

Thermo Scientific Verso 1-Step RT-PCR Hot-Start Kit

Description

Verso™ 1-Step RT-PCR Hot-Start Kit supplies in only two vials, all the components required to perform a rapid, sensitive and reproducible RT-PCR for the detection and analysis of RNA.

- Verso™ Enzyme Mix includes Verso™ Reverse Transcriptase, which is active at high temperatures, is highly sensitive and can generate long cDNA strands. This mix also contains RNase inhibitor to protect RNA templates from degradation.
- 1-Step PCR Hot-Start Master Mix (2X), a proprietary reaction buffer which has been optimized to allow both reverse transcription and PCR amplification to occur in the same reaction across a wide range of templates.
Thermo-Start™ DNA Polymerase, a chemically modified hot-start version of Thermoprime Plus DNA Polymerase, which prevents non-specific amplification during cDNA synthesis. Thermo-Start™ requires an **activation step at 95°C for 15 minutes**.
- RT Enhancer is included to remove contaminating DNA, eliminating the need for DNase I treatment.

Kit Contents

Vial	Pack Size (cap color)	
	A	B
Verso Enzyme Mix	40µl (black)	200µl (black)
1-Step PCR Hot-Start Master Mix (2X)	1ml (purple)	5 x 1ml (purple)
RT Enhancer	100µl (yellow)	500µl (yellow)

INFORMATION

Verso™ Reverse Transcriptase

Verso™ is an RNA-dependent DNA polymerase with a significantly attenuated RNase H activity compared to *Reverse-iT™*. Verso™ can synthesize long cDNA strands, up to 11 kb, at a temperature range of 42°C to 57°C. Verso™ can reverse transcribe total RNA from 1 pg - 1 µg. The recommended amount of total RNA template to use in 1-step kits is between 1 pg - 100 ng.

Thermo-Start™ DNA Polymerase

The enzyme requires an activation step at 95°C for 15 minutes.

Thermo-Start™ has 5' to 3' polymerization and exonuclease activity but lacks 3' to 5' exonuclease activity (proofreading).

RT Enhancer

RT Enhancer is included to remove contaminating DNA, eliminating the need for DNase I treatment. It degrades double stranded DNA during the transcription of RNA and is inactivated during the activation step of the Thermo-Start™ DNA Polymerase.

Storage Conditions

Store at -20°C until ready for use. Verso™ 1-Step RT-PCR Hot-Start Kit is stable for a minimum of 12 months. Avoid repeated freeze thawing. Shipped on ice within the UK and on dry ice for international and within the US.

Additional Info

- The use of disposable gloves, RNase and DNase free filter tips and plastics is recommended.
- RT Enhancer is not required if DNase I treatment is performed prior to QRT-PCR.

Tips before use

Thaw the reagents on ice. Mix and spin down the solutions before use to recover the maximum amount. **Do not vortex the Verso Enzyme Mix or the 1-Step PCR Hot-Start Master Mix.**

Briefly centrifuge to avoid bubbles within the wells. Always include a no template control (NTC) and a no enzyme control (NEC).

PROTOCOL

Example of reaction mix preparation.

The volume of each component is for a **50 µl final reaction**.

	Volume	Final Concentration
Verso Enzyme Mix	1 µl	
1-Step PCR Hot-Start Master Mix (2X)	25 µl	1X
Forward primer (10 µM) ^a	1 µl	200 nM
Reverse primer (10 µM) ^a	1 µl	200 nM
RT Enhancer	2.5 µl	
Water (PCR grade) ^b	variable	
Template (RNA) ^c	1 - 5 µl	1 ng
Total volume	50 µl	

Example of a **1-Step RT-PCR thermal cycling program**:

	Temp.	Time	Number of cycle
cDNA Synthesis ^d	50°C	15 min	1 cycle
Thermo-Start activation	95°C	15 min	1 cycle
Denaturation	95°C	20 sec	35 - 45 cycles
Annealing ^e	50-60°C	30 sec	
Extension ^f	72°C	1 min	
Final extension	72°C	5 min	1 cycle

Notes

- a – For optimization, a primer titration should be performed from 50 nM to 500 nM final concentration. Scale up or down the volume and concentration as appropriate.
- b – The volume of the total reaction should be completed up to 50 µl with water.
- c – The amount of total RNA added as a template should be between 1pg and 100 ng.
- d – Depending on the length of template and degree of secondary structure, the efficiency of the first strand synthesis maybe improved by optimizing temperature and time (42-57°C for 5-30 minutes).
- e – Annealing temperature depends on primer sequence.
- f – Time of extension depends on the length of the amplicon. If the amplicon exceeds 1 kb amplification time should be adapted (Thermo-Start™ DNA Polymerase extends at approximately 1 kb/min).

Quality control

Verso™ 1-Step RT-PCR Hot-Start Kit is tested functionally for use in RT-PCR.

Ordering Information

AB-1455/A	Verso™ 1-Step RT-PCR Hot-Start Kit	40 x 50 µl rxns
AB-1455/B	Verso™ 1-Step RT-PCR Hot-Start Kit	200 x 50 µl rxns

Related Products

Cat. No.	Description	Quantity
AB-2400	ABgene® SuperPlate™ Semi-Skirted 96-Well PCR Plate	25 plates
AB-2400/W	ABgene® SuperPlate™ Semi-Skirted 96-Well PCR Plate, white	25 plates
AB-2800	ABgene® SuperPlate™ Skirted 96-Well PCR Plate	25 plates
AB-2800/W	ABgene® SuperPlate™ Skirted 96-Well PCR Plate, White	25 plates
AB-0745	Easy Peel (heat seal)	100 sheets
AB-0626	Adhesive PCR Foil	100 sheets
AB-0558	Adhesive PCR Film	100 sheets
AB-0386	Strips of 8 Domed Caps	120 strips
AB-0783	Strips of 8 Flat Caps	120 strips

For technical information or troubleshooting contact Thermo Scientific Genomics Tech Support:

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Literature Code: AB-1455-v6-0511