be pulled to the magnet as the liquid level is lowered.

⁴ Beads will change in appearance from glossy black when still wet to a dull brown when fully dry.

Ordering Information:

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

For Individual Sale	Amount	Catalog No.
Viral DNA/RNA Buffer	50 ml	D7020-1-50
	100 ml	D7020-1-100
Proteinase K² w/ Storage Buffer Set	5 mg	D3001-2-5
	20 mg	D3001-2-20
MagBead DNA/RNA Wash 1 (concentrate)	30 ml	R2130-1-30
	120 ml	R2130-1-120
MagBead DNA/RNA Wash 2 (concentrate)	20 ml	R2130-2-20
	80 ml	R2130-2-80
MagBinding Beads	3 ml	D4100-2-3
	6 ml	D4100-2-6
	8 ml	D4100-2-8
	12 ml	D4100-2-12
DNase/RNase-Free Water	10 ml	W1001-10
	30 ml	W1001-30
	100 ml	W1001-100
DNA/RNA Shield™ (2X concentrate)	25 ml	R1200-25
	125 ml	R1200-125
DNA/RNA Shield™	10 pack	R1106
Collection Tube w/ Swab (1 ml fill)	50 pack	R1107
DNA/RNA Shield™	10 pack	R1108
Collection Tube w/ Swab (2 ml fill)	50 pack	R1109
DNA/RNA Shield™	50 pack	R1102
Lysis Tube (Tissue) (1 ml fill)		
ZR-96 MagStand	1	P1005
Collection Plate (capacity 1.2 ml/well)	2 plates	C2002
96-Well Block (capacity 2 ml/well)	2 plates	P1001-2
	10 plates	P1001-10
Elution Plate (capacity 0.35 ml/well)	2 plates	C2003
96-Well Plate Cover Foil	2 foils	C2007-2
	6 foils	C2007-6
	8 foils	C2007-8

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