

ENZYMES

RNA-direct Realtime PCR Master Mix

CAT# QRT Range

SPECIFICATION

Concentration	40 reactions/mL
Functional Test*	Correlation coefficient $ r \geq 0.98$
Bacterial DNA contamination	Ct ≥ 27
Ribonuclease Activity	None detected

*Amplification of a G3PDH gene from serial dilutions of human G3PDH control RNA and no-template control.

PRODUCT FORMAT

PART #	DESCRIPTION	CONTENT/FORMAT
QRT-101	RNA-direct Realtime PCR Master Mix Kit	5x 0.5mL RNA-direct Realtime PCR Master Mix 0.5mL 50mM Mn(OAc) ²
QRT-201	RNA-direct Realtime PCR Master Mix (SYBR Green) Kit	5x 0.5mL RNA-direct SYBR Green Realtime PCR Master Mix 0.5mL 50mM Mn(OAc) ²

Bulk format (100mL) also available.

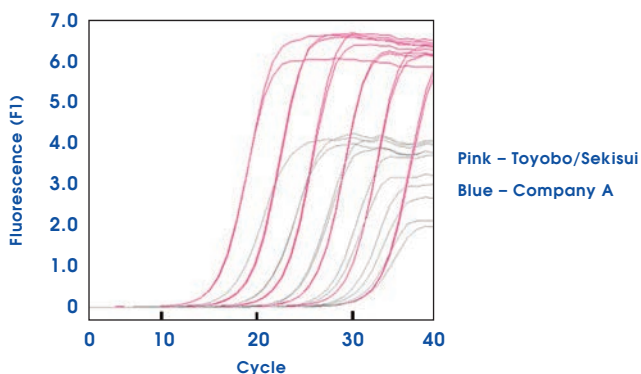
DESCRIPTION AND FEATURES

This product is a 2 × Master Mix for “1-step real-time PCR” using a thermostable DNA polymerase derived from *Thermus thermophilus* (Tth) HB8. Tth DNA polymerase exhibits reverse transcriptase activity in the presence of Mn²⁺ ions. This system allows for “1-step real-time PCR”, including reverse transcription and PCR steps. RNA-direct Realtime PCR Master Mix is applicable for TaqMan assay or hybridization probe assay, in combination with each probe. RNA-direct SYBR Green Realtime PCR Master Mix can be applied to an intercalation assay with SYBR Green I.

- Suitable for high-throughput real-time PCR and increases reliability of product, due to lowered risk of contamination.
- Can be used in systems using glass capillaries (e.g. LightCycler, Roche Molecular Systems, Inc.).
- Can be used in systems using passive reference (e.g. ABI PRISM 7000, 7700, 7900HT, StepOne Plus, Applied Biosystems, Inc.).
- Hot Start technology, using anti-Tth DNA polymerase antibodies, allows for high specificity and reproducible amplification.

CHARACTERISTICS

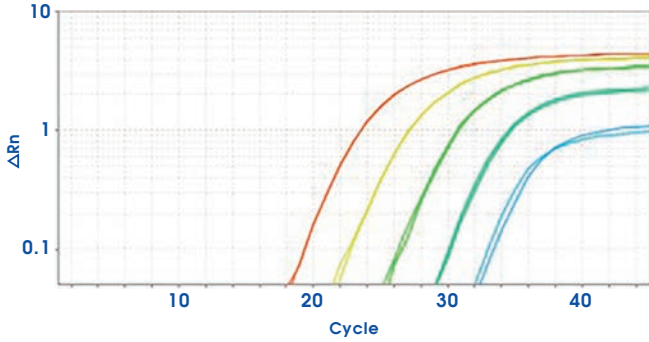
Application Data: Amplification of G3PDH mRNA was detected using serially diluted poly(A)+ RNA (10n dilution) with SYBR Green Realtime PCR kits including Tth DNA polymerase. The *RNA-direct* SYBR Green Realtime PCR Master Mix showed **greater sensitivity and signal intensity** than the other kit (company A).



Detection of Hepatitis C Virus (HCV): The sensitivity and quantitative nature of three one-step qRT-PCR master mix reagents were compared by detecting serially (10n) diluted HCV RNA using TaqMan probe. The *RNA-direct* Realtime PCR Master Mix exhibited higher sensitivity and PCR efficiency than other master mixes.

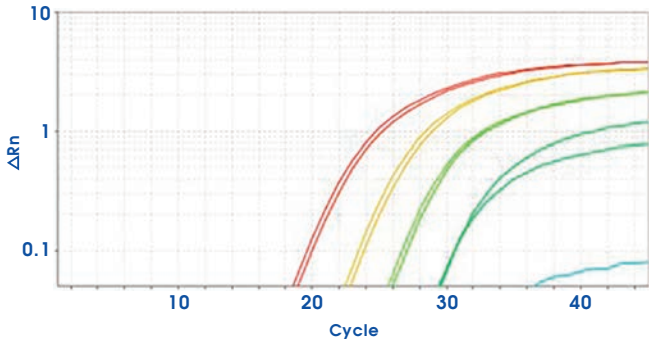
	TOYOBO/SEKISUI		QIAGEN		TAKARA	
	RNA-DIRECT REALTIME PCR MASTER MIX		QUIANTITECT PROBE RT-PCR KIT		ONE-STEP PRIMESCRIPT RT-PCR KIT	
10 ⁶ copies	19.38	19.36	19.65	19.99	24.32	24.64
10 ⁵ copies	22.68	22.84	23.86	23.45	28.48	29.06
10 ⁴ copies	26.60	26.34	26.64	26.97	32.84	33.04
10 ³ copies	30.04	30.22	30.58	30.55	38.13	37.43
10 ² copies	32.96	33.48	N/A	N/A	42.16	42.30
NTC	N/A	N/A	N/A	N/A	N/A	N/A
Slope	-3.452		-3.557		-4.532	
Efficiency	94.8%		91.0%		66.2%	
r	-0.999		-0.997		-0.999	

RNA Direct HCV Toyobo/Sekisui
Amplification Plot

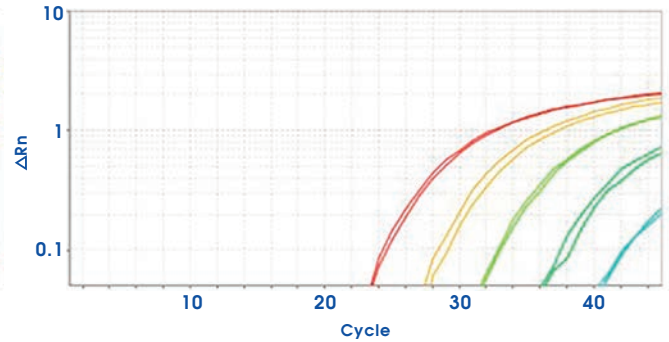


Please inquire about customization options. Our experienced technical team can work with you to optimize mixes for your requirements.

RNA Direct HCV Qiagen
Amplification Plot

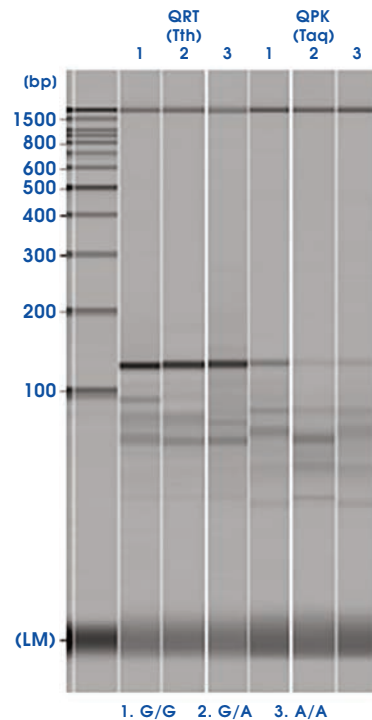


RNA Direct HCV Takara
Amplification Plot

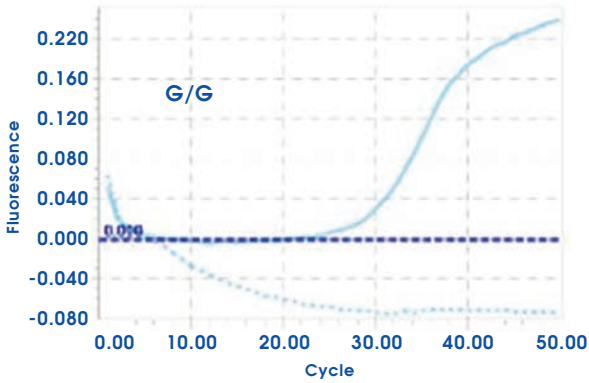


Detection of single nucleotide polymorphism (SNP) using flesh whole blood:

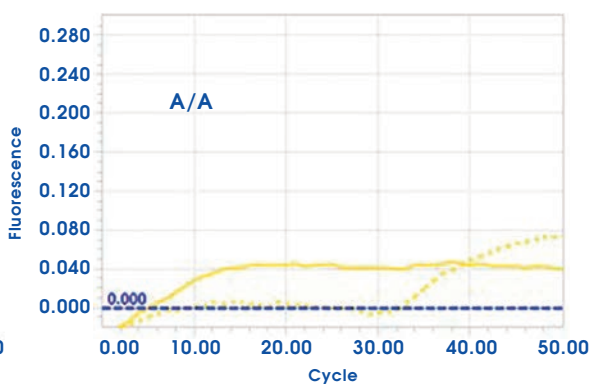
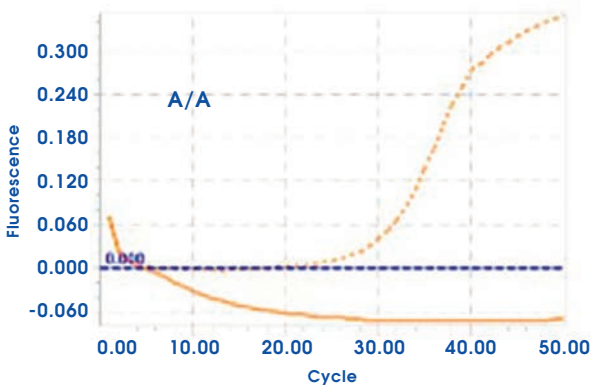
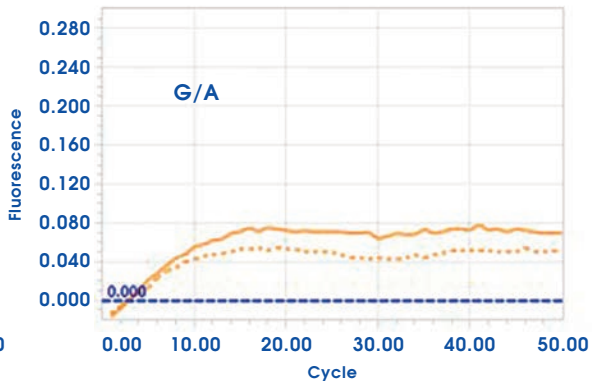
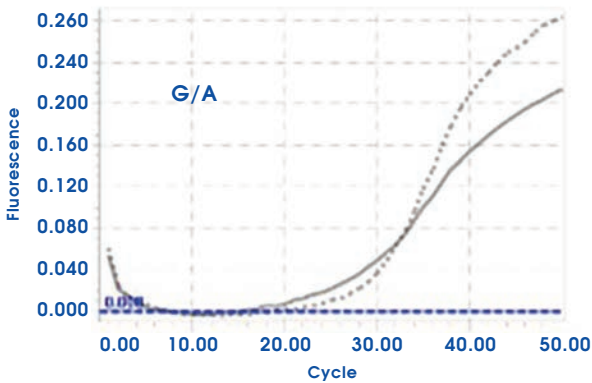
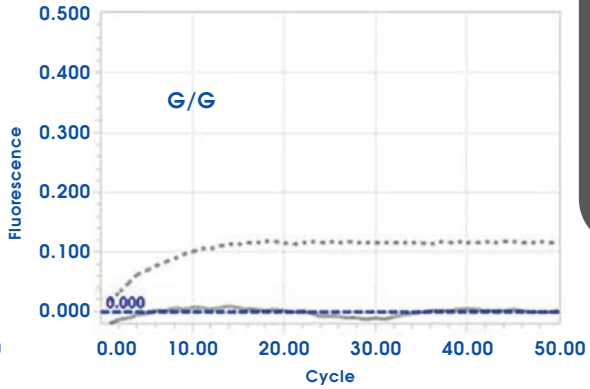
The SNPs of aldehyde dehydrogenase 2 gene (ALDH2) were analyzed using flesh whole blood samples by *RNA-direct* Realtime PCR Master Mix and Realtime PCR Master Mix based on Tth and Taq DNA polymerase, respectively. *RNA-direct* Realtime PCR Master Mix successfully detected all types of SNPs (G/G, G/A, A/A) using TaqMan probe assay. In this experiment, the amplification by *RNA-direct* Realtime PCR Master Mix was performed in the presence of MgCl₂ instead of MnCl₂.



RNA-direct Realtime PCR Master Mix
(based on Tth DNA Polymerase):



Realtime PCR Master Mix
(based on Taq DNA Polymerase):



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