Oligo 200 nt Purity and Integrity kit

High-resolution purity and analysis for oligonucleotides

SCIEX R&D Chemistry Team

September 2026

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The increasing analytical complexity of oligonucleotides

From guide RNA (gRNA) purity to Poly(A) tail characterization, today's single-stranded oligonucleotide workflows demand confident answers across a wide range of applications.

Range and resolution

Separation of full-length product from closely related species

Method development

Minimized method optimization across different oligonucleotide lengths

Workflow efficiency

Simplifying setup and reducing preparation time

The Oligo 200 nt Purity and Integrity kit

Designed to deliver resolution, reproducibility, and workflow simplicity

- Coverage of a wide size range (10 - 200+ nt) with minimal method optimization
- Single-nucleotide resolution (R>0.7) from 10–141 nt
- Ready-to-use gel for simplified operation
- Pre-built bare-fused capillary cartridges to streamline setup
- Compatible with both the PA 800 Plus and BioPhase 8800 systems



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Validated kit-based mRNA workflows for SCIEX CE



mRNA vaccines/ therapeutics

pDNA template production → Template linearization → In vitro transcription & capping → Purification → Encapsulation → Formulation → Fill/Finish



DNA 20 kb Plasmid and Linear kit
- Plasmid purity
- Linearization efficiency

RNA 9000 Purity & Integrity kit
- mRNA purity and integrity
- mRNA length estimation

Oligo 200 nt Purity and Integrity kit
- mRNA poly(A) tail characterization

RNA 9000 Purity & Integrity kit
- mRNA purity and integrity
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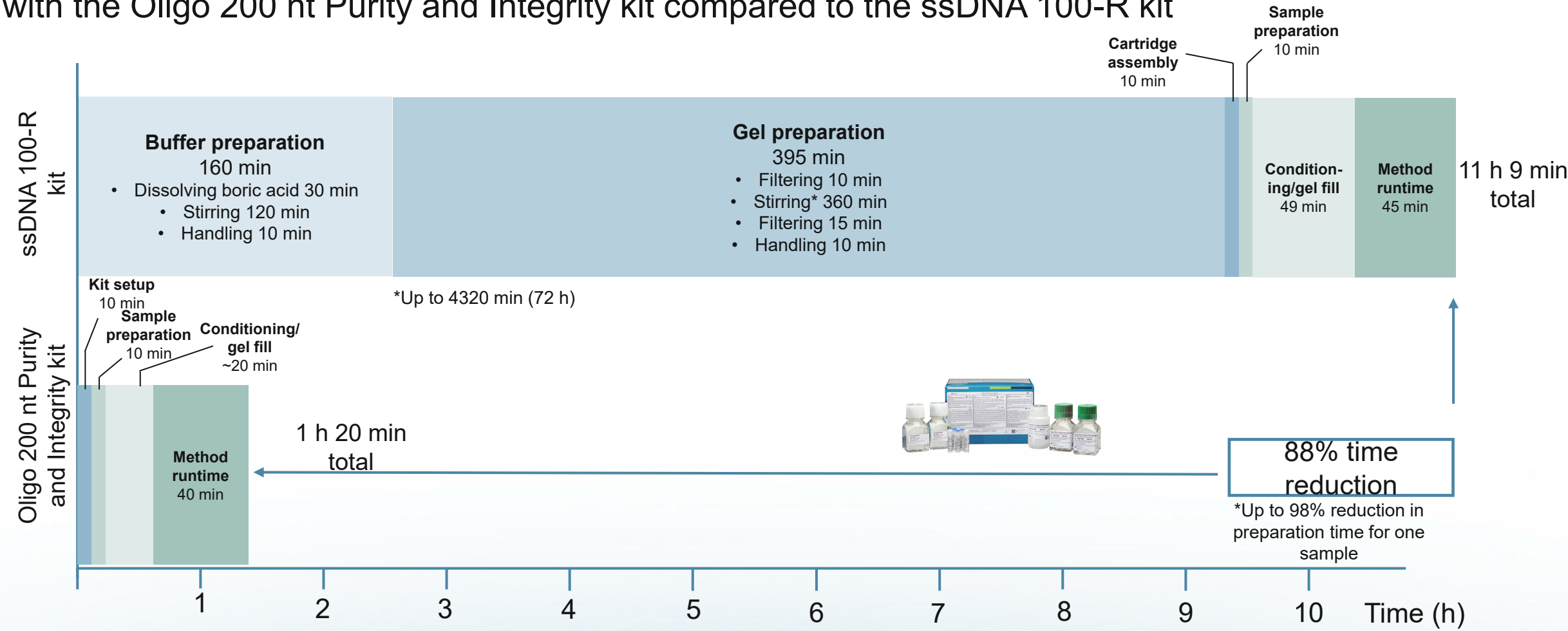
Oligo 200 nt Purity and Integrity kit
- mRNA poly(A) tail characterization

From plasmid starting material to mRNA, kits enable characterization throughout development

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Workflow time savings

with the Oligo 200 nt Purity and Integrity kit compared to the ssDNA 100-R kit



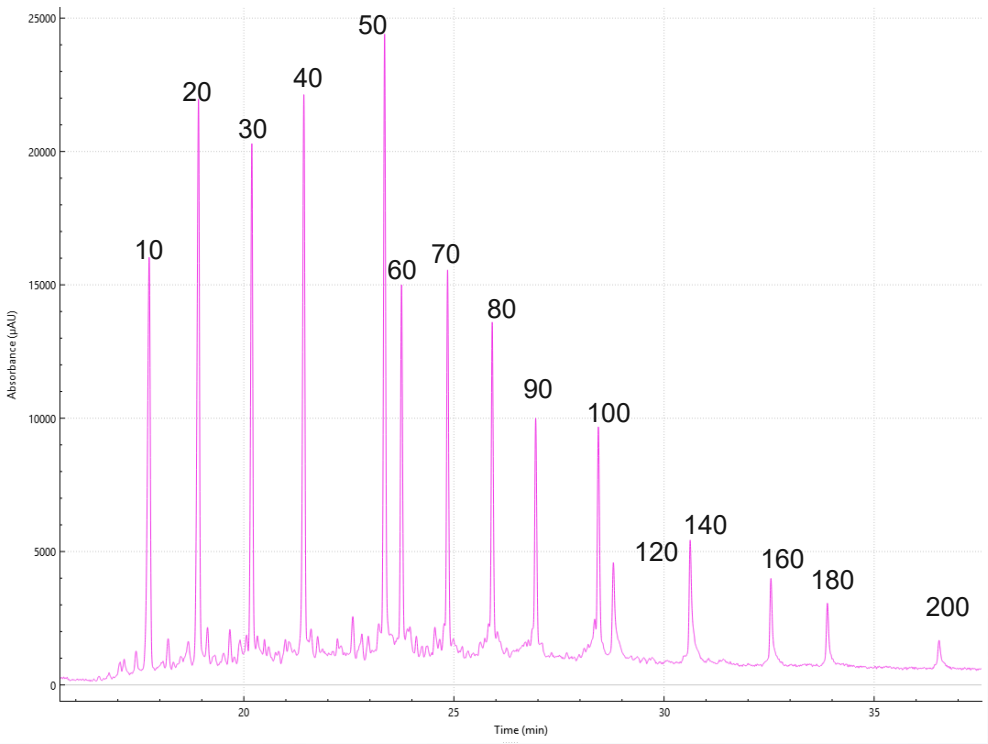
Oligo 200 nt Purity and Integrity kit supports ultra-high-resolution CE analysis of single-stranded oligonucleotides with a streamlined setup, significantly reducing preparation time.

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Kit performance

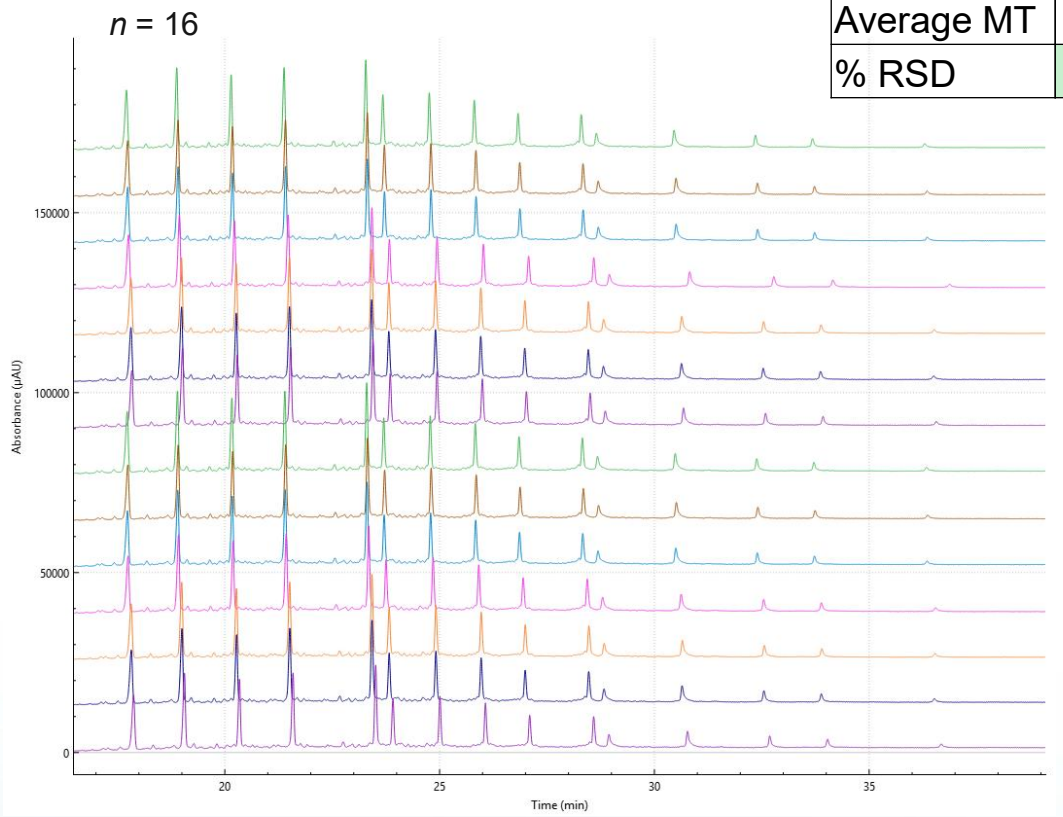
Size range coverage and migration time repeatability

Oligo 200 nt ladder (10 nt to 200 nt)



Ladder with DNA markers from 10 to 200 nt.

	200 nt
Average MT	36.48
% RSD	0.43



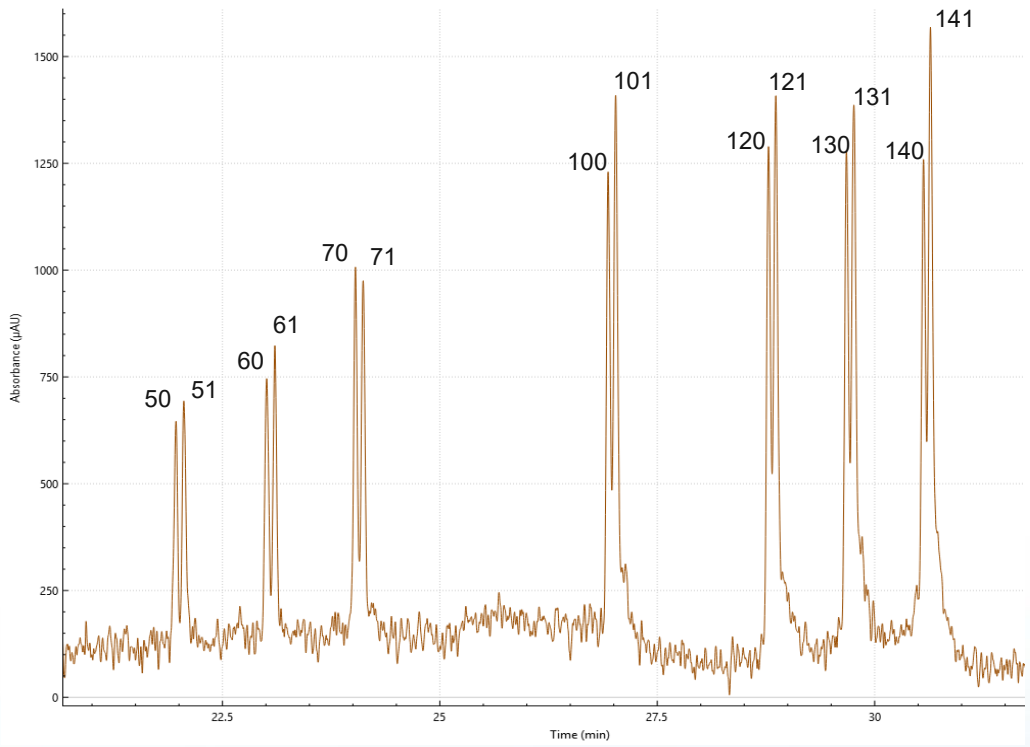
Cover a wide size range from 10 to beyond 200 nt with excellent repeatability.
* Data shared uses prototype kit chemistries

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Demonstration of resolution and repeatability

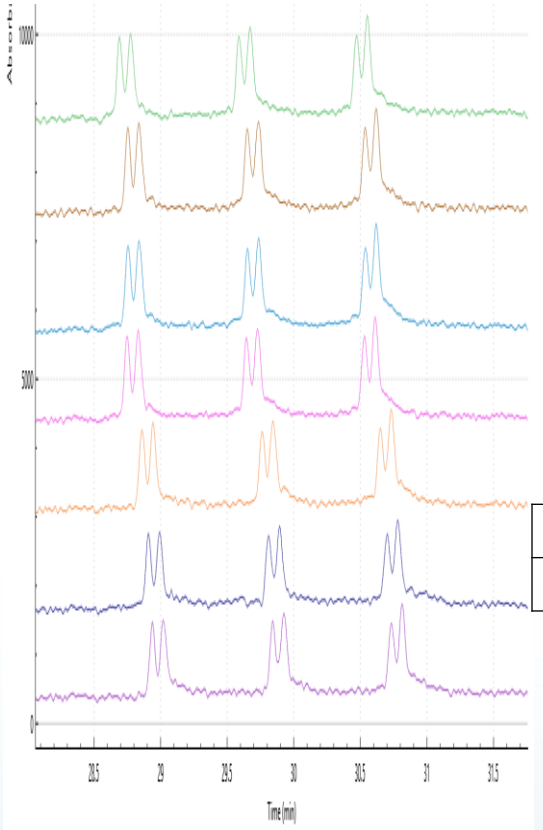
Oligo 200 nt test mix (50 nt to 141 nt)

n and n+1 pairs from 50 to 141 nt



Test mix with *n*-1 DNA markers used for system suitability testing.

n = 16



	Migration time		
	121 nt	**131 nt**	**141 nt**
Average MT	28.89	29.79	30.67
% RSD	0.24	0.24	0.24

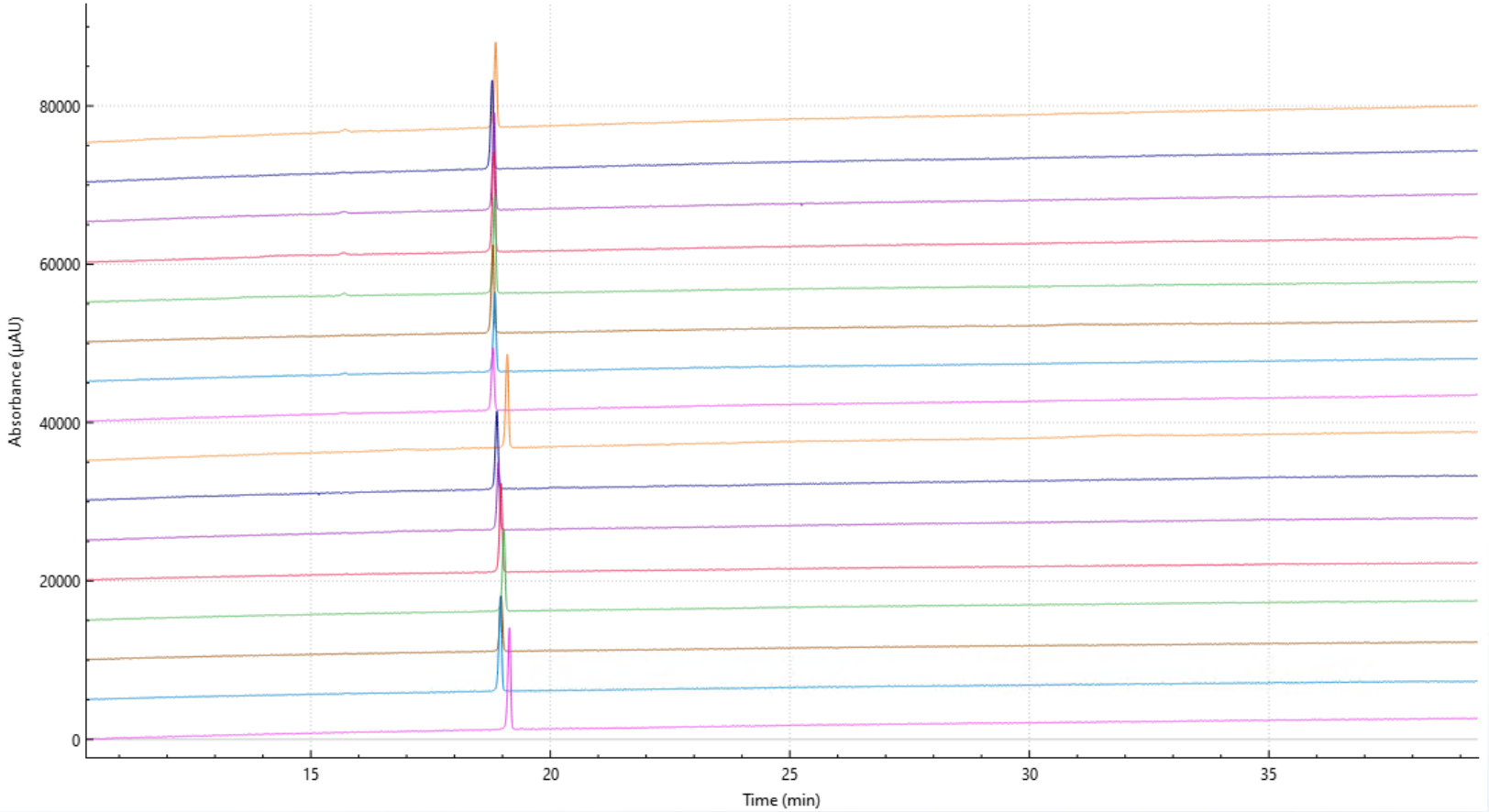
	Resolution of n and n+1 oligo pairs		
	120,121	**130,131**	**140,141**
Average Resolution	0.96	0.91	0.86
% RSD	3.38	3.71	3.02

Resolve closely related oligonucleotide species across a broad size range

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Consistent migration across all 8 capillaries



Peak	Internal Standard (15 nt)
Average Migration Time (min)	18.91
% RSD	0.59

Internal standard (15 nt)
16 runs: two consecutive injections across eight capillaries

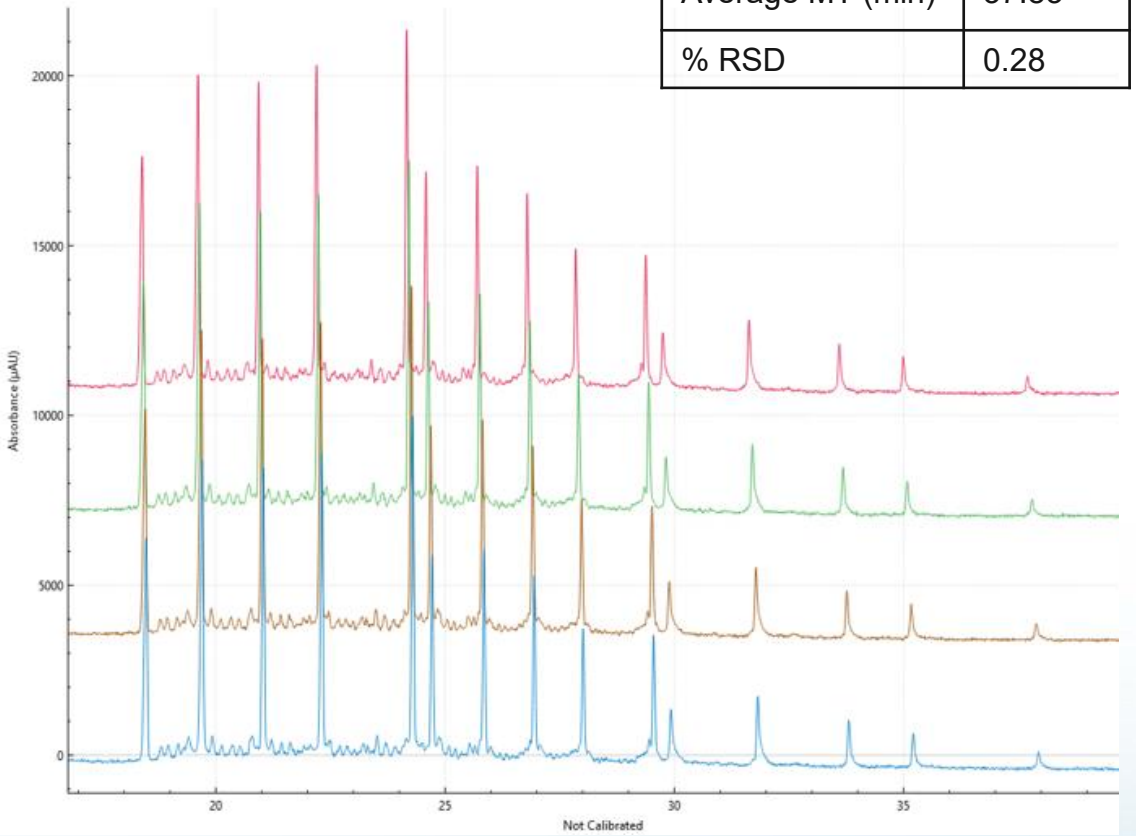
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Compatible with PA 800 Plus system

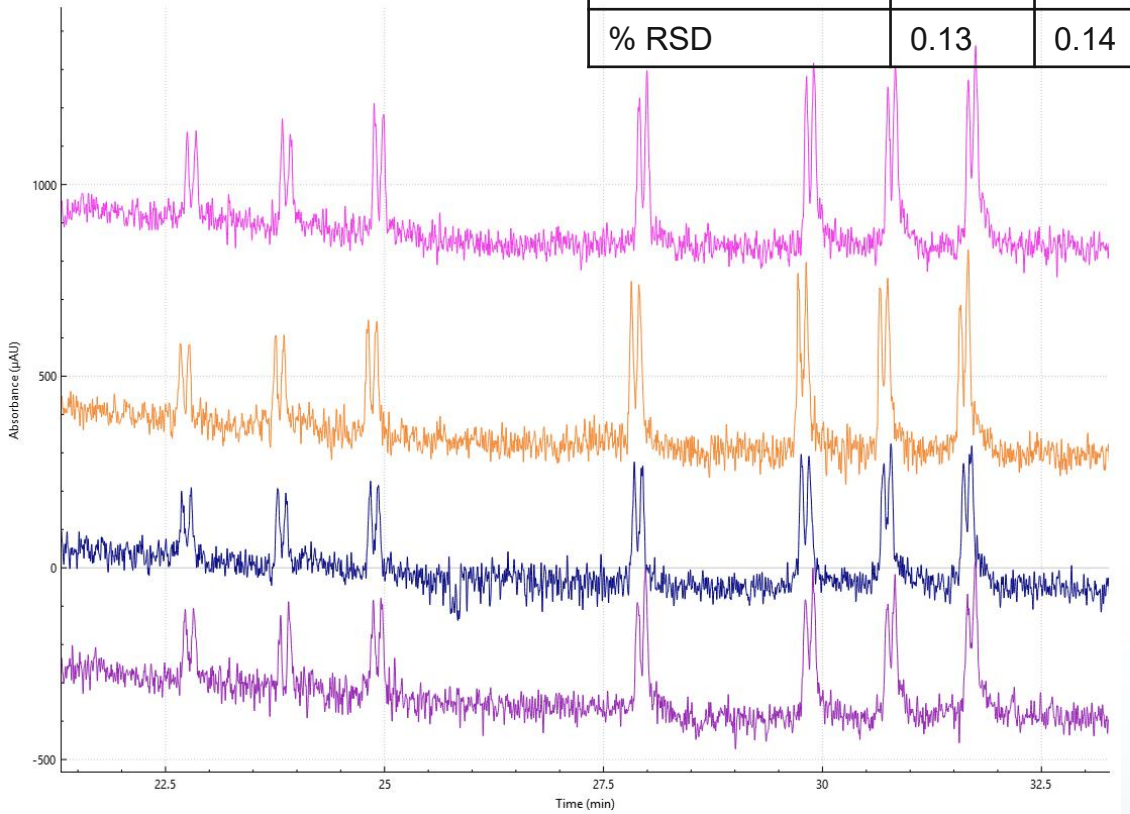
Ladder (10 – 200 nt)

Peak	200 nt
Average MT (min)	37.83
% RSD	0.28



Oligo 200 nt test mix (50 nt to 141 nt)

Peak	121 nt	131 nt	141 nt
Average MT (min)	29.86	30.80	31.71
% RSD	0.13	0.14	0.15



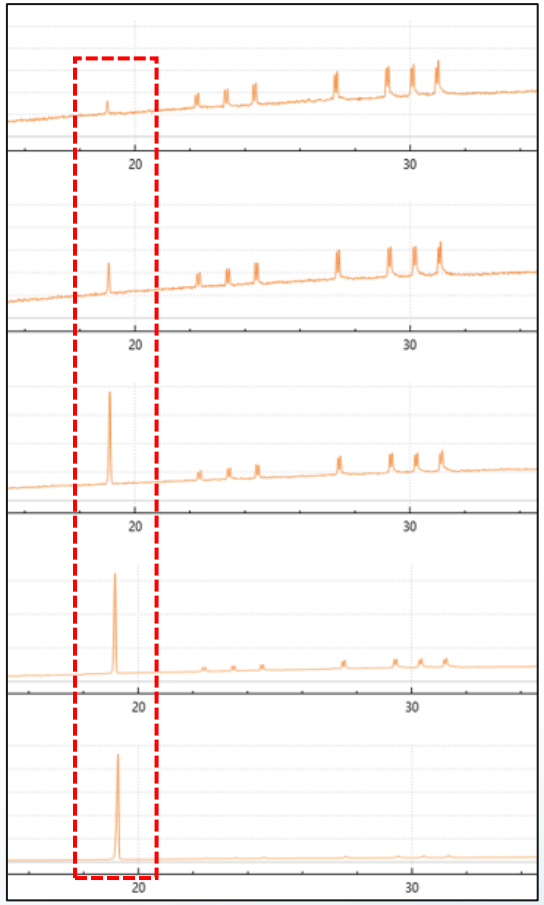
Peak	120/121 nt	130/131 nt	140/141 nt
Average Resolution	0.92	0.92	0.95
% RSD	6.34	8.74	6.38

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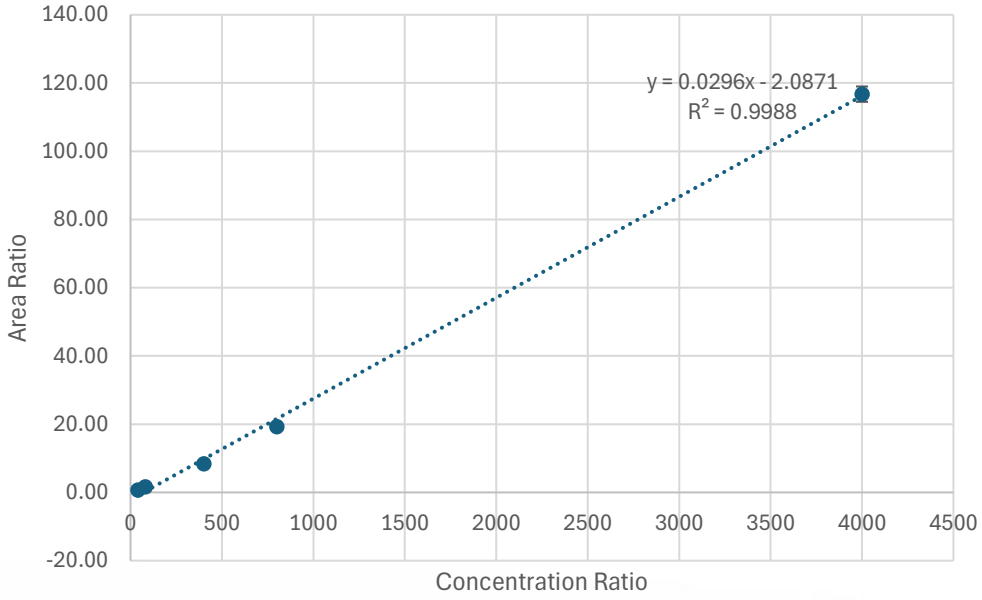
Linearity assessment

Single-stranded Oligo standard (15 nt) diluted to 5, 10, 50, 100, and 500 pg/µL; *n* = 8



Average Values (n=8)		
Conc (pg/uL)	**Area Ratio**	**Conc Ratio**
5	0.71	40
10	1.71	80
50	8.40	400
100	19.34	800
500	116.73	4000

Linearity: 5-500 pg/uL

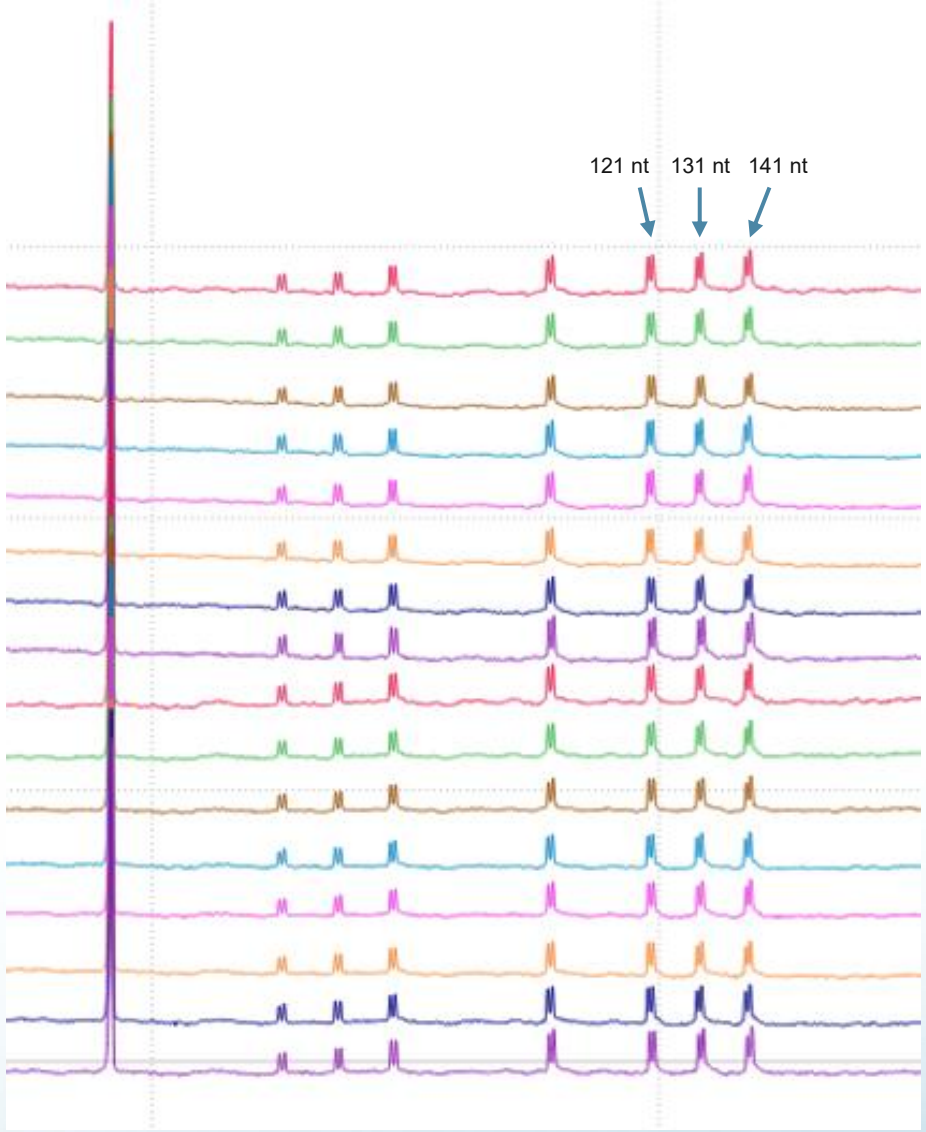


Achieve excellent linearity (R^2 = 0.9988)of the single-stranded Oligo standard (15 nt)

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Gel is stable for 1 year at 2-8°C



1-year accelerated stability studies – test mix

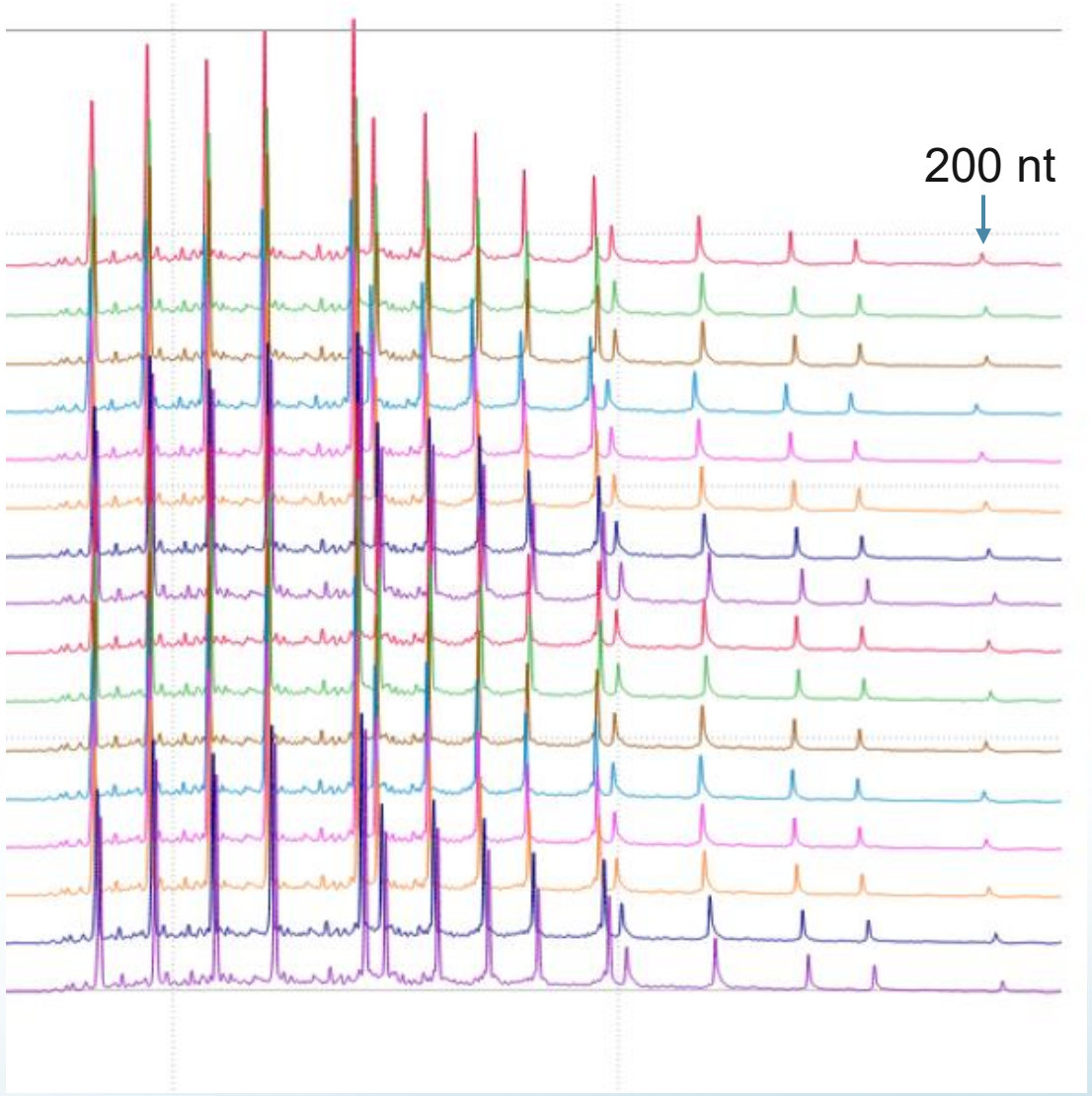
Peak	121 nt	131 nt	141 nt
Average Resolution (n = 16)	1.01	0.99	0.96
RSD	2.70	1.62	3.03

Peak	121 nt	131 nt	141 nt
Average Relative Migration Time (n = 16)	30.00	30.97	31.93
RSD	0.29	0.29	0.29

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Gel is stable for 1 year at 2-8°C



Peak	200 nt
Average Migration Time (n = 16)	38.29
RSD	0.36

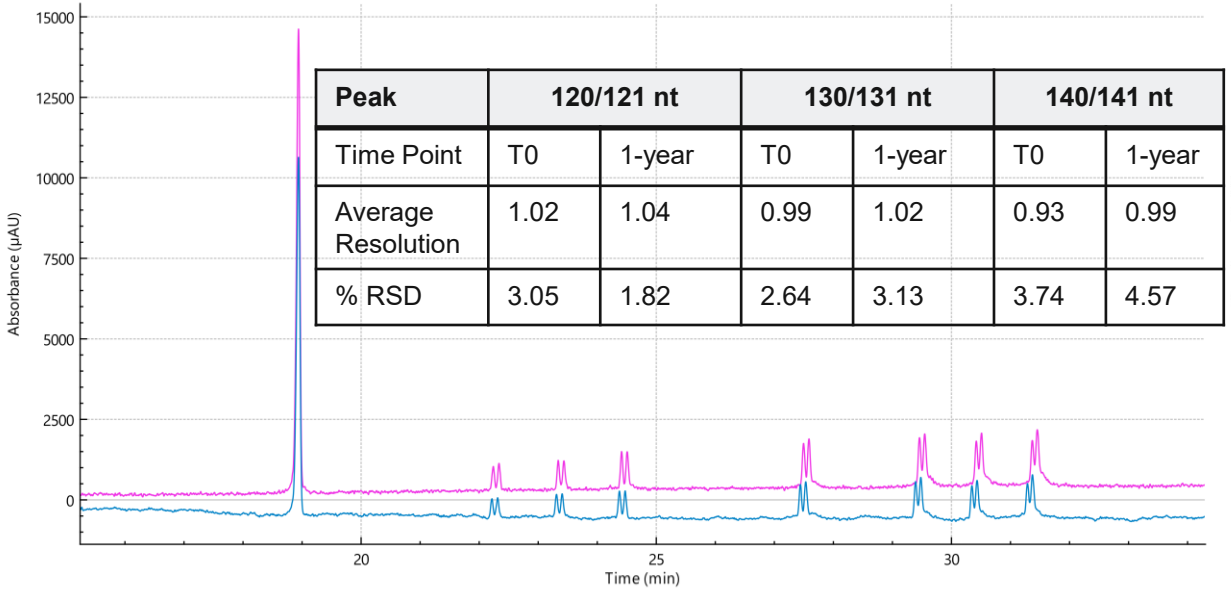
Gel stability: 1-year accelerated stability studies – ladder

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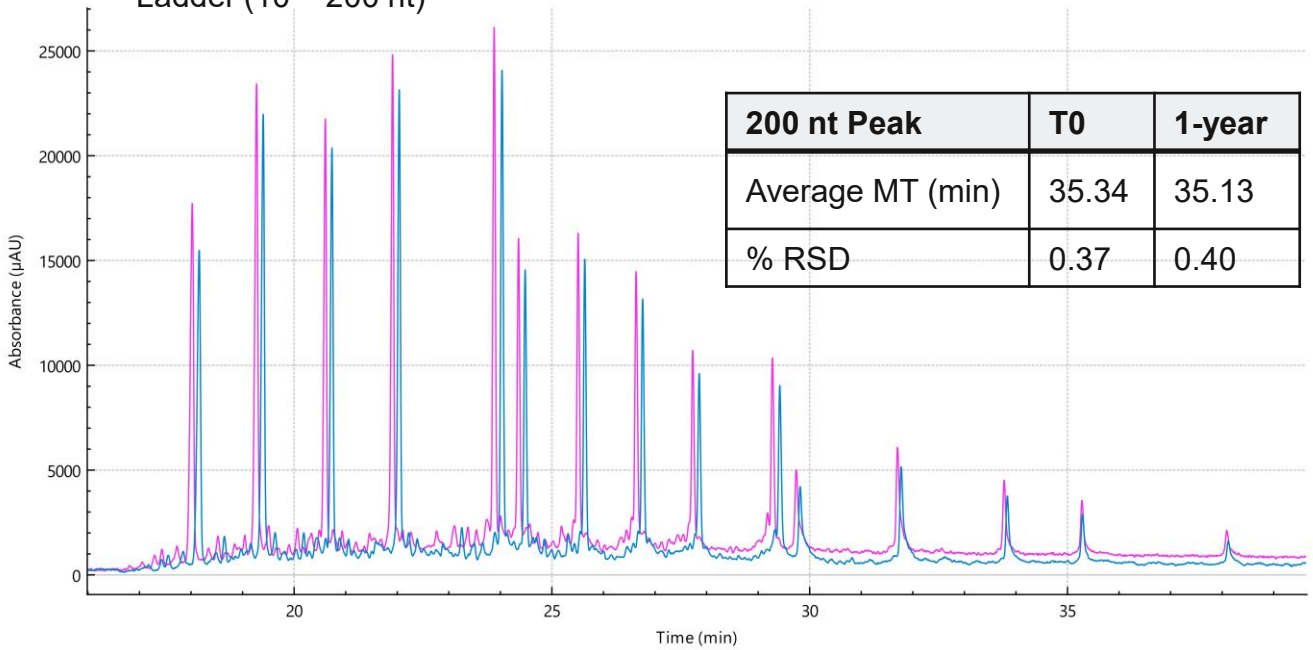
Comparison between T0 and 1-year stability

Oligo 200 nt test mix (50 nt to 141 nt)



Peak	120/121 nt		130/131 nt		140/141 nt	
Time Point	T0	1-year	T0	1-year	T0	1-year
Average Resolution	1.02	1.04	0.99	1.02	0.93	0.99
% RSD	3.05	1.82	2.64	3.13	3.74	4.57

Ladder (10 – 200 nt)



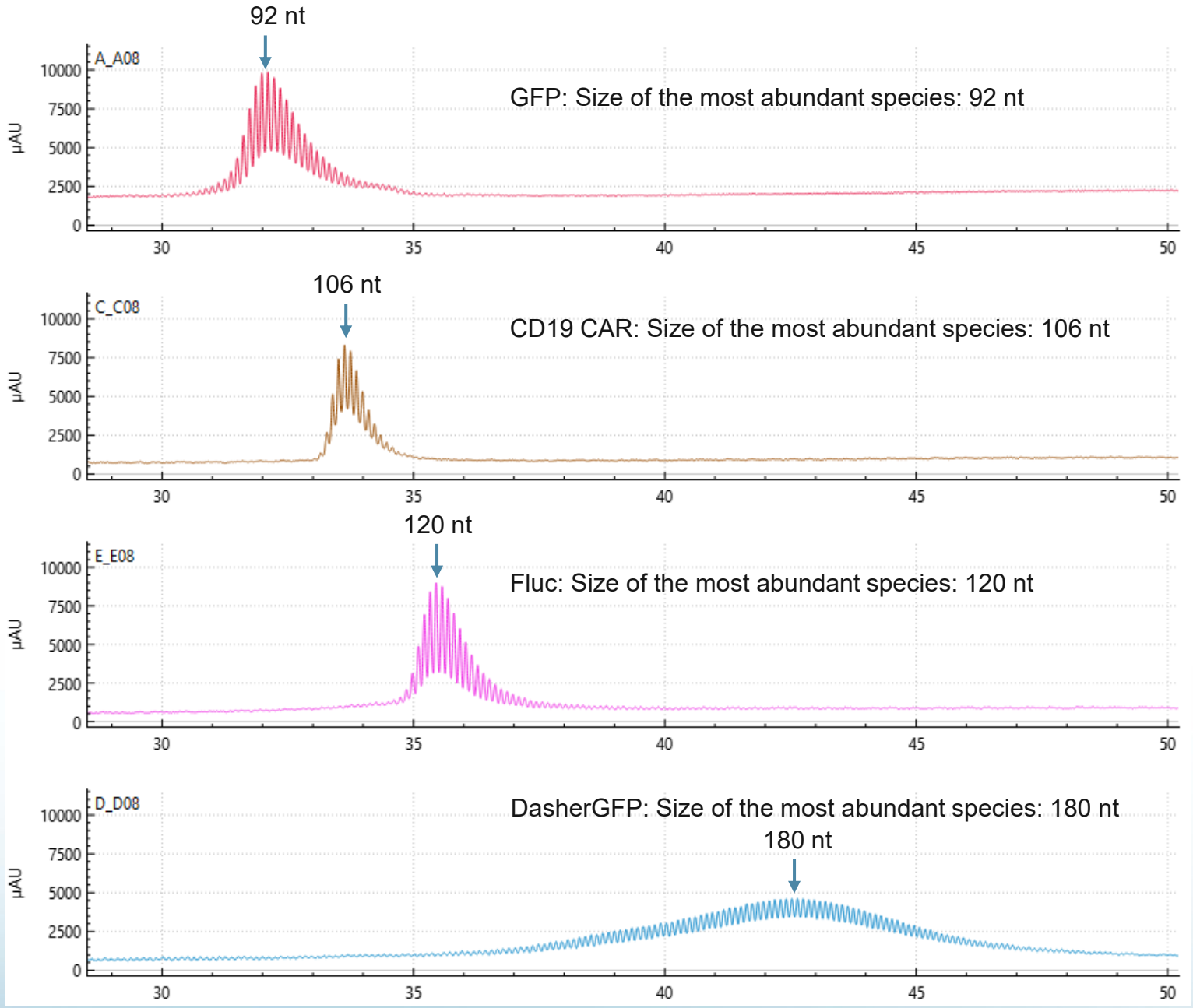
200 nt Peak	T0	1-year
Average MT (min)	35.34	35.13
% RSD	0.37	0.40

- 1-year accelerated stability
- Time 0

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Poly(A) tail analysis

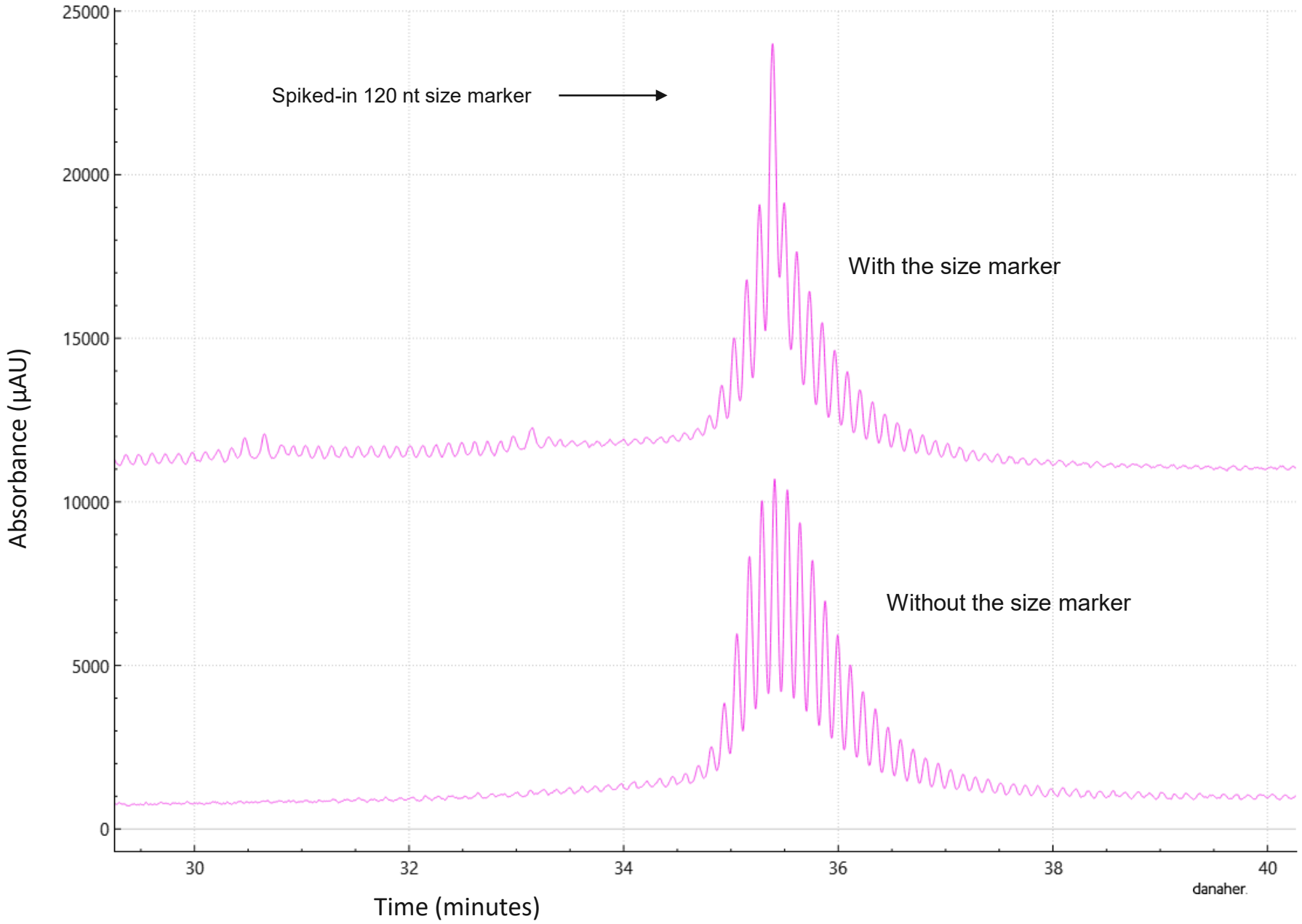
- One platform workflow resolves any poly(A) tail length
- Across mRNA samples with tails from 92 to 180 nt, every expected fragment is distinguished at single-nucleotide resolution.



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Poly(A) tail analysis

- The most abundant poly(A) tail species in the TriLink FLuc mRNA was identified as 120 nt by spiking in a size marker.



Designed to deliver resolution, reproducibility, and workflow simplicity

Range and resolution

Cover a wide size range with high resolution from 10 to 200+ nt in length and single-nucleotide resolution (R > 0.7) from 10 to 141 nt

Method development

Validated kit that compatible with the PA 800 Plus system and BioPhase 8800 system minimizes method optimization across different oligonucleotide lengths

Workflow efficiency

Skip reconstitutions and dilutions with a ready-to-use gel. Simplify operations with bare-fused silica capillaries



Oligo 200 nt Purity and Integrity kit

Thank you!



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