

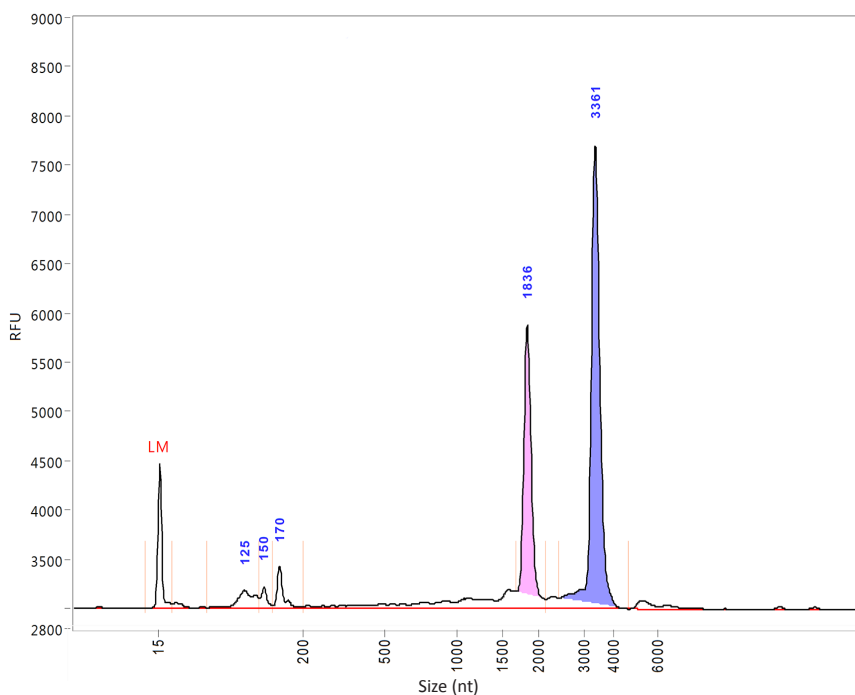
Total RNA Analysis

Fragment Analyzer™ Automated CE System

Check Quantity and Quality of Total RNA With One Instrument

RNA is the starting material for many molecular techniques including gene expression studies, gene cloning, and sequencing (transcriptomics). Understanding the integrity of total RNA is important for successful result generation. Low quality or degraded RNA can lead to sub-optimum, inconsistent, or misleading results.

The ability to evaluate more RNA samples in less time, with less effort by researchers has become crucial as RNA technologies have advanced. Manual lab-on-chip instruments lack the throughput and automation necessary to keep pace. However, hundreds of laboratories worldwide have seen how the Fragment Analyzer™ Automated CE System has transformed total RNA analysis with speed, accuracy, and automation.



Total RNA separation: PROSize® Data Analysis Software displays quality and quantity measurements including: RNA concentration, 28S/18S ratio, and the RQN.

RNA Property Summary

RNA Concentration (ng/uL)	98.5079
28S/18S	1.9
RNA Quality Number	9.0

The Fragment Analyzer™ Automated CE System's analytical software package, *PROSize®* Data Analysis Software, provides key metrics including a method for scoring RNA quality called the RNA Quality Number (RQN). Studies show a high correlation of RQN to legacy integrity scoring methods, across a diverse set of organisms with varying quality.

The Fragment Analyzer provides accurate quantification of RNA. A comparison to standard laboratory spectrophotometric and fluorometric instruments is shown in the table below for a dilution series of rat liver total RNA. Measurements are shown across the dynamic range of the **DNF-471 Standard Sensitivity RNA Analysis Kit**, from 5 ng/μL to 500 ng/μL input sample concentration.

Expected Concentrations	Spectrophotometry (UV-Vis)		Fluorometry		Fragment Analyzer	
	Avg.	%CV	Avg.	%CV	Avg.	%CV
	Concentration (ng/μL)					
500	533.0	1.2	541.0	6.2	561.4	1.7
250	282.7	0.4	255.7	6.4	256.8	9.7
100	111.4	1.0	110.7	13.3	93.2	4.3
25	27.7	2.9	24.1	0.9	22.1	0.7
5	4.9	6.6	4.5	2.1	5.6	29.7

The **DNF-472 High Sensitivity RNA Analysis Kit** is also available, which can analyze total RNA from 50 pg/μL to 5,000 pg/μL and mRNA from 250 pg/μL to 5,000 pg/μL input concentration.

Features and Benefits

- High Sensitivity**
 Detection limits as low as 50 pg/μL total RNA and 250 pg/μL messenger RNA.
- Short Run Times**
 Analyze 12, 48, or 96 samples in about 40 minutes.
- No Chip Loading**
 Universal capillary array handles multiple applications and requires no daily handling.
- No Manual Priming**
 Separation gel is automatically loaded into capillaries prior to each run.
- Quality Analysis**
 Analytical software metric provides RNA quality indicator which correlates to the current industry practices.
- Simplified Sample Handling**
 Requires a single dilution step into a 96-well sample plate or strip tubes.
- Flexible Platform Design**
 Use the system for more than just RNA analysis. Gel kits for NGS library analysis, genomic DNA, dsDNA fragments, PCR fragments, and plasmids are available.



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