




Efficient and rapid rRNA-depletion solution for ribosome profiling

# Human Ribo-Seq riboPOOL

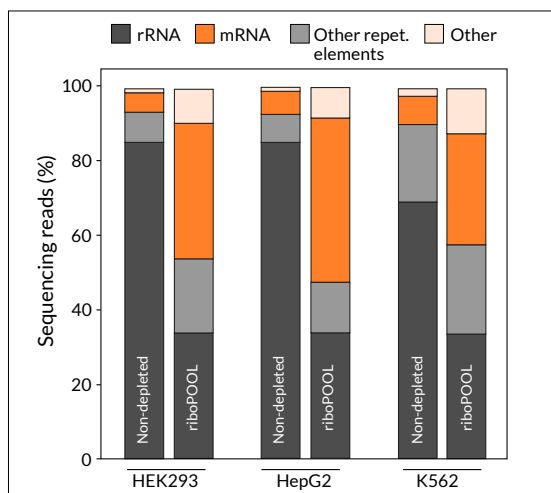
Ribosome profiling (Ribo-Seq) is an NGS-based method involving the isolation and sequencing of ribosome-protected fragments (RPFs): sections of mRNAs (ca. 30 nucleotides long) that are found inside the ribosome during translation. Sequencing RPFs allow to capture a snapshot of ongoing translation, thereby obtaining a quantitative overview of protein synthesis.

Similar to total RNA sequencing, ribosomal RNA (rRNA) represents the most abundant fraction of Ribo-Seq samples, while RPFs typically account for less than 5% of the sequencing output. This makes the depletion of rRNA from samples prior to sequencing necessary.

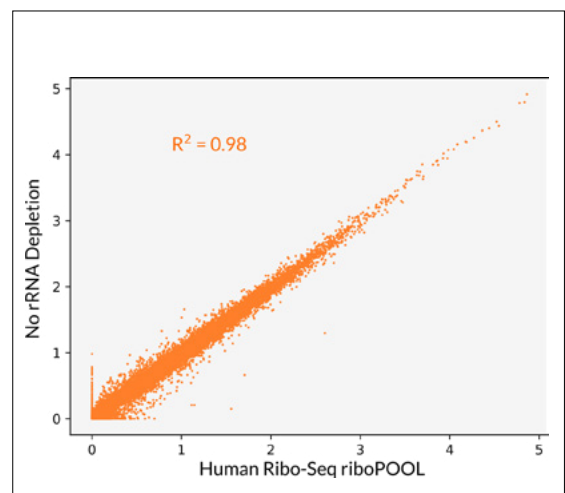
- The Human Ribo-Seq riboPOOL offers:**
-  Efficient rRNA-depletion
  -  Possibility to combine with other riboPOOL
  -  Fast and enzyme-free workflow
  -  Compatible with lab-automated workflows

## Human Ribo-Seq riboPOOL Performance

The Human Ribo-Seq riboPOOL efficiently removes rRNA and can increase proportion of mRNA reads up to more than 300% (Fig. 1 and Fig. 3). Ribodepletion with Human Ribo-Seq riboPOOL doesn't alter the abundance of coding transcripts, providing a non-biased overview of the cell transcriptome (Fig. 2).



**Figure 1** Percentage of sequencing reads mapping to different RNA categories in non-depleted and rRNA-depleted samples from three different human cell lines.



**Figure 2** Abundance (log<sub>10</sub> RPKM) of coding transcripts in non-depleted and rRNA-depleted samples.



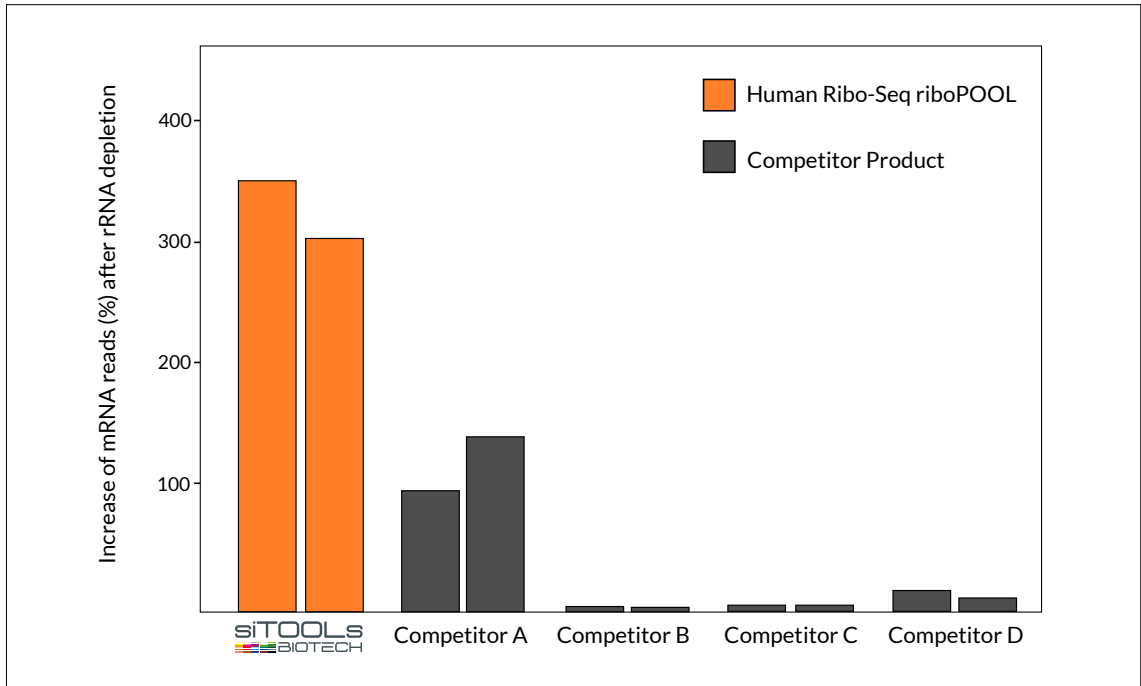


Figure 3 Percentage increase of sequencing reads mapping to mRNA (HEK293 cells) after rRNA depletion with Human Ribo-Seq riboPOOL (orange bars) and competitor products (grey bars).

### Combination riboPOOLS

The Human Ribo-Seq riboPOOL can be combined with up to 3 other Ribo-Seq riboPOOL targeting a different species from our portfolio. Combination Ribo-Seq riboPOOLS are recommended any time samples contain RNA from two or more species as in studies examining infected human samples (Fig. 4). The Human Ribo-Seq riboPOOL can also be combined with the Human tRNA riboPOOL for simultaneous depletion of rRNAs and tRNAs. Transfer RNAs often represent a major fraction of sequencing reads after ribodepletion, and their removal can lead to further enrichment of mRNA reads in Ribo-Seq samples (Fig. 5).

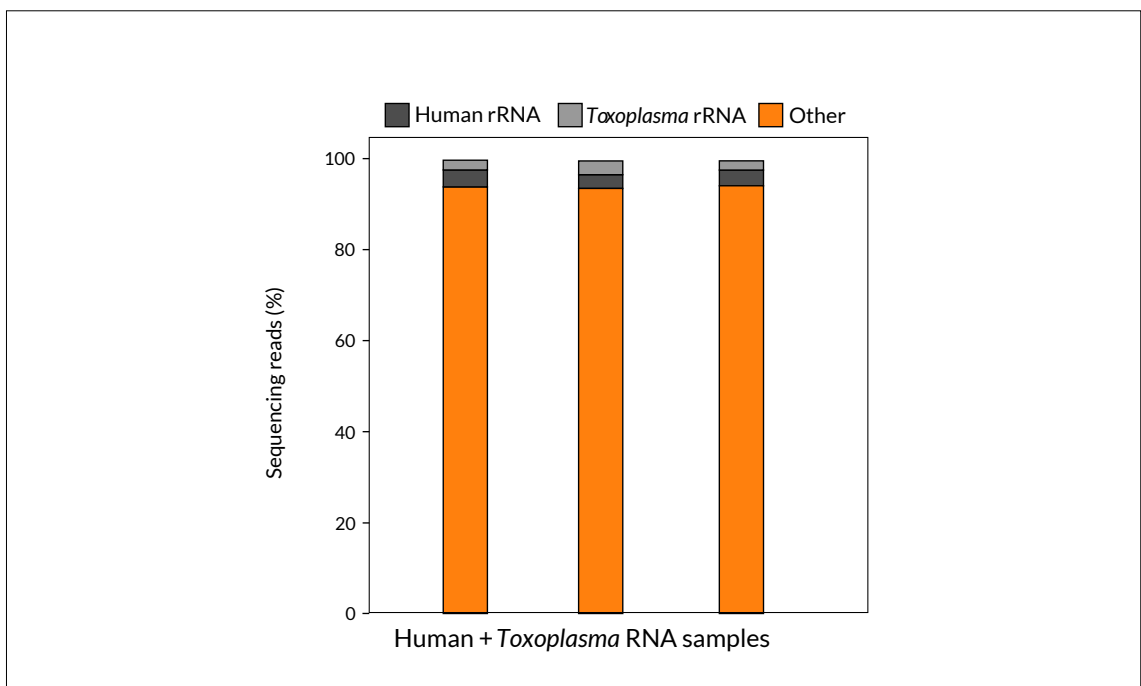


Figure 4 Percentage of human (dark gray) and *Toxoplasma gondii* (light gray) rRNA after rRNA depletion with the Human and *Toxoplasma* Ribo-Seq riboPOOLS. Data provided by Dr. Micheal Holmes (Indiana University, USA).

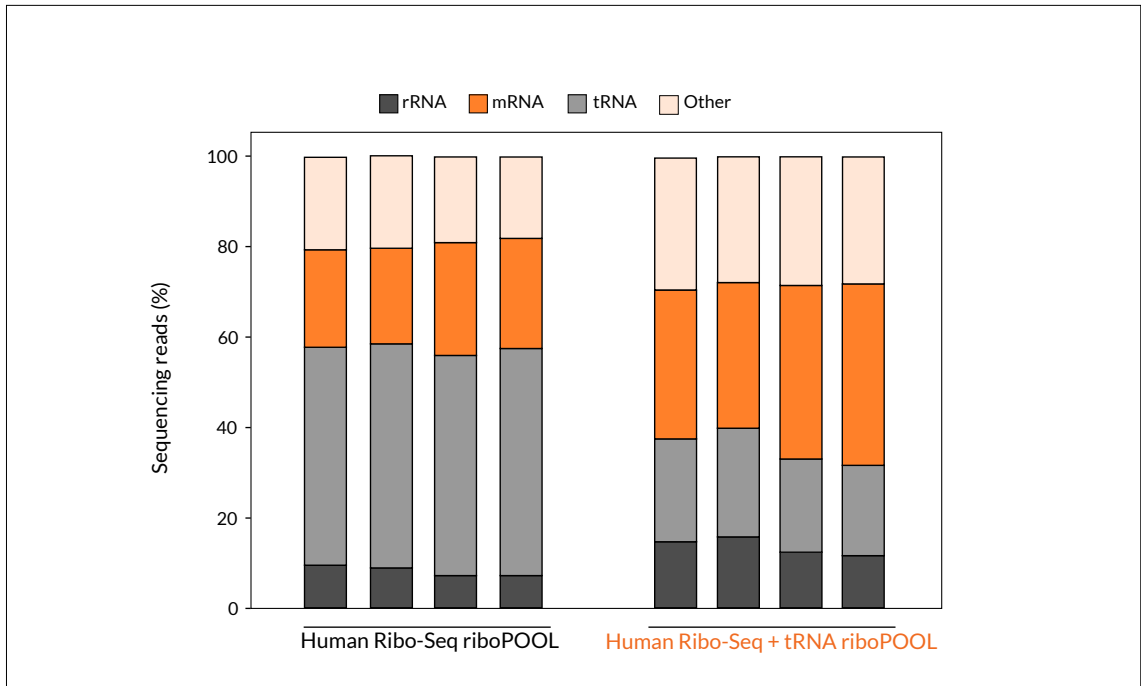
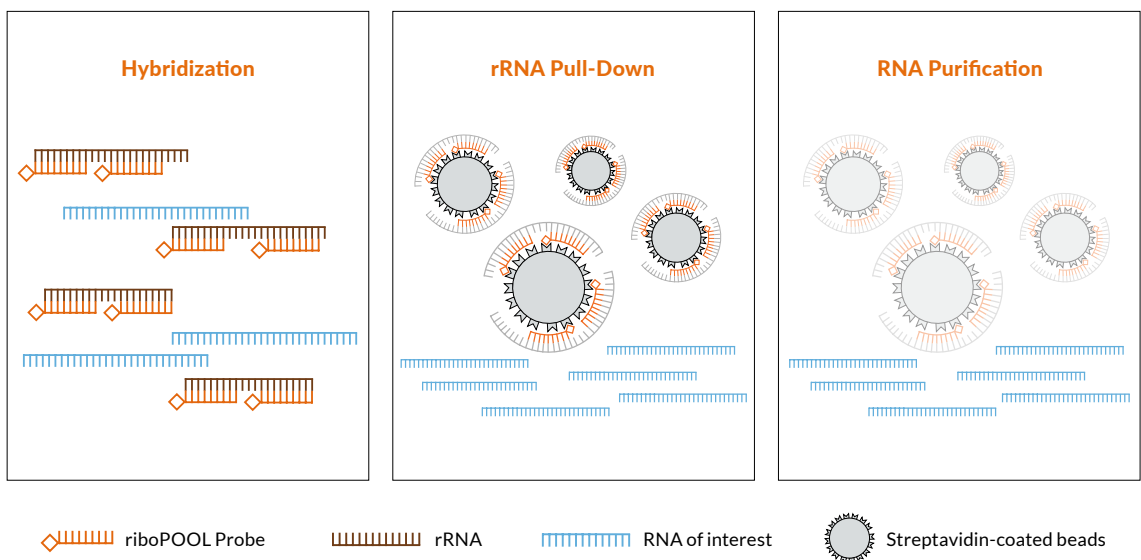


Figure 5 Percentage of sequencing reads mapping to different RNA classes (HEK293 cells) in samples depleted with the Human Ribo-Seq ripoPOOL (left group) and Human Ribo-Seq + tRNA ripoPOOLS.


## Workflow


The Human Ribo-Seq ripoPOOL consists of a complex pool of biotinylated probes, specifically design to target and remove rRNAs from human total RNA samples in ribosome profiling experiments. Hybridization of ripoPOOL probes to rRNA fragments is followed by rRNA pull-down via streptavidin-coated magnetic beads and RNA purification. The entire workflow can be completed in under 2 hours and can easily be integrated into established RNA-Seq workflows.



## Ordering

The Human Ribo-Seq riboPOOL can be ordered in two different formats:

 Full kit: includes all necessary reagents for ribodepletion. For post-depletion RNA purification, the kit allows to choose between magnetic beads or ethanol precipitation.

 Probes only. Streptavidin beads and buffers are not included.

### riboPOOL Kit

12rxn Catalogue Nr. dp-K012-42	24rxn Catalogue Nr. dp-K024-42	96rxn Catalogue Nr. dp-K096-42
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### riboPOOL Probes

12rxn Catalogue Nr. dp-P012-42	24rxn Catalogue Nr. dp-P024-42	96rxn Catalogue Nr. dp-P096-42
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## Distributors

Europe		
Country/Region	Distributor	Website
Czech Republic	Eastport Life Sciences	www.eastport.cz
Germany - Austria	Biozym Scientific	www.biozym.com
Italy	Diatech Lab Line	www.labline.it
Netherlands	Westburg Life Sciences	www.westburg.eu
Scandinavia	LabLife Nordic AB	www.lablifenordic.com
Spain	Labclinics	www.labclinics.com
United Kingdom	Cambridge Bioscience	www.bioscience.co.uk
North America		
Country/Region	Distributor	Website
USA - Canada	Galen Lab Supplies	www.galenmolecular.com
Asia		
Country/Region	Distributor	Website
China	Bluescape	www.bluescape.cc
	Pukairui	www.pukairui.com
Israel	Eisenberg Bros. Ltd	www.eisenbros.co.il
Japan	Bizcom Japan	www.bizcomjapan.co.jp
South Korea	Koma Biotech	www.komabiotech.co.kr
Taiwan	Interlab CO., LTD,	www.interlab.com.tw
United Arab Emirates	Biomss	www.biomss.com

## Customer Support

For customer and technical support you can send us an email at [info@sitools.de](mailto:info@sitools.de)  
 Alternatively, you can call us at +49 89 89557286  
 Protocols and MSDS are available in the Resources section at  
[www.sitoolsbiotech.com](http://www.sitoolsbiotech.com)

