



File Properties

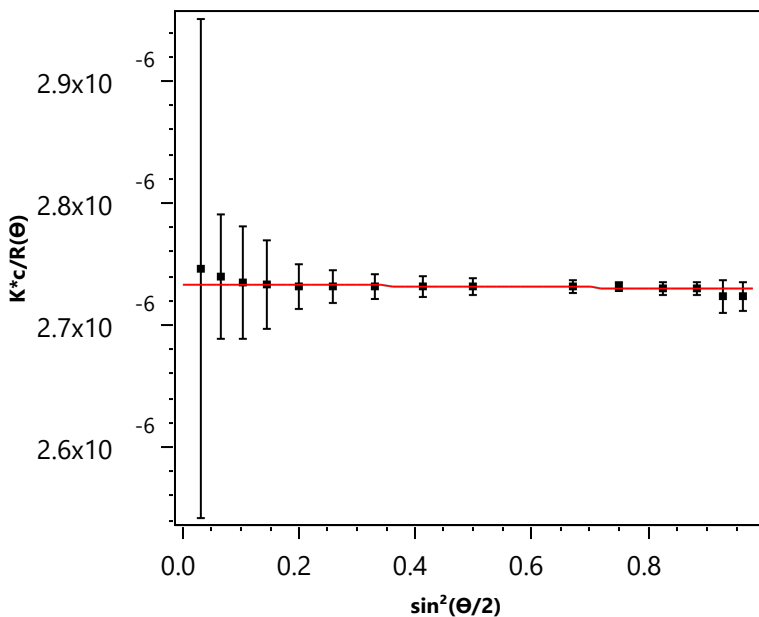
File Name: D:\GoogleDrive\LBNI\SIBYLS_Group\MALS and DLS Data\Sequences\Covid_anti3[070920_Covid].afe7
 Created: July 10, 2020 17:16:26.695

Sample: Covid_anti3

dn/dc: 0.1750 mL/g

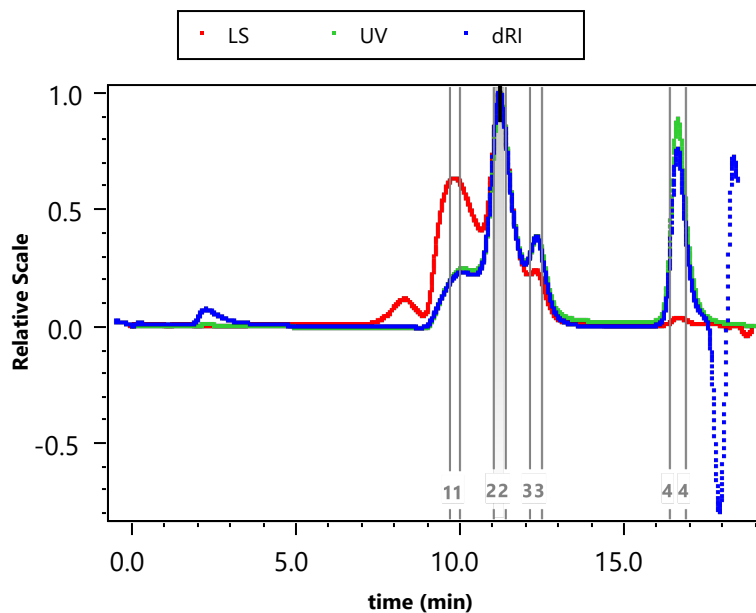
Concentration: 2.000 mg/mL

results graph



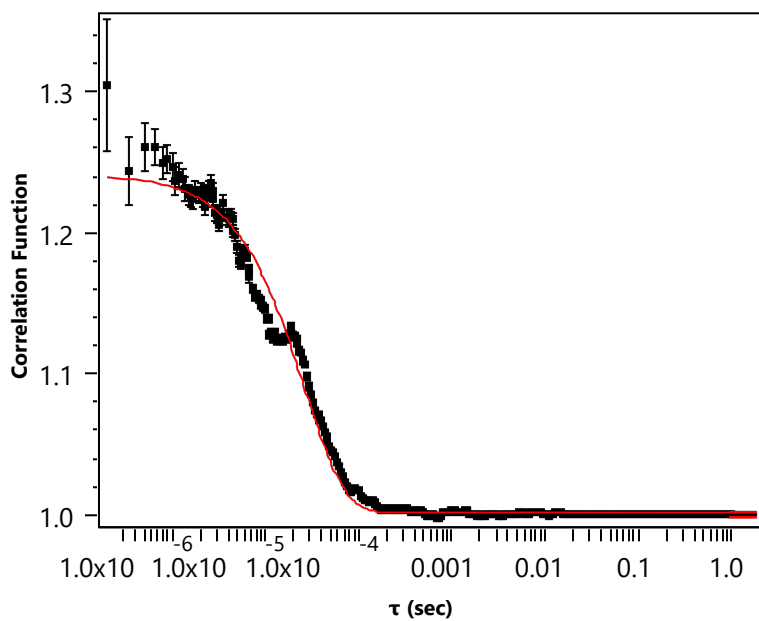
Fit $R^2=0.3833$

control graph



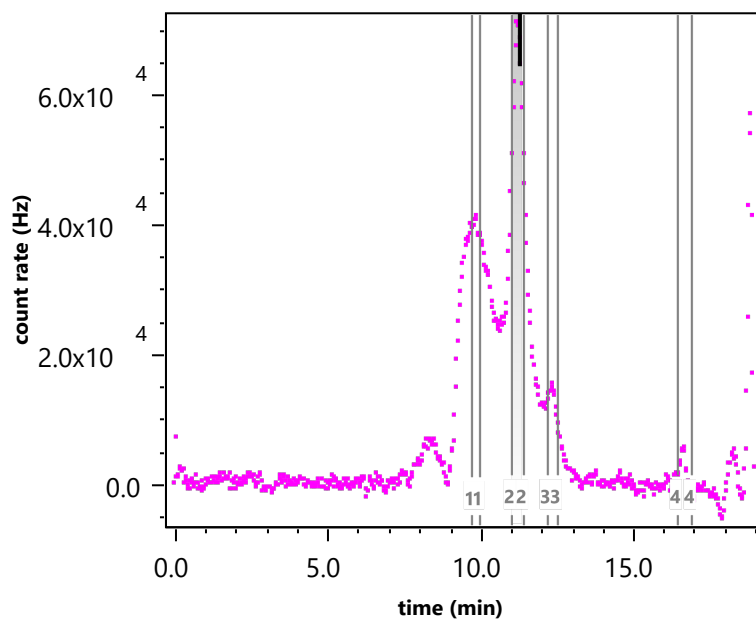
Index = 11.225 min

Correlation Function



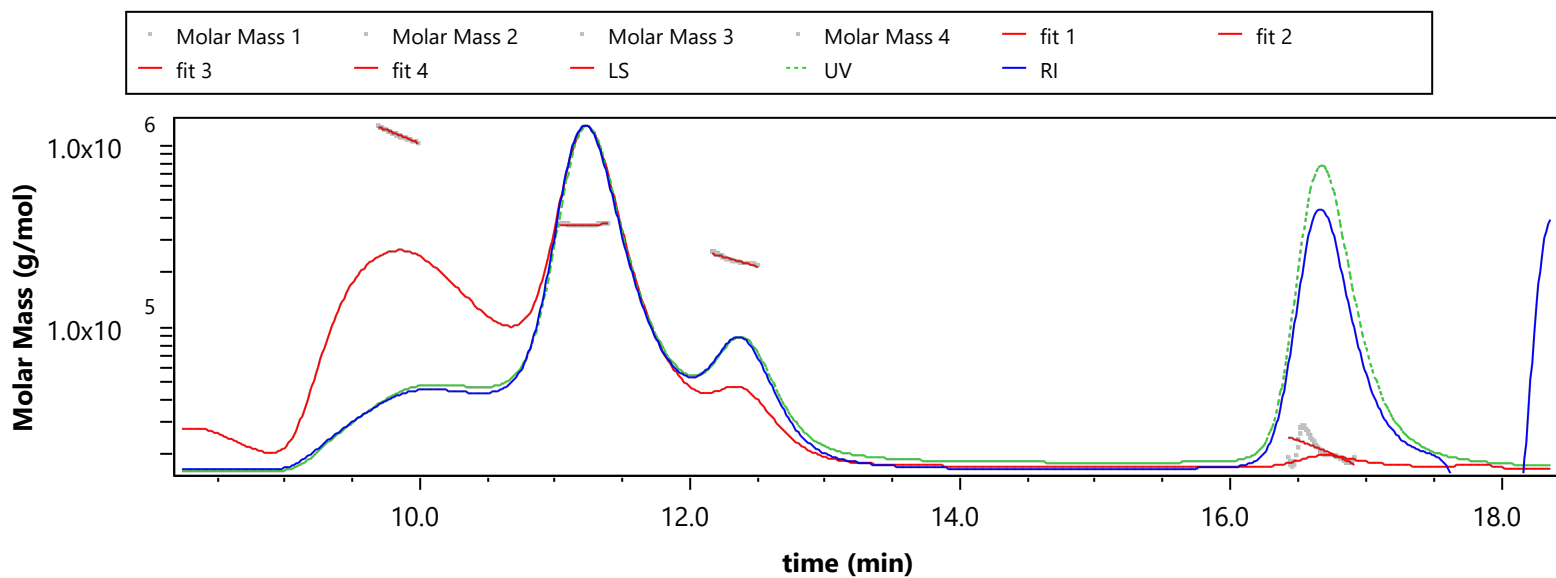
Fit $R^2=0.9788$

control graph



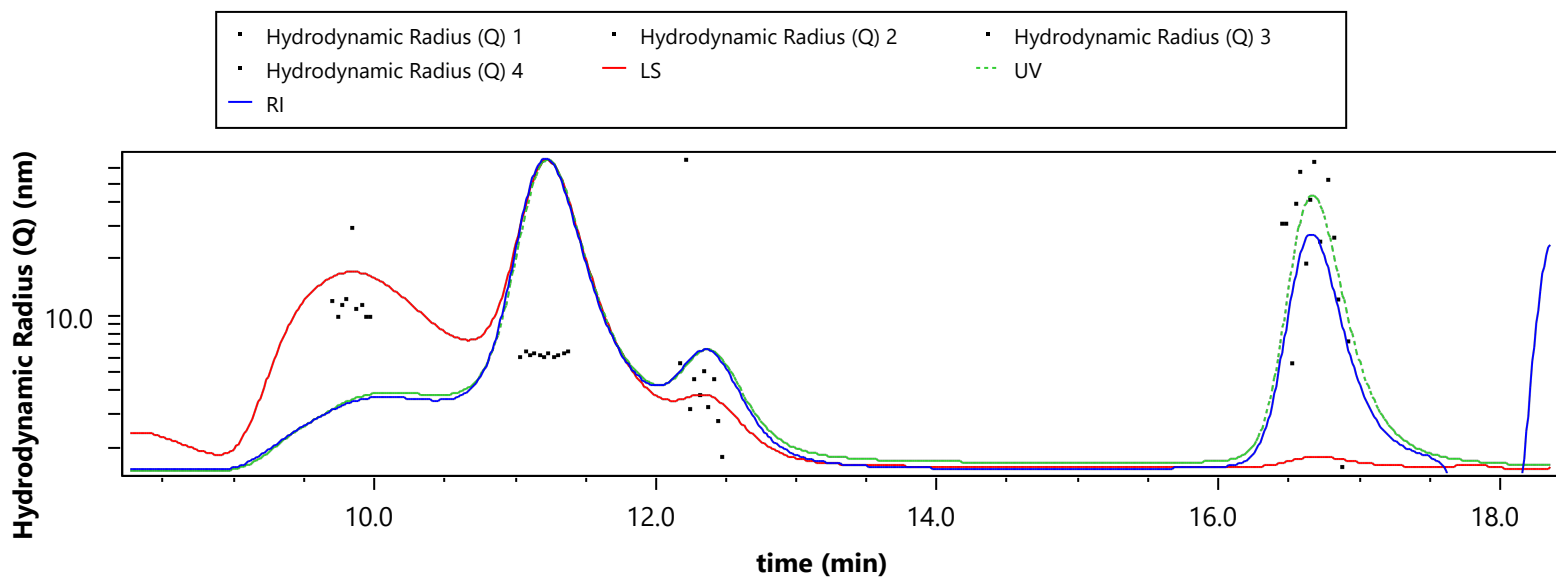
Index = 11.245 min

Results Fitting

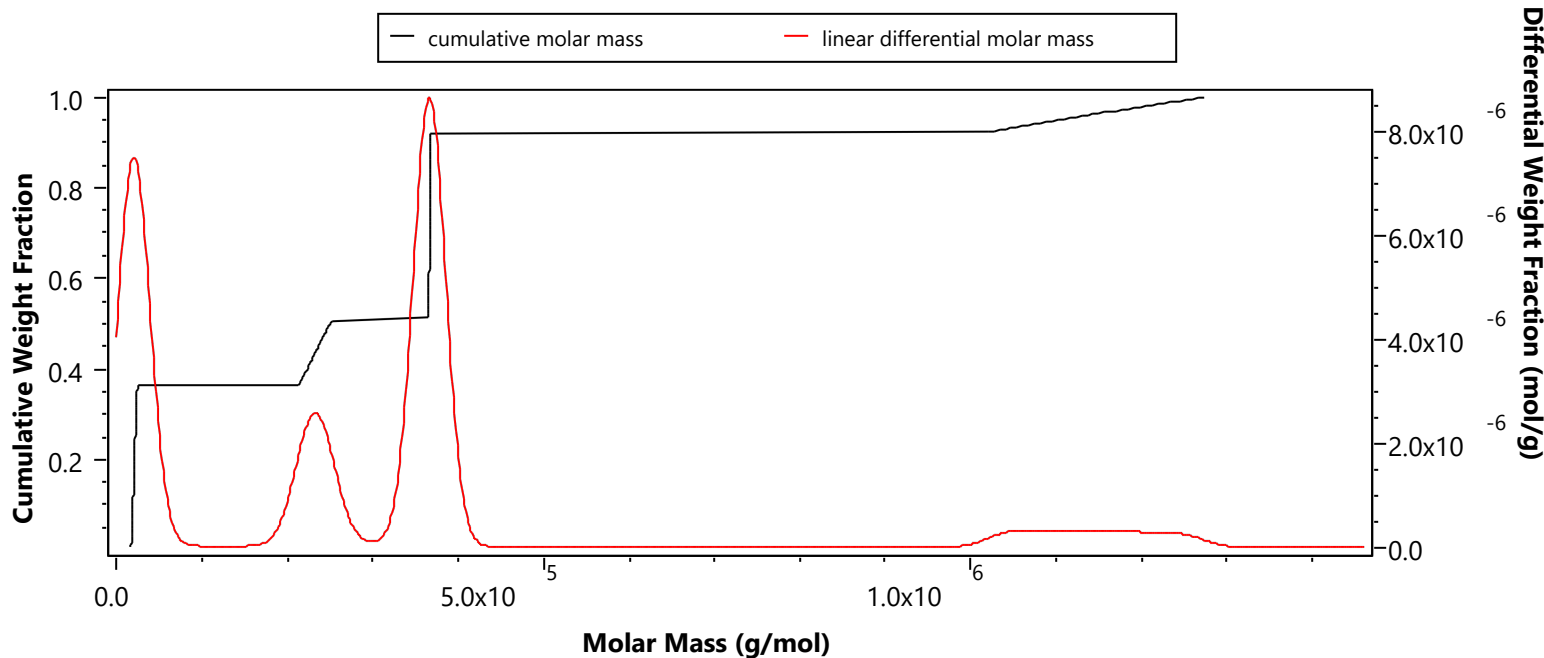


Peak 1 Fit Adjusted $R^2=0.9896$; Peak 2 Fit Adjusted $R^2=0.0296$; Peak 3 Fit Adjusted $R^2=0.8892$; Peak 4 Fit Adjusted $R^2=0.4826$

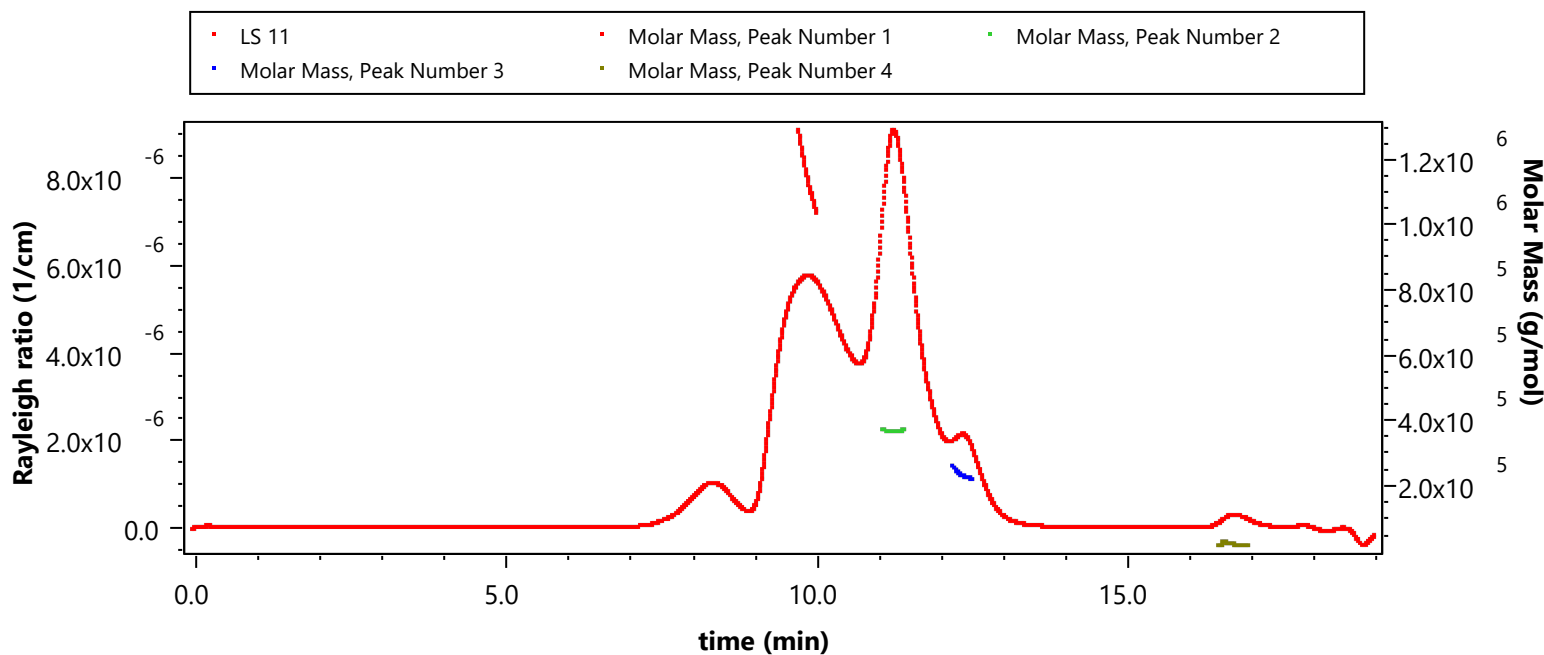
Results Fitting



Distribution Analysis



masses vs volume



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 x 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: Friday, July 10, 2020 11:27:09 AM

Collection Version: 7.1.4.8

Processing Operator: ALAN-TURING\Alan Turing (Alan Turing)

Processing Time: Saturday, July 11, 2020 11:07:51 AM

Despiking Level: Heavy

Peak settings:

Peak Name	Peak 1	Peak 2	Peak 3	Peak 4
Peak Limits (min)	9.684 - 9.991	11.031 - 11.403	12.165 - 12.499	16.419 - 16.921
Light Scattering Model	Zimm	Zimm	Zimm	Zimm
Fit Degree	1	1	1	1
dn/dc (mL/g)	0.1700	0.1700	0.1700	0.1700
dn/dc Ref. Temp. (°C)	25.000	25.000	25.000	25.000
Modifier dn/dc (mL/g)	0.0000	0.0000	0.0000	0.0000
Modifier dn/dc Ref. Temp. (°C)	25.000	25.000	25.000	25.000
A2 (mol mL/g ²)	0.000	0.000	0.000	0.000
UV Ext. Coef. (mL/(mg cm))	0.667	0.667	0.667	0.667
UV Ext. Coef. Ref. Temp. (°C)	25.000	25.000	25.000	25.000
Modifier UV Ext. Coef. (mL/(mg cm))	0.000	0.000	0.000	0.000
Modifier UV Ext. Coef. Ref. Temp. (°C)	25.000	25.000	25.000	25.000
Real Refractive Index	0	0	0	0
Imaginary Refractive Index	0	0	0	0
Shell Thickness (nm)	0.000	0.000	0.000	0.000
Shell Real Refractive Index	0	0	0	0
Shell Imaginary Refractive Index	0	0	0	0
Rod radius (nm)	0.000	0.000	0.000	0.000
Molecular Standard	n/a	n/a	n/a	n/a
Concentration (mg/mL)	2.000	2.000	2.000	2.000
Concentration Ref. Temp. (°C)	25.000	25.000	25.000	25.000
Mn (g/mol)	0.000	0.000	0.000	0.000
Mw (g/mol)	0.000	0.000	0.000	0.000
Mp (g/mol)	0.000	0.000	0.000	0.000
Intrinsic Viscosity (mL/g)	0.000	0.000	0.000	0.000
Intrinsic Viscosity Ref. Temp. (°C)	25.000	25.000	25.000	25.000
Mark-Houwink-Sakurada K (mL/g)	0.000	0.000	0.000	0.000
Mark-Houwink-Sakurada a	0	0	0	0
Flory-Fox Equation Phi Parameter	0	0	0	0
Ptitsyn-Eizner Equation Epsilon Parameter	0	0	0	0
Viscometry Model	Huggins	Huggins	Huggins	Huggins
Huggins Equation Parameter	0	0	0	0
Kraemers Equation Parameter	0	0	0	0
radius (nm)	3.480	3.480	3.480	3.480
Radius Type	rms	rms	rms	rms

Molar Mass & Radius from LS:

Peak Name: Peak 2
Molar Mass: (3.658 ± 0.011) e+5 g/mol
rms radius: 0.0 ± 0.0 nm
Light Scattering Model: Zimm
Fit Degree: 1
Concentration: (1.394 ± 0.004) e-1 mg/mL
dn/dc: 0.171 mL/g
Slice Index: 1378
Abscissa Position: 11.225 min

Fit R²: 0.3833

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	0.989619	none

Results

Peak Results

	Peak 1	Peak 2	Peak 3	Peak 4
Hydrodynamic radius (Q) moments (nm)				
rh(Q)n	12.812 (±5.115%)	6.162 (±3.143%)	9.360 (±10.921%)	31.104 (±36.644%)
Std Dev rh(Q)n	5.916	0.149	17.874	19.472
rh(Q)w	12.856 (±5.111%)	6.162 (±3.143%)	9.737 (±10.937%)	31.687 (±36.371%)
Std Dev rh(Q)w	5.926	0.149	18.356	19.245
rh(Q)z	12.891 (±5.107%)	6.162 (±3.143%)	10.121 (±10.953%)	32.155 (±36.077%)
Std Dev rh(Q)z	5.926	0.149	18.360	19.251
rh(Q)(avg)	10.864 (±1.684%)	6.153 (±0.940%)	2.899 (±3.709%)	2.204 (±12.835%)
General (mL/(mg cm))				
UV Ext. Coef. (mL/(mg cm))	1.425	1.408	1.401	1.660
Masses				
Injected Mass (µg)	100.00	100.00	100.00	100.00
Calculated Mass (µg)	4.46	23.93	8.31	20.75
Mass Recovery (%)	4.5	23.9	8.3	20.8
Mass Fraction (%)	7.8	41.7	14.5	36.1
Concentration (mg/mL)				
Average concentration	0.029 (±0.000%)	0.130 (±0.000%)	0.050 (±0.000%)	0.083 (±0.000%)
Molar mass moments (g/mol)				
Mn	1.137×10 ⁶ (±0.152%)	3.667×10 ⁵ (±0.115%)	2.325×10 ⁵ (±0.364%)	2.088×10 ⁴ (±3.625%)
Mp	1.020×10 ⁶ (±0.228%)	3.666×10 ⁵ (±0.079%)	2.304×10 ⁵ (±0.268%)	2.136×10 ⁴ (±2.645%)
Mv	n/a	n/a	n/a	n/a
Mw	1.142×10 ⁶ (±0.151%)	3.667×10 ⁵ (±0.115%)	2.331×10 ⁵ (±0.363%)	2.107×10 ⁴ (±3.626%)
Mz	1.147×10 ⁶ (±0.337%)	3.667×10 ⁵ (±0.256%)	2.336×10 ⁵ (±0.811%)	2.126×10 ⁴ (±8.133%)
Mz+1	1.151×10 ⁶ (±0.541%)	3.667×10 ⁵ (±0.413%)	2.341×10 ⁵ (±1.304%)	2.144×10 ⁴ (±13.066%)
M(avg)	1.140×10 ⁶ (±0.023%)	3.667×10 ⁵ (±0.016%)	2.328×10 ⁵ (±0.053%)	2.071×10 ⁴ (±0.440%)
Polydispersity				
Mw/Mn	1.004 (±0.214%)	1.000 (±0.162%)	1.002 (±0.514%)	1.009 (±5.127%)
Mz/Mn	1.009 (±0.370%)	1.000 (±0.280%)	1.005 (±0.889%)	1.018 (±8.904%)
rms radius moments (nm)				
rn	17.1 (±5.2%)	3.5 (±86.7%)	8.6 (±55.3%)	32.2 (±70.3%)
Std Dev rn	4.971	7.284	8.930	57.798
rw	17.1 (±5.1%)	3.5 (±87.2%)	8.8 (±52.7%)	34.8 (±62.5%)
Std Dev rw	4.986	7.283	8.894	58.661
rz	17.2 (±5.1%)	3.5 (±87.7%)	9.0 (±50.3%)	37.0 (±57.4%)
Std Dev rz	4.995	7.282	8.851	59.488
r(avg)	17.2 (±0.8%)	6.9 (±4.7%)	10.6 (±6.4%)	53.2 (±3.7%)
Light scattering peak statistics				
Peak Area (1/cm min)	1.787×10 ⁻⁶	1.064×10 ⁻⁵	2.236×10 ⁻⁶	7.302×10 ⁻⁷
Peak Height (1/cm)	5.952×10 ⁻⁶	9.084×10 ⁻⁶	2.166×10 ⁻⁶	4.337×10 ⁻⁷
Retention Time (min)	9.834	11.222	12.318	16.559
Peak Width at Half-Height (min)	0.000	0.000	0.000	0.381

	Peak 1	Peak 2	Peak 3	Peak 4				
Peak Width at Quarter-Height (min)	0.000	0.000	0.000	0.000				
Peak Width at Tenth-Height (min)	0.000	0.000	0.000	0.000				
Peak Width at User-Specified-Height (4.4%, min)	0.000	0.000	0.000	0.000				
Asymmetry Factor	0.000	0.000	0.000	0.000				
Tailing Factor	0.000	0.000	0.000	0.000				
Column Plate Count	0.000	0.000	0.000	10461.431				
Mean (min)	9.837	11.218	12.328	16.663				
Standard Deviation (min)	0.089	0.103	0.095	0.126				
Skew	0.085	-0.676	3.035	41.422				
Peak Area (%)	11.611	69.113	14.531	4.744				
Resolution Relative to Peak 2	0.000	n/a	0.000	16.510				
Refractive index peak statistics								
Peak Area (RIU min)	1.517×10 ⁻⁶	8.137×10 ⁻⁶	2.825×10 ⁻⁶	7.056×10 ⁻⁶				
Peak Height (RIU)	5.398×10 ⁻⁶	2.377×10 ⁻⁵	9.046×10 ⁻⁶	1.798×10 ⁻⁵				
Retention Time (min)	10.059	11.219	12.352	16.658				
Peak Width at Half-Height (min)	0.000	0.000	0.000	0.000				
Peak Width at Quarter-Height (min)	0.000	0.000	0.000	0.000				
Peak Width at Tenth-Height (min)	0.000	0.000	0.000	0.000				
Peak Width at User-Specified-Height (4.4%, min)	0.000	0.000	0.000	0.000				
Asymmetry Factor	0.000	0.000	0.000	0.000				
Tailing Factor	0.000	0.000	0.000	0.000				
Column Plate Count	0.000	0.000	0.000	0.000				
Mean (min)	9.842	11.219	12.333	16.673				
Standard Deviation (min)	0.088	0.103	0.094	0.129				
Skew	-5.781	-0.326	-1.374	0.123				
Peak Area (%)	7.764	41.654	14.460	36.122				
Resolution Relative to Peak 2	0.000	n/a	0.000	0.000				
UV peak statistics								
Peak Area (channel 1) (AU min)	1.272×10 ⁻²	6.740×10 ⁻²	2.328×10 ⁻²	6.891×10 ⁻²				
Peak Area (channel 2) (AU min)	-0.000	-0.000	-0.000	0.000				
Peak Height (channel 1) (AU)	4.706×10 ⁻²	1.944×10 ⁻¹	7.422×10 ⁻²	1.723×10 ⁻¹				
Peak Height (channel 2) (AU)	-0.000	-0.000	-0.000	0.000				
Retention Time (channel 1) (min)	10.093	11.232	12.367	16.665				
Retention Time (channel 2) (min)	9.909	11.466	12.667	17.184				
Peak Width at Half-Height (channel 1) (min)	0.000	0.000	0.000	0.000				
Peak Width at Half-Height (channel 2) (min)	0.000	0.000	0.000	0.000				
Peak Width at Quarter-Height (channel 1) (min)	0.000	0.000	0.000	0.000				
Peak Width at Quarter-Height (channel 2) (min)	0.000	0.000	0.000	0.000				
Peak Width at Tenth-Height (channel 1) (min)	0.000	0.000	0.000	0.000				
Peak Width at Tenth-Height (channel 2) (min)	0.000	0.000	0.000	0.000				
Peak Width at User-Specified-Height (channel 1) (4.4%, min)	0.000	0.000	0.000	0.000				
Peak Width at User-Specified-Height (channel 2) (4.4%, min)	0.000	0.000	0.000	0.000				
Asymmetry Factor (channel 1)	0.000	0.000	0.000	0.000				
Asymmetry Factor (channel 2)	0.000	0.000	0.000	0.000				
Column Plate Count (channel 1)	0.000	0.000	0.000	0.000				
Column Plate Count (channel 2)	0.000	0.000	0.000	0.000				
Tailing Factor (channel 1)	0.000	0.000	0.000	0.000				
Tailing Factor (channel 2)	0.000	0.000	0.000	0.000				
Mean (channel 1) (min)	9.843	11.220	12.337	16.676				
Mean (channel 2) (min)	9.761	11.440	12.301	16.717				
Standard Deviation (channel 1) (min)	0.087	0.105	0.095	0.132				
Standard Deviation (channel 2) (min)	0.030	0.000	0.096	0.136				
Skew (channel 1)	-0.071	-0.012	-0.025	-0.004				
Skew (channel 2)	0.000	-130.385	0.000	-5.930				
Peak Area % (channel 1) (%)	7.381	39.116	13.510	39.994				
Peak Area % (channel 2) (%)	-8.892	-15.857	-25.255	150.004				
Resolution Relative to Peak 2	0.000	0.000	n/a	n/a	0.000	0.000	0.000	0.000
Translational diffusion coefficient moments (cm²/sec)								
Dt(n)	2.76×10 ⁻⁷ (±4.94%)	5.13×10 ⁻⁷ (±3.14%)	8.53×10 ⁻⁷ (±10.39%)	2.76×10 ⁻⁷ (±24.55%)				
Dt(w)	2.75×10 ⁻⁷ (±4.94%)	5.13×10 ⁻⁷ (±3.14%)	8.39×10 ⁻⁷ (±10.40%)	2.57×10 ⁻⁷ (±24.75%)				

	Peak 1	Peak 2	Peak 3	Peak 4
Dt(z)	2.74×10 ⁻⁷ (±4.93%)	5.13×10 ⁻⁷ (±3.14%)	8.25×10 ⁻⁷ (±10.42%)	2.41×10 ⁻⁷ (±24.94%)
Dt(avg)	2.18×10 ⁻⁷ (±1.79%)	5.13×10 ⁻⁷ (±0.94%)	7.23×10 ⁻⁸ (±7.16%)	8.44×10 ⁻⁸ (±9.06%)

laser monitor average: 0.999 V

Forward Monitor Average: 0.936 V

laser current average: 0.156 amps

laser voltage average: -226305.669 V

rms conformation plot slope: -0.30 (±2.54%) log(nm)/log(g/mol)

rms Conformation Plot y-intercept: 3.046 (±1.491%) log(nm)

rh(Q) conformation plot slope: 0.337 (±3.917%) log(nm)/log(g/mol)

rh(Q) Conformation Plot y-intercept: -1.054 (±7.084%) log(nm)

rms radius vs. rh(Q) plot slope: 0.495 (±1.778%) rms radius vs. rh(Q) plot slope

rms radius vs. rh(Q) Plot y-intercept: 9.455 (±2.168%) log(nm)