

# FIREScript® RT cDNA synthesis KIT

Flexible cDNA synthesis kit with fast and robust FIREScript® Reverse Transcriptase



97 /100 10 Citations

Genetically modified MMLV-based reverse transcriptase with increased thermostability and improved performance at elevated temperatures

- high specificity and yield
- wide reaction temperature from 37°C to 60°C
- fast 15 min reaction time
- a flexible 7-vial kit with all reaction components
- RNase inhibitor and water included
- reaction set-up and shipment without ice

## Ordering

### Choose Product Size

- 50 rxn | 50 x 20 µl rxn
- 200 rxn | 200 x 20 µl rxn
- 20 rxn | 20 x 20 µl rxn **free**

### sample

REQUEST FOR BULK SIZE

Some applications of this product may require a license which is not provided by the purchase of this product.

For research use only.

## — Reagents Provided

Item	Pcs.	Vial size
FIREScript® Reverse Transcriptase	1	10000 U   50 µl
RiboGrip™ RNase Inhibitor	1	50 rxn   1000 U
10x RT Reaction Buffer with DTT	1	125 µl
dNTP MIX (20 mM of each)	1	2 µmol   25 µl
Oligo (dT) Primer	1	50 µl
Random Primers	1	50 µl
Water, nuclease free	1	1.25 ml

## Description

FIREScript® Reverse Transcriptase (RT) is a genetically engineered MMLV (Moloney Murine Leukemia Virus) based Reverse Transcriptase.

This is an RNA-directed DNA polymerase that can synthesize a complementary DNA strand from ssRNA or ssDNA and is active over a broad range of reaction temperatures from 37°C to 60°C.

FIREScript® RT is a robust enzyme for RNA detection and has enhanced stability at room temperature with no activity loss for up to 1 month. This RT contains a functional RNase H domain which can increase the sensitivity of RT-qPCR (quantitative reverse transcription PCR).

## Reagents

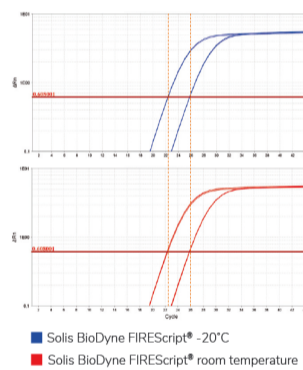
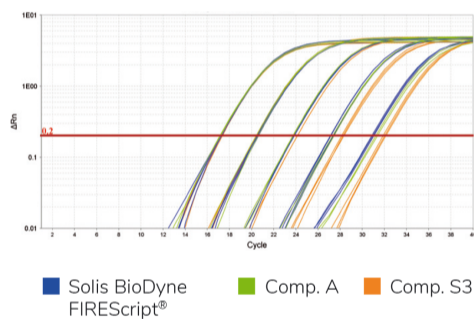
- FIREScript® Reverse Transcriptase (200 U/μl)
- RiboGrip RNase inhibitor (40 U/μl)
- 10x RT Reaction Buffer with DTT (500 mM Tris-HCl pH 8.3, 500 mM KCl, 30 mM MgCl<sub>2</sub>, 100 mM DTT)
- Oligo (dT) Primer (100 μM)
- Random Primers (100 μM)
- dNTP MIX (20 mM of each)
- Water, nuclease free

## Applications

First-strand cDNA synthesis

RT-PCR

RT-qPCR



**SOLIS BIODYNE**

**cDNA synthesis primer comparison**

	Oligo dT primer	Random primers	Oligo dT and Random	Gene specific primers
Recommended final conc.	5 μM	5 μM	2.5 μM each	0.1 - 1 μM
Primer extension at 42°C for 5-10 min	-	-	-	-
Benefits	Full length cDNA	All RNAs in sample, non-specific cDNA	Reducing 3' bias	All reaction reagents used for genes of interest (increased sensitivity)
Disadvantages	Potential 3' bias; Can't bind to RNA lacking poly A sequence; Can bind to long poly A sequences in the middle of RNA	Truncated cDNA (multiple potential binding sites per RNA molecule)	Oligo dT doesn't bind to RNAs lacking poly A sequence; Truncated cDNA (multiple potential binding sites per RNA molecule)	Only 1 specific gene of interest per cDNA synthesis run can be analyzed downstream
Target RNAs	RNA containing poly A tail (eg. mature eukaryotic mRNA, which accounts for 15% of total RNA in the cell)	Prokaryotic RNA; All eukaryotic RNA types (mRNA, tRNA, rRNA); Degraded RNA	Combined targets of both primers	Specific genes of interest

cDNA synthesis priming options

Highly competitive enzyme

Exceptional stability

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