

## SciPhi™ First Strand cDNA Synthesis Kit

Catalog Number #NXG777

Components of the Kit	Pack Size (40 Reactions)	Storage
SciPhi™ RT Enzyme Mix	40 µl	Store kit and all components at -20 °C
SciPhi™ 5X cDNA Synthesis Buffer	500 µl	
SciPhi™ Oligo dT (500 ng/µL)	40 µl	
SciPhi™ Random Hexamer (400 ng/µL)	40 µl	
SciPhi™ dNTP Mix (5 mM each)	200 µl	
SciPhi™ Enhancer for RT	40 µl	

### Product Description

The **SciPhi™ First Strand cDNA Synthesis Kit** contains all the necessary components to produce high yields of full-length cDNA from different RNA types. The kit includes the **SciPhi™ RT Enzyme Mix**, which consists of the SciPhi™ Reverse Transcriptase enzyme, known for its high sensitivity, ability to generate long cDNA strands, and tolerance to high temperatures. The mix also includes the **SciPhi™ RNase inhibitor**, which protects RNA templates from degradation.

The kit comprises **SciPhi™ 5X cDNA Synthesis Buffer**, a specially formulated buffer, is designed to enhance reverse transcription across a wide range of templates. The kit offers two RNA priming methods using the **SciPhi™ Oligo dT primers** and the **SciPhi™ Random Hexamers**, which provide flexible options for cDNA synthesis.

The kit includes the **SciPhi™ Enhancer for RT**, which eliminates the need for DNaseI treatment by removing contaminating DNA during RNA transcription. This enhancer breaks down double-stranded DNA during the transcription of RNA and becomes inactive after a short time at 95°C.

The **SciPhi™ Reverse Transcriptase** is an RNA-dependent DNA polymerase with reduced RNase H activity. This enzyme can synthesize long cDNA strands, up to 11 kb, at a temperature range of 42°C to 57°C. It is recommended to use between 1 pg and 1 µg of total RNA with this kit.

### Storage Conditions

Keep the item stored at a temperature of -20°C until it is ready for use. It is important to avoid subjecting the item to repeated freeze-thaw cycles.

### Instruction for Use

Components	Volume
SciPhi™ 5X cDNA Synthesis Buffer	4 µl
SciPhi™ dNTP Mix (5 mM each)	2 µl
RNA Primer*	1 µl
SciPhi™ Enhancer for RT	1 µl
SciPhi™ RT Enzyme Mix	1 µl
Template ( RNA )	1 -5 µl
Water, nuclease-free	6 µl -10 µl
<b>Total volume</b>	<b>20 µl</b>

\*When preparing the final 1X reaction, it is advised to add RNA primers. For eukaryotic RNA, you can choose one of the following options: Add 1 µL of SciPhi™ Oligo-dT, or 1 µL of SciPhi™ random hexamers, or 1 µL of a mixture of SciPhi™ random hexamers and SciPhi™ Oligo-dT in a 3:1 ratio (v/v), or use a gene-specific primer. Aim for a final primer concentration of 0.5 - 2 µM. However, please note that SciPhi™ Oligo-dT is not suitable for most prokaryotic RNA, so for prokaryotic RNA, it is recommended to use random hexamers or gene-specific primers instead.

### Reverse transcription cycling program:

	Temp.	Time	Number of cycle
<b>cDNA synthesis*</b>	42 °C	30 min	1 cycle
<b>Inactivation</b>	95 °C	2 min	1 cycle

\*Depending on the length of template and degree of secondary structure, the efficiency of the first strand synthesis may be improved by optimizing temperature and time (42-57 °C for 5-60 minutes).

### Additional Recommendations:

- It is recommended to use disposable gloves, RNase and DNase free filter tips, and plastics.
- If DNaseI treatment has been done, RT Enhancer is not needed.
- Reagents should be thawed on ice.
- Before use, mix and spin down the solutions to ensure maximum recovery.
- Do not vortex the SciPhi™ RT Enzyme Mix.
- Centrifuge briefly to prevent bubbles in the wells.

### Troubleshooting:

For troubleshooting please email us at [info@nextgenlife.com](mailto:info@nextgenlife.com).

NEXTGEN LIFE SCIENCES PVT. LTD.

F 44-45, Pankaj Central Market, I. P. Extension, Patparganj, Delhi-110092