GPC Application Note #10

Advanced GPC Analysis of Chitosan

Chitosan is a linear polysaccharide that is obtained from the hard outer skeleton of shellfish, including crab, lobster, and shrimp. It is widely used in pharmaceutics, foods, cosmetics and various medical applications. Its fibrous property seems to block absorption of dietary fat and cholesterol. When used on wounds, chitosan helps blood to clot. The MWD and IV are key process control parameters in the production of chitosan. The following 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	Shodex SB-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 a Chitosan sample

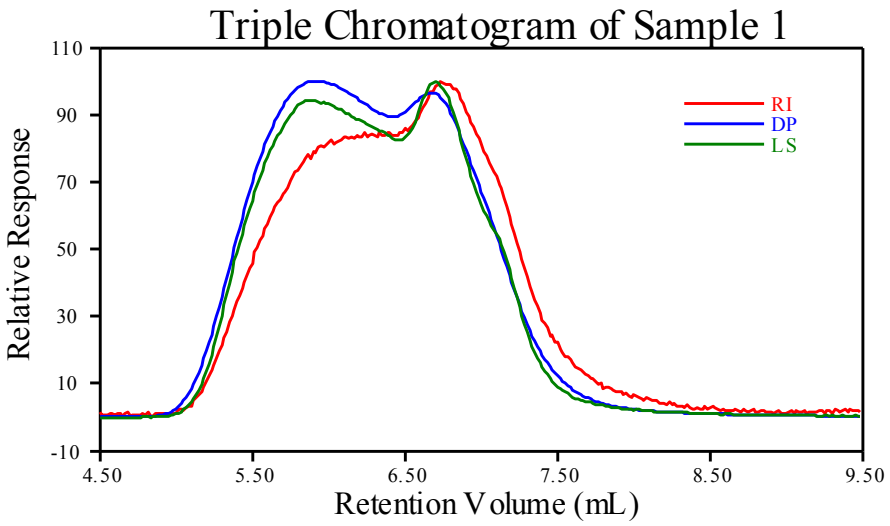

Table: Analysis Summary of two Chitosan samples

	Mw	Mn	IV (dL/g)			Mw	Mn	IV (dL/g)
Chitosan-1A	938,600	676,800	13.30		Chitosan-2A	646,300	134,500	8.67
Chitosan-1B	926,500	677,900	13.19		Chitosan-2B	678,900	147,500	8.72
PEO-3	932,550	677,350	13.24		PEO-7	681,600	141,000	8.69

The results show consistent MWD and IV data for Chitosan samples.