VLP-RNA Extraction Control
Product Handling Guide

Shipping:	On Dry or Blue Ice
Catalog number:	MDX068 MDX069
Concentration	10^4 copies/µL
Batch/Lot No.:	See vial

Store at –20 °C

Storage and stability:
VLP-RNA Extraction Control is shipped on dry or blue ice. On arrival store at –20 °C for optimum stability. Repeated freeze/thaw cycles should be avoided. Solutions should be mixed/equilibrated after each thawing to avoid phasing.

Expiry:
When stored under the recommended conditions and handled correctly, full activity of the kit is retained until expiry on outer box label.

Safety precautions:
Read and understand the SDS (Safety Data Sheets) before handling the reagents. Hardcopies of the SDS will be provided with the first shipment, thereafter they will be available upon request.

Quality control:
Meridian operates under ISO 13485 Quality Management System. VLP-RNA Extraction Control and its components are extensively tested for functionality.

Notes:
For research or further manufactured use only.

Description

VLP-RNA Extraction Control contains an internal control RNA sequence, with no known homology to any organism, encapsidated in a virus-like particle. The VLP-RNA Extraction Control is spiked in the sample prior to RNA extraction. Following RNA extraction, VLP-RNA Extraction Control can be detected in RT-qPCR adding the VLP Detection mix to the reaction mix. The detection of VLP-RNA Extraction Control confirms the success of the extraction, reverse transcription and amplification steps, avoiding the misinterpretation of a false negative result.

Kit components

Table 1

Component
VLP-RNA Extraction Control
VLP Detection Mix (Red or Orange)

Users Guidelines:

Notes:

a. Optimal volumes of VLP-RNA Extraction Control may vary depending on sample type and RNA extraction technique. Protocol optimization may be needed.
b. After first use, VLP-RNA Extraction control can be stored at 2 to 8 °C up to 3 months.
c. Validation of multiplex PCR should be performed prior to high-throughput processes.
d. A control reaction should contain all components required for amplification of sample RNA, including Internal Control RNA, to ensure the amplification of the VLP-RNA Extraction Control
e. A control to verify the absence of cross-reactivity between the user-assay and Internal Control RNA should be carried out.

Extraction step

1. Briefly spin down all tubes before opening.
2. Standard Protocol:
   i) Spike 4 µL* of VLP-RNA Extraction Control into each sample.
   ii) Follow the manufacturer's protocol for total RNA extraction.
   iii) Elute total RNA in a volume up to 50 µL.
3. Use up to 5 µL of the elution volume for a 20 µL RT-qPCR reaction.

**This volume has to be considered as a reference. The amount of VLP-RNA Extraction Control spiked should be adjusted depending on sample and extraction method used.*

Post-extraction set up master mix preparation

Recommended reagent volumes per 20 µL RT-qPCR mix are given in Table 2

Table 2

Component	Supplied	Volume
2x RT-qPCR master mix	No	10 µL
Target probe/primer mix	No	X µL
Sample RNA from extraction step	No	Up to 5 µL
VLP Detection Mix (Red or Orange)**	Yes	0.8 µL
Reverse transcriptase 100x	No	0.2 µL
RNase inhibitor	No	0.4 µL
Total Volume (for 1 reaction)		20 µL

** *Vortex Control Mix before making up the master mix*

Assay setup

The RT-qPCR conditions in Table 3 are suitable for amplicons of up to 200 bp, however they can be varied to suit different commercial RT-qPCR mixes and machine-specific protocols.

Table 3

Step	Temperature	Time	Cycles
Reverse transcription	42 °C	10-20 min	1
Polymerase activation	95 °C	3 min	1
Denaturation	95 °C	10 s	35-40
Annealing/Extension	60 °C	30-45 s	

Acquire VLP-RNA Extraction Control fluorescence signal on the appropriate channel:
- VLP Detection Mix Red (Cy5 - emission wavelength = 670 nm)
- VLP Detection Mix Orange (HEX - emission wavelength = 555 nm)

Related Products	Cat. No.
VLP-RNA Extraction Control CUS	MDX071

Technical Support

For any technical enquiries, please contact our Technical Support team via email at: mbi.tech@meridianlifescience.com

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