LEXOGEN
The RNA Experts

lexogen.com

High yield cDNA generation for long-read sequencing with **TeloPrime**

TeloPrime Full-length cDNA Amplification Kit V2

Effective capture of mature and intact mRNAs with exceptional 5′ cap specificity

TeloPrime efficiently generates full-length cDNA from total RNA using Lexogen's proprietary Cap-Dependent Linker Ligation (CDLL) and long reverse transcription (long RT) technology. This method is **highly selective for RNA molecules possessing both intact 5′ cap and polyadenylated 3′ end**, allowing for **accurate detection of splice variants and true transcription start and end sites** in both short and long mRNA molecules. TeloPrime-generated full-length cDNA products can be used for various downstream applications such as **NGS, RACE, cloning, microarray probes, and normalization**.

Exceptional 5′ cap specificity

TeloPrime's Cap-Dependent Linker Ligation (CDLL) technology ensures superior 5′ cap specificity of mRNAs for true transcriptions start site (TSS) mapping.

Ideal for long-read sequencing

TeloPrime is ideal for cDNA generation prior to **PacBio™** and **Oxford Nanopore™** long-read sequencing.

High yield cDNA generation

TeloPrime generates cDNA from intact mRNA at exceptionally high yield, applicable for various down-stream applications, including NGS, cloning, or RACE.

Maximal flexibility with custom priming

TeloPrime is compatible with custom primers to perform targeted cDNA generation for maximal protocol flexibility.

For more information, visit our website lexogen.com or contact us at sales@lexogen.com

TeloPrime Workflow

Full-length cDNA synthesis is initiated by oligo(dT)-primed long RT, forming a stable RNA : cDNA hybrid. The CDLL reaction employs a double-stranded adapter that base-pairs atypically with the inverted guanosine (G) of the 5′ cap structure. This mechanism is highly specific: ligation of the 5′ linker only occurs when an intact 5′ cap is present and the RT reaction has reached the very end of the mRNA, effectively excluding degraded transcripts or prematurely terminated cDNAs (Fig. 1). This stringent, cap-dependent selection ensures that the final amplified cDNA represents only mature, full-length mRNA transcripts, allowing for the study of true transcription start and end sites.

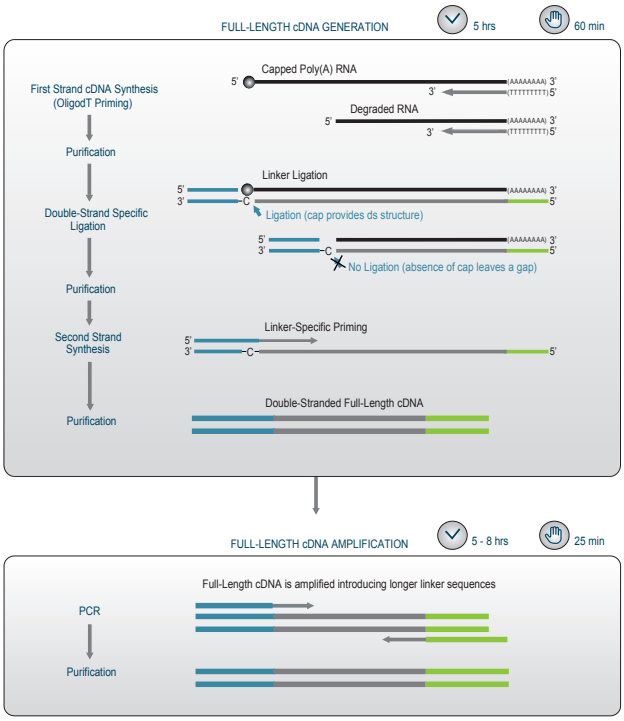

Figure 1 | Schematic overview of the TeloPrime Full-Length cDNA Amplification V2 workflow.

Optimized for High Yield cDNA Generation for Various Downstream Applications

TeloPrime full-length cDNA synthesis, based on Lexogen's CDLL technology, is optimized for the efficient production of high yields of full-length cDNA, resulting in up to 2 µg of full-length cDNA per PCR. This robust protocol ensures efficient amplification of even long transcripts, making it ideally suited for a range of downstream applications, including long-read sequencing, transcriptome profiling, and detailed analysis of full-length mRNAs.

> “Recovering true full-length transcripts with the TeloPrime kit enables our customers to do cutting edge research. Establishing the kit at our facility with help of Lexogen's experts has been a truly satisfying and productive experience.”
>
> ***Laura-Maria Bayer,*** *Sequencing Specialist,*
> *NGS Facility VBCF, Vienna, Austria*

Ordering Information

Cat. №	Product Name
013	TeloPrime Full-Length cDNA Amplification Kit V2
018	TeloPrime PCR Add-on Kit V2
141	SIRV-Set 4 (Iso Mix E0 / ERCC / Long SIRVs)

Exceptional 5′ Cap Specificity

TeloPrime delivers superior 5′ cap specificity compared to other full-length cDNA preparation methods. Short-read sequencing analyses revealed the highest precision of transcription start site (TSS) mapping for TeloPrime, compared to Template Switch and Oligo Capping methods (Fig. 2).

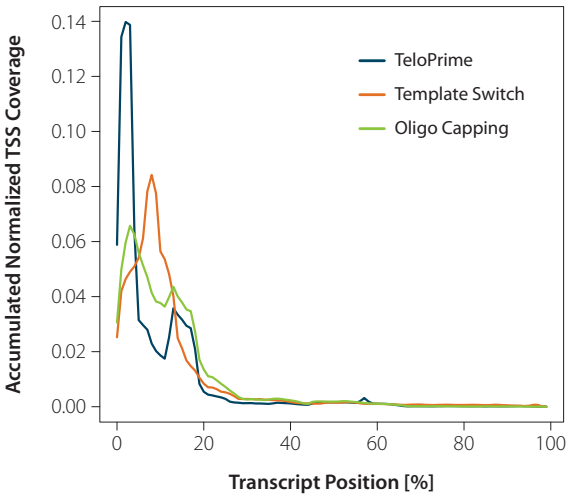

Figure 2 | TeloPrime V2 enables high precision of transcription start sites (TSS) mapping. mRNAs were tagged at 5′ end using TeloPrime's CDLL, Template-Switch or Oligo Capping technology (500 ng input).

Custom Primers for Flexible cDNA Generation

TeloPrime is designed for maximum flexibility and support the use of custom primers for reverse transcription (RT) and/ or PCR. This approach has been successfully applied to full-length cDNA generation for both plant and vertebrate RNA samples (Fig. 3). Custom RT or PCR primers can also be used to add sample barcodes for multiplexed downstream sequencing approaches.

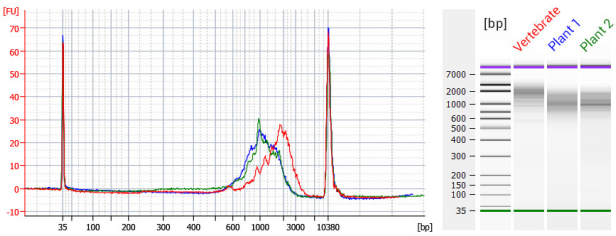

Figure 3 | TeloPrime cDNA generation with custom RT primers from 1 µg of total RNA of vertebrate or plant origin.

> “TeloPrime V2 PCRs have significantly improved yields compared to the previous version of chemistry, which makes it possible to construct sequencing libraries from relatively small amounts of input RNA (e.g. 1 µg total RNA for PacBio Iso-Seq).”
>
> ***Dr. Yuanyuan Cheng,*** *UQ Genomics Initiative,*
> *The University of Queensland, Australia*

Scan the code to secure your introductory offer and get started: