

Miniaturized Gene Expression in as Little as 250 nL

The Access laboratory workstation presents exciting new capabilities for walkaway assay assembly and screening of high-throughput gene expression analysis using qPCR. The Access workstation combines the Echo liquid handler, the Roche RealTime ready Cell Lysis Kit and the Roche LightCycler 480 system into a single automated system for gene expression assays with reaction volumes as low as 250 nL. With flexible, wizard-driven software and high quality acoustic liquid transfer, the Access workstation is an ideal platform for both assay development and screening with zero cross contamination.

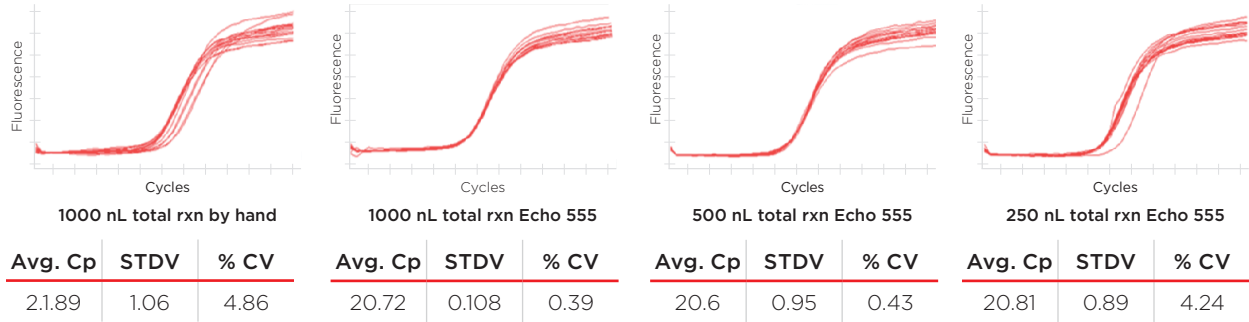
- Increase throughput with 384- and 1536-well assays at reaction volumes as low as 250 nL
- Work directly from cells with low volume lysis addition and lysate transfer
- Immediately reduce costs with automation and miniaturization in a single platform
- Zero cross contamination with acoustic transfer

Simplifying Miniaturization

The Echo Plate Reformat (EPR) application provides a graphical interface to map transfers of cDNA along with master mix, probes and primers at varying volumes to easily design assays for optimization. The Access workstation's automation control software instantly transforms EPR transfer protocols into automated routines with barcode verification, sealing, centrifugation and more.

Data gathered from assay optimization for the Echo liquid handler shows the ability to significantly reduce volumes in both 384- and 1536- well assay plates.

Miniaturized 384-Well Assays



Miniaturized 1536-Well Assays

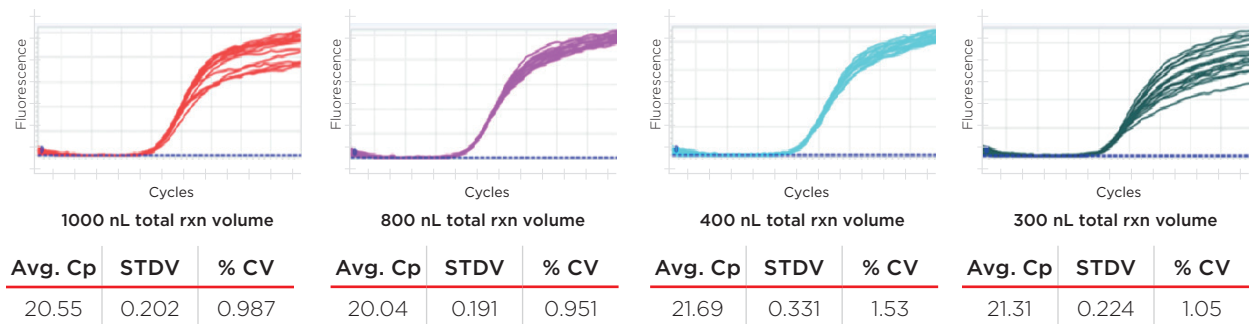
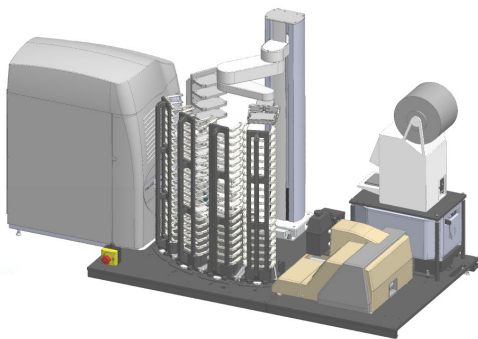


Figure 1. Rapid gene expression analysis directly from cells, at volumes as low as 250 nL.

Automated Workflow for Gene Expression



Access Workstation with Echo Liquid Handler

Cell Seeding

- Seed and culture cells in 384- or 1536-well tissue culture treated Echo qualified source plates

Cell Lysis Buffer Addition

- Add one step lysis buffer with Echo Liquid Handler
- Seamlessly scale from 384- to 1536-well plates

qPCR Setup

- Transfer lysed cells directly from Echo source plate
- Add master mix, primers, and probes with Echo Liquid Handler

Plate Sealing & Centrifugation

- Seal PCR plates with clear seal and centrifuge

qPCR Analysis

- Available now for the LightCycler 480 (ask for details on alternative qPCR platforms)
- Walk-away capable for overnight runs

Integration Options

Liquid Handling	Plate Handling	Plate Storage
All Echo Liquid Handlers: Echo 550, Echo 555	PlateLoc Thermal Seale	20-Plate Random Access Racks
All Echo Software Applications: Cherry Pick, Reformat, Dose-Response	Vspin Centrifuge	50-Plate Sequential Stacks
LXp Bulk Dispenser	Keyence Barcode Reader	
GX Nano Dispenser	Vacuum Delidder	
Multidrop Combi nL Bulk Dispenser	Teleshake Shaker	
	XPeel Peeler	

Cost savings are tremendous with miniaturization. Moving qPCR assays to high-density formats can provide a valuable increase in experimental throughput.

Additionally, by reducing the amount of source mRNA consumed, researchers can dramatically increase the number of experiments performed with limited amounts of starting sample. When commonly used volumes of 25 μ L are reduced to 250 nL using the Echo liquid handler, the savings on master mix, probes, and primers are more than 95%. The same expenditure can yield twenty times as many high-quality assays or provide savings of tens to hundreds of thousands of dollars per year.

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