cDNA Synthesis

QSCRIPT CDNA SYNTHESIS KITS FOR EXCEPTIONAL CDNA SYNTHESIS AND ACCURATE REPRESENTATION FROM LESS STARTING MATERIAL

qScript cDNA Synthesis Kits set a new standard for reproducibility, specificity, speed and sensitivity in quantitative and conventional RT-PCR. Key to the performance of qScript cDNA Synthesis Kits is our proprietary qScript Reverse Transcriptase, a mixture of an engineered MMLV reverse transcriptase derivative and ribonuclease inhibitor protein, optimized for sensitive and reliable cDNA synthesis over a broad dynamic range of input RNA. Our cDNA synthesis reagents are provided in a variety of supermix and kit formats to fit your specific application.

Quanta BIOSCIENCES™

FEATURES AND BENEFITS

- **cDNA SuperMix—One tube, less variability, ideal for high throughput applications**
- **Unbiased Representation—For confidence that your RNA is represented accurately in the resulting cDNA**
- **Broad Dynamic Range—More reliably attain useful data from your precious samples**
- **Flexible Priming—Choose the ideal priming method for your needs**

qScript cDNA SuperMix

Q INNOVATIONS

Just add RNA and go! qScript cDNA SuperMix is the first commercially available true cDNA SuperMix. qScript cDNA SuperMix is an easy-to-use format for 2-step RT-PCR. This one-tube SuperMix contains all components for cDNA synthesis including buffer, dNTPs, $MgCl_2$, primers, RNase inhibitor, qScript Reverse Transcriptase and stabilizers–all you need to add is RNA. Complete cDNA synthesis is achieved in only 40 minutes (See Figure 1). Consistency and reproducibility are achieved over a broad dynamic range regardless of RNA input (See Figure 2). In addition, qScript cDNA SuperMix offers superior sensitivity and more accurate representation of low abundance genes compared to other products (See Figure 3). The SuperMix format eliminates multiple component additions providing exceptional reproducibility and precision. qScript cDNA SuperMix is available in both single tube and 96-well plate formats.

qScript cDNA Synthesis Kit

qScript cDNA Synthesis Kit* is a sensitive and easy-to-use kit for RNA quantification using two-step RT-PCR. This kit contains an optimized blend of random and oligo(dT) primers for robust, consistent and unbiased first-strand synthesis over a broad range of RNA template concentrations. The novel qScript Reaction Mix (5X) contains all required reagents for cDNA synthesis, except for qScript Reverse Transcriptase and RNA. qScript Reverse Transcriptase is provided in a separate tube.

*This kit is intended for use by researchers using Bio-Rad's iScript™ cDNA Synthesis Kit (previously developed and manufactured by Quanta) for ongoing studies or established Standard Operating Procedures that cannot be readily switch to qScript cDNA SuperMix.

qScript Flex cDNA Kit

The qScript Flex cDNA Synthesis Kit is an easy-to-use format for first strand cDNA synthesis that supports multiple RNA priming strategies. The qScript Flex Reaction Mix (5X) is optimized for use with oligo dT, random or gene-specific primers in any combination. A proprietary cDNA-priming enhancer that improves sensitivity is provided pre-mixed with random and oligo dT primers, and in a separate tube for use with gene-specific primers (user provided). qScript Reverse Transcriptase is provided in a separate tube.

QSCRIPT CDNA SYNTHESIS: PERFORMANCE DATA

qScript cDNA SuperMix
Protocol 40 minutes

- Mix RNA + water with 4 µl of cDNA SuperMix Final vol = 20 µl
- Incubate: 5 min at 25°C, 30 min at 42°C, 5 min at 85°C
- Use up to 50% of the first-strand product directly for qPCR

Conventional cDNA Synthesis Kit
Protocol 1 hour 42 minutes

- Combine RNA template, dNTPs, primer(s) and water (12 µl)
- Incubate 5 min at 65°C, Snap chill on ice. Centrifuge to collect contents
- Add: Buffer
- Add: $MgCl_2$
- Add: DTT
- Add: RNase inhibitor protein
- Mix and Incubate 2 min at 37°C
- Add reverse transcriptase Mix by pipettting up and down (Final vol. = 20 µl)
- Incubate: 10 min at 25°C, 50 min at 42°C, 15 min at 75°C
- Add RNase H (optional)
- Incubate 20 min at 37°C
- Use only 1/10th of the first-strand product for PCR amplification

Fig.1 **First Strand Synthesis Protocol Comparison for qScript vs. Conventional Protocol**

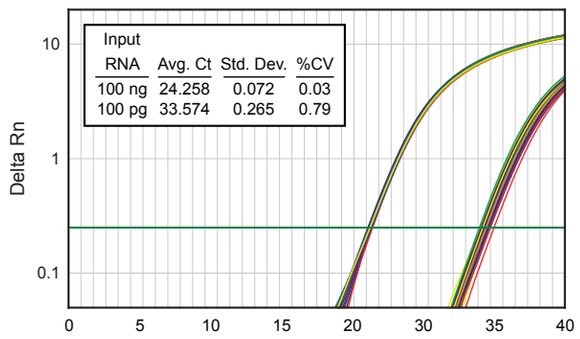

Fig.2 **Reproducibility**
48 independent first-strand reactions using 100 ng or 100 pg of HeLa cell total RNA and qScript cDNA SuperMix. 1/10th of each first-strand reaction was used as template for Taq Man® qRT-PCR of CDKN1B using PerfeCta™ qPCR SuperMix

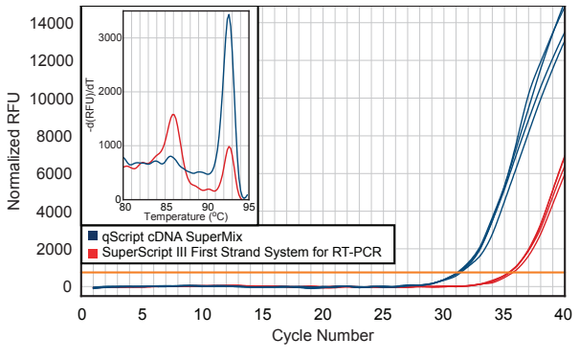

Fig.3 **Higher Yield (more accurate representation) of Low Abundance Gene–PP2A**
PP2A. First-strand synthesis was carried out using 1 µg HeLa cell total RNA with either qScript cDNA SuperMix or SuperScript® III cDNA SuperMix. 5 ng total RNA equivalent (1/200th of each cDNA reaction) was used for SYBR® Green qPCR of PP2A gene with PerfeCta SYBR Green SuperMix.

ORDERING INFORMATION

PRODUCT	Quanta Cat. No.	Reactions
qScript cDNA Synthesis Kit	95047-025	25 X 20 ul rxns
	95047-100	100 X 20 ul rxns
	95047-500	500 X 20 ul rxns
qScript cDNA SuperMix	95048-025	25 X 20 ul rxns
	95048-100	100 X 20 ul rxns
	95048-500	500 X 20 ul rxns
	95048-096	5 x 96-well plate
qScript Flex cDNA Kit	95049-025	25 X 20 ul rxns
	95049-100	100 X 20 ul rxns

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