LEXOGEN
The RNA Experts

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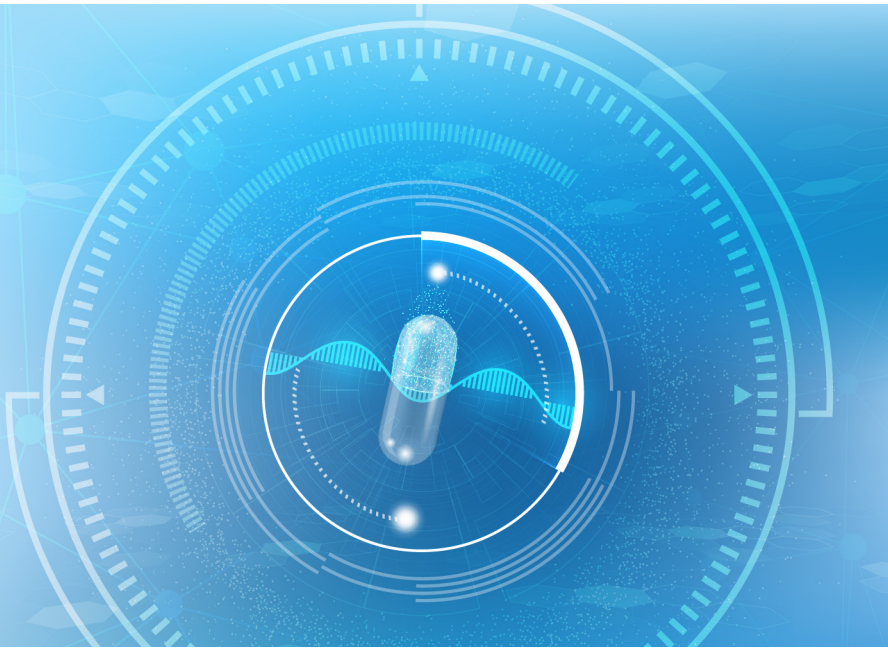
SLAMseq

High-Throughput Kinetic RNA Sequencing



It's about time...

Accelerate your drug development processes with kinetic RNA sequencing

SLAMseq combines RNA labeling with RNA sequencing (RNA-Seq) to study effects of fast-acting drugs or drug candidates on RNA kinetics in cell culture experiments. Kinetic RNA-Seq assesses anabolic (RNA synthesis) or catabolic processes (RNA degradation) in a time-resolved manner and reveals significant cause-effect relations of therapeutic compounds at much higher resolution than conventional methods. Lexogen's SLAMseq unites the patented S4U labeling technology with a streamlined workflow in the only commercially available kit to boost and accelerate your drug discovery at large scale.

Label newly synthesized RNA *in vivo* for specific detection by RNA-Seq

SLAMseq resolves transcript expression dynamics on a transcriptome-wide scale without the need for tedious biochemical pull-down.

Measure and monitor RNA synthesis and degradation rates on a global scale

Upon drug treatment, SLAMseq allows to distinguish between direct (primary) and indirect (secondary) target responses, including off-targets.

Lexogen holds the exclusive license for SLAMseq

Our commercial SLAMseq kits cover all user rights and include optimized reagent composition for a high-quality solution and optimal output.

Combine with QuantSeq for cost-efficient analysis of RNA kinetics

Lexogen offers the complete end-to-end workflow by combining SLAMseq and QuantSeq. Your SLAMseq samples are also accepted in our Services facility.

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

One workflow, one solution

RNA labeling is specific to every cell type and culturing method. For new setups, SLAMseq requires optimization of labeling conditions and efficiency testing of S4U uptake (exploring phase). As for RNA kinetics analysis, either RNA synthesis (anabolic) or RNA degradation rates (catabolic) are measured and monitored to generate response profiles of the treatment(s). Every sample is prepped with QuantSeq 3′ mRNA-Seq, sequenced and data is analyzed using SLAMdunk (Fig. 1).

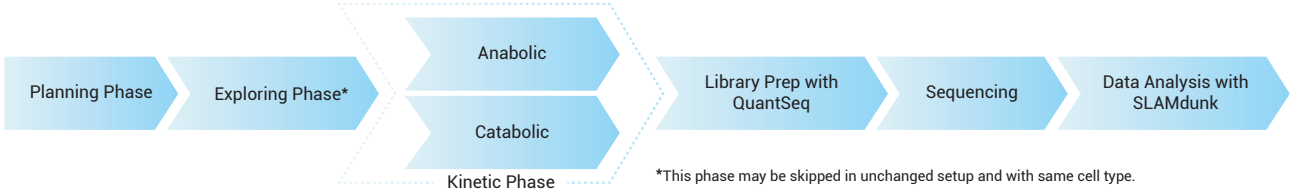


Figure 1 | Most important steps for High-Throughput Kinetic RNA Sequencing with SLAMseq.

Identification of primary and secondary transcriptional targets

SLAMseq measures RNA synthesis and RNA degradation separately and allows to capture nascent RNA expression or transcript stability in response to drug administrations. With the additional dimension of time, primary or secondary transcriptional targets are identified, and off-targets recognized. Understanding the full range of drug effects helps to predict potential side effects, study drug-to- drug interactions and optimize efficacy. SLAMseq is applicable for fast-acting drugs, including small molecules, rapid RNA therapeutics, and biologicals.

Target identification and validation of drugs or drug candidates

The ability to differentiate between primary and secondary targets with SLAMseq is beneficial in various stages of drug development, such as target identification, validation of potential targets, and lead optimization. SLAMseq delivers the unbiased picture of transcriptional processes in the living cell and adds value to every drug discovery journey.

Biomarker identification in biomedical research

High-throughput kinetic RNA sequencing with SLAMseq uncovers mechanisms of action for drugs and thus supports identification of potential biomarkers. Biomarkers indicate the presence or severity of a disease, and are becoming the driving force in personalized treatment approaches and for monitoring of disease progression. SLAMseq can accelerate the development of new therapies and improves patient outcomes.

Boost your drug development with SLAMseq! Do you tick all the boxes?

- ☐ Testing effects of fast-acting compounds
- ☐ Drug response on RNA kinetics is expected
- ☐ Early stage of drug development, e.g., pre-clinical studies
- ☐ Curious to see ALL cellular processes of transcription
- ☐ Interested in a streamlined, established, easy-to-use workflow
- ☐ Keen to work with the RNA Experts from Lexogen

SLAMseq: High-throughput kinetic RNA sequencing

Cultured cells are pre-treated with a drug or control, before 4-thiouridine (S4U) is added to the culturing media to label newly synthesized transcripts. Cells are collected at specific timepoints, RNA is isolated (Sampling) and alkylated with Iodoacetamide (IAA). Libraries are generated with QuantSeq 3′ mRNA-Seq resulting in a nucleotide conversion during reverse transcription. Sequencing detects thymine-to-cytosine (T>C) mutations in S4U-labeled transcripts enabling bioinformatic analysis of changes in nascent RNA levels (Fig. 2).

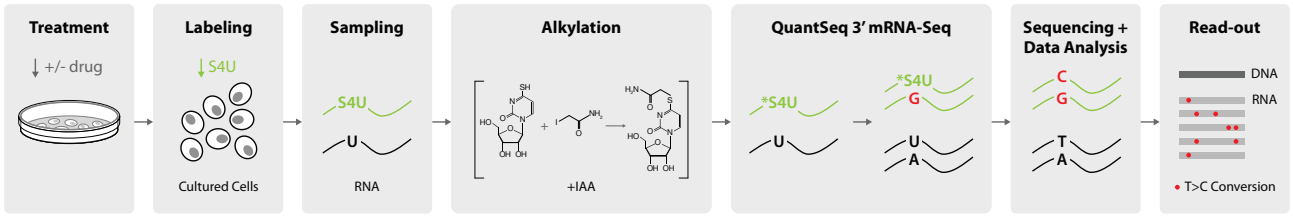


Figure 2 | Simplified workflow of SLAMseq for High-Throughput Kinetic RNA Sequencing.

Ordering Information

Cat. №	Product Name
059	SLAMseq Explorer Kit - Cell Viability Titration Module, 24 preps
060	SLAMseq Explorer Kit - S4U Incorporation Module, 24 preps
061	SLAMseq Kinetics Kit - Anabolic Kinetics Module, 24 preps
062	SLAMseq Kinetics Kit - Catabolic Kinetics Module, 24 preps
Associated Products	
191 - 196	QuantSeq 3′ mRNA-Seq V2 with UDIs

For more information and additional resources, please visit our website.