

eQo 1-Step ToughMix[®]

No compromises.
Unparalleled performance meets sustainability



FEATURES AND BENEFITS:

- Unrivaled Sensitivity – Detection down to 2 copies of RNA
- Sustainable & Earth Friendly – lyophilized eQo bead format eliminates dry ice, CO₂ consumptions & reduces shipping costs
- Novel Reverse Transcriptase – convenient, ambient reaction setup. Overcomes rigid RNA secondary structure
- High Stability – Up to 1 year at room temperature, up to 1 year rehydrated at –20°C
- Tough Tested – Broad and significantly enhanced tolerance to PCR inhibitors

DESCRIPTION:

eQo 1-step ToughMix is a lyophilized reagent system for reverse transcription quantitative PCR (RT-qPCR) of RNA templates using hybridization probe detection chemistries such as TaqMan[®] 5'-hydrolysis probes. It is supplied with a proprietary rehydration buffer that when combined with the lyophilized “eQo beads” produces a stabilized 4X concentrated master mix. The kit includes thermolabile UDG for amplicon carryover elimination, an enhanced warm-start reverse transcriptase (RT) and all other required components for 1-step RT-qPCR except RNA template and primer/probe(s). The reaction chemistry has been optimized for inhibitor tolerance and delivers exceptional performance in either single-plex or highly demanding multiplex 1-step RT-qPCR formats.

Enhanced Thermostability

The included qScript Ultra reverse transcriptase supports rapid and processive first-strand synthesis at temperatures up to 65°C (optimal 55°C to 60°C), which disrupts interfering RNA secondary structure and improves primer specificity. This novel RT is further enhanced by an aptamer “warm-start” component

that effectively blocks RT activity during reaction setup enabling highly sensitive and reproducible low copy quantification and extended room-temperature stability of fully assembled reactions.

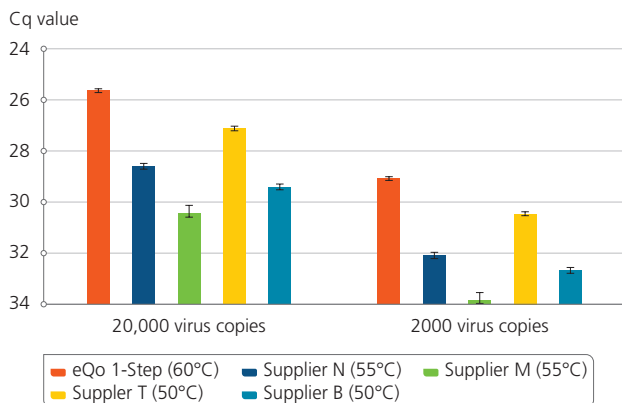
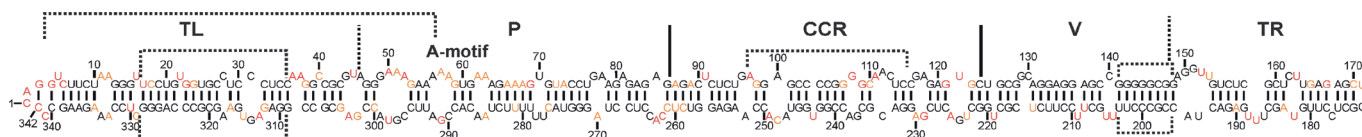


Figure 1 Amplification of a viroid RNA with a high degree of stable secondary structure. Dahlia latent viroid RNA template was prepared, and upon folding, the ssRNA molecule was shown to adopt a stable rod-like structure. Compared with kits from other suppliers, reactions with eQo 1-step carried out at a reverse transcription temperature of 60°C show consistently improved detection.



Overcome Challenging Samples

eQo 1-Step ToughMix demonstrates a tolerance to a broad range of common PCR inhibitors, reducing the requirement for perfectly “clean” samples. Additionally, amplification of difficult gene targets, include those that are GC-rich, is robust and consistent.

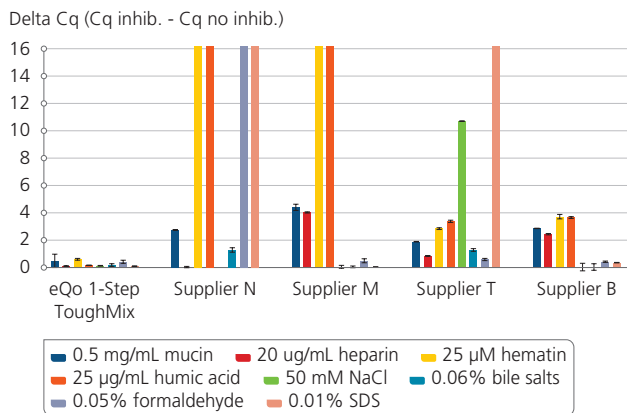


Figure 2 Inhibitor resistance across wide range of sample types. Innate inhibitor tolerance of qScript Ultra reverse transcriptase together with the formulation of the eQo 1-step mix allow for superior tolerance to many common reaction inhibitors. Reverse transcription was carried out at manufacturer’s recommendations (including 60°C for eQo 1-Step); thermocycling was performed at the same cycling protocols for all. Cq values were compared with reactions without inhibitors to show relative inhibitor tolerance in the 1-step reaction.

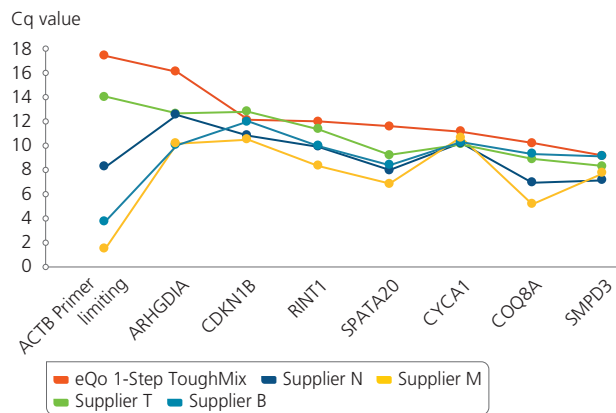


Figure 3 Gene expression quantification using primer limiting of GC-rich targets. eQo 1-step shows consistent mRNA quantification over a range of difficult gene targets. 1-step reaction mixtures were assembled in duplicate using 50 ng total human RNA and the indicated primer/probe assay sets. Reverse transcription was carried out at manufacturer’s recommendations (including 60°C for eQo 1-Step); thermocycling was performed at the same cycling protocols for all. The average Cq was plotted for each gene expression assay.

Extreme Sensitivity

Detection of extremely low-copy RNA virus is possible with eQo 1-Step ToughMix. Amplification of just 2 copies of SARS-CoV-2 RNA template is robust and clearly evident.

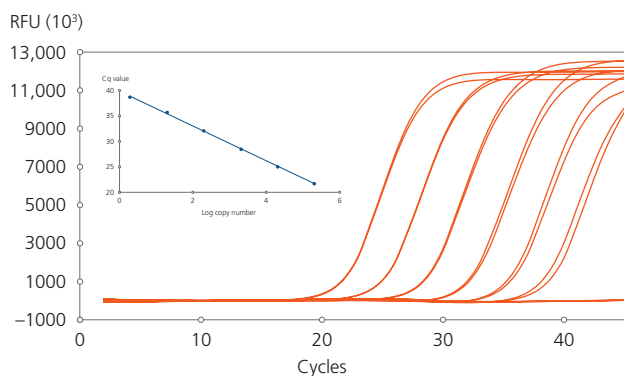


Figure 4 Improved limits of detection for RNA pathogens: In a fourplex RT-qPCR experiment, eQo 1-step ToughMix can detect RNA pathogens in a purified sample matrix with as few as two copies. A representative amplification plot was generated by diluting SARS-CoV-2 RNA from 200,000 to 2 copies. The inset plot displays the average Cq against the log copy number of the SARS-CoV-2 target. Strong amplification was observed even at the highest dilution.

ORDER INFO

Product Name

eQo 1-Step ToughMix - 100 R
eQo 1-Step ToughMix - 1000 R

Quantabio Catalog Number

95301-100
95301-02K

Size

100 x 20 µL rxns
1000 x 20 µL rxns