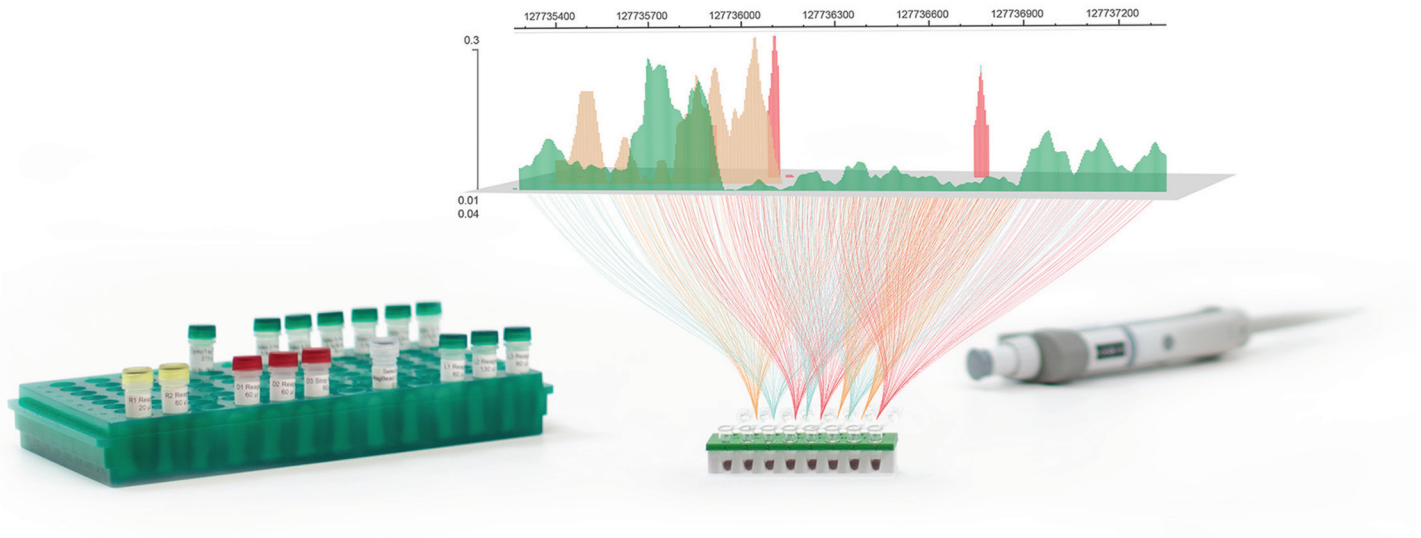
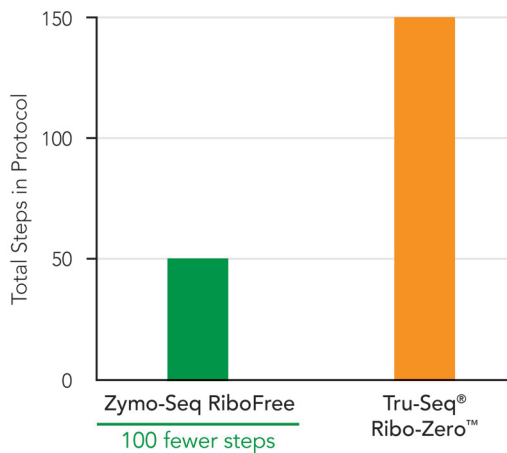


# RNA-Seq *Made Simple*<sup>™</sup>

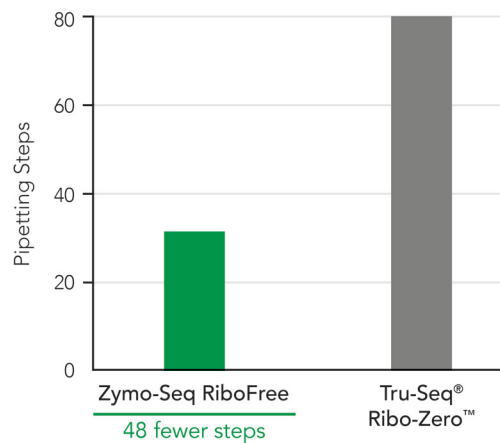
## RiboFree<sup>™</sup> Total RNA Libraries in 3.5 Hours



Save Over 6 Hours  
**The Easiest Kit For Library Prep**



Significantly Reduce Hands-on Time  
**60% Less Pipetting Than TruSeq<sup>®</sup>**



Zymo-Seq RiboFree Total RNA Library Prep minimizes the number of reagents and steps needed to generate stranded, rRNA-depleted total RNA-Seq libraries. An easy-to-follow protocol allows users to go from RNA samples to the sequencer in a single day with 100 fewer steps in the protocol and 60% less pipetting than TruSeq<sup>®</sup> Stranded Total RNA Library Prep.

Learn more about the fastest and simplest total RNA-Seq library prep kit at

[www.zymoresearch.com/pages/total-rna-seq-library-prep](http://www.zymoresearch.com/pages/total-rna-seq-library-prep)



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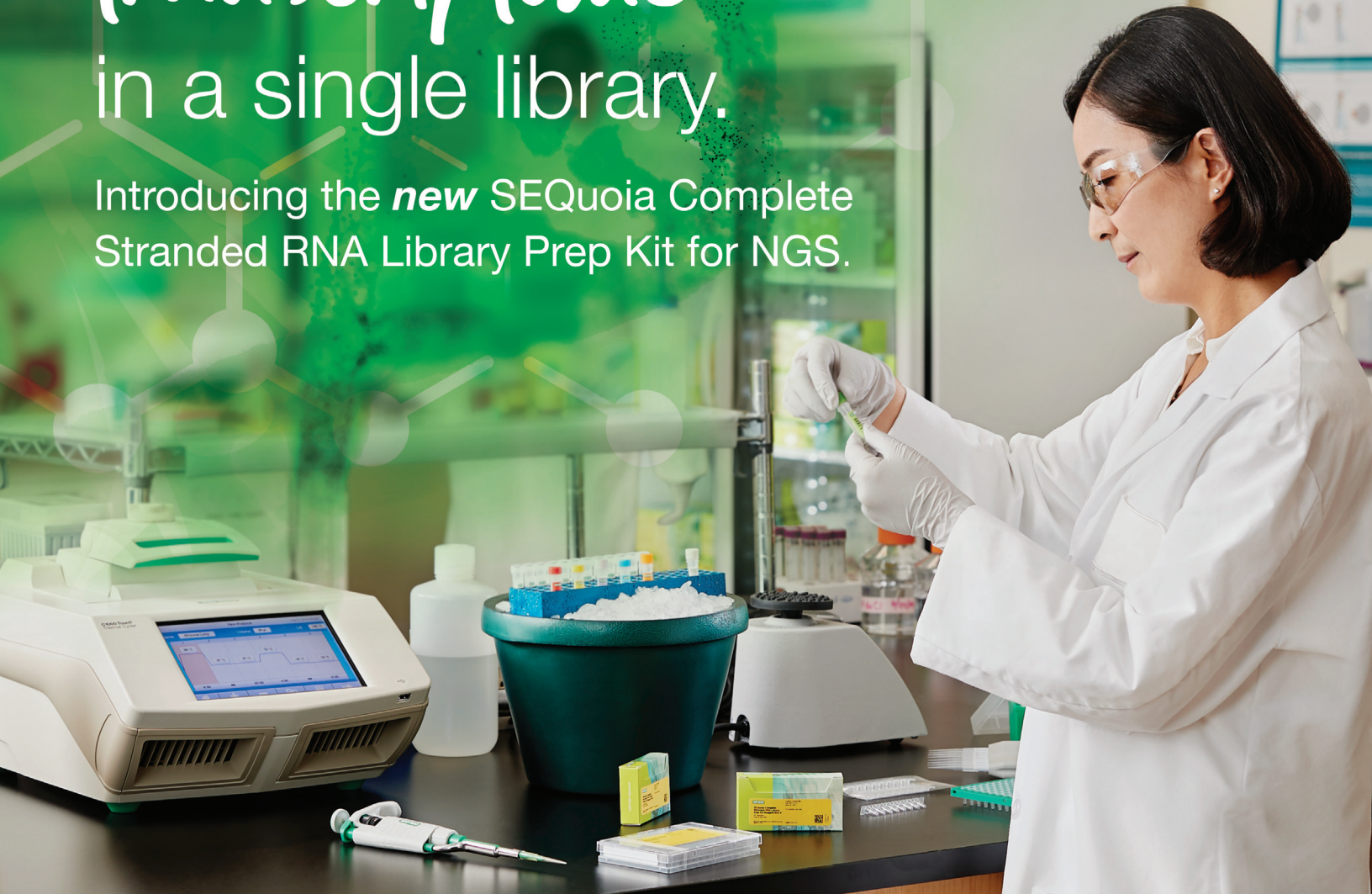


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The SEQuoia Complete Stranded RNA Library Prep kit gives you a truly holistic view of the transcriptome, capturing all types of RNAs (long, short, and everything in between) from all types of samples in less than 4 hours. With unparalleled uniformity of coverage, strandedness, and efficiency, what you will discover will definitely surprise you.

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#ScienceForward

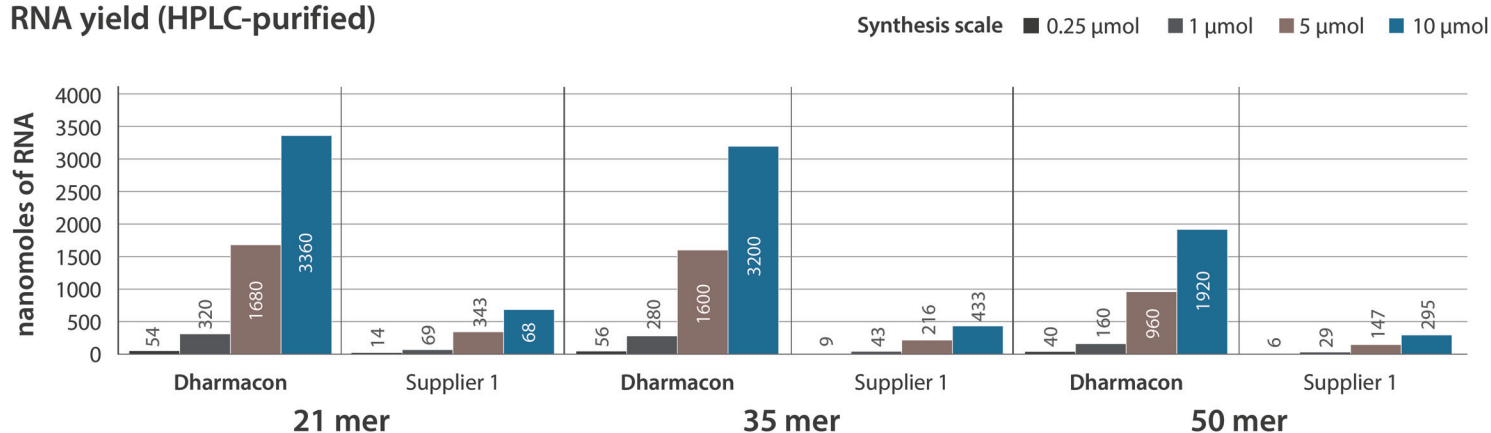
**BIO-RAD**

## Meet your custom RNA requirements with our nearly limitless synthetic options.

If your NMR, crystallography, or RNA binding study requires a non-standard chemical modification or a commercially unavailable modified nucleobase, we can help. For more than 20 years our chemists have utilized Dharmacon™ proprietary 2' ACE chemistry to synthesize RNA with superior yield and quality giving you the flexibility you need.

**Better RNA yields give you more for your money.**

### RNA yield (HPLC-purified)



The yield for RNA oligos of three different lengths was compared for all available synthesis scales between Dharmacon and a competitor.

For more information please visit  
[meetings.cshl.edu](https://meetings.cshl.edu)

Meeting social event at CSHL

## Meetings

Systems Biology: Global Regulation of Gene Expression March 11 - 14 / January 20

Neuronal Circuits March 18 - 21 / January 10

From Neuroscience to Artificially Intelligent Systems March 24 - 28 / January 10

Celebrating the Life and Science of Sydney Brenner March 29 - 31 / January 31

The PARP Family & ADP-ribosylation April 1 - 4 / January 17

JAK-STAT Pathways in Health & Disease April 6 - 9 / January 17

Gene Expression and Signaling in the Immune System April 14 - 18 / January 24

Protein Homeostasis in Health & Disease April 21 - 25 / January 31

Genome Organization & Nuclear Function April 28 - May 2 / February 7

The Biology of Genomes May 5 - 9 / February 14

Regulatory & Non-Coding RNAs May 12 - 16 / February 21

Retroviruses May 18 - 23 / February 28

85th Symposium: Genome Stability & Integrity May 27 - June 1 / March 6

Glia in Health & Disease July 16 - 20 / May 1

Mechanisms & Models of Cancer August 11 - 15 / May 22

Genome Engineering: CRISPR Frontiers August 19 - 22 / May 29

Single Biomolecules & their Cellular Context August 25 - 29 / June 5

Translational Control September 1 - 5 / June 12

Molecular Mechanisms of Neuronal Connectivity September 8 - 12 / June 19

Epigenetics & Chromatin September 14 - 18 / June 26

Mechanisms of Aging September 21 - 25 / July 3

Germ Cells September 29 - October 3 / July 10

Transposable Elements October 6 - 10 / July 17

Microbiome October 20 - 24 / July 31

Fifty Years of Reverse Transcriptase October 28 - 31 / August 7

Biological Data Science November 4 - 7 / August 14

Neurodegenerative Diseases: Biology & Therapeutics December 2 - 5 / September 18

## Courses

Cryoelectron Microscopy March 9 - 22 / January 15

Quantitative Imaging: From Acquisition to Analysis March 24 - April 7 / January 31

Cell & Dev Biology of *Xenopus*: Gene Discovery & Disease March 25 - April 7 / January 31

Expression, Purification & Analysis of Proteins & Protein Complexes March 25 - April 7 / January 31

Advanced Bacterial Genetics June 2 - 22 / March 1

Ion Channels in Synaptic & Neural Circuit Physiology June 2 - 22 / March 1

Schizophrenia & Related Disorders June 3 - 10 / March 1

Mouse Development, Stem Cells & Cancer June 3 - 22 / March 1

Metabolomics June 6 - 22 / March 1

Pancreatic Cancer June 15 - 21 / March 1

Statistical Methods for Functional Genomics June 26 - July 9 / March 15

Advanced Techniques in Molecular Neuroscience June 26 - July 11 / March 15

Single Cell Analysis June 26 - July 11 / March 15

*Drosophila* Neurobiology: Genes, Circuits & Behavior June 26 - July 16 / March 15

Frontiers & Techniques in Plant Science June 26 - July 16 / March 15

Computational Neuroscience: Vision July 12 - 25 / March 15

Synthetic Biology July 21 - August 3 / April 1

Chromatin, Epigenetics and Gene Expression July 21 - August 9 / April 1

Imaging Structure & Function in the Nervous System July 21 - August 10 / April 1

Yeast Genetics & Genomics July 21 - August 10 / April 1

Genetics & Neurobiology of Language July 27 - August 2 / April 1

Brain Tumors August 4 - 10 / April 1

Proteomics August 5 - 18 / April 1

Neuroscience of Addiction September 27 - October 4 / May 31

Macromolecular Crystallography October 13 - 28 / June 15

Programming for Biology October 13 - 28 / July 15

Antibody Engineering, Phage Display & Immune Repertoire Analysis October 15 - 28 / July 15

Advanced Sequencing Technologies & Bioinformatics Analysis November 3 - 15 / August 15

Scientific Writing Retreat November 11 - 15 / August 15

Computational Genomics December 2 - 9 / August 15

The Genome Access Course April 26 - 28 & November 17 - 18 / rolling

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## JUNK or GOLD?

# Unlock the Myths of Non-Coding RNAs

In the recent years, the discovery of non-coding RNA (ncRNA) regulatory activities has unleashed alluring opportunities of finding new disease regulators, biomarkers and therapeutic targets. Did you know that Arraystar offers dedicated solutions for ncRNAs, including lncRNAs, circular RNAs, tRNAs, tRFs and more?

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*Quantify the percentage of modifications for mRNAs, lncRNAs and CircRNAs*

### nrStar™ ncRNA PCR Arrays

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to Data,  
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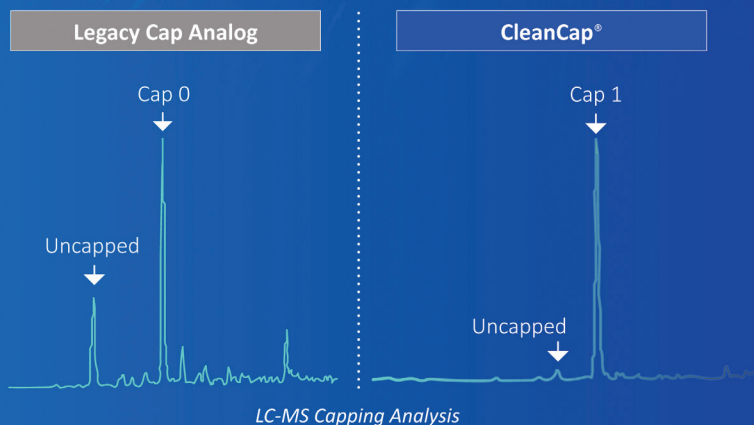
# A REVOLUTION in Co-Transcriptional mRNA Capping

CleanCap® demonstrates superior performance versus legacy co-transcriptional capping methods

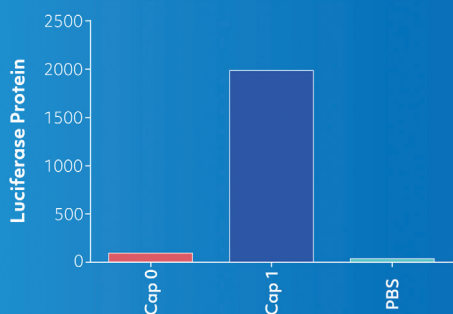
	Legacy Cap Analogs		CleanCap®	
Natural Cap	No	⊖	Yes	⊕
Immunogenic	Yes	⊖	Reduced Immunogenicity	⊕
Capping Efficiency	~70%	⊖	~95%	⊕
Yield/mL Transcription	1.5 mg/mL	⊖	4 mg/mL	⊕
Cost	3 X	⊖	1 X	⊕
Available Therapeutic Licenses	No	⊖	Yes	⊕



Successful development of mRNA therapeutics relies on reproducible, high-efficiency production of capped mRNA. CleanCap® uses a new co-transcriptional chemical process for the highest level of mRNA capping:



CleanCap® gives superior activity *in vivo* by mimicking a natural cap



Luciferase mRNA was formulated with Lunar Lipids and injected by tail vein into mice. At 6 hours, luciferase was measured by western blot in mouse liver. Data courtesy of Arcturus Therapeutics.

CleanCap® results in a natural Cap 1 structure that does not stimulate the innate immune system of the host, resulting in unparalleled efficiency *in vivo*. Legacy co-transcriptional capping methods yield a Cap 0, an immunogenic cap structure that is poorly expressed *in vivo*. The results speak for themselves: **CleanCap®, the next generation of cap analogs, provide the most active and least toxic mRNA for your *in vivo* applications.**

Be part of the revolution.

For more information visit: [trilinkbiotech.com/cleancap](http://trilinkbiotech.com/cleancap)