



## REAL-TIME qPCR

# Reliance One-Step Multiplex Supermix

### Maximize Throughput and Quality of Your qPCR Data

#### Introduction

For researchers who want to reliably and reproducibly quantify multiple RNA targets directly, Reliance One-Step Multiplex Supermix is the best choice.

Key features of this robust supermix include:

- Sensitive, reproducible multiplexing of up to 5 targets
- 24-hour reaction stability at room temperature
- Convenient one-tube supermix for easy reaction setup
- 4x concentrated formulation to load more diluted RNA (as little as 1 pg)
- Tolerance to common PCR inhibitors, ideal for samples of varying quality

The Reliance One-Step Multiplex Supermix allows researchers to:

- Amplify multiple targets with maximum efficiency
- Accelerate data throughput while decreasing costs and reaction time
- Achieve consistent and reproducible data, run after run
- Streamline automated workflows by bypassing the need for plate refrigeration

The Reliance One-Step Multiplex Supermix is ideal for:

- Gene expression studies
- Viral/pathogen detection
- Diagnostic research
- High-throughput screening



tube format



concentrated



targets per sample



hours of room temperature stability

# A Robust Formulation Perfect for Multiplex RT-qPCR

When you need more data and higher throughput without compromising any performance, you need a supermix that can get the job done reliably.



Proprietary Reliance chimeric reverse transcriptase for maximized detection sensitivity

Optimized blend of powerful DNA polymerases including Sso7d Fusion Polymerase\*

Refined, robust buffer formulation optimized for multiplexing and sample stability

Proprietary blend of passive reference dyes,\*\* including ROX, to enable detection in any instrument

\* U.S. patents 6,627,424; 7,541,170; 7,560,260.

\*\* U.S. patent 9,493,824.



Integrate Reliance One-Step Multiplex Supermix with the CFX Automation System II to enable walk-away high-throughput qPCR operation.

Visit [bio-rad.com/CFXauto](http://bio-rad.com/CFXauto) for more information.



Multiplex with minimal cross-reactivity using expertly designed Prime PCR Probe Assays for gene expression.

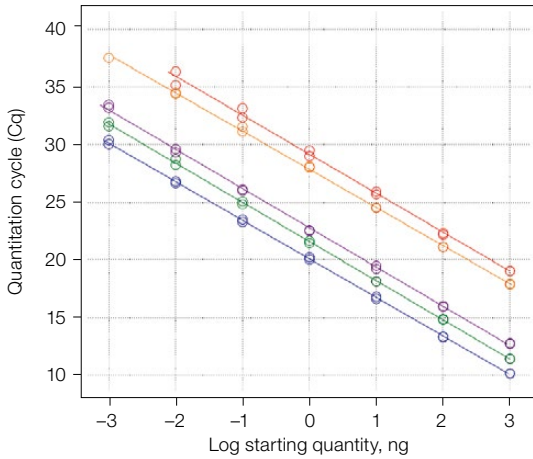
Visit [bio-rad.com/PrimePCR](http://bio-rad.com/PrimePCR) for more information.



Streamline the RT-qPCR workflow by eliminating RNA extraction step.

Visit [bio-rad.com/SingleShot](http://bio-rad.com/SingleShot) for more information.

## Exceptional Performance of 5-Target Multiplex

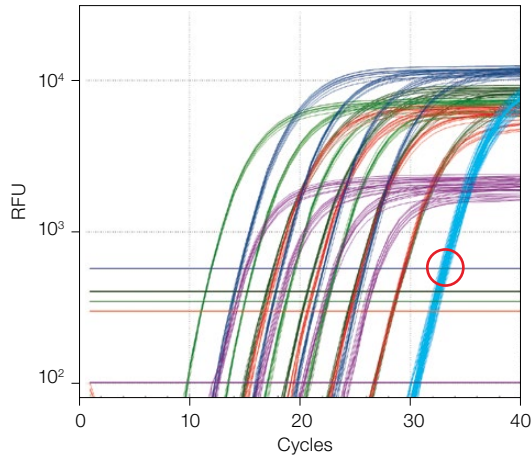


Reporter Dye	Assays	Efficiency	R <sup>2</sup>	Slope
FAM	ACTB	99.0%	1.000	-3.346
HEX	NGFRP	100.5%	0.999	-3.311
Texas Red	TBP	97.6%	0.997	-3.382
Cy5	EF1a	96.6%	0.999	-3.406
Cy5.5	GAPDH	96.9%	1.000	-3.397

**Fig. 1. The linear dynamic range in 5-plex one-step RT-qPCR reactions.**

Five targets across seven orders of magnitude (1 pg to 1 µg RNA input) were amplified using Reliance One-Step Multiplex Supermix on a CFX96 Touch Real-Time PCR Detection System. The results demonstrated exceptional performance with superior efficiency and linearity over a wide dynamic range down to 1 pg of RNA input.

## Reliable and Sensitive 10-Copy Detection



Reporter Dye	Assays	Template	Input Amount(s)
FAM	Control	Synthetic RNA	10-copy per reaction
FAM	Control	Synthetic RNA	
HEX	NGFRP	HeLa RNA	
Texas Red	HSPA4	HeLa RNA	Four 13.5-fold serial dilutions from 1 µg
Cy5	EF1a	HeLa RNA	
Cy5.5	GAPDH	HeLa RNA	

**Fig. 2. Detection of 10 copies of synthetic RNA quantified by one-step RT-ddPCR.** Fifty-three replicates of 10 copies of synthetic RNA (red circle) along with 5-plex reactions consisting of one target from synthetic RNA and four targets from HeLa RNA across the above serial dilutions were amplified using Reliance One-Step Multiplex Supermix. The results demonstrated reliable and sensitive detection of RNA targets down to 10 copies per reaction with tight Cq values between the replicates.

## Unparalleled Stability of Assembled Reactions

**Table 1. Comparison of assembled reaction stability after 24 hours.** The five targets from Figure 1 across seven orders of magnitude (1 pg to 1 µg) were amplified using various reagents on a CFX96 Touch System immediately after the reaction setup and then again after 24 hours incubation at room temperature protected from light. Reliance One-Step Multiplex Supermix maintained less than 1 ΔCq between two runs (■) indicating uncompromised performance even after 24 hour incubation of assembled reactions while other suppliers' reagents showed significantly declined performance with over 1 ΔCq (■) or no amplification (■).

Reagent	RNA Input (ng/rxn)	Difference in Quantitation Cycle (0–24 hr), ΔCq				
		ACTB	NGFRP	TBP	EF1a	GAPDH
Bio-Rad Reliance One-Step Multiplex Supermix	1,000	0.26	0.57	0.13	0.20	-0.34
	100	0.32	0.48	0.02	0.17	-0.70
	10	0.24	0.69	0.17	0.24	-0.71
	1	0.28	0.37	-0.17	0.48	-0.70
	0.1	0.30	0.96	0.05	0.62	-0.74
	0.01	0.28	0.91	-0.77	-0.27	-0.70
	0.001	-0.21	—	—	0.95	-0.86
Company T	1,000	-0.15	1.63	11.88	-0.79	-0.93
	100	-0.65	5.82	8.57	-0.52	-0.96
	10	-0.46	2.28	2.46	0.30	-1.92
	1	-0.51	—	0.19	6.60	-1.76
	0.1	-0.13	—	—	15.02	15.62
	0.01	1.35	—	—	10.42	13.12
	0.001	10.54	—	—	—	4.43
Company Q	1,000	-0.69	-2.23	-0.46	-0.82	-0.90
	100	-0.73	-0.77	-0.16	-0.31	-0.91
	10	-0.66	0.10	1.76	-0.24	-0.81
	1	-0.78	4.60	1.78	0.47	-0.94
	0.1	-0.86	1.58	4.18	0.26	-1.05
	0.01	-0.80	—	1.36	7.94	-0.48
	0.001	-0.12	—	—	4.92	9.00

## Ordering Information

Catalog #	Description
12010176	<b>Reliance One-Step Multiplex Supermix</b> , 1 ml (1 x 1 ml vial), 200 x 20 µl reactions, 4x RT-qPCR supermix, contains Reliance Reverse Transcriptase, a blend of high-performance DNA polymerases including Sso7d Fusion Polymerase, universal reference dye, stabilizer, and reaction buffer
12010220	<b>Reliance One-Step Multiplex Supermix</b> , 5 ml (5 x 1 ml vials), 1,000 x 20 µl reactions, 4x RT-qPCR supermix, contains Reliance Reverse Transcriptase, a blend of high-performance DNA polymerases including Sso7d Fusion Polymerase, universal reference dye, stabilizer, and reaction buffer
12010221	<b>Reliance One-Step Multiplex Supermix</b> , 10 ml (2 x 5 ml vials), 2,000 x 20 µl reactions, 4x RT-qPCR supermix, contains Reliance Reverse Transcriptase, a blend of high-performance DNA polymerases including Sso7d Fusion Polymerase, universal reference dye, stabilizer, and reaction buffer

### Related Products

1845075	<b>CFX Automation System II</b>
1725080	<b>SingleShot Cell Lysis Kit</b> , 100 x 50 µl reactions
1725081	<b>SingleShot Cell Lysis Kit</b> , 500 x 50 µl reactions

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Visit [bio-rad.com/PCRPlastics](http://bio-rad.com/PCRPlastics) for a full range of PCR plastics and seals.

Visit [bio-rad.com/RelianceOneStep](http://bio-rad.com/RelianceOneStep) for more information.



Bio-Rad's PCR reagents are manufactured under an ISO 13485:2016 certified Quality Management System and are quality control tested to ensure consistent product performance you can trust.

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**Sweden** 46 08 555 127 00 **Switzerland** 41 0617 17 9555 **Taiwan** 886 2 2578 7189 **Thailand** 66 2 651 8311 **United Arab Emirates** 971 4 8187300  
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