

Assessing mRNA 5'-capping efficiency has never been easier

EZ-QC™ mRNA Capping Efficiency Assay Kit

EZ-QC™ XBG mRNA Capping Efficiency Assay Kit

Product Intro

5' Capping ensures that mRNA molecules are efficiently translated and expressed in cells, which is vital for function in cellular processes and therapeutic applications. LC-MS capping analyses require access to specialized equipment, can prove costly, and may have long lead times. The EZ-QC™ mRNA Capping Efficiency Assay Kits allow users to quantitate the capping efficiency (percent capped RNA content) of their mRNA production product using standard laboratory equipment in a single day.

Benefits

- **Low input:** mRNA inputs as low as 5 pmol.
- **High specificity:** Targeting Oligonucleotide facilitates cutting the mRNA at a single, precise location.
- **XBG mRNA analysis in one kit:** XBG-specific kit includes XBG 5' UTR Targeting Oligo and XBG 5' UTR Control Mix.
- **One-day analysis:** Complete mRNA 5' capping QC analysis in a single day.
- **Budget-friendly:** Use common PAGE lab equipment to perform QC analysis, in contrast to specialized instrumentation, such as LC-MS.

Product Description

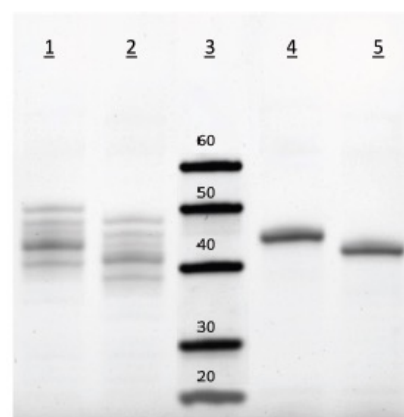
The EZ-QC™ mRNA Capping Efficiency Assay Kits utilize a chimeric RNA:DNA:RNA oligonucleotide ([ACE240910](#): user provided, [XBG250310](#): kit provided) which hybridizes to the 5'-end region of an RNA mixture. This hybridization complex serves as a substrate for RNase H cleavage releasing the capped and uncapped 5'-end fragments which can be resolved via PAGE, visualized and quantified, allowing for the calculation of the percent capped RNA content of the RNA mixture. The specificity of the Targeting Oligonucleotide allows for greater confidence in determining the percentage capped/uncapped content of the assayed mRNA sample. Samples can be assayed in less than one day, providing fast QC data to continue moving research forward.

For determination of Cap 0 vs Cap 1 content, CELLSRIPT™ also offers the [EZ-QC™ mRNA Cap 1 Efficiency Assay Kit](#) as well as the [EZ-QC™ mRNA Poly\(A\) Tail Length Assay Kit](#) for complete mRNA characterization.

Performance Data

Figure 1. The chimeric Targeting Oligonucleotide enables site-specific cleavage of 5'-end fragments resulting in a highly specific capping assay.

1. 100% Capped RNA with DNA Targeting Oligo
2. 100% Uncapped RNA with DNA Targeting Oligo
3. 100% IDT ssDNA 10/60 Ladder
4. 100% Capped RNA with RNA:DNA:Targeting Chimeric Oligo
5. 100% Uncapped RNA with RNA:DNA:Targeting Chimeric Oligo



For research use only

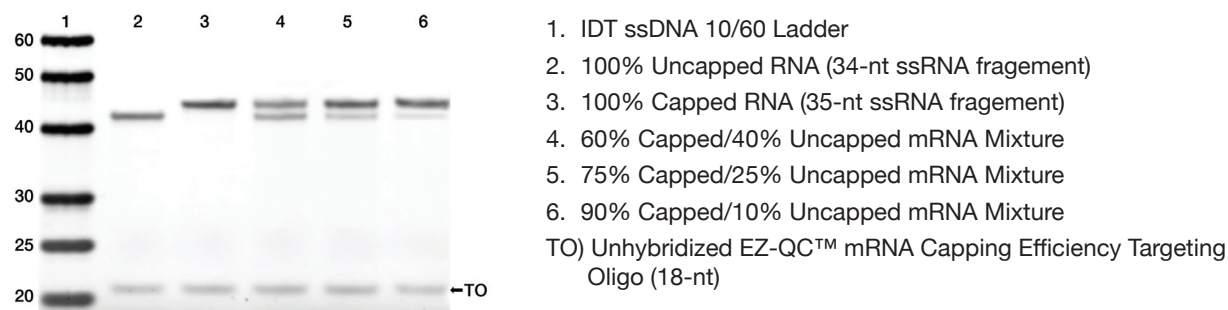
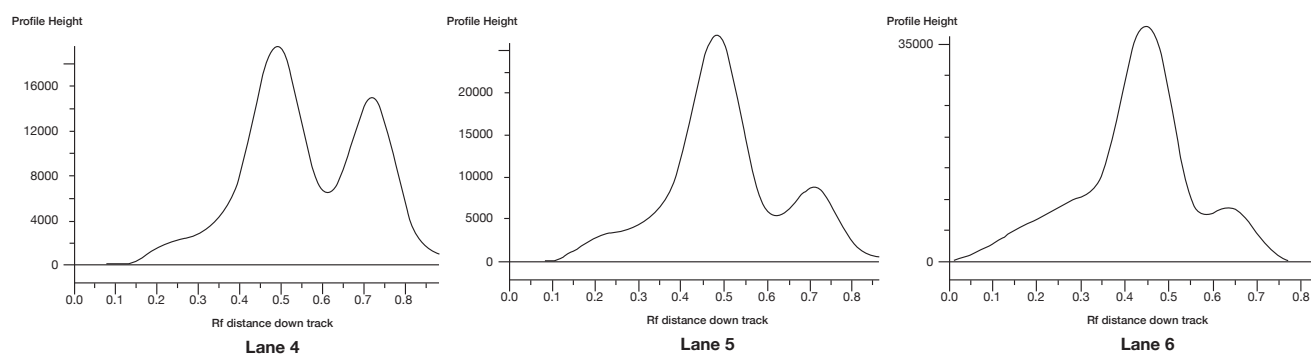


Figure 2a. Capped and uncapped 5'-end fragments are efficiently resolved by PAGE allowing for capping efficiency analysis with standard lab equipment.



Lane	Sample	Percent Capped	Percent Uncapped
4	60:40 Mix	58.1	41.9
5	75:25 Mix	77.2	22.8
6	90:10 Mix	91.2	8.8

Figure 2b. Densitometric data from lanes 4, 5 & 6 from the above PAGE gel using a Syngene® G:Box Gel Documentation System. The percent capped and uncapped mRNA in a mixture are calculated with a simple readout from any gel imaging system.

Ordering information

Catalog Number	Description
ACE240910	EZ-QC™ mRNA Capping Efficiency Assay Kit (10 reactions)
XBG250310	EZ-QC™ XBG mRNA Capping Efficiency Assay Kit (10 reactions)

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