

Armored RNA Quant[®] Internal Process Control*

Armored Controls have been utilized in IVD-approved assays for more than 20 years and continue to serve as an important tool in the rapidly evolving space of molecular diagnostics. For technologies ranging from qPCR to NGS, there is now a convenient and inexpensive way to test the utility of the Armored RNA[®] technology in your assay with the Armored RNA Quant[®] Internal Process Control.

This control is a non-specific, 1,000 base pair IVT RNA (alien/non-homologous) sequence, encapsulated in a coat of protein dimer armor which renders it resistant to degradation and therefore useful across a variety of applications. It is intended to be used as a spike-in to your sample (e.g., urine, blood, CSF, plasma/liquid biopsy) to monitor the overall efficiency of your process. This robust and versatile control allows you to measure specificity and sensitivity of your assay during development or while running samples as an on-board process control.

Armored RNA Quant[®]
**THE GOLD STANDARD
FOR MOLECULAR
QUALITY CONTROL**

REDUCED COMPLEXITY

- Available as a standalone catalog item
- Simple, spike-in solution to monitor extraction and process efficiency
- Compatible with new and existing RNA-based clinical assays
- Non-infectious, synthetic constructs simplify shipping and storage
- Incorporates a 1000bp, non-coding, non-specific alien sequence

OPTIMIZED WORKFLOW

- Deployable as extractable, exogenous internal positive control
- Non-competitive sequence will not interfere with amplification/detection of target(s)
- Degradation resistant in majority of biological matrices
- Multiple volume and manufacturing options available
- Available as cGMP or development lot in a range of fill volumes

QUALITY PERFORMANCE

- Concentration determined using National Institute of Standards (NIST) traceable standard
- Highly standardized, quality controlled manufacturing ensures reliability and consistency between lots
- Manufactured in a cell-free system

Armored RNA Quant® Internal Process Control Product Details

- Encapsulated as non-infectious, nuclease-resistant, pseudo-viral particle
- NIST traceability enables usage in standardization and reproducibility assessments
- Minimum concentration: 2×10^6 copies/ml
- Buffer Composition: TSM III (10 mM Tris, 100 mM NaCl, 1 mM $MgCl_2$, 0.1% Gelatin, 0.3% Microcide III, pH 7.0)
- Storage at -15 to -30°C
- Total Volume: 0.5mL[†]

[†]Higher concentrations, volumes and vial quantities available upon request.

Armored RNA Quant® Internal Process Control Target Sequence (1,000 bp):

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GTACTGACGTAAAGTCACTATTTTTTCGTGCAACGTACGTCTCGATGTACAACCTGCTCTATTACGGTTTCATTTTTTTGTAGGGTTACGCGGC
CAGATGACTCCATCTTATCCCCTTAAAAACATTCTTATTTGTACGCCATAGTGGCATCGCGGTTGGATATCAATCGTATTGGACGCAAGCGC
GCTCTACTCAGTTTATAAGACCGCCAACCTATTTTCGCAAGATCAGTGTATTTACGCTGACTCCAGTGGTGAAGCTCCTAAGATCTGTTTAGC
TATTGCGCCGTGCGTTTATCAAATCGGGCTTCCCAACATTCTTCTAGAAGGAAGCTCGATAGTTCAGAGCTGCGGAAGGCCCAATTCATAT
TATATGTATGAGCCTGTCAATACCTGCACCCACGAACACCACAGTGACTAGAGTATGAGAGGTCGACGATCTACGGATGGTGATGAGCAC
GGAGATCTAAGCGTGAAGTGGCTATATAGAGCAGATATATTATATGACGTACCAGAGGATCACCTACTAAAAGACTTTTCGAGAATCTA
CACCTACTAGCAAGGGTAGCCGATTAGTGGATCATCTAAGACATCAAGGCTCAAACCTAATTTTACCATGGACGCTGCATTTACGCTTGCA
CATTTTATGTTGGCAGCCTTTGCCGCGGCACATAGCGATATCCCGTACCCGCTTTTCTTAAGTTAATCGCCGATGATTGGCTCAATAATCG
CCTCACTTGTGCGATGACTAGCCAGGCGTTTCCCGCGTTTCTAGATATTATCGCGCTTATATAGTATAGACGAGTACCCTTTGTTGTTATTG
CAGCACCCAACAGAACTAAGTAATCTTTAGGCTGCGGCCGCTTAGGTGGCAGAAGATTGCTCGATGTTCTCAAGTAAAGGACGTCG
GGGAGTTGACGGTTGGCAGGTAACGTATGGATCTTTAATATAATCTAGGCAACAAGTAAGGGCCATTGAGCGCTTATATGCCGCGAGTCT
GGGAGTTGACGGTTGGCAGGTAACGTATGGATCTTTAATATAATCTAGGCAACAAGTAAGGGCCATTGAGCGCTTATATGCCGCGAGTCT
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Publication References

1. Tang N, Pahalawatta V, Frank A, Bagley Z, Viana R, Lampinen J, Leckie G, Huang S, Abravaya K, Wallis CL. 2017. HIV-1 viral load measurement in venous blood and fingerprick blood using Abbott RealTime HIV-1 DBS assay. *J Clin Virol.* 2017 Jul;92:56-61.
2. Beld M, Minnaar R, Weel J, Sol C, Damen M, van der Avoort H, Wertheim-van Dillen P, van Breda A, Boom R. 2004. Highly sensitive assay for detection of enterovirus in clinical specimens by reverse transcription-PCR with an armored RNA internal control. *J Clin Microbiol.* 2004 Jul;42(7):3059-64.
3. Okello JB, Rodriguez L, Poinar D, Bos K, Okwi AL, Bimenya GS, Sewankambo NK, Henry KR, Kuch M, Poinar HN. 2010. Quantitative assessment of the sensitivity of various commercial reverse transcriptases based on armored HIV RNA. *PLoS One.* 2010 Nov 10;5(11):e13931.
4. Stevenson J, Hymas W, Hillyard D. 2008. The use of Armored RNA as a multi-purpose internal control for RT-PCR. *J Virol Methods.* 2008 Jun;150(1-2):73-6.

ORDERING INFORMATION

Part Number	Product Description	Volume
49650	Armored RNA Quant® Internal Process Control	0.5mL

To request a quote or for more information about Armored RNA Quant® Internal Process Control or other Custom Armored solutions, contact | armored@asuragen.com

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