PARTICLE SIZE ANALYSIS OF PROTEIN (Lysozyme: 0.1 mg/mL)

Summary

Lysozyme is an enzyme found in chicken egg-whites, tears, saliva and other secretions. It protects eggs, eyes, and mouths from microbial infections. In the industrial field, lysozyme is extracted from egg-whites and used in food and medical products. Its has a molecular weight of 14.7 kDa, isoelectric point of 11 to 11.5, optimum pH of around 5, and optimum temperature of 50 degrees C.

Lysozyme has a diameter of 3 to 5 nm (see Fig. 1).

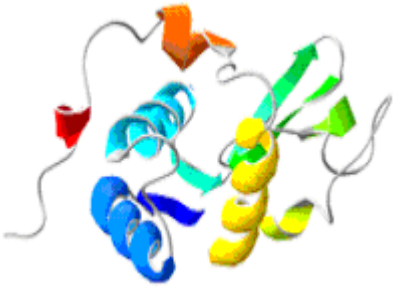

Fig. 1: The three-dimensional structure of lysozyme

Analytical Test Method

Instrument:	SZ-100 nano Partica
Temperature:	25 ± 0.3 degrees C
Sample:	Lysozyme (MP Biomedicals Inc.) added to aqueous solution of acetic acid (pH = 4)
Sample refractive index:	1.60
Dispersion medium refractive index:	1.333
Ditribution notation:	Volumetric basis
Concentration:	0.1 mg/mL

The average diameter of lysozyme as measured with the SZ-100 was 4.57 nm (see Fig. 2). Reproducibility was good, with the coefficient of variation (CV) of 1.27 (see Table 1).

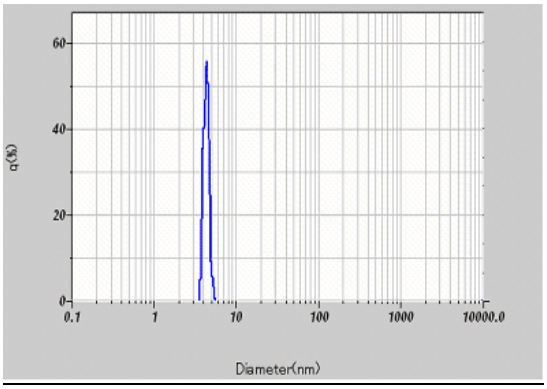

Fig. 2: Lysozyme particle size distribution measurement

Table 1: Lysozyme measurement reproducibility

	Average particle size (nm)
1	4.6
2	4.5
3	4.6
Average	4.57
Standard deviation	0.058
CV (%)	1.27

Applications Data Sheet

Lysozyme

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