

Small Fragment Analysis

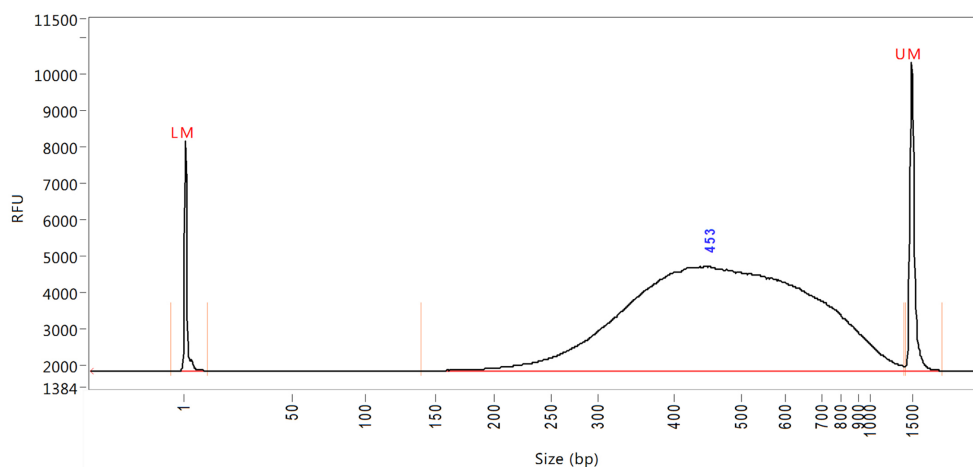
Fragment Analyzer™ Automated CE System

Precise and Rapid Quantification of Small Fragments and NGS Library Smears

Small DNA fragments and smears have traditionally proven challenging to quantify and size. The Small Fragment Analysis Kits for the Fragment Analyzer will quickly and accurately size and quantify DNA fragments and smears under 1,500 bp. The high quality sizing and resolution of fragments and smears, such as small RNA NGS libraries, is due to the kit's reformulated gel and smaller fragments in the ladder.

The figures below highlight the differing detection sensitivities of the two Small Fragment Kits. Both separations were performed with sheared gDNA.

DNF-476 Standard Sensitivity Small Fragment Analysis Kit



Sizing Range:

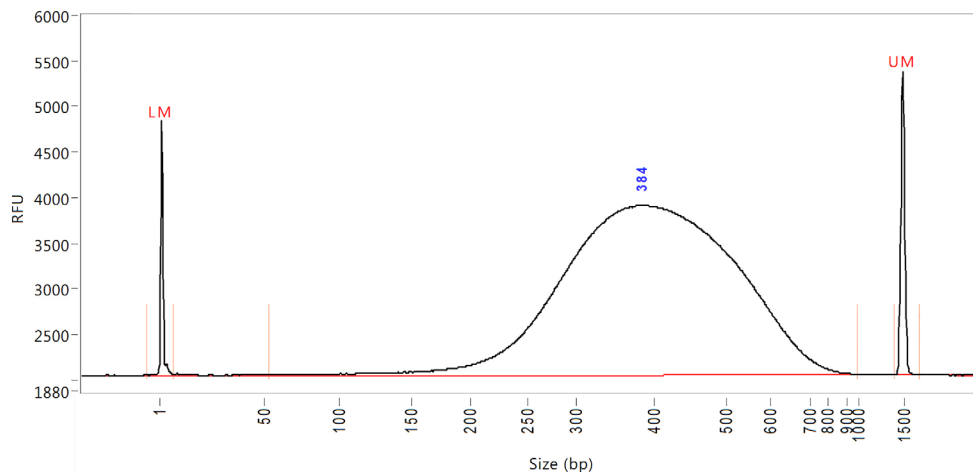
50 bp - 1,500 bp

Input Concentration Range:

Fragment: 0.5 ng/μL - 10 ng/μL

Smear: 5 ng/μL - 100 ng/μL

DNF-477 High Sensitivity Small Fragment Analysis Kit



Sizing Range:

50 bp - 1,500 bp

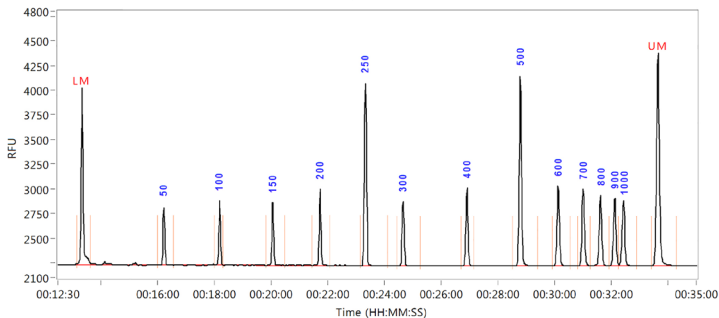
Input Concentration Range:

Fragment: 5 pg/μL - 500 pg/μL

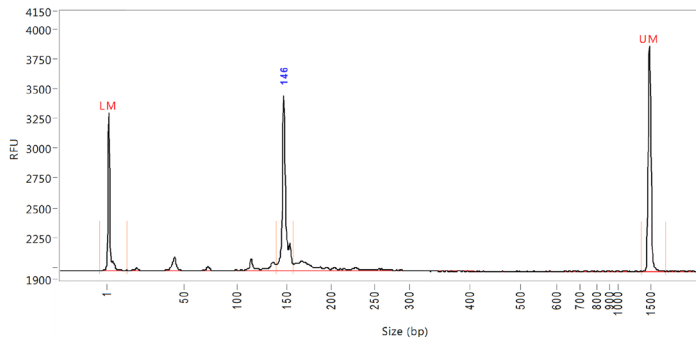
Smear: 100 pg/μL - 5,000 pg/μL

DNF-477 High Sensitivity Small Fragment Kit

High Sensitivity Small Fragment Ladder



Small RNA NGS Library After Size Selection



Separations were performed on a Short Capillary Array (33-55)

Shared gDNA

The concentration of gDNA sheared to 150 bp – 1,400 bp was measured via **DNF-477 HS Small Fragment Kit** and compared to a standard fluorescent quantification method.

Concentration (ng/μL)

	5.00	1.00	0.50	0.25	0.1
Expected	5.00	1.00	0.50	0.25	0.1
Fluorescent Instrument	5.00	1.00	0.51	0.27	0.10
Fragment Analyzer	4.81	0.99	0.55	0.27	0.15
FA Std. Dev.	0.16	0.04	0.03	0.01	0.01
FA Precision	3.30%	4.21%	4.64%	3.97%	6.08%
FA Accuracy	-3.11%	-4.86%	6.83%	-0.55%	21.16%

Fluorescent instrument averages were taken from three replicates, while Fragment Analyzer averages were taken from eight replicates using a 96 Short Capillary Array (33-55). The Small Fragment Kits provide unmatched precision with repeated measurements commonly falling within 5% of each other.

Features and Benefits

- Simplified Sample Handling**
 Only requires a single dilution step into a 96-well plate or strip tubes.
- One Cap, One Sample**
 One capillary dedicated to each sample eliminates cross-contamination.
- Flexible Platform Design**
 Gel kits for total RNA, genomic DNA, dsDNA fragments, amplicon/PCR fragments, and NGS library analysis are available.
- Reproducible Sizing**
 Smaller ladder fragments and improved gel formula improves sizing across all capillaries and fragment sizes.
- Better Sizing**
 Ladder has more small fragments for increased sizing accuracy.
- Fast Run Time**
 Complete analysis in approximately 35 minutes.



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