



File Properties

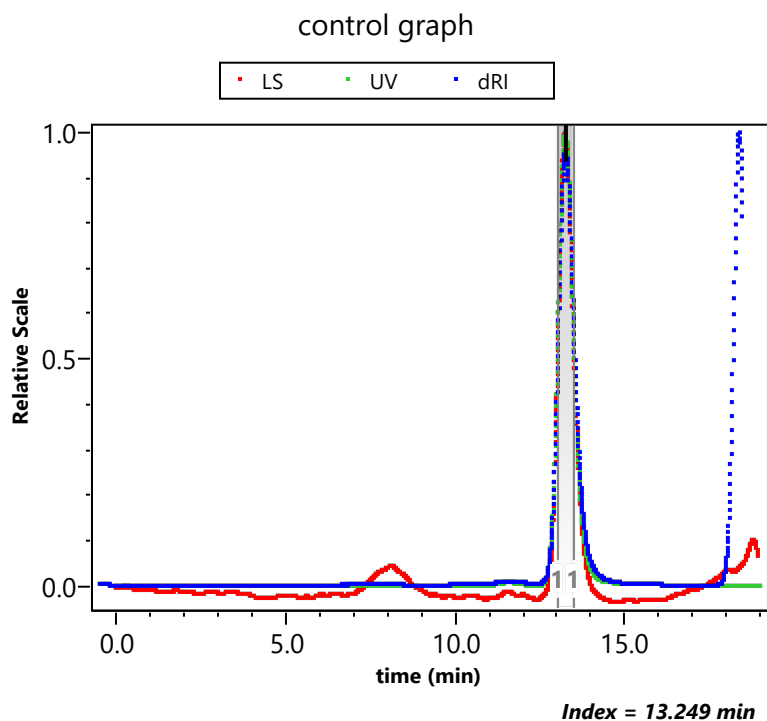
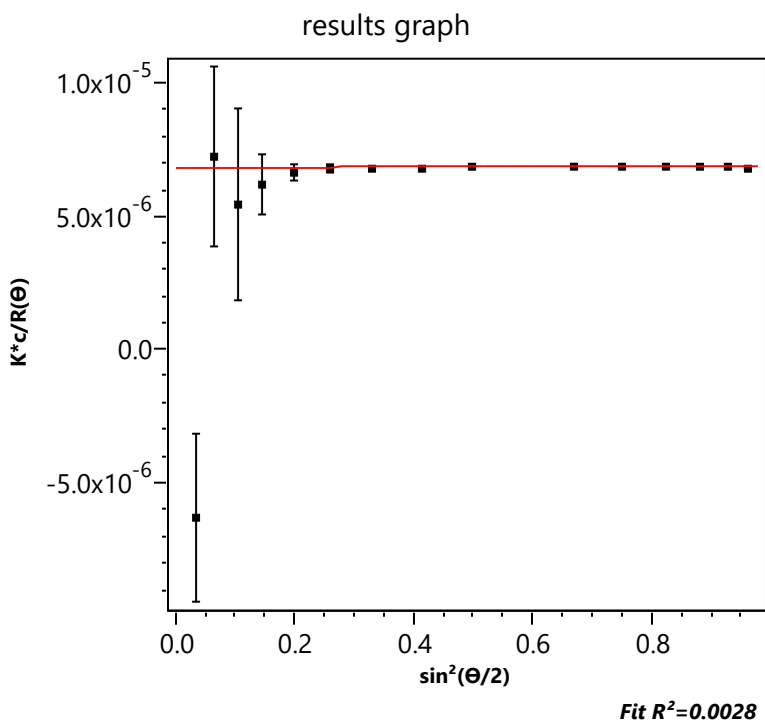
File Name: F:\GoogleDrive\LBNL\SIBYLS_Group\MALS and DLS Data\Sequences\Covid_anti3[111320_Seq1].afe7

Created: November 15, 2020 11:26:53.528

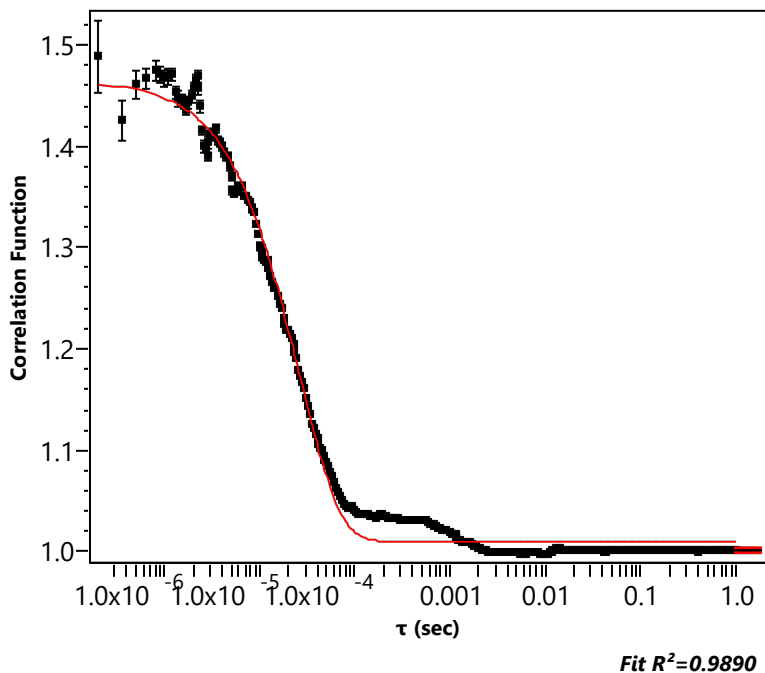
Sample: Covid_anti3

dn/dc: 0.1750 mL/g

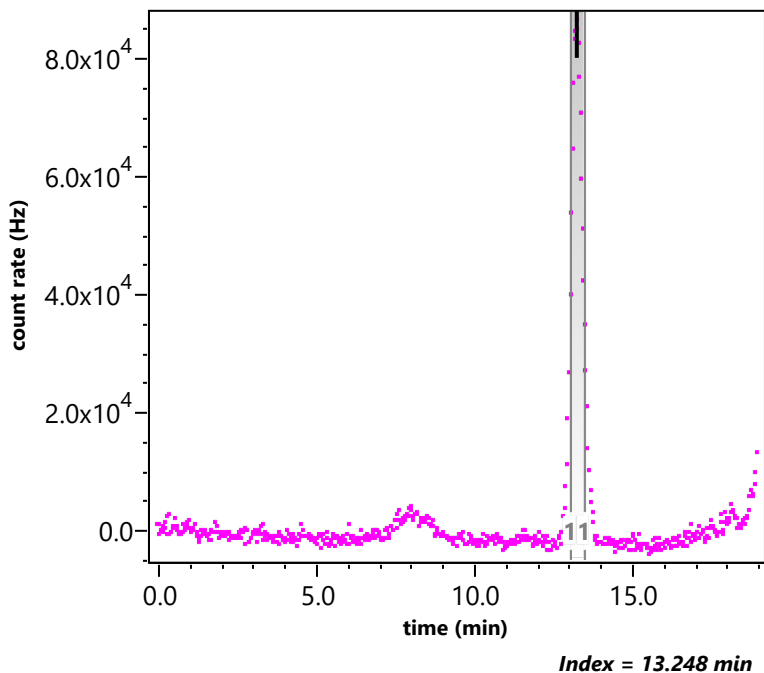
Concentration: 2.000 mg/mL



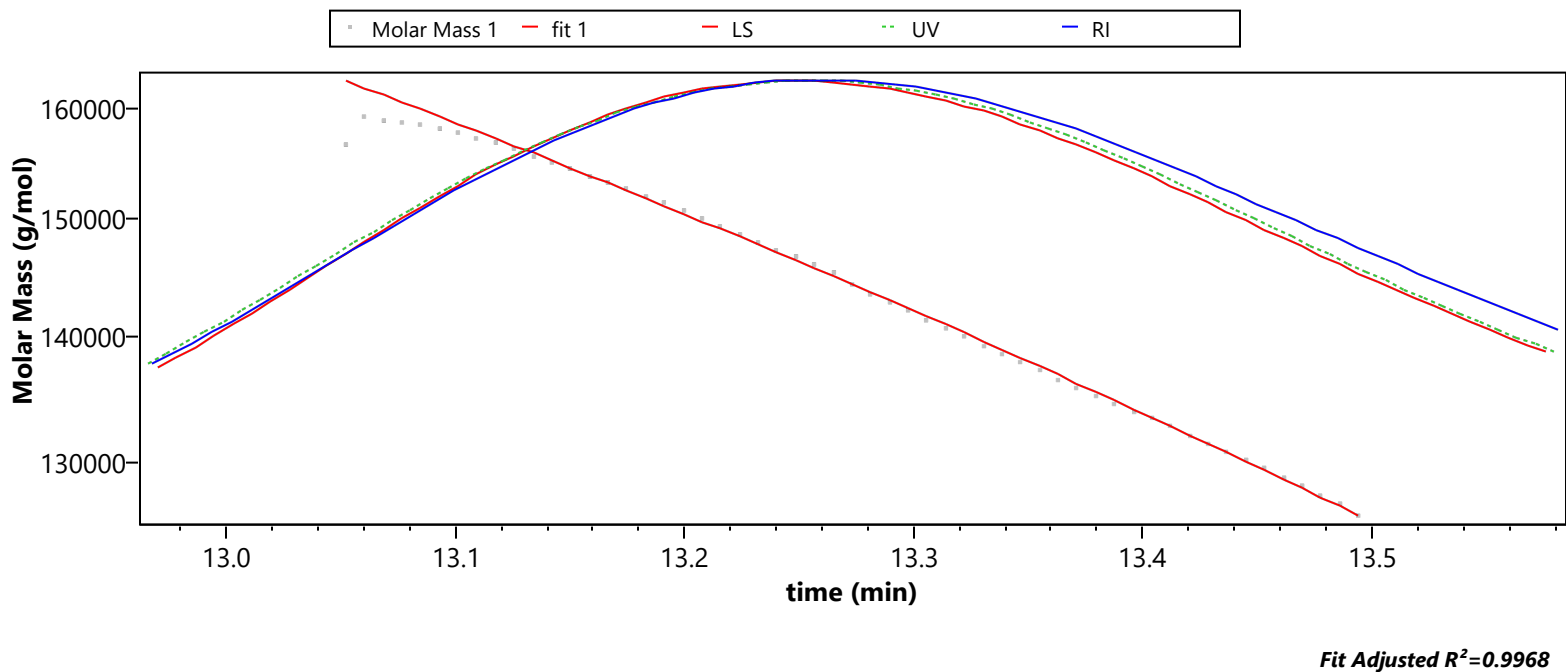
Correlation Function



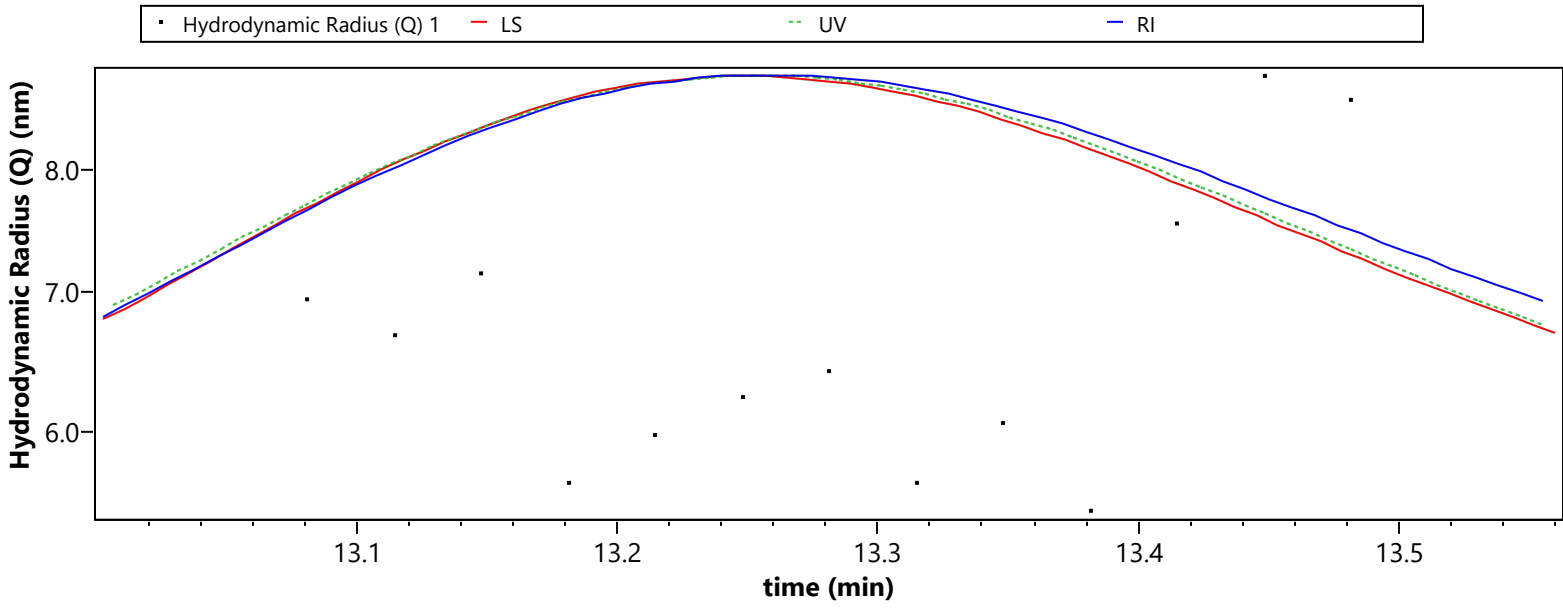
control graph



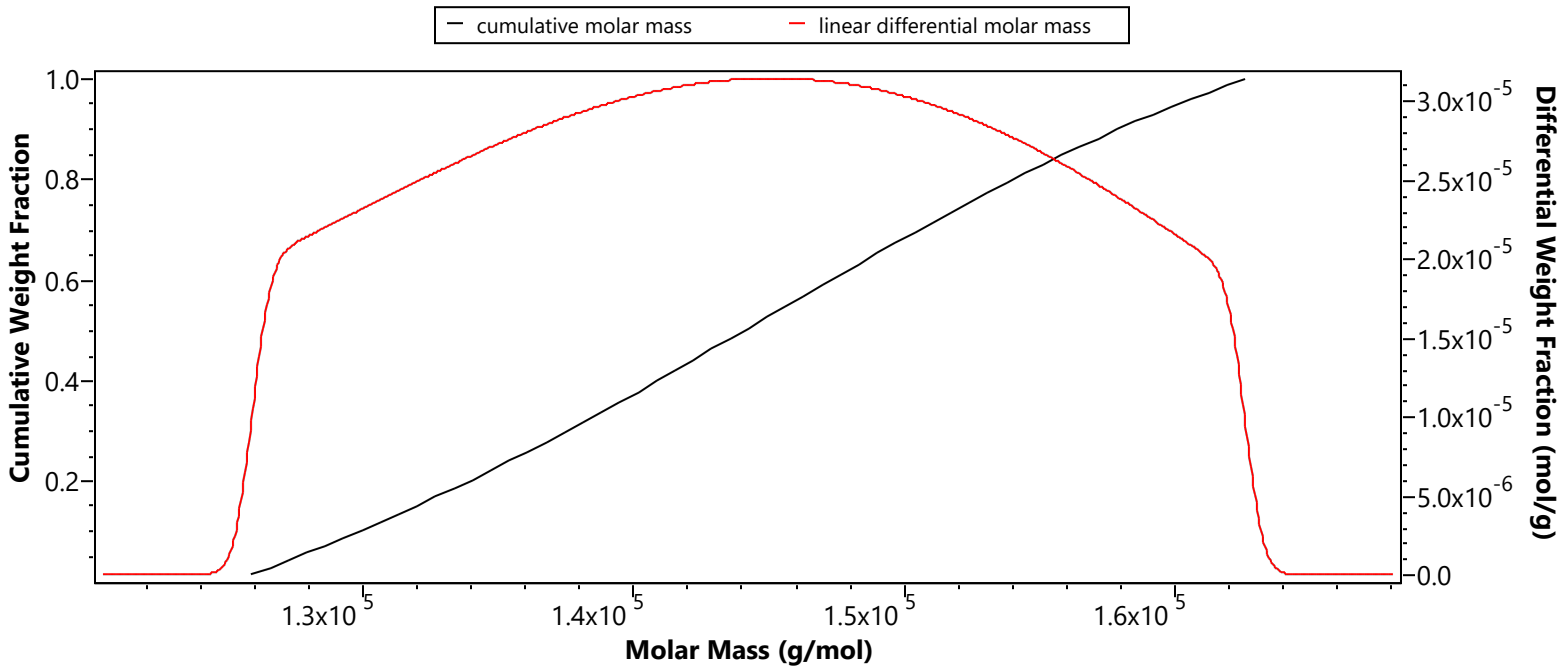
Results Fitting

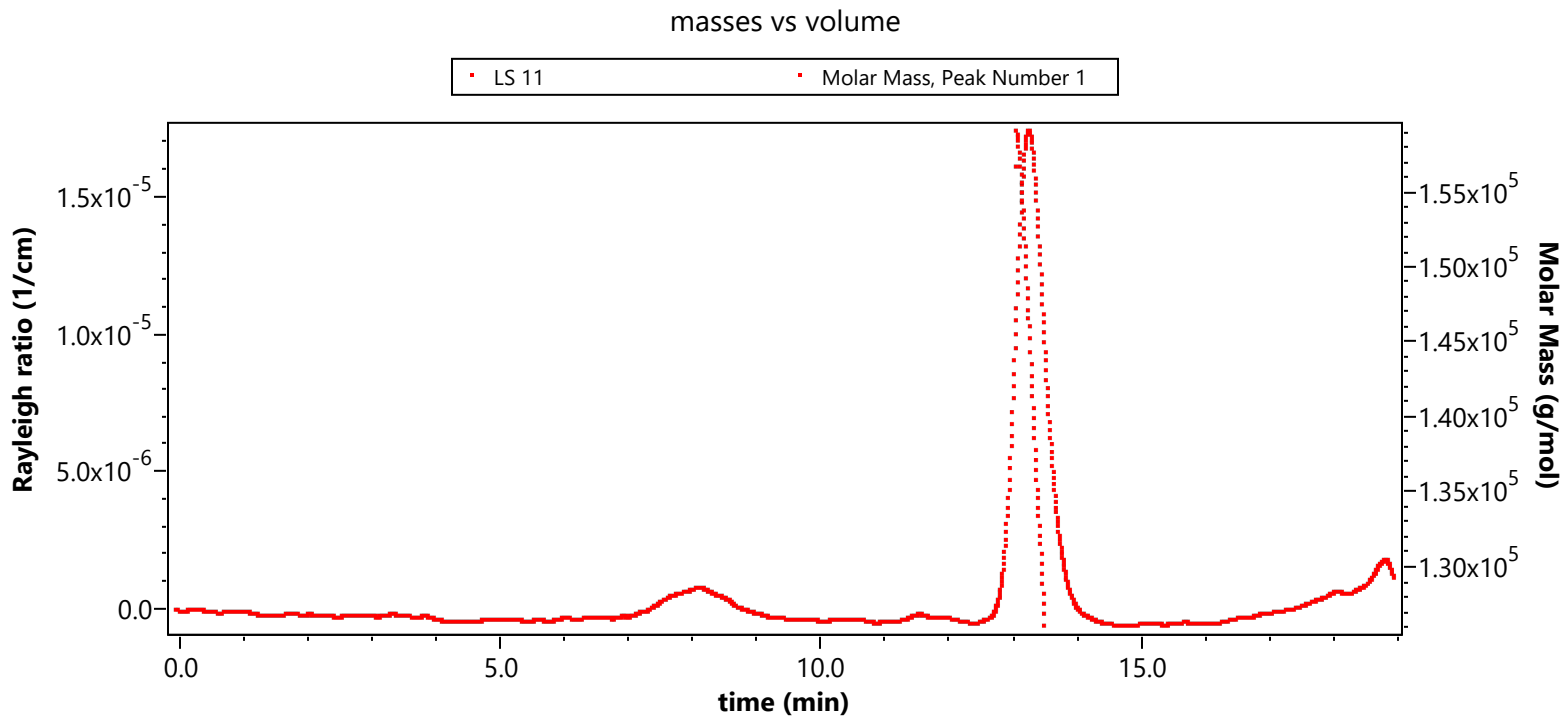


Results Fitting



Distribution Analysis





Configuration

Abscissa Units: min
Concentration Source: RI
Flow Rate: 0.500 mL/min
Pulse Correction Enabled: yes

Light Scattering Instrument: DAWN HELEOS
Cell Type: Fused Silica
Wavelength: 660.0 nm
Calibration Constant: 3.3316×10^{-5} 1/(V cm)

RI Instrument: Optilab T-rEX
Wavelength: 658.0 nm

UV Instrument: Generic UV

Solvent: PBS, Aqueous
Refractive Index: 1.331

Fluid Connections

Source Instrument	Destination Instrument	Delay Volume (mL)
Generic Pump	Injector	0.000
Injector	Generic UV Instrument	0.000
Generic UV Instrument	DAWN HELEOS	0.026
DAWN HELEOS	Optilab rEX	0.222

Aux Connections

Source Instrument	Destination Instrument	Source Aux Channel	Destination Aux Channel	Calibration Constant
Generic UV Instrument	DAWN HELEOS		2	1.000
Generic UV Instrument	DAWN HELEOS	2	3	1.000

Autoinject Connections

Source Instrument	Destination Instrument
autoinject	DAWN HELEOS

Processing

Collection Operator: MICHAELFARADAY\Michael Faraday (MICHAELFARADAY\Michael Faraday (Michael Faraday))**Collection Time:** Saturday, November 14, 2020 13:22:37 PM**Collection Version:** 7.1.4.8**Processing Operator:** MICROSOFTACCOUNT\themi (Richard Burton)**Processing Time:** Sunday, November 15, 2020 12:30:48 PM**Despiking Level:** Heavy**Peak settings:**

Peak Name	Peak 1
Peak Limits (min)	13.049 - 13.498
Light Scattering Model	Zimm
Fit Degree	1
dn/dc (mL/g)	0.1739
dn/dc Ref. Temp. (°C)	25.000
Modifier dn/dc (mL/g)	0.0000
Modifier dn/dc Ref. Temp. (°C)	25.000
A2 (mol mL/g²)	0.000
UV Ext. Coef. (mL/(mg cm))	0.667
UV Ext. Coef. Ref. Temp. (°C)	25.000
Modifier UV Ext. Coef. (mL/(mg cm))	0.000
Modifier UV Ext. Coef. Ref. Temp. (°C)	25.000
Real Refractive Index	0
Imaginary Refractive Index	0
Shell Thickness (nm)	0.000
Shell Real Refractive Index	0
Shell Imaginary Refractive Index	0
Rod radius (nm)	0.000
Molecular Standard	n/a
Concentration (mg/mL)	2.000
Concentration Ref. Temp. (°C)	25.000
Mn (g/mol)	0.000
Mw (g/mol)	0.000
Mp (g/mol)	0.000
Intrinsic Viscosity (mL/g)	0.000
Intrinsic Viscosity Ref. Temp. (°C)	25.000
Mark-Houwink-Sakurada K (mL/g)	0.000
Mark-Houwink-Sakurada a	0
Flory-Fox Equation Phi Parameter	0
Ptitsyn-Eizner Equation Epsilon Parameter	0
Viscometry Model	Huggins
Huggins Equation Parameter	0
Kraemers Equation Parameter	0
radius (nm)	3.480
Radius Type	rms

Molar Mass & Radius from LS:

Peak Name: Peak 1
Molar Mass: (1.466 ± 0.013) e+5 g/mol
rms radius: 3.9 ± 6.3 nm
Light Scattering Model: Zimm
Fit Degree: 1
Concentration: (6.375 ± 0.001) e-1 mg/mL
dn/dc: 0.175 mL/g
Slice Index: 1625
Abscissa Position: 13.249 min
Fit R²: 0.0028
Enabled Detectors: 3 4 5 6 7 8 9 10 11 13 14 15 16 17 18

rh from QELS:

Use Disabled Slices: no
Prefilter Correlation Function before Averaging: yes

Minimum Delay for Fit: 2.000×10^{-7} sec
Maximum Delay for Fit: 1.0 sec
Minimum Radius Threshold: 1.00 nm
Maximum Radius Threshold: 300.00 nm
Suppress Distribution Peaks Below: 0.50 nm
Suppress Distribution Peaks Above: 10000.000 nm

Results Fitting Procedure:

Data	Fit Model	Degree	R ²	Extrapolation
Molar Mass	Polynomial	1	0.996783	none

Results**Peak Results**

	Peak 1
Hydrodynamic radius (Q) moments (nm)	
rh(Q)n	6.634 (±2.611%)
Std Dev rh(Q)n	1.029
rh(Q)w	6.604 (±2.563%)
Std Dev rh(Q)w	0.995
rh(Q)z	6.579 (±2.519%)
Std Dev rh(Q)z	0.995
rh(Q)(avg)	6.053 (±0.583%)
General (mL/(mg cm))	
UV Ext. Coef. (mL/(mg cm))	1.211
Masses	
Injected Mass (µg)	100.00
Calculated Mass (µg)	122.13
Mass Recovery (%)	122.1
Mass Fraction (%)	100.0
Concentration (mg/mL)	
Average concentration	0.546 (±0.000%)
Molar mass moments (g/mol)	
Mn	1.437×10^5 (±0.301%)
Mp	1.463×10^5 (±0.188%)
Mv	n/a
Mw	1.444×10^5 (±0.296%)
Mz	1.451×10^5 (±0.660%)
Mz+1	1.458×10^5 (±1.056%)
M(avg)	1.443×10^5 (±0.036%)
Polydispersity	
Mw/Mn	1.005 (±0.422%)
Mz/Mn	1.010 (±0.725%)
rms radius moments (nm)	
rn	n/a
Std Dev rn	n/a
rw	4.7 (±219.8%)
Std Dev rw	18.623
rz	6.8 (±106.7%)
Std Dev rz	18.718
r(avg)	13.9 (±3.8%)
Light scattering peak statistics	
Peak Area (1/cm min)	6.483×10^{-6}
Peak Height (1/cm)	1.749×10^{-5}
Retention Time (min)	13.231
Peak Width at Half-Height (min)	0.000
Peak Width at Quarter-Height (min)	0.000
Peak Width at Tenth-Height (min)	0.000
Peak Width at User-Specified-Height (4.4%, min)	0.000
Asymmetry Factor	0.000

	Peak 1	
Tailing Factor	0.000	
Column Plate Count	0.000	
Mean (min)	13.264	
Standard Deviation (min)	0.121	
Skew	3.424	
Peak Area (%)	100.000	
Refractive index peak statistics		
Peak Area (RIU min)	4.248×10^{-5}	
Peak Height (RIU)	1.113×10^{-4}	
Retention Time (min)	13.256	
Peak Width at Half-Height (min)	0.000	
Peak Width at Quarter-Height (min)	0.000	
Peak Width at Tenth-Height (min)	0.000	
Peak Width at User-Specified-Height (4.4%, min)	0.000	
Asymmetry Factor	0.000	
Tailing Factor	0.000	
Column Plate Count	0.000	
Mean (min)	13.273	
Standard Deviation (min)	0.121	
Skew	0.385	
Peak Area (%)	100.000	
UV peak statistics		
Peak Area (channel 1) (AU min)	2.958×10^{-1}	
Peak Area (channel 2) (AU min)	0.000	
Peak Height (channel 1) (AU)	7.891×10^{-1}	
Peak Height (channel 2) (AU)	0.000	
Retention Time (channel 1) (min)	13.254	
Retention Time (channel 2) (min)	13.230	
Peak Width at Half-Height (channel 1) (min)	0.000	
Peak Width at Half-Height (channel 2) (min)	0.000	
Peak Width at Quarter-Height (channel 1) (min)	0.000	
Peak Width at Quarter-Height (channel 2) (min)	0.000	
Peak Width at Tenth-Height (channel 1) (min)	0.000	
Peak Width at Tenth-Height (channel 2) (min)	0.000	
Peak Width at User-Specified-Height (channel 1) (4.4%, min)	0.000	
Peak Width at User-Specified-Height (channel 2) (4.4%, min)	0.000	
Asymmetry Factor (channel 1)	0.000	
Asymmetry Factor (channel 2)	0.000	
Column Plate Count (channel 1)	0.000	
Column Plate Count (channel 2)	0.000	
Tailing Factor (channel 1)	0.000	
Tailing Factor (channel 2)	0.000	
Mean (channel 1) (min)	13.269	
Mean (channel 2) (min)	13.267	
Standard Deviation (channel 1) (min)	0.119	
Standard Deviation (channel 2) (min)	0.124	
Skew (channel 1)	0.007	
Skew (channel 2)	1.789	
Peak Area % (channel 1) (%)	100.000	
Peak Area % (channel 2) (%)	100.000	
Translational diffusion coefficient moments (cm²/sec)		
Dt(n)	4.95×10^{-7}	(±2.33%)
Dt(w)	4.96×10^{-7}	(±2.30%)
Dt(z)	4.98×10^{-7}	(±2.27%)
Dt(avg)	5.13×10^{-7}	(±0.58%)

laser monitor average: 0.999 V

Forward Monitor Average: 0.924 V

laser current average: 0.156 amps

laser voltage average: -225423.032 V

rms conformation plot slope: 9.83 ($\pm 11.99\%$) $\log(\text{nm})/\log(\text{g/mol})$

rms Conformation Plot y-intercept: -49.756 ($\pm 12.303\%$) $\log(\text{nm})$

rh(Q) conformation plot slope: -0.017 ($\pm 598.409\%$) $\log(\text{nm})/\log(\text{g/mol})$

rh(Q) Conformation Plot y-intercept: 0.879 ($\pm 61.480\%$) $\log(\text{nm})$

rms radius vs. rh(Q) plot slope: -0.559 ($\pm 47.176\%$) rms radius vs. rh(Q) plot slope

rms radius vs. rh(Q) Plot y-intercept: 13.540 ($\pm 13.242\%$) $\log(\text{nm})$