

# Explore maximum reverse transcription performance

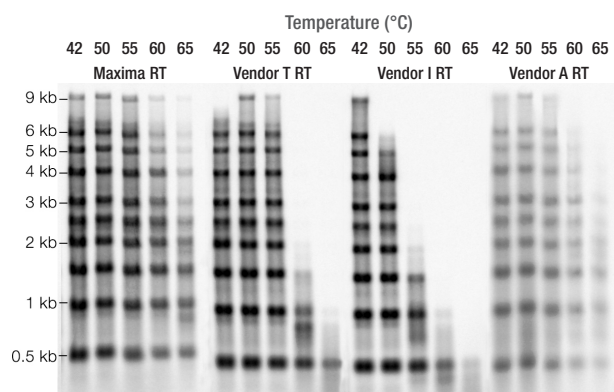
## Maxima Reverse Transcriptases

Thermo Scientific™ Maxima™ and Maxima™ H Minus Reverse Transcriptases were developed through molecular evolution, which has enabled the introduction and selection of multiple favorable mutations in traditional M-MuLV reverse transcriptase to help maximize performance in cDNA synthesis.

- Superior yields of full-length cDNA
- High reaction temperatures for improved transcription
- High transcription efficiency on long RNA templates
- Formats available with integrated gDNA removal step for simplified workflows\*

### Full-length cDNA over a wide temperature range

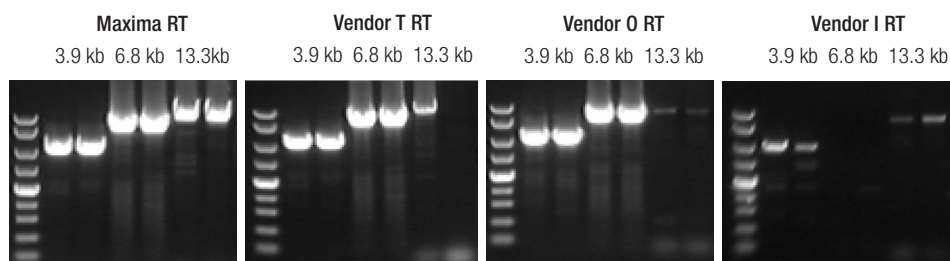
Maxima enzymes outperform other enzymes over a wide temperature range. Their tolerance of high reaction temperatures allows efficient transcription of RNA regions with extensive secondary structure and helps improve primer specificity, resulting in high yields of full-length DNA (Figure 1).



**Figure 1. High yields of cDNA over a broad temperature range.** cDNA synthesis incorporating a radioactive label, using 1 µg of Millennium™ RNA markers (poly(A)-tailed) with oligo(dT)<sub>18</sub> primer, was performed with Maxima H Minus Reverse Transcriptase and reverse transcriptases from other vendors at different temperatures. Reaction products were resolved on an alkaline agarose gel.

## Superior performance in long RT-PCR

Designed with proprietary mutations for enhanced performance, Maxima H Minus Reverse Transcriptase is capable of full-length cDNA synthesis from very long RNA templates (Figure 2).



**Figure 2. Amplification of long targets in two-step RT-PCR.** Total RNA (1 µg) from mammalian cells was used in duplicate reverse transcription reactions with Maxima H Minus Reverse Transcriptase and reverse transcriptases from other vendors, according to manufacturers' recommendations. The resulting synthesized cDNA was used as templates for PCR. The products of the two-step RT-PCR were visualized on gels. Only Maxima H Minus Reverse Transcriptase was able to generate very long (13.3 kb) products with high yields.

## Ordering information

Product	Size	Cat. No.
Maxima Reverse Transcriptase	2,000 U/10,000 U/ 4 x 10,000 U	EP0741/EP0742/EP0743
Maxima H Minus Reverse Transcriptase	2,000 U/10,000 U/ 4 x 10,000 U	EP0751/EP0752/EP0753
Maxima H Minus First Strand cDNA Synthesis Kit	20 rxns/100 rxns	K1651/K1652
Maxima H Minus First Strand cDNA Synthesis Kit with dsDNase*	20 rxns/100 rxns	K1681/K1682
Maxima H Minus Double-Stranded cDNA Synthesis Kit	10 rxns	K2561
Maxima First Strand cDNA Synthesis Kit for RT-qPCR	50 rxns/200 rxns	K1641/K1642
Maxima First Strand cDNA Synthesis Kit for RT-qPCR with dsDNase*	50 rxns/200 rxns	K1671/K1672

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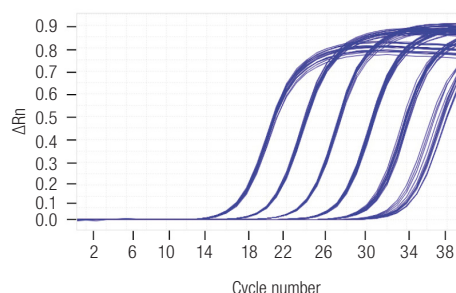
Country	Telephone Number	Fax Number	Email
Austria	01 97 002 0	01 97 002 600	info@at.vwr.com
Belgium	016 385 011	016 385 385	vwrbe@be.vwr.com
Czech Republic	+420 321 570 321	+420 321 570 320	info@cz.vwr.com
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France	0 825 02 30 30 (0,18 € TTC/min)	0 825 02 30 35 (0,18 € TTC/min)	info@fr.vwr.com
Germany	Freecall: 0800 702 00 07	0180 570 22 22*	info@de.vwr.com
*0,14 €/Min. aus d. dt. Festnetz			
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Ireland/Northern Ireland	01 88 22 222	01 88 22 333	sales@ie.vwr.com

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The Netherlands	020 4808 400	020 4808 480	info@nl.vwr.com
Norway	02290	815 00 940	info@no.vwr.com
Poland	058 32 38 200	058 32 38 205	info@pl.vwr.com
Portugal	21 3600 770	21 3600 798/9	info@pt.vwr.com
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Sweden	08 621 34 00	08 621 34 66	kundservice@se.vwr.com
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## Ideal for RT-qPCR—sensitive and reproducible quantification

Maxima Reverse Transcriptase is capable of reproducible cDNA synthesis from a wide range of template amounts, making it an ideal choice for RT-qPCR experiments (Figure 3). The premixed solutions of Thermo Scientific™ Maxima™ First Strand cDNA Synthesis Kits further help improve reproducibility and save time during reaction setup.



**Figure 3. Reproducible cDNA synthesis and low variability (<1% SD/C<sub>i</sub>) with a wide range of starting RNA amounts.**

First-strand cDNA was generated from 100 ng to 1 pg of total RNA from mammalian cells using a Maxima First Strand cDNA Synthesis Kit in 16 replicated reactions. Synthesized cDNA was used as a template in qPCR with Thermo Scientific™ Maxima™ SYBR™ Green/ROX™ qPCR Master Mix.