

qNTQX® Fast Cell Direct Probe RT-qPCR Kit

Cat. no. LM602007 — Test Data Report

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Product Overview

qNTQX® Fast Cell Direct Probe RT-qPCR Kit is a cell-direct, two-step (probe-based) RT-qPCR reagent kit that combines rapid cell lysis, DNase I-mediated genomic DNA removal, reverse transcription and TaqMan-style probe qPCR detection in a single streamlined workflow. It is suitable for gene-expression quantification directly from a wide range of animal cell types — adherent and suspension cell lines, primary cultures, stem cells, iPS cells and more — without a separate RNA extraction step. Starting from intact cells, gene-expression results can be obtained in as little as 1.5 hours. This report summarizes the application and performance data supporting the kit's reproducibility and sensitivity, direct-lysis workflow efficiency, inhibitor tolerance, and qPCR premix stability.

Component	40 T	100 T
11173-A FCD Lysis Buffer	2 mL	5 mL
11173-B FCD Washing Buffer	8 mL	20 mL
11173-C FCD Stop Solution	100 µL	250 µL
11173-D DNase I	80 µL	200 µL
11173-E 4× Hifair® FCD RT Mix	200 µL	500 µL
11173-F 2× Hieff® FCD Probe qPCR Mix	2 mL	5 mL
11173-G RNase Free H ₂ O	2 mL	5 mL

Component identifiers and volumes correspond to Medino® pack sizes 40 T and 100 T; refer to the kit label for exact fill volumes of each tube.

Key Performance Features

1. Comprehensive workflow — the kit includes cell lysis reagent, washing reagent, gDNA removal reagent, reverse-transcription reagent and probe-based fluorescent quantification reagent in one package.
2. Fast — the complete workflow from cell lysis through reverse transcription to qPCR can be completed in as little as 1.5 hours, with no separate RNA extraction required.
3. Sensitive and reproducible — strong amplification efficiency and run-to-run consistency across a range of target GC contents.
4. Inhibitor-tolerant — tolerates up to 55% cell-lysate carryover in the RT step.
5. Stable — the reagent kit can be stored at 4 °C for 7 days, and the fully assembled qPCR reaction premix remains stable for 48 hours.

Application Cases

1. Reproducibility and Sensitivity — Dual Guarantee

Using 293 adherent cells as template and an hBCL6-specific probe, the qNTQX® LM602007 kit and an imported cell-direct probe RT-qPCR reagent were each used to amplify a 10-fold dilution series of cells (10^3 – 10^5 cells), and the resulting Ct values were compared.

	10^3	10^4	10^5	10^6
LM602007	35.0	31.1	29.0	26.7
Imported product	37.1	33.4	30.4	28.8

Ct values, 293 adherent cells, hBCL6-probe, 10^3 – 10^6 cell input.

The same comparison was repeated using 293 suspension cells as template:

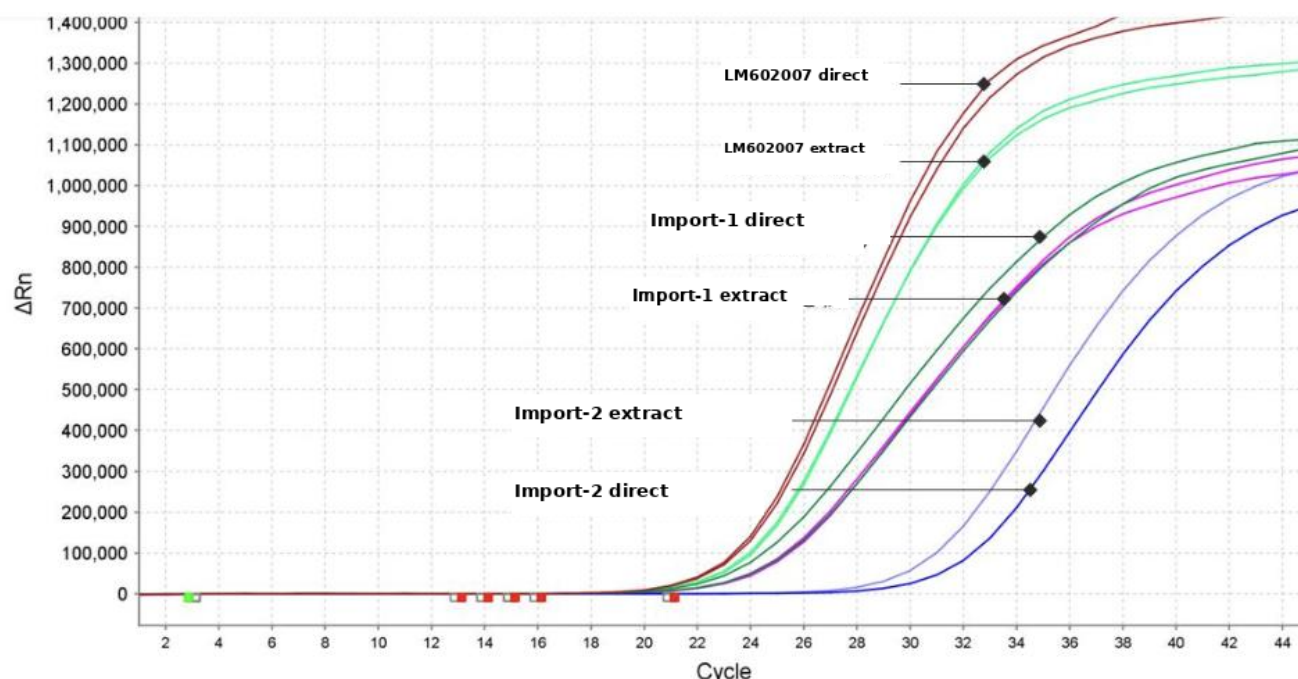
	10^3	10^4	10^5	10^6
LM602007	37.9	32.6	29.1	26.6
Imported product	39.9	34.9	31.7	30.7

Ct values, 293 suspension cells, hBCL6-probe, 10^3 – 10^6 cell input.

Across both adherent- and suspension-cell formats and across the full 10^3 – 10^6 cell-input range tested, the Ct values obtained with LM602007 were consistently lower (earlier) than those of the imported product, demonstrating superior sensitivity together with strong run-to-run reproducibility — a dual guarantee of assay performance.

2. High-Efficiency Detection — Direct Lysis vs. Traditional RNA Extraction

Using 293 cells as template, the reverse-transcription and quantification components of the kit were used to run the direct-lysis workflow and compared against results obtained via a traditional RNA-extraction workflow, for both the Medino® LM602007 kit and two imported competitor products.

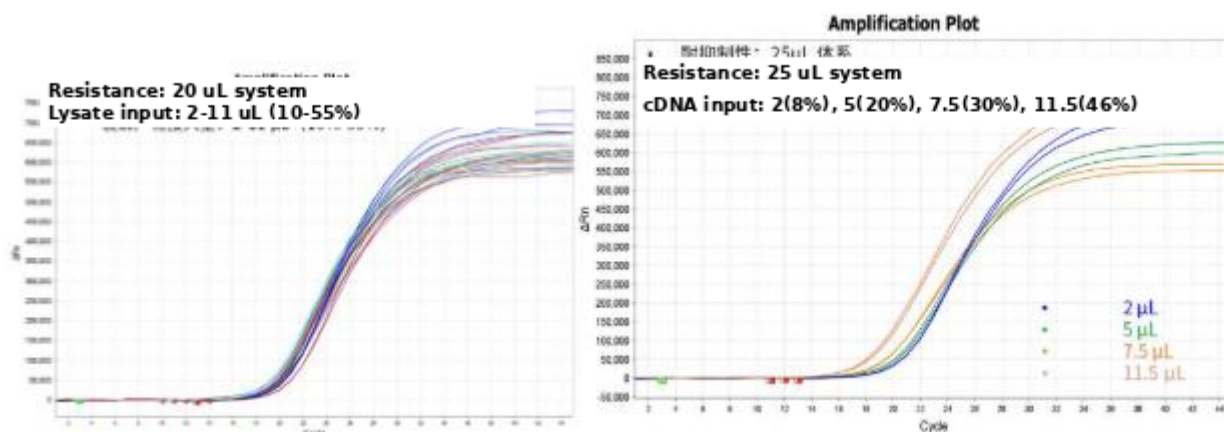


Amplification curves comparing the direct-lysis workflow against traditional RNA extraction: LM602007 vs. two imported competitor products.

The direct-lysis workflow using LM602007 produced amplification curves closely matching those obtained via traditional RNA extraction, and outperformed both imported competitor products in each workflow mode, showing that the direct-lysis process saves the time otherwise required for RNA extraction without sacrificing detection efficiency.

3. Strong Inhibitor Tolerance

Cell-lysate carryover tolerance in the reverse-transcription step was assessed by spiking 2–11 μL (10%–55%) of cell lysate directly into a 20 μL RT reaction (panel a). Downstream cDNA carryover tolerance in the qPCR step was assessed by spiking 2 μL (8%), 5 μL (20%), 7.5 μL (30%) and 11.5 μL (46%) of cDNA directly into a 25 μL qPCR reaction (panel b).

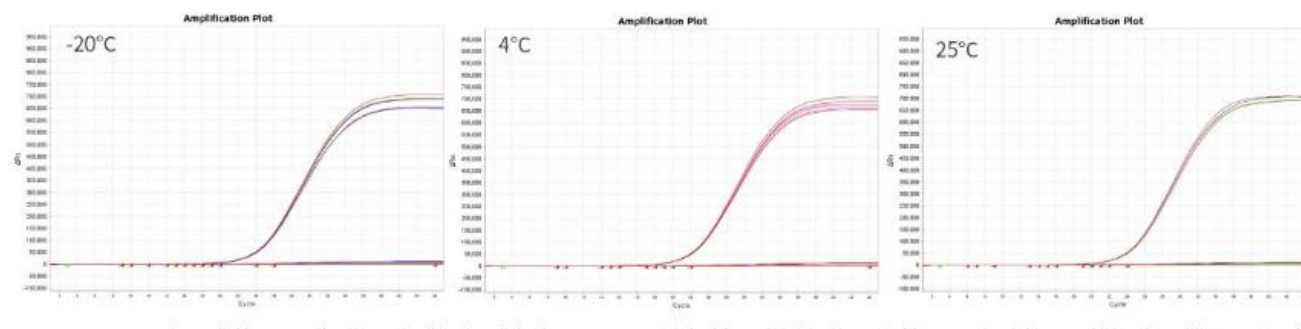


(a) Amplification curves with 2–11 μL (10%–55%) of cell lysate carried into the RT reaction. (b) Amplification curves with 2/5/7.5/11.5 μL (8%/20%/30%/46%) of cDNA carried into the qPCR reaction.

The reverse-transcription step tolerated up to 55% cell-lysate carryover, and the downstream qPCR step tolerated up to 46% cDNA carryover, with amplification remaining robust across all conditions tested — demonstrating strong inhibitor tolerance at both stages of the workflow.

4. No Concern for Wait Time on the Instrument

The kit's assembled qPCR premix (cDNA, primers/probe and water, fully pre-mixed) was held at -20°C , 4°C and 25°C for 24 and 48 hours before running qPCR, to evaluate premix stability under realistic queueing/wait conditions on the instrument.



Amplification curves for the assembled qPCR premix held at -20°C , 4°C and 25°C for 24 and 48 hours.

Across all three storage temperatures and both storage durations tested, the qPCR premix showed consistent, reproducible amplification with no notable curve shift, demonstrating that the pre-mixed reaction system remains stable and can tolerate typical queueing/wait times on the instrument.

Notes

1. Data presented in this report were generated by the reagent manufacturer (Yeasten) using the source formulation (11173ES) on which this Medino®-branded kit is based; results are provided for reference and may vary with sample type, instrument and operating conditions.
2. This product is for scientific research use only. Not for use in diagnostic or clinical procedures.