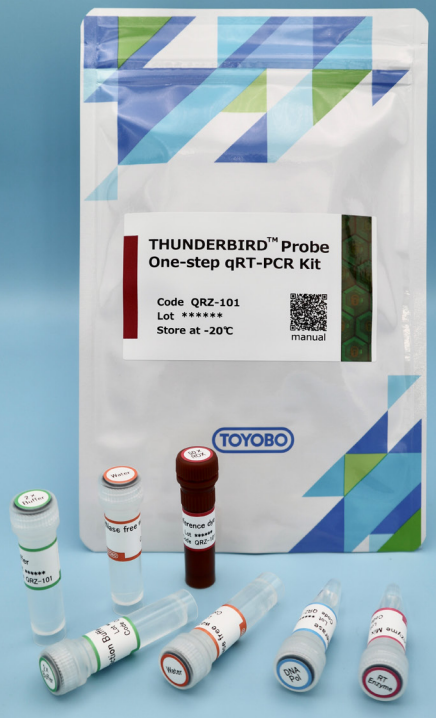
THUNDERBIRD™
Probe One-step qRT-PCR Kit

High efficient real-time qRT-PCR Kit

TOYOBO
Ideas & Chemistry



THUNDERBIRD™ Probe One-step qRT-PCR Kit is a one-step real-time reverse-transcription polymerase chain reaction (RT-PCR) kit using the highly efficient reverse transcriptase "ReverTra Ace™" and Tth DNA polymerase as a PCR enzyme. This product can be used mainly in TaqMan™ probe assays. The one-step system is suitable for high-throughput analysis because of its simple reaction setup. In addition, this system can reduce the risk of cross-contamination. The combination of the two enzymes and optimized buffer system enable the effective detection and quantification of a small amount of RNA. This kit can also detect various kinds of RNA with different sequences because it is tolerant of target sequence diversity.

Features

- **Rapid and highly sensitive**
- **Tolerant of target sequence diversity**
- **Tolerant of PCR inhibitors**
- **Utilization of dUTP**
- **Multiplex detection**

Code No. QRZ-101
<100 reactions [50 µL per reaction]>

Store at -20°C

Components:

2× Reaction Buffer*	2 × 1.25 mL
DNA Polymerase	125 µL
RT Enzyme Mix	125 µL
50× ROX Reference dye	100 µL
RNase free water	2 × 1.25 mL

* 2× Reaction Buffer contains essential components for the reaction (buffer, salts, dATP, dCTP, dGTP, and dUTP, etc.).

Over 100,000 Reactions Utilized in Malaysia's COVID-19 Testing Labs

Sample Request Available

Compatible with Leading qPCR Platforms

Prompt Technical Support

Multiplex Ready

Premium Quality at Affordable Price

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APPLICATIONS

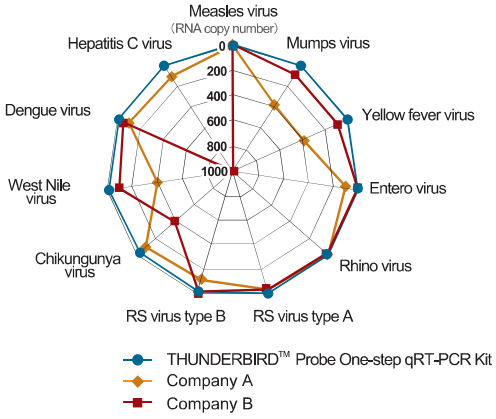
- One-step qRT-PCR
- Compatible real-time PCR cycler

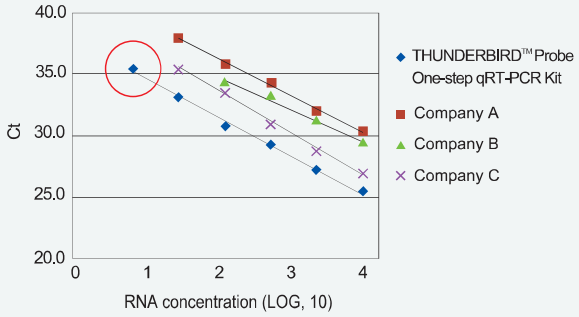
Applied Biosystems	ABI PRISM 7000	Roche Diagnostics	LightCycler 2.0
	ABI PRISM 7700		LightCycler Nano
	Applied Biosystems 7300		LightCycler 96/480
	Applied Biosystems 7500/Fast	Rio-Rad/MJ	CFX96 Touch
	Applied Biosystems 7900HT	Agilent Technologies	Mx3000P/3005P/4000
	Applied Biosystems StepOne	TaKaRa	Thermal Cycler Dice
	Applied Biosystems StepOneOlus	Qiagen	Rotor-Gene

Application data

Example 1.The maximum sensitivities of various one-step qRT-PCR kits

A 4^n dilution series of various viral RNAs was detected. The primers and TaqMan™ probes were synthesized in accordance with previous reports. The graph indicates the minimum copy numbers that were detected by the kits. THUNDERBIRD™ Probe One-step qRT-PCR Kit was the only kit that detected all viral RNAs tested at high sensitivity (≤30 copies).





Example 2.Comparison of sensitivity of detection of enterovirus RNA

The sensitivity and quantitativity of various kits were compared by detecting serially (4n) diluted enterovirus RNA . The primers and probe were synthesized in accordance with a previous report. Applied Biosystems™ StepOnePlusTM was used in this experiment. THUNDERBIRD™ Probe One-step qRT-PCR Kit was the only kit that detected less than 10 copies of RNA and showed wide-ranging quantitation. The results indicate that this kit is suitable for the highly sensitive detection of RNA viruses or mRNA expressed at a low level.

Example 3.Comparison of sensitivity of detection of enterovirus RNA

The expression levels of IL-1β, TNF-a and GAPDH mRNAs were analyzed using 10n times serially diluted total RNA (1 pg–100 ng) by triplex detection systems with TaqMan™ probes labeled by different fluorescent dyes (Fig.1). LightCycler™ 96 (Roche Diagnostics) was used in this experiment. HeLa S3 cells were incubated for 20 h after being seeded in six-well plates at 4 × 105 cells/well and treated with or without 100 nM phorbol 12-myristate 13-acetate. Then, the expression levels of mRNA were analyzed using purified total RNA from treated cells. The elevations of IL-1β and TNF-a mRNAs were observed upon adding phorbol 12-myristate 13-acetate (Fig. 2). No significant differences of PCR efficiency and correlation coefficient were observed between the triplex and singleplex. systems (data not shown).