ArrayScript™ Reverse Transcriptase

Store at –20°C.
Do not store in a frost-free freezer.

Catalog #:	AM2048	AM2049
Amount:	4,000 Units	10,000 Units

Product Description: An M-MLV reverse transcriptase engineered to produce high yields of full-length cDNA from single-stranded RNA templates.

Source: An *E. coli* strain overexpressing an engineered version of the *pol* gene of M-MLV.

Unit Concentration: 200 U/µL

Unit Definition: One unit of ArrayScript™ Reverse Transcriptase incorporates 1 nmol dTTP into acid-precipitable material in 10 min at 37°C, using poly(A):oligo(dT) as template:primer.

Additional Materials Included: 500 µL 10X RT Reaction Buffer
- 500 mM Tris pH 8.3
- 750 mM KCL
- 30 mM $MgCl_2$
- 50 mM DTT

Storage Conditions: Store at –20°C. ***Do not store in a frost-free freezer.***

Storage Buffer: (Not included) 20 mM Tris-HCl (pH 7.5), 1 mM DTT, 0.05% Triton X-100, 0.1 mM Na_2EDTA, 0.1 mM NaCl, 50% (v/v) glycerol.

USER INFORMATION

General Information: ArrayScript™ Reverse Transcriptase (patent pending) is a novel, engineered form of the *pol* gene of M-MLV, isolated from an overexpression strain of *E. coli*. In the presence of a single-stranded RNA or DNA template, primer, and deoxynucleotides, this enzyme will extend the oligonucleotide primer, producing a complementary DNA (cDNA) strand. ArrayScript has been engineered to synthesize cDNA products that are 9000 nt or longer. In RNA amplification experiments, ArrayScript enables yields of amplified RNA that are superior to wild type M-MLV, AMV, or other engineered M-MLV reverse transcriptases when low amounts of total RNA (~100 ng) are used. As a result, ArrayScript is the enzyme of choice for a range of cDNA synthesis applications, from RT-PCR to high yield, representational RNA amplification.

Applications:

Reverse Transcription of RNA

Prepare a first strand synthesis reaction in a nuclease-free tube.

1. Add 1–5 µM Oligo(dT) or randomers, or 0.25–1 µM gene-specific primers.
2. Add 1–5 µg of total RNA, or 10–100 ng of mRNA.
3. Add nuclease-free water to a final volume of 12 µL.
4. Incubate at 70°C for 3–5 min and chill on ice.
5. Add 4 µL of 2.5 mM (each) dNTPs.
6. Add 2 µL of 10X ArrayScript RT Buffer (included).
7. Add 1 µL of RNase Inhibitor (40 U/µL; Cat #AM2682, AM2684).
8. Add 1 µL of 200 U/µL ArrayScript RT.

The final volume of the reaction is 20 µL.

9. Incubate the reaction at 42°C for 0.5–2 hr.
10. Inactivate the reaction by incubating at 95°C for 5 min.

QUALITY CONTROL

Arrayscript Reverse Transcriptase is thoroughly tested for contaminating nonspecific endonuclease, exonuclease, RNase, and protease activity. Functionality is determined in a reverse transcription reaction using a 9 kb RNA template.

OTHER INFORMATION

Material Safety Data Sheets:

Material Safety Data Sheets (MSDSs) can be printed or downloaded from product-specific links on our website at the following address: www.ambion.com/techlib/msds. Alternatively, e-mail your request to MSDS_Inquiry_CCRM@appliedbiosystems.com. Specify the catalog or part number(s) of the product(s), and we will e-mail the associated MSDSs unless you specify a preference for fax delivery. For customers without access to the internet or fax, our technical service department can fulfill MSDS requests placed by telephone or postal mail. (Requests for postal delivery require 1–2 weeks for processing.)

Warranty and Liability:

For research use only. Not for use in diagnostic procedures.

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