

TetroScript Reverse Transcriptase

Robust thermostable reverse transcriptase ideal for ambient temperature stable molecular assays.

- **Stable:** Reverse transcriptase activity up to 60°C
- **Robust:** Ideal for RNA with high secondary structure such as viral genomes
- **Sensitive:** Detection of low copy number RNA targets
- **Low glycerol:** Formulation compatible with lyophilization and air-drying applications
- **Fast:** Ideal for developing fast, highly reproducible RT-qPCR assays

Meridian's new TetroScript Reverse Transcriptase is a robust thermostable MMLV-RT, designed to reduce RNase H activity and increase thermal stability. The enzyme offers higher cDNA yields and improved efficiency on GC-rich target RNAs and RNA with high secondary structure, such as viral RNA sequences.

HIGH SENSITIVITY

Standard Moloney Murine Leukemia Virus Reverse Transcriptase (MMLV-RT) is not thermostable and can only maintain its enzymatic activity at relatively low temperatures (up to 50°C). However, for cDNA synthesis, a higher reaction temperature may be desirable as it reduces RNA secondary structures which can inhibit reverse transcription and it minimizes nonspecific primer binding.

TetroScript Reverse Transcriptase has higher thermal stability and has reduced RNase H activity. The enzyme can be used to synthesize first-strand cDNA at temperatures up to 60°C which improves the cDNA yield from difficult RNA targets that require higher temperature to denature strong secondary structures.

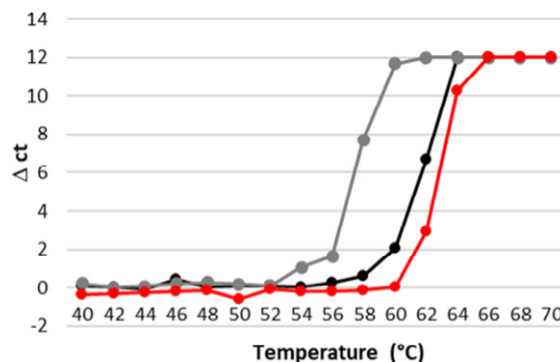


Fig. 1 Comparison of thermostability

Performance of Meridian's TetroScript Reverse Transcriptase (red), standard MMLV-RT (grey) and a thermostable reverse transcriptase from supplier X (black) after pre-incubation at 40°C to 70°C for 10 mins, in a multiplex one-step RT-qPCR assay. Δ ct values were calculated against the ct value produced by the same enzyme stored at -20 °C. The data illustrates the increased thermal stability of TetroScript Reverse Transcriptase when compared to other MMLV-RT enzymes and its ability to efficiently synthesize cDNA at temperatures up to 60°C.

HIGHER ENZYME EFFICIENCY AND SENSITIVITY

TetroScript Reverse Transcriptase is designed for greater efficiency of the reverse transcription reaction, enabling a lower limit of detection (LOD) with higher sensitivity in one-step RT-qPCR assays.

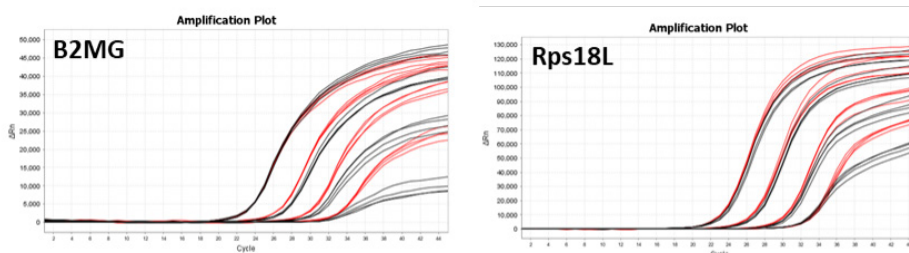


Fig. 2 High sensitivity and specificity

The sensitivity of TetroScript Reverse Transcriptase (red) was compared to supplier T (black) in a multiplex one-step RT-qPCR assay using a 10-fold serial dilution of mammalian total RNA. The results demonstrate that TetroScript Reverse Transcriptase has higher performance with better sensitivity and end-fluorescence.

COMPATIBLE WITH LYOPHILIZATION AND AIR-DRYING APPLICATIONS

TetroScript Reverse Transcriptase proprietary formulation allows for incorporation into assays designed for subsequent lyophilization or air-drying.

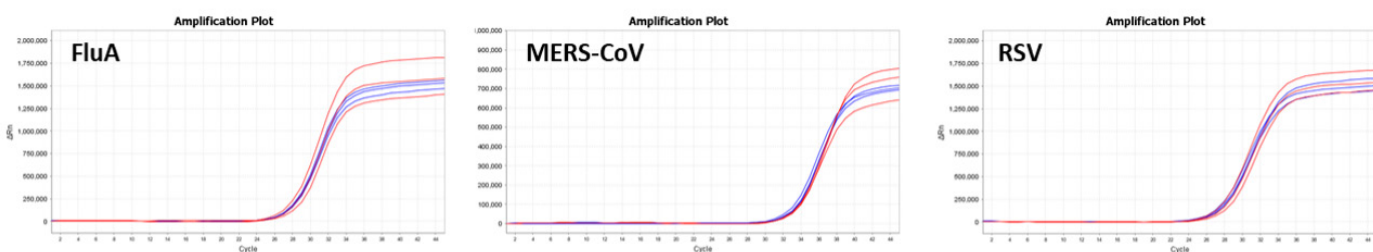


Fig. 3 Reproducible results

Meridian's TetroScript Reverse Transcriptase was used in an air-dryable RT-qPCR Mix and dried down in a fan assisted oven (red). After rehydration, the mix was tested against freshly prepared liquid mix (blue), in a triplex one-step RT-qPCR assay on respiratory RNA virus targets (Influenza A, MERS-CoV and RSV). The results demonstrate that TetroScript Reverse Transcriptase retains the same activity level after air-drying even in challenging conditions such as multiplex RT-qPCR reactions.

APPLICATIONS

The high-quality first-strand cDNA generated makes TetroScript Reverse Transcriptase ideal for:

- Construction of cDNA libraries
- 2- Step qPCR assays
- Viral RNA targets
- Gene cloning

Ordering Information

	Size	Cat. #
TetroScript Reverse	10,000 Units	BIO-65111
Transcriptase (200 U/ μ L)	4 x 10,000 Units	BIO-65112

Ordering information:

USA

5171 Wilfong Road
Memphis, Tennessee 38134
Phone: +1 901-382-8716
Fax: +1 901-333-8223

Email: info@meridianlifescience.com
Orders: orders@meridianlifescience.com

www.bioline.com/thermostable-reverse-transcriptase.html

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