BioFlux

Bioer Technology

BioRT Master HiSensi cDNA First Strand Synthesis kit

This kit is designed for RNA reverse transcription experiments in the field of biochemical molecular research. It can convert various types of RNA (including total RNA, mRNA, tRNA, rRNA) into cDNA to meet the requirements for synthesizing cDNA of different lengths. The kit utilizes a modified Moloney Murine Leukemia Virus reverse transcriptase (M-MLV) with enhanced template affinity and reduced RNase H activity. This modification allows the enzyme to efficiently transcribe complex secondary structure templates and synthesize long cDNA fragments during the first-strand cDNA synthesis process. Additionally, it can reverse transcribe extremely low amounts of RNA templates (down to 1 pg), significantly improving experimental efficiency. The kit is supplied with both oligo(dT)and random primer, In addition, customers can also use gene specific primers, random primers initiate cDNA synthesis at multiple random sites along RNA, ensuring unbiased representation. Oligo (dT) primers specifically prime cDNA synthesis from the poly(A) tail of mRNA, enabling selective amplification of mRNA transcripts. The benifits allows for unbiased initiation of cDNA synthesis from RNA, providing comprehensive coverage of the transcriptome and selective amplification of mRNA, enabling accurate analysis of gene expression.

Specification

Specification	Description
Sample Type	RNA（total RNA, mRNA, tRNA, rRNA）
Reverse Transcriptase	M-MLV
Total Input RNA Range	1pg-2μg
Final Fragment Length	<14kb
Compatible Platform	Thermal Cycler
Final Product Type	First-Strand cDNA
Time to Produce cDNA	30min
Storage Condition	-20 ± 5℃
Application	• First strand cDNA synthesis for RT-PCR and RT-qPCR • Construction of full length cDNA libraries

Principle

This kit utilizes a modified Moloney Murine Leukemia Virus reverse transcriptase (M-MLV), which has enhanced template affinity and reduced RNase H activity. The modified RTase enables efficient synthesis of the first strand of cDNA from RNA templates, even in the presence of complex secondary structures, while suppressing non-specific binding between RNA structures and the reverse transcriptase. The Hybrid Mix reaction solution in this kit contains pre-added random primers and oligo(dT), allowing direct synthesis of 1st strand cDNA from total RNA or poly(A)+ RNA.

The application case

Case 1

Using this kit, total RNA from 293T cells was reverse transcribed into cDNA. The synthesized cDNA was then tested for its ability to generate long fragments using our company's PCR master mix (BSA31 BioReady Taq Mix) and specific primers. A comparative analysis was conducted against a competitor's product. The results, as shown in Figure 1, demonstrate that this kit exhibits superior capability in synthesizing long cDNA fragments through reverse transcription.

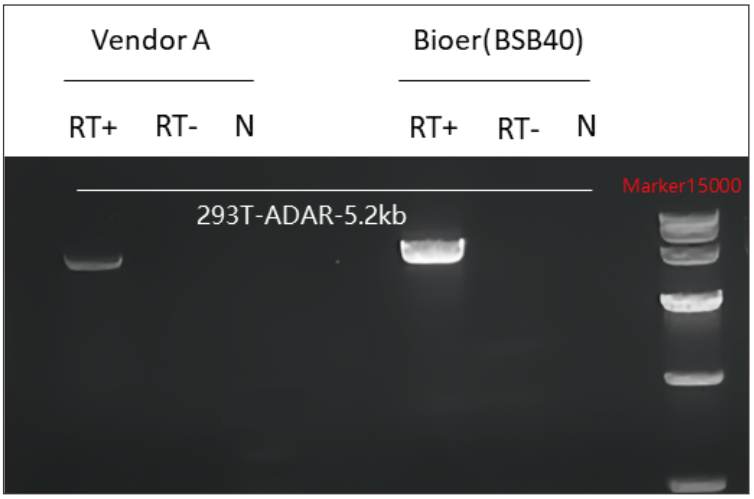
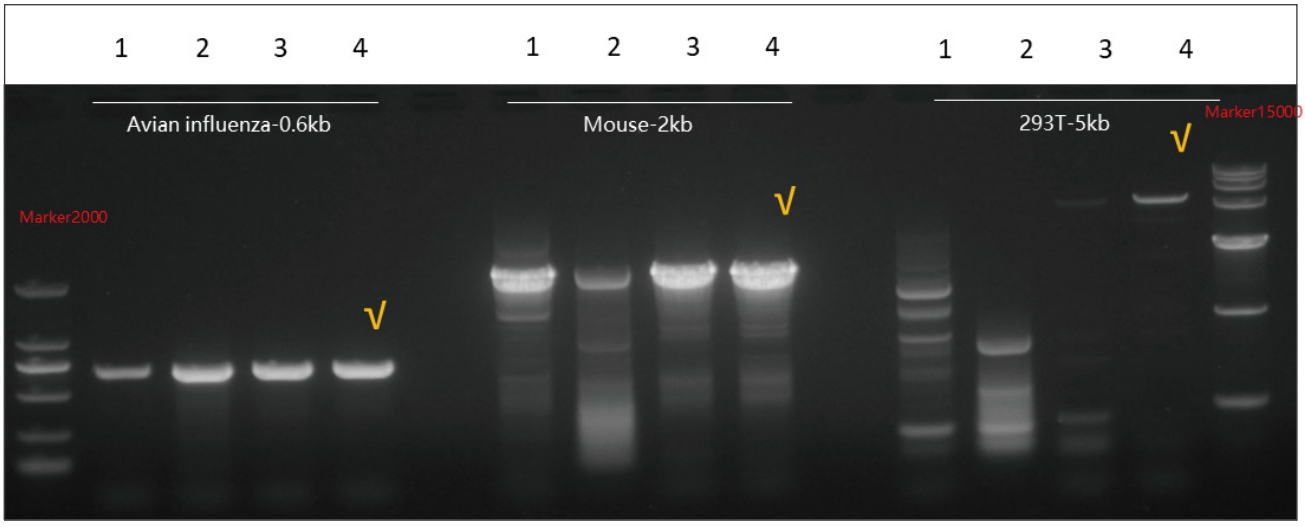


Figure 1: Effectiveness of Long Fragment RNA First-Strand Synthesis

Case 2

This kit was used to perform first-strand cDNA synthesis on different types of RNA, including avian influenza virus RNA, mouse liver mRNA, and total RNA from 293T cells. The synthesized cDNA was then tested using our company's PCR master mix (BSA31 BioReady Taq Mix) and specific primers to evaluate reverse transcription efficiency across various RNA types. Comparative analyses were conducted against three competitor products. The results, as shown in Figure 2, demonstrate that this kit exhibits excellent reverse transcription capability across different RNA types.



(1.Vendor A 2. Vendor B 3. Vendor C 4. Bioer (BSB40))

Figure 2: First-Strand Synthesis of RNA from Different Sources and Lengths

Ordering Information

Cat. No.	Product Name Name	Package
BSB40T1	BioRT Master HiSensi cDNA First Strand Synthesis Kit	10 T
BSB40M1	BioRT Master HiSensi cDNA First Strand Synthesis Kit	100 T

For research use only

HANGZHOU BIOER TECHNOLOGY CO.,LTD.

Address: 1192 Bin'an Road, Hi-tech (Binjiang) District, Hangzhou, 31005, P.R.China
Direct Phone: +86-0571-87774575 (Overseas Department) **Fax:** +86-0571-87774553
Website: http://www.bioer.com **Email:** overseas@bioer.com **E-Date:** 2024.04