GPC Application Note #4

Advanced GPC Analysis of Dextran

Dextran is a complex branched glucan (polysaccharide derived from the condensation of glucose). Dextran is produced from sucrose by lactic acid bacteria. Its structure primarily depends upon the family and species of the bacterium, as well as the strain. Dextran is an important product used in medicine to reduce blood viscosity and as a volume expander in hypovolemia. It is also used in eye drops as a lubricant, in coatings to protect metal nanoparticles from oxidation, and as a microcarrier for industrial cell culture. The purpose of this App Note is to demonstrate the repeatability of this HMJ Advanced GPC Method. The samples were analyzed using a Malvern Triple Detector GPC system. The analysis conditions are listed below.

Solvent	0.05M Na_2SO_4		Sample Conc	2 mg/mL
Columns	2 X Shodex LB-806M HQ		Dissolution Temp	25C
Flow Rate	1 mL/min		Dissolution Time	60 Minutes
Column Temp	30C		Sample Filtration	0.2 um Nylon

Figure: Triple Chromatogram of Dextran 69K Sample

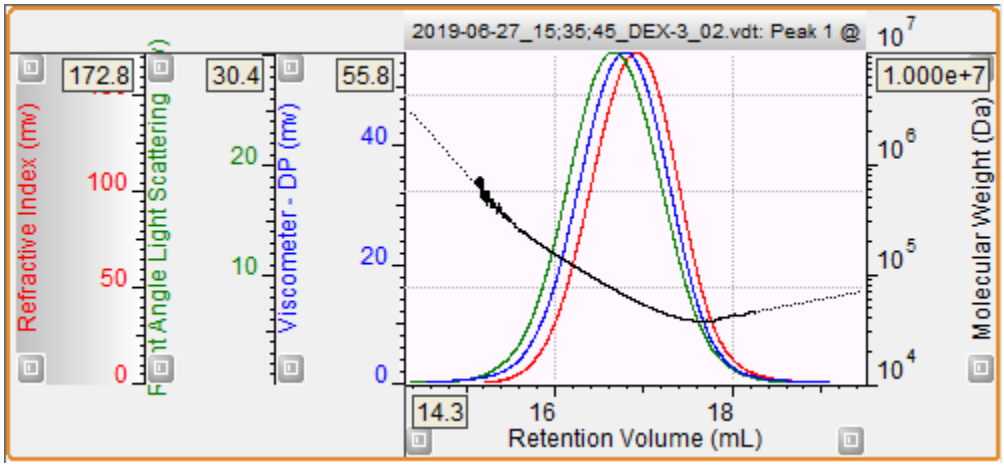

Table 2: Summary of Analysis of Dextran Standards

Analytical Results	Runs	dn/dc	Mw	Mn	IV	mg/vial
Dextran-69K AVG	6	0.147	68,991	57,644	0.258	23.40
SD			220	163	0.003	0.20
RSD			0.32%	0.28%	1.03%	0.84%

The results show consistent MWD and IV data for the Dextran 69K samples.