One-Step RT-ddPCR Kit for Probes

The Bio-Rad one-step RT-ddPCR kit for probes creates a new paradigm for the precise quantitation of RNA by combining reverse transcription with Droplet Digital™ PCR (ddPCR™). The one-step RT-ddPCR kit for probes provides an absolute measure of target RNA molecules with unrivaled precision and sensitivity.

In combination with the QX100™ Droplet Digital™ PCR system, the one-step RT-ddPCR kit for probes lets you:

- Enrich for rare target RNA sequences
- Detect small differences in gene expression levels
- Determine the number of copies of an RNA molecule without a standard curve

For more information, visit us on the Web at **www.bio-rad.com/one-stepddPCR**.

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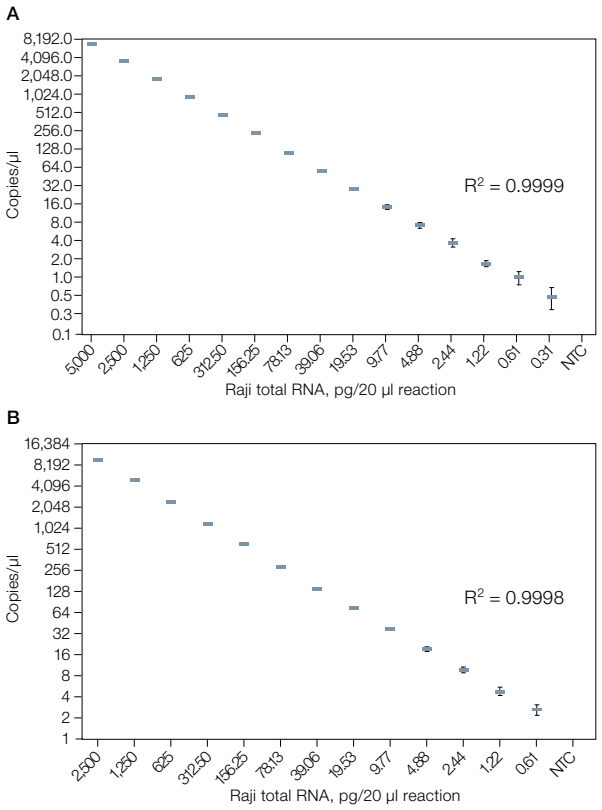
A Breakthrough in Quantitative PCR

With the one-step RT-ddPCR kit for probes, the sample is partitioned into 20,000 droplets, with target and background RNA randomly distributed among the droplets. An RNase inhibitor included in the formulation minimizes template degradation during reaction setup and droplet generation. After reverse transcription, the resulting cDNA is amplified for target detection using TaqMan hydrolysis probes. After PCR amplification, each droplet provides a fluorescent positive or negative signal indicating the target RNA was present or not present after partitioning. Each droplet provides an independent digital measurement. Positive and negative droplets are counted and software calculates the concentration of target RNA as copies per microliter.

The one-step RT-ddPCR kit for probes is formulated for efficient and sensitive reverse transcription over a wide linear dynamic range of input RNA for Droplet Digital PCR. Our unique hot-start reverse transcriptase enables convenient reaction setup. The reverse transcription reaction is performed at 55–60°C, enhancing the specificity and efficiency of primer-mediated cDNA conversion. The thermostable enzymes allow RNA template to be reverse transcribed and subsequently amplified in the same reaction tube. Template-specific primer annealing at elevated temperatures significantly improves stringency and melting of secondary structures.



ddPCR absolute quantification of *EEF2* (A) and *GAPDH* (B) gene transcripts using the one-step RT-ddPCR kit for probes. Raji total RNA was serially diluted twofold from 5 ng to 310 fg per 20 µl reaction. The data demonstrate the precision and sensitivity of the QX100 Droplet Digital PCR system in detecting thousands of copies down to a single copy per microliter. N = 6. NTC, no template control.

Ordering Information

Catalog #	Description
186-3021	**One-Step RT-ddPCR Kit for Probes**, 2 x 1 ml, 200 x 20 µl reactions, 2x RT-ddPCR mix, contains manganese acetate
186-3022	**One-Step RT-ddPCR Kit for Probes**, 5 x 1 ml, 500 x 20 µl reactions, 2x RT-ddPCR mix, contains manganese acetate

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Bio-Rad Laboratories, Inc.

Life Science Group

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