

GUEasy MMLV Reverse-Transcriptase III (H-)

i. Product Description

M-MLV Reverse Transcriptase (MMLV) is an RNA-mediated DNA polymerase derived from Moloney Murine Leukemia Virus. This enzyme uses RNA (synthesized from cDNA) or ssDNA as a template to make a complementary strand of DNA. Compared with wild-type M-MLV reverse transcriptase, GUEasy MMLV Reverse-Transcriptase III (H-) can effectively synthesize high-quality cDNA by removing RNase H activity through genetic modification and increasing the reverse transcription temperature to 50-60 °C, avoiding the inhibition of cDNA synthesis by the complex secondary structure of RNA.

ii. Advantages

Stability: extremely high stability by high-standard production process.

Tolerance: for common impurities have a strong tolerance.

Compatibility: compatible with animal, plant, virus and other templates.

iii. Operation steps

- 1) RNA denaturation (Denaturation of RNA helps to open up secondary structures, which can greatly increase the production of first-strand cDNA. Do not omit the denaturation step for fragments larger than 3Kb)

Components	Volume (ul)
RNase Free ddH ₂ O	up to10
Total RNA	10pg-5ug
Oligo (dT) ₁₈ (50 μM)	
or Random Primers (100 μM)	1
or Gene Specific Primers (2 μM)	

It was then heated at 65°C for 5 min and quickly placed on ice to cool for 2 min. After the reaction solution was collected by centrifugation briefly, the reverse transcription reaction solution in the table below was added and gently blown and mixed.

- 2) The first strand cDNA synthesis reaction liquid was prepared

Components	Volume (ul)
The previous reaction liquid	10
5xGUEasy MMLV Reverse-Transcriptase III buffer	4
dNTP Mix (10 mM)	1
GUEasy MMLV Reverse-Transcriptase III (200U/ul)	1
RNase inhibitor (40 U/μL)	1
RNase Free ddH ₂ O	up to 20ul

- 3) The first strand cDNA synthesis reaction program

Temperature	Time
25°C	5min
42°C	15-30min
85°C	5min

iv. Notes

- 1) When using Random Primers, incubate for 5 min at 25°C. This step may be omitted if Oligo (dT)18 or Gene Specific Primers are used.
- 2) Reverse transcription temperature: 42°C is recommended. For templates with high GC content or complex secondary structure, the reverse transcription temperature can be increased to 50-55°C.
- 3) Heating at 85°C for 5 min was used to inactivate reverse transcriptase.
※ Reverse transcription products can be immediately used for subsequent PCR or qPCR reaction, or can be stored at -20°C for a short time. If long-term storage is needed, it is recommended to store them at -80°C after packaging to avoid repeated freeze-thaw.

v. Storage condition

Shipped in ice-pack, stored at -20°C, valid for two years.

vi. Product Specification

Product	Catalog #	Size	Activity
GUeasy MMLV Reverse-Transcriptase III (H-)	RT3003-01	100ul	20000U
GUeasy MMLV Reverse-Transcriptase III (H-)	RT3003-02	200ul	40000U
GUeasy MMLV Reverse-Transcriptase III (H-)	RT3003-05	500ul	100000U