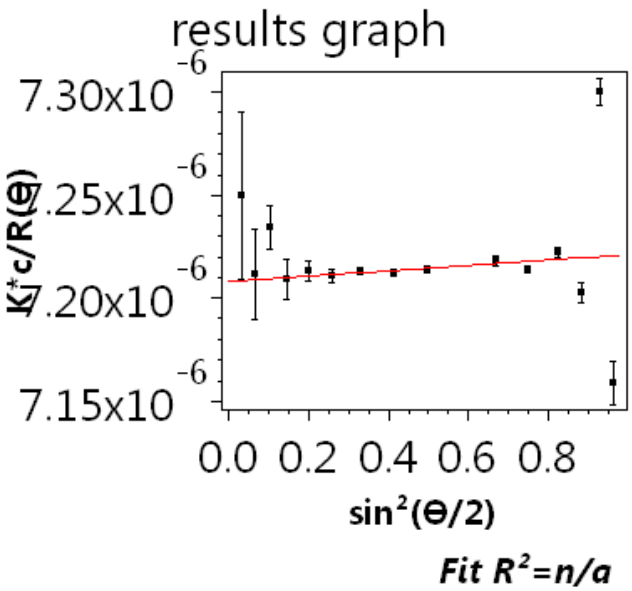
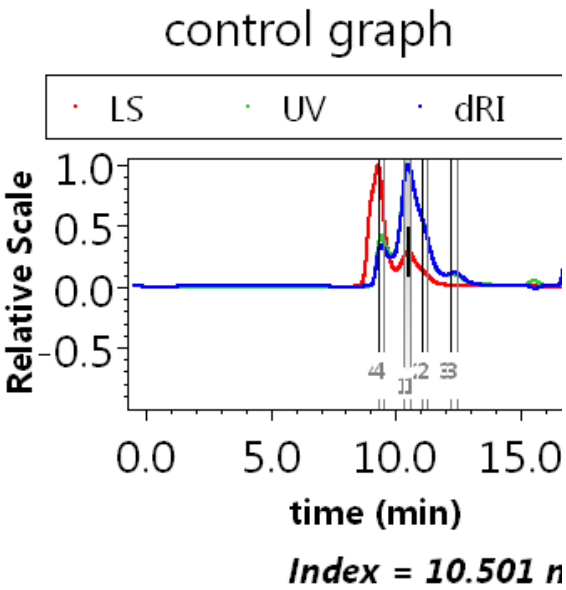
ASTRA Report Nsp12 + Nsp7_Nsp8 mgcl2[052220_COVID_5]

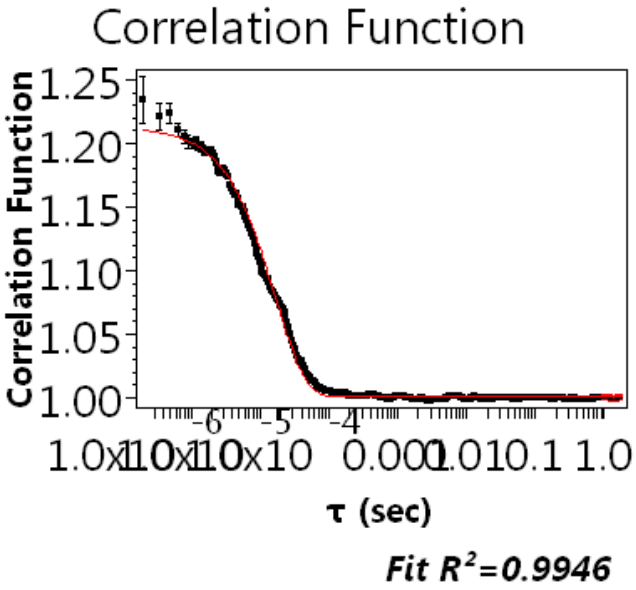
File Properties

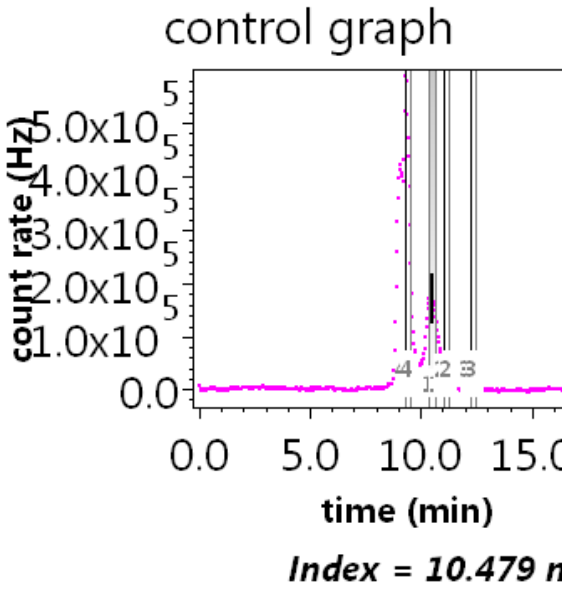
File Name: \\psf\Home\Documents\COVID19\NSP12_NSP7_NSP8complex\nsp12_7_8stock_052220\Nsp12 + Nsp7_Nsp8 mgcl2[052220_COVID_5].afe7
Created: May 25, 2020 10:26:21.000

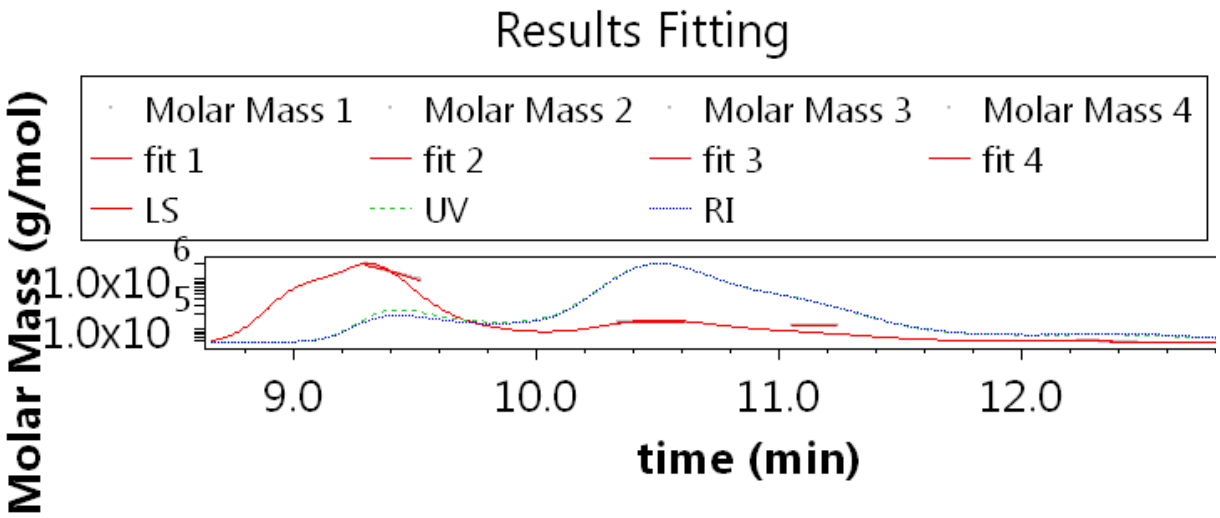
Sample: Nsp12 + Nsp7_Nsp8 mgcl2
dn/dc: 0.1750 mL/g
Concentration: 2.000 mg/mL



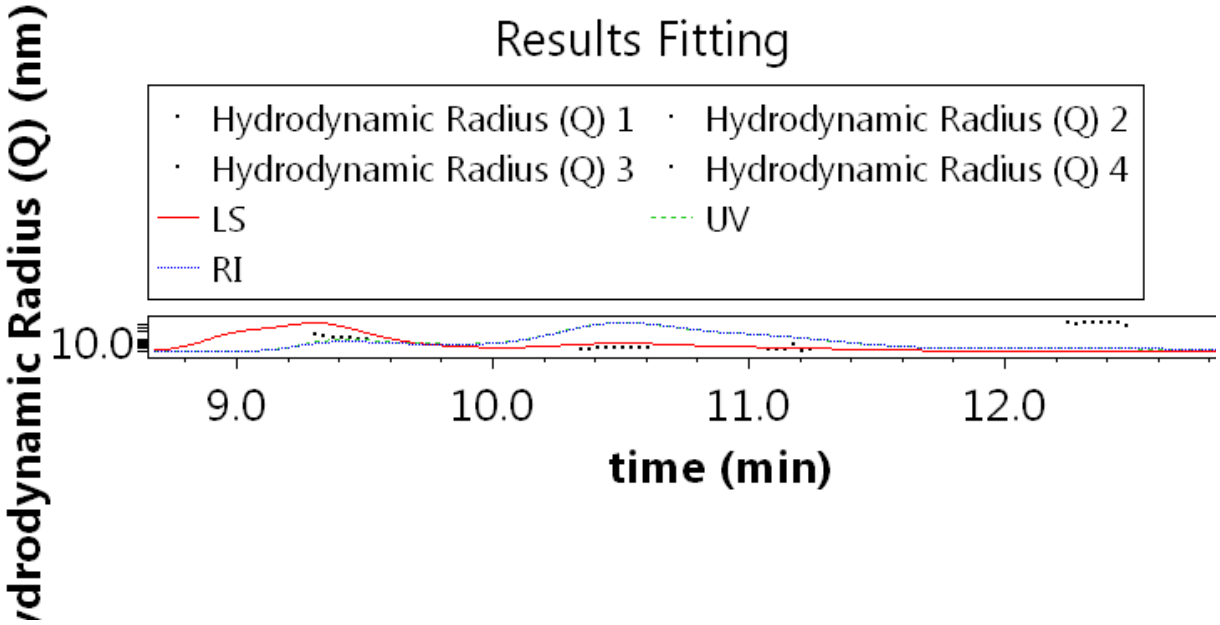








usted R^2=0.9831; Peak 3 Fit Adjusted R^2=0.6777; Peak 4 Fit Adjusted R^2=0.9



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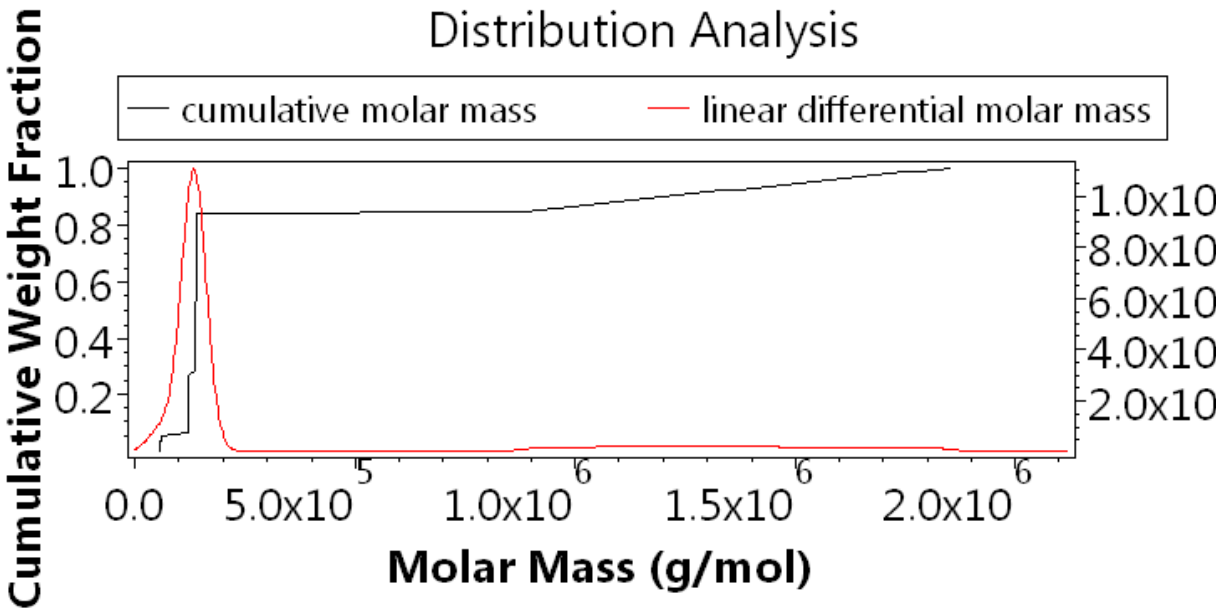

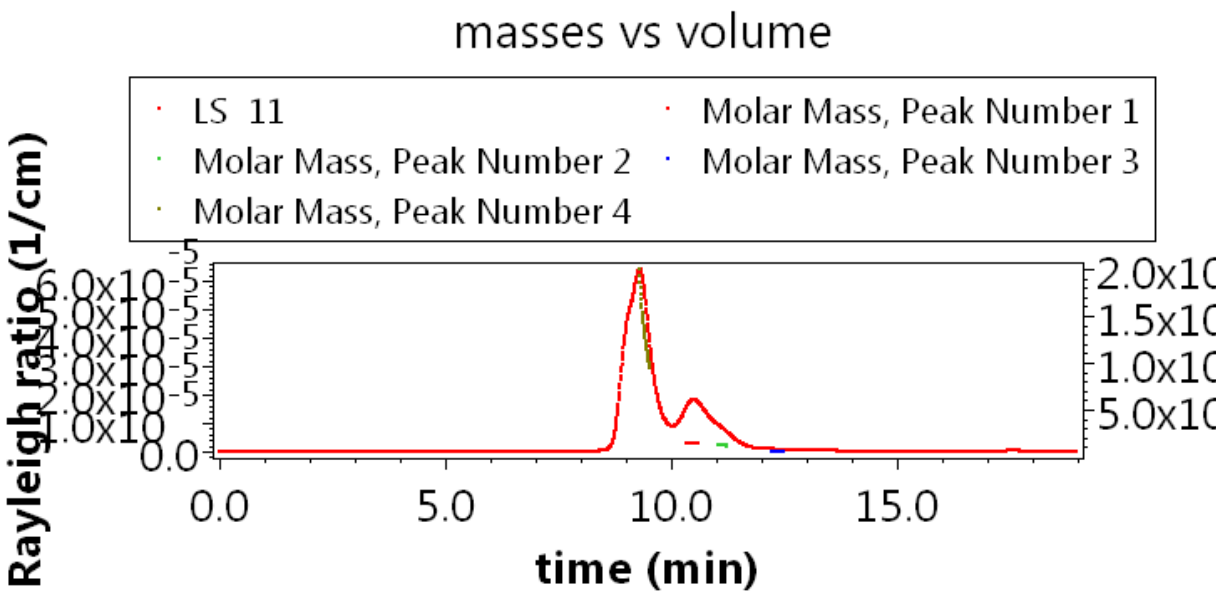

Configuration

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	0.008
DAWN HELEOS	Optilab rEX	0.239

Aux Connections

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Processing

Collection Operator: MICHAELFARADAY\Michael Faraday (MICHAELFARADAY\Michael Faraday (Michael Faraday))
Collection Time: Friday, May 22, 2020 11:59:29 AM
Collection Version: 7.1.4.8
Processing Operator: MHAMMEL0242\michalhammel (michalhammel)
Processing Time: Monday, May 25, 2020 10:36:16 AM
Despiking Level: Heavy

Peak settings:

Peak Name	Peak 1	Peak 2	Peak 3	Peak 4
Peak Limits (min)	10.333- 10.621	11.052- 11.250	12.230- 12.482	9.294- 9.529
Light Scattering Model	Zimm	Zimm	Zimm	Zimm
Fit Degree	1	1	1	1
dn/dc (mL/g)	0.1750	0.1750	0.1750	0.1750
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 1
Molar Mass: (1.387 ± 0.002) e+5 g/mol
rms radius: 2.9 ± 1.6 nm
Light Scattering Model: Zimm
Fit Degree: 1
Concentration: (6.980 ± 0.009) e-1 mg/mL
dn/dc: 0.176 mL/g
Slice Index: 1284
Abscissa Position: 10.501 min
Fit R^2: n/a
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	0.607763	none

Results

Peak Results

	Peak 1	Peak 2	Peak 3	Peak 4
Hydrodynamic radius (Q) moments (nm)				
rh(Q)n	4.048 (±2.713%)	3.773 (±3.629%)	43.726 (±16.030%)	10.542 (±1.587%)
Std Dev rh(Q)n	0.259	0.774	3.268	1.636
rh(Q)w	4.047 (±2.715%)	3.772 (±3.627%)	43.756 (±16.026%)	10.875 (±1.593%)
Std Dev rh(Q)w	0.259	0.773	3.213	1.716
rh(Q)z	4.046 (±2.717%)	3.772 (±3.624%)	43.785 (±16.023%)	11.213 (±1.598%)
Std Dev rh(Q)z	0.259	0.773	3.213	1.749
rh(Q)(avg)	4.091 (±0.863%)	3.466 (±1.382%)	42.660 (±5.618%)	10.402 (±0.607%)
General (mL/(mg cm))				
UV Ext. Coef. (mL/(mg cm))	1.123	1.155	0.981	1.372
Masses				
Injected Mass (µg)	100.00	100.00	100.00	100.00
Calculated Mass (µg)	96.97	34.45	9.96	26.52
Mass Recovery (%)	97.0	34.5	10.0	26.5
Mass Fraction (%)	57.8	20.5	5.9	15.8
Concentration (mg/mL)				
Average concentration	0.670 (±0.000%)	0.357 (±0.000%)	0.078 (±0.000%)	0.224 (±0.000%)
Molar mass moments (g/mol)				
Mn	1.388×10^5 (±0.080%)	1.217×10^5 (±0.359%)	5.830×10^4 (±1.521%)	1.297×10^6 (±0.971%)
Mp	1.387×10^5 (±0.043%)	1.234×10^5 (±0.467%)	5.826×10^4 (±1.106%)	1.301×10^6 (±0.659%)
Mv	n/a	n/a	n/a	n/a
Mw	1.388×10^5 (±0.080%)	1.217×10^5 (±0.358%)	5.834×10^4 (±1.515%)	1.357×10^6 (±0.883%)
Mz	1.388×10^5 (±0.180%)	1.218×10^5 (±0.801%)	5.837×10^4 (±3.382%)	1.416×10^6 (±1.927%)
Mz+1	1.388×10^5 (±0.290%)	1.218×10^5 (±1.291%)	5.841×10^4 (±5.442%)	1.470×10^6 (±2.939%)
M(avg)	1.388×10^5 (±0.011%)	1.218×10^5 (±0.068%)	5.844×10^4 (±0.257%)	1.343×10^6 (±0.155%)
Polydispersity				
Mw/Mn	1.000 (±0.114%)	1.000 (±0.507%)	1.001 (±2.147%)	1.047 (±1.312%)
Mz/Mn	1.000 (±0.197%)	1.000 (±0.878%)	1.001 (±3.709%)	1.092 (±2.158%)
rms radius moments (nm)				
rn	3.0 (±155.7%)	16.1 (±19.9%)	44.0 (±13.2%)	20.7 (±3.1%)
Std Dev rn	5.428	4.619	15.419	10.741
rw	3.0 (±157.1%)	16.1 (±19.9%)	44.0 (±13.2%)	21.2 (±2.9%)
Std Dev rw	5.426	4.616	15.376	11.089
rz	3.0 (±158.4%)	16.1 (±19.9%)	43.9 (±13.2%)	21.8 (±2.7%)

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	Peak 1	Peak 2	Peak 3	Peak 4				
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)	10.479	11.147	12.354	9.400				
Standard Deviation (min)	0.081	0.056	0.071	0.067				
Skew	-1.508	7.473	4.229	4.838				
Peak Area (%)	46.732	15.197	2.913	35.158				
Resolution Relative to Peak 2	0.000	n/a	0.000	0.000				
Refractive index peak statistics								
Peak Area (RIU min)	3.394×10^{-5}	1.206×10^{-5}	3.485×10^{-6}	9.283×10^{-6}				
Peak Height (RIU)	1.225×10^{-4}	9.639×10^{-5}	1.400×10^{-5}	4.142×10^{-5}				
Retention Time (min)	10.505	10.335	12.363	9.431				
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)	10.482	11.146	12.357	9.412				
Standard Deviation (min)	0.082	0.055	0.073	0.067				
Skew	-0.602	2.500	-0.237	-1.501				
Peak Area (%)	57.752	20.520	5.930	15.798				
Resolution Relative to Peak 2	0.000	n/a	0.000	0.000				
UV peak statistics								
Peak Area (channel 1) (AU min)	2.177×10^{-1}	7.958×10^{-2}	1.954×10^{-2}	7.280×10^{-2}				
Peak Area (channel 2) (AU min)	0.000	0.000	0.000	0.000				
Peak Height (channel 1) (AU)	7.938×10^{-1}	5.830×10^{-1}	7.863×10^{-2}	3.297×10^{-1}				
Peak Height (channel 2) (AU)	0.000	0.000	0.000	0.000				
Retention Time (channel 1) (min)	10.505	10.497	12.324	9.431				
Retention Time (channel 2) (min)	10.006	11.006	12.369	9.415				
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)	10.478	11.147	12.358	9.415				
Mean (channel 2) (min)	10.474	11.149	12.356	9.411				
Standard Deviation (channel 1) (min)	0.081	0.056	0.073	0.067				
Standard Deviation (channel 2) (min)	0.083	0.057	0.072	0.068				
Skew (channel 1)	-0.007	0.031	0.014	-0.019				
Skew (channel 2)	0.430	0.965	1.109	-0.110				
Peak Area % (channel 1) (%)	55.880	20.423	5.014	18.684				
Peak Area % (channel 2) (%)	31.230	21.417	15.438	31.915				
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)	7.82×10^{-7} (±2.78%)	8.64×10^{-7} (±3.39%)	7.26×10^{-8} (±15.90%)	3.05×10^{-7} (±1.58%)				
Dt(w)	7.82×10^{-7} (±2.78%)	8.64×10^{-7} (±3.39%)	7.25×10^{-8} (±15.90%)	2.97×10^{-7} (±1.59%)				
Dt(z)	7.82×10^{-7} (±2.78%)	8.64×10^{-7} (±3.39%)	7.25×10^{-8} (±15.90%)	2.88×10^{-7} (±1.59%)				
Dt(avg)	7.63×10^{-7} (±0.86%)	8.57×10^{-7} (±1.39%)	7.23×10^{-8} (±5.61%)	2.81×10^{-7} (±0.61%)				

laser monitor average: 0.999 V
Forward Monitor Average: 0.932 V
laser current average: 0.156 amps
laser voltage average: -226034.428 V
rms conformation plot slope: -0.08 (±8.63%) log(nm)/log(g/mol)
rms Conformation Plot y-intercept: 1.843 (±2.210%) log(nm)
rh(Q) conformation plot slope: 0.413 (±0.971%) log(nm)/log(g/mol)
rh(Q) Conformation Plot y-intercept: -1.500 (±1.535%) log(nm)
rms radius vs. rh(Q) plot slope: 0.850 (±1.268%) rms radius vs. rh(Q) plot slope
rms radius vs. rh(Q) Plot y-intercept: 7.502 (±3.365%) log(nm)