



Technical Data Sheet

GENERAL INFORMATION

PRODUCT	M-MLV Reverse Transcriptase, expressed in yeast. Lyophilized.
Cat. No.	MT50U-L1MVRTHA
UNITS	50,000 U
DESCRIPTION	Moloney Murine Leukemia Virus Reverse Transcriptase (M-MLV RT) is a DNA polymerase using single-strand RNA or DNA to synthesize a complementary DNA strand. This enzyme synthesizes the first-strand cDNA up to 7 kb. M-MLV RT is a product of the pol gene purified from <i>K. phaffii</i> . This enzyme does not show RNase H activity. This lyophilized product is a freeze-dried version of its liquid equivalent.

PRODUCTS PROVIDED

Component	Amount
50U-L1MVRTHA M-MLV Reverse Transcriptase.	1 vial

DELIVERY CONDITIONS

50U-L1MVRTHA 50,000 U of freeze-dried M-MLV RT.

SHIPPING CONDITIONS This lyophilized product can be handled and stored at Room Temperature for at least 12 months.

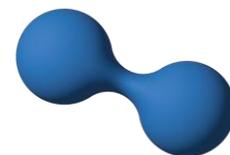
SUGGESTED RECONSTITUTION BUFFER 20 mM Tris pH 7.5, 100 mM NaCl, 0.1 mM EDTA, 1 mM DTT, 0.1% Tween, 50% glycerol.

RECONSTITUTION INSTRUCTIONS

1. Add 250 μ L of the suggested Reconstitution Buffer to reconstitute the enzyme at 200 U/ μ L.
2. Gently pipette up and down to dissolve the solid powder.
3. Place on ice and aliquot into smaller volumes to avoid multiple freeze/thaw cycles.
4. Store from -20 °C to -80 °C.

STORAGE CONDITIONS This lyophilized product can be handled and stored at Room Temperature for at least 12 months. After reconstitution, the shelf life is 12 months if stored from -20 °C to -80 °C. To avoid multiple freeze/thaw cycles, store in multiple aliquots.





SUGGESTED 10X REACTION BUFFER 100 mM Tris pH 8.3, 300 mM KCl, 0.1% Tween, 50 mM MgCl₂ and 100 mM DTT.

ADDITIONAL INFORMATION

ACTIVITY UNIT DEFINITION

One unit incorporates 1 nmol of dTTP into acid-precipitable material in 10 minutes at 37 °C using poly(A)•oligo(dT)₂₅ as template-primer.

RECOMMENDED REACTION CONDITIONS

1. Gently vortex and briefly centrifuge all solutions.
2. Denature RNA and anneal the primer/s by incubating the RNA with the primer/s at 65-70 °C for 5 min. Then, place the mix on ice for 1 min.

Component	Final concentration or quantity (recommended)
RNA Template	Total RNA: up to 5 µg or mRNA: up to 0.5 µg
Primer/s:	
Oligo dT	1-2 µg Oligo dT
Random Primers	2-5 µg Random Primers
Gene-specific Primers	≥ 0.2 µM Gene-specific Primers

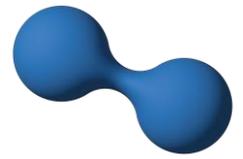
3. For reverse transcription of RNA to DNA, complete the mixture from the previous step with the rest of the components in the table to prepare the following 20-µL reaction mix on ice, and mix gently by pipetting:

Component	Final concentration or quantity (recommended)
Mix from previous step	
10X M-MLV Reverse Transcriptase Reaction Buffer	1X
dNTPs, 10 mM each	0.5 mM each dNTP
M-MLV Reverse Transcriptase	200 U
Nuclease-free water	Adjust to 20 µL

4. Incubate the mix at 45 °C for 30 min for cDNA synthesis.
5. Inactivate the M-MLV Reverse Transcriptase by incubating the mix at 95 °C for 2 min and then, chill on ice.

Proceed with the cDNA in downstream applications or store at -20 °C.





QUALITY CONTROL

To perform quality control of the protein, it is first resuspended in the suggested reconstitution buffer, which also serves as a negative control in the quality control process.

M-MLV REVERSE TRANSCRIPTASE ACTIVITY

M-MLV RT activity is measured for each batch to verify that the resulting units are the same to the reference units, with an accepted 8% deviation.

E. coli DNA CONTAMINATION

200 U of M-MLV RT is screened for the presence of the specific gene *ybbW* from *Escherichia coli*. A C_q value higher than 35 is accepted.

RNase ACTIVITY

A 50 μ L reaction containing 0.5 μ g of RNA and 200 U of M-MLV RT is incubated at 37 °C for 4 hours, and RNA degradation is determined by agarose gel electrophoresis. It is considered acceptable when no RNA degradation is detected.

TECHNICAL SUPPORT

If you have any questions, feel free to contact us at support@levprot.com

Consult the Safety Data Sheet for information regarding hazards and safe handling practises.

THIS PRODUCT IS INTENDED FOR RESEARCH USE ONLY.

DATE 19/08/2025

REV. TDS_MT50U-L1MVRTHA rev.01

