From RNA to cDNA: Streamlined solutions for your research

SuperScript IV Reverse Transcriptase

With over 50,000 citations, reviews, and publications, Invitrogen™ SuperScript™ Reverse Transcriptases are widely used first-strand cDNA synthesis products. Invitrogen™ SuperScript™ IV Reverse Transcriptase is the latest SuperScript enzyme, engineered to deliver excellent performance even with challenging RNA samples.

For Research Use Only. Not for use in diagnostic procedures.

Why should you choose SuperScript IV Reverse Transcriptase?

SuperScript IV Reverse Transcriptase features:

Great results, even with RNA samples of suboptimal purity

Higher cDNA yields than with other reverse transcriptase enzymes

High thermostability and processivity for exceptional cDNA synthesis performance

Short, 10 min cDNA synthesis protocol

Exceptional efficiency, short reaction time

SuperScript IV Reverse Transcriptase delivers high cDNA yield even with challenging RNA samples and 10 min reaction time (Figure 1).

High inhibitor tolerance

SuperScript IV Reverse Transcriptase tolerates common reverse transcriptase inhibitors such as copurified compounds from biological samples, or reagents used for RNA preservation or purification (Figure 2).

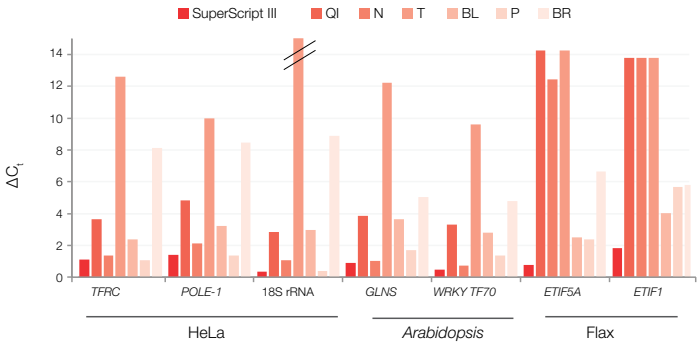

Figure 1. High efficiency with degraded RNA. SuperScript IV Reverse Transcriptase, Invitrogen™ SuperScript™ III Reverse Transcriptase, and reverse transcriptases from other supplierswere used along with Applied Biosystems™ TaqMan™ Assays for RT-qPCR of degraded RNA (RNA integrity number (RIN) 1–3) from human cells and plant tissues. Delta C_t values ($\Delta C_t = C_t - C_{t\ \text{SuperScript IV}}$) show that SuperScript IV Reverse Transcriptase, with its standard 10 min protocol, delivered higher cDNA yields and lower C_t values than the recommended protocols for SuperScript III reagent and other suppliers' reverse transcriptases.

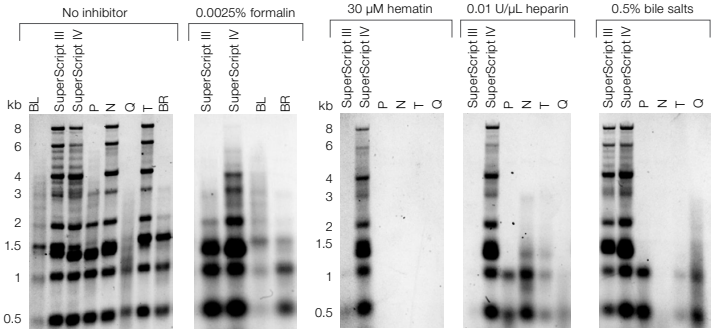

Figure 2. Tolerance to inhibitors. These data show first-strand cDNA synthesis of an RNA ladder in the presence of reaction inhibitors. cDNA fragments were resolved by alkaline gel electrophoresis. All reverse transcriptases except for SuperScript IV Reverse Transcriptase were severely affected with trace amounts of inhibitor.

Which SuperScript IV format is right for you?

SuperScript IV Reverse Transcriptase

Are you looking for a high-performance reverse transcriptase and flexible reaction setup?

SuperScript IV Reverse Transcriptase is a proprietary Moloney Murine Leukemia Virus (MMLV) reverse transcriptase mutant known for its excellent robustness and reliability in RT reactions. This enzyme is significantly improved over the SuperScript III formulation in inhibitor resistance, processivity, and reaction speed while retaining all the benefits, including thermostability, highly efficient full-length cDNA synthesis, and reduced RNase activity.

Ordering information

Product	Cat. No.
SuperScript IV Reverse Transcriptase	18090050

Scan for white paper: SuperScript IV Reverse Transcriptase

SuperScript IV First-Strand Synthesis System

Are you looking for a complete kit with all cDNA synthesis reaction components?

The Invitrogen™ SuperScript™ IV First-Strand Synthesis System is optimized for first-strand cDNA synthesis from purified poly(A)+ or total RNA. It contains all components needed for RT reactions, plus an additional control gene and primers, and provides the flexibility to customize the RT setup to fit the needs of your application. The SuperScript IV First-Strand Synthesis System with Invitrogen™ ezDNase™ Enzyme has the additional ability to remove potential genomic DNA contamination. The SuperScript IV synthesis system provides high performance and flexibility for reverse transcription PCR (RT-PCR) applications.

Ordering information

Product	Cat. No.
SuperScript IV First-Strand Synthesis System	18091050
SuperScript IV First-Strand Synthesis System with ezDNase Enzyme	18091150

SuperScript IV VILO Master Mix

Are you looking for exceptional convenience and fewer pipetting steps for two-step RT-qPCR applications?

Invitrogen™ SuperScript™ IV VILO™ Master Mix is a first-strand cDNA synthesis reaction mix for two-step RT-qPCR. The master mix format elevates the trusted VILO technology to the next level by combining further optimized buffer conditions with highly processive and thermostable SuperScript IV Reverse Transcriptase. The master mix offers exceptional performance features while maintaining linearity across the broadest range of input RNA.

Ordering information

Product	Cat. No.
SuperScript IV VILO Master Mix, with ezDnase Enzyme	11766050
SuperScript IV VILO Master Mix, kit only	11756050

Did you know VILO (variable input, linear output) technology produces a consistent and proportional cDNA output, regardless of the volume of input RNA? Essentially, the cDNA yield is directly proportional to input RNA.

Scan for an application note: SuperScript IV VILO Master Mix for an optimal RT-qPCR

Scan for application note: Reliable and sensitive RT-qPCR analysis of whole-blood RNA samples

SuperScript IV UniPrime One-Step RT-PCR System

Are you looking for a convenient formulation to perform cDNA synthesis and PCR amplification in a single setup?

The Invitrogen™ SuperScript™ IV UniPrime™ One-Step RT-PCR System combines high-processivity SuperScript IV Reverse Transcriptase with a novel Invitrogen™ UniPrime™ RT-PCR Master Mix to provide excellent one-step RT-PCR performance. This formulation enables universal primer annealing at 60°C, contains dyes for visually tracking the reactions, and allows direct loading on agarose gels.

Ordering information

Product	Cat. No.
SuperScript IV UniPrime One-Step RT-PCR System, Colored	12597100
SuperScript IV UniPrime One-Step RT-PCR System, Dye-free	12596100

Scan for a white paper: **Discover superior RT-PCR results more easily than ever**

Scan for an application note: **Protocol for amplicon-based viral genome sequencing**

SuperScript IV CellsDirect cDNA Synthesis Kit

Do you want to go directly from cell lysate to cDNA synthesis without having to isolate RNA?

The Invitrogen™ SuperScript™ IV CellsDirect™ cDNA Synthesis Kit is an easy-to-use solution designed to synthesize first-strand cDNA directly from mammalian cell lysate without first isolating the RNA. With lysis and reverse transcription performed in the same tube, the resulting first-strand cDNA is ready to use in many downstream applications such as PCR, qPCR, and cloning.

Scan for a white paper: **SuperScript IV CellsDirect cDNA Synthesis Kit**

Scan for an application note: **Direct cDNA synthesis from single spheroids and primary cell samples**

Ordering information

Product	Cat. No.
SuperScript IV CellsDirect cDNA Synthesis Kit	11750150

SuperScript IV Template-Switching RT Master Mix

Are you looking for high template-switching efficiency in cDNA synthesis reactions?

The Invitrogen™ SuperScript™ IV Template-Switching RT Master Mix contains a proprietary enhancer to help maximize template-switching efficiency and provides all reaction components in a convenient premixed format. The master mix is supplied with a cell lysis buffer for direct cDNA synthesis without RNA purification.

Ordering information

Product	Cat. No.
SuperScript IV Template-Switching RT Master Mix	A65423

Scan for an application note: **5' RACE-based immune repertoire sequencing**

SuperScript IV Single Cell/Low-Input cDNA PreAmp Kit

Are you looking for a cDNA preamplification solution from only a single cell?

The Invitrogen™ SuperScript™ IV Single Cell/Low-Input cDNA PreAmp Kit is designed for efficient cDNA synthesis and amplification directly from intact single cells (1–1,000) or low amounts of total RNA (2 pg–10 ng). It contains all required components to perform cell lysis, reverse transcription, and PCR amplification in a convenient premixed format.

Scan for white paper: **Efficient global preamplification via the SuperScript IV Single Cell/Low-Input cDNA PreAmp Kit**

Ordering information

Product	Cat. No.
SuperScript IV Single Cell/Low-Input cDNA PreAmp Kit	11752096

Features of SuperScript IV products

	Flexibility for optimizing reaction components and conditions	Complete cDNA synthesis kit with all reaction components	Two- step RT-qPCR; convenient and minimal pipetting steps	One-step RT-PCR; convenient and fewest pipetting steps	Go from mammalian cell lysate to cDNA synthesis; skip RNA isolation	cDNA synthesis and amplification from single cells or low amounts of input RNA	Maximal template-switching efficiency
Format	Stand-alone enzyme	First-strand cDNA synthesis kit	First-strand cDNA synthesis master mix for RT-qPCR	One-step RT-PCR kit	Direct RT kit	cDNA preamplification kit	Template-switching RT master mix
Input	1 pg–5 µg total RNA	1 pg–5 µg total RNA	0.01 pg–2.5 µg total RNA	0.01 pg–1 µg total RNA	1–10,000 cells	1–1,000 cells or 2 pg–10 ng total RNA	1–1,000 cells or 2 pg–4 µg total RNA
Optimal reaction temperature	50–55°C	50–55°C	50–55°C	50–55°C	50–55°C	50°C	50°C
Reverse transcription time	10 min	10 min	10 min	10 min	10 min	30 min	30 min
High cDNA yield with challenging or degraded sample	✓	✓	✓	✓	✓	–	–
Includes PCR step	–	–	–	✓	–	✓	–
Recommended product(s)	SuperScript IV Reverse Transcriptase	• SuperScript IV First-Strand Synthesis System • SuperScript IV First-Strand Synthesis System with ezDNase Enzyme	• SuperScript IV VILO Master Mix • SuperScript IV VILO Master Mix with ezDNase Enzyme	• SuperScript IV UniPrime One-Step RT-PCR System (colored) • SuperScript IV UniPrime One-Step RT-PCR System (dye-free)	SuperScript IV CellsDirect cDNA Synthesis Kit	SuperScript IV Single Cell/ Low-Input cDNA PreAmp Kit	• SuperScript IV Template Switching RT Master Mix • Template Switching Reverse Transcription Oligonucleotides

Support resources

- Access our RT education center at **thermofisher.com/rteducation**
- Learn about optimizing your cDNA synthesis experiments in five easy steps at **thermofisher.com/5steps-cdna**
- Explore quick five-step workflow tutorials designed to help save you time at **thermofisher.com/keepseeking**

Learn more at **thermofisher.com/superscript**

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