



SensiFAST™ One-Step Kits

Superior Fast Gene Expression Analysis

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One-Step qPCR Kits

SensiFAST™ One-Step RT-qPCR Kits are available in a variety of configurations to suit all of your different applications and techniques

SensiFAST One-Step Kits are a complete range of highly-optimized ready-to-use kits, designed for first-strand cDNA synthesis and subsequent qPCR amplification of a specific target RNA, from either total RNA or mRNA, in a single tube. This reduces sample handling, which helps to decrease the chances of pipetting errors and cross contamination, as well as reduced bench time, meaning faster time to results. In contrast to two-step protocols, gene specific primers are required and all of the cDNA is consumed in the qPCR step.

SensiFAST benefits from the latest developments in real-time reverse transcription qPCR (RT-qPCR) to realize the fastest cycling times and greatest sensitivity, without compromising accuracy reproducibility or performance. SensiFAST One-Step Kits can be used on all qPCR instruments and are ideal for the new generation of fast PCR cyclers (see selection table).

SensiFAST One-Step Kits provide the perfect solution when processing multiple samples and amplifying only a few genes of interest, making SensiFAST One-Step Kits ideal for assays such as virus detection and quantification and high-throughput gene expression screening, without compromising on sensitivity and reproducibility (see Table 1).

- **Sensitive:** optimized buffer formulation delivers reliable quantification from even very low-copy number RNA targets
- **Reproducible:** consistent results between technical replicates for increased accuracy
- **Specific:** antibody-mediated hot-start DNA polymerase minimizes non-specific amplification for improved assay sensitivity and reliability
- **Robust:** reliable detection of RNA targets from a broad range of sample types
- **Fast:** optimized proprietary mix of enzymes and RT buffer chemistry, delivers reproducible, accurate assay results in as little as 40 minutes

Table 1 Applications for SensiFAST One-Step kits

Gene expression analysis	Microarray validation	Viral quantitation
Pathogen detection	Biomarker discovery and validation	Gene knockdown validation
Genotyping	Cellular mRNA and miRNA	ChIP
Gene dosage determination	Cancer risk assessment	Microbial quantification
Detection of extremely low copy targets	Quantification	Drug therapy efficacy

SensiFAST™ SYBR® One-Step Kit

SensiFAST SYBR® One-Step Kit has been formulated for fast, efficient, unbiased cDNA synthesis and subsequent highly-sensitive (Fig. 1), reproducible RT-qPCR in a single tube (Fig. 2). An antibody-mediated hot-start DNA polymerase promotes rapid activation and supports highly-specific amplification, which in turn improves assay sensitivity and dynamic range. A combination of the latest advances in buffer chemistry and PCR enhancers confer superior assay performance under fast thermal cycling conditions. The inclusion of separate RiboSafe Inhibitor ensures accuracy by protecting RNA targets from RNase degradation.

SensiFAST SYBR® One-Step Kit consists of a 2x SensiFAST SYBR® One-Step mix, a separate reverse transcriptase and RiboSafe RNase Inhibitor and has been validated on all commonly used qPCR instruments.

“SensiFAST Probe One-Step Kit has provided our lab with a fast, reliable and economic solution for our viral testing qPCR assays. Our lab routinely uses a quadruplex reaction and SensiFAST is the only mix where we achieve the same results as with a singleplex reaction.”

Center for Vectorborne Diseases,
University of California Davis, USA

SYBR	Size	Cat. #
SensiFAST SYBR No-ROX One-Step Kit	100 Reactions	BIO-72001
	500 Reactions	BIO-72005
SensiFAST SYBR Hi-ROX One-Step Kit	100 Reactions	BIO-73001
	500 Reactions	BIO-73005
SensiFAST SYBR Lo-ROX One-Step Kit	100 Reactions	BIO-74001
	500 Reactions	BIO-74005

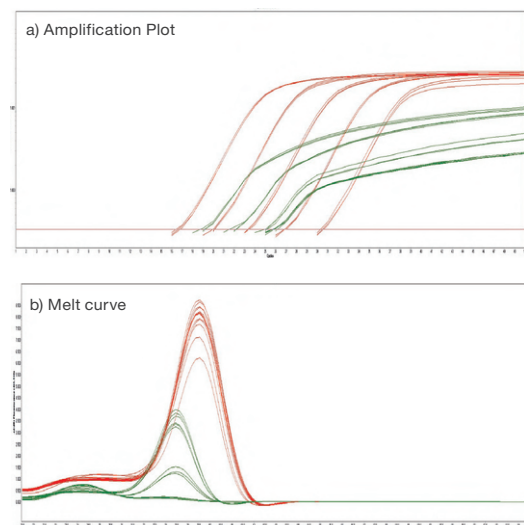


Fig. 1 Sensitivity under fast cycling conditions

A 10-fold serial dilution of human RNA (in triplicate) was amplified over 5 orders of magnitude, according to the manufacturers' standard protocol. The results illustrate that SensiFAST SYBR One-Step (red) could be diluted further than supplier T (green) and so is more sensitive.

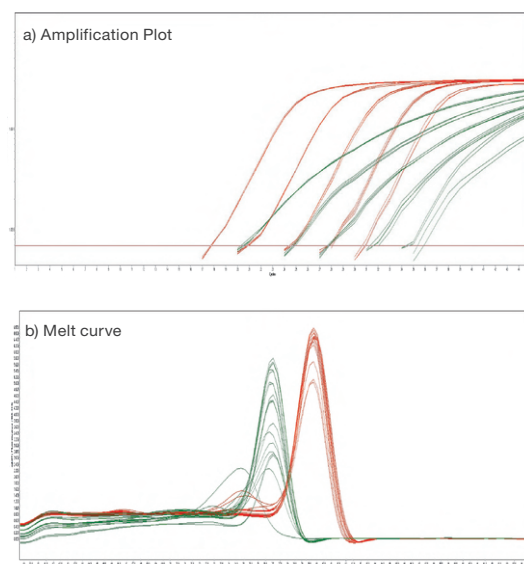


Fig. 2 Reproducibility under fast cycling conditions

A 10-fold serial dilution of human RNA (in triplicate) was amplified over 5 orders of magnitude, according to the manufacturers' standard protocol. The earlier Ct values illustrate that SensiFAST SYBR One-Step Kit (red) with tight replicates illustrating greater reproducibility than supplier Q (green).

SensiFAST™ Probe One-Step Kit

SensiFAST Probe One-Step Kit has been developed for fast RT-qPCR and designed for superior sensitivity (Fig. 1) and specificity (Fig. 2) with probe-detection technology, including TaqMan®, Scorpions® and molecular beacon probes. SensiFAST Probe One-Step Kit has been formulated for highly reproducible first-strand cDNA synthesis and subsequent RT-qPCR in a single tube. An antibody-mediated hot-start DNA polymerase promotes rapid activation and supports highly-specific amplification, which in turn improves assay sensitivity and dynamic range. A combination of the latest advances in buffer chemistry and PCR enhancers confer superior assay performance under fast thermal cycling conditions. This also gives SensiFAST Probe One-Step Kit unmatched efficiency in multiplexing (Fig. 3).

SensiFAST Probe One-Step Kit consists of a 2x SensiFAST Probe Mix, plus separate reverse transcriptase and RiboSafe RNase Inhibitor and has been validated on all commonly used qPCR instruments.

“SensiFAST Probe One-Step Kit was used with human parainfluenzavirus type 4 to show sensitivity of down to 10 copies per reaction across an 8 log₁₀ dynamic range”

University of Queensland, Australia

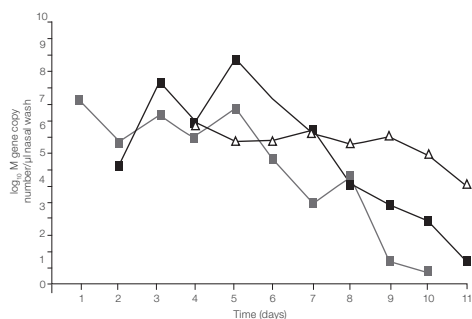


Fig. 1 Copy number of viral RNA in nasal washes

The WHO Collaborating Centre for Reference and Research on Influenza in Australia used RT-qPCR analysis of a mixed population of influenza viruses in ferret nasal washes to measure the viral replication and transmission kinetics of each virus population (*Butler et al 2014). The copy number of viral RNA in each nasal wash was determined over 11 days using SensiFAST Probe One-Step Kit. The results illustrate sensitivity of RT-qPCR, helping to show the fitness advantage conferred by mutations in drug-resistant influenza viruses.

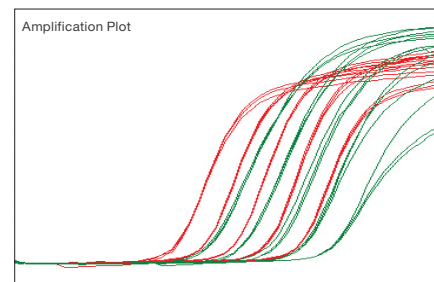


Fig. 2 Fast cycling conditions

Mouse β-actin amplified in triplicate using gene specific primers and TaqMan probe according to each manufacturer's protocol, from 10-fold serial dilution of RNA with SensiFAST Probe One-Step and supplier A mix. The results illustrate that SensiFAST Probe One-Step Kit is faster than supplier A mix by four Ct (more than 10-fold).

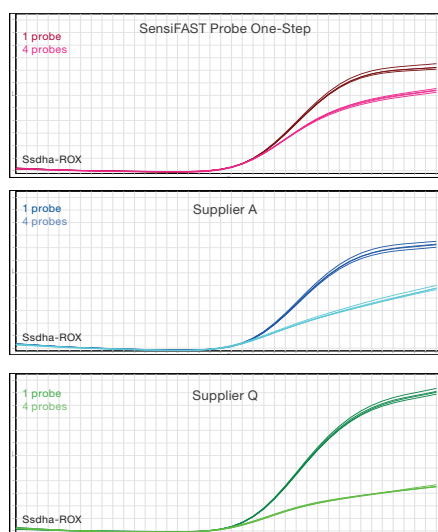


Fig. 3 Multiplexing performance comparison

A 100-fold dilution of human cDNA was used with four probes, either in singleplex reactions (darker line) or in quadruplex reaction (lighter line), using a conventional TaqMan prime/probe set. The results illustrate that the SensiFAST Probe One-Step Kit is very efficient in delivering the same Ct in singleplex and multiplex assays.

Probe	Size	Cat. #
SensiFAST Probe No-ROX One-Step Kit	100 Reactions	BIO-76001
	500 Reactions	BIO-76005
SensiFAST Probe Hi-ROX One-Step Kit	100 Reactions	BIO-77001
	500 Reactions	BIO-77005
SensiFAST Probe Lo-ROX One-Step Kit	100 Reactions	BIO-78001
	500 Reactions	BIO-78005

SensiFAST Selection Table

Manufacturer	Model	Lo-ROX	Hi-ROX	No-ROX	HRM Compatible
Agilent (Stratagene)	AriaMX	Yes			Yes
	MX3000P™, MX3005P™, MX4000P™	Yes			Yes
Analytika Jena	qTower, qTower 2.x			Yes	
Applied Biosystems™	7000		Yes		
	7300		Yes		
	7500	Yes			
	7500 FAST	Yes			Yes
	7700		Yes		
	7900		Yes		
	7900 HT		Yes		
	7900HT FAST	Yes			Yes
	Quantstudio™ 3,5,6,7, 12k flex	Yes			Yes
	StepOne™		Yes		Yes
	StepOne™ Plus		Yes		Yes
	Viiia7™	Yes			Yes
Bio-Rad®	CFX96™			Yes	Yes
	CFX384™			Yes	Yes
	Chromo4™			Yes	
	iCycler®	Yes			
	iQ™5			Yes	
	MiniOpticon™			Yes	
	MyiQ™			Yes	
	Opticon™			Yes	
	Opticon™2			Yes	
BJS	Xpress®			Yes	
BMS	MIC			Yes	Yes
Cepheid®	SmartCycler®			Yes	
Eppendorf	Mastercycler® ep realplex			Yes	Yes
	Mastercycler® ep realplex 2S			Yes	Yes
Fluidigm	BioMark™	Yes			
IT-IS Life Science	MyGo Pro			Yes	Yes
PCRmax	Eco™			Yes	Yes
Qiagen	Rotor-Gene™ 3000			Yes	
	Rotor-Gene™ 6000			Yes	Yes
	Rotor-Gene™ Q			Yes	Yes
Roche	Lightcycler®96			Yes	Yes
	Lightcycler®480			Yes	Yes
	Lightcycler®Nano			Yes	Yes
Takara	Thermal Cycler Dice®			Yes	
Techne	PrimeQ			Yes	
	Quanta®			Yes	
Thermo	Piko Real™			Yes	

Nous contacter

OZYME
Des femmes et des hommes
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