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## TargetEx Tolerant Reverse Transcriptase 1 mg/mL

Catalogue Number: TGX-022-BS/-BM/-BL

### INTRODUCTION

**TargetEx Tolerant Reverse Transcriptase** is a modified form of M-MLV RTase, designed to have lower RNase H activity and enhanced inhibitor tolerance. It is highly purified from *E. coli*, carrying a genetically altered *pol* gene derived from M-MLV. This enzyme is ideal for first-strand cDNA synthesis, offering improved specificity, higher cDNA yields, and a greater proportion of full-length transcripts compared to common reverse transcriptases. It is capable of generating cDNA from fragments up to 9 kilobases.

**Store the product at -20 °C.**

### PREPARATION

Prepare a 1.5-fold enzyme dilution from the 1 mg/mL polymerase stock with 20 mM Tris, 100 mM NaCl, 0.1 mM EDTA, 1 mM DTT, 50% glycerol, pH=7.5 buffer. Use 1 µL from this enzyme dilution for a 20 µL reaction volume.

### TYPICAL REACTION ASSEMBLY

For first-strand cDNA synthesis, mix NFW, oligo(dT) primer, RNA template, and dNTP mix, then place it into the thermal cycler and run Step 1 of the thermal cycler program (initial heating). After completion, remove the plate from the cycler and add the remaining materials listed in the component list below. Continue with Steps 2 and 3 of the thermal cycler program (synthesis and inactivation).

### COMPONENT LIST

| Material | Volume to 20 µL (single measurement) | Recommended final concentration |
| --- | --- | --- |
| **Nuclease-Free Water (NFW)** | 10 µL | N/A |
| **oligo$_{(dT)20}$ (50 µM)** | 1 µL | Variable |
| **RNA template (10 pg – 5 µg)** | 1 µL | Variable |
| **dNTP mix (10 mM each)** | 1 µL | 1 mM |
| **5X First Strand Buffer** | 4 µL | 1X |
| **DTT (0.1 mM)** | 1 µL | 5 µM |
| **RibonEx Recombinant RNase Inhibitor (40 U/µL)** | 1 µL | 40 U/reaction |
| **1.5X diluted TargetEx Tolerant Reverse Transcriptase 1 mg/mL** | 1 µL | ~200 U/reaction |

### THERMAL CYCLER PROGRAM SETUP

| No. | Step | Temperature (°C) | Duration |
| --- | --- | --- | --- |
| 1 | Initial Heating | 65 | 5 min |
| 2 | First Strand Synthesis | 50 | 30-60 min |
| 3 | Inactivation | 75 | 15 min |

If you need further information or would like to try our products, please do not hesitate to contact us at **info@targetex.com**.