



## Zeta Potential Measurement of Lysozyme

### Overview

Lysozyme is an enzyme predominately present in egg white, tears or saliva secretion. Its enzymatic properties prevent egg, eyes & mouth from microbial infection. Lysozyme is industrially produced (from white part of egg, albumin) and practically used by various products such as food commodities and medicines.

Physical properties: MW: 14,307, pI: 11.1~11.4, optimum pH: 5.0, optimum temp: 50°C (Fig:1)

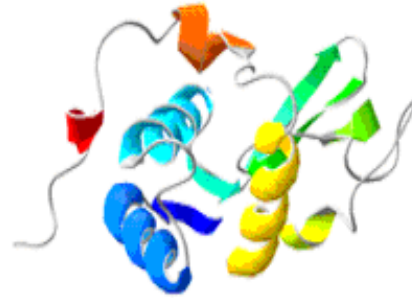


Fig 1. 3D image of Lysozyme

Source: free encyclopedia 『Wikipedia』  
(2009/08/21)

### Method

Analyzer: SZ-100

Temperature: 25.0 degree C

Sample: Lysozyme, 100 mg/mL, pH 3.8

Dispersion medium: Pure water

### Result

Preparation of lysozyme was executed using pure water. Sample pH was 3.8. The particle distribution measurement result showed that the mean distribution is of 2.0 nm (Fig 2). Next step, Zeta potential measurement was performed, Zeta potential was +16.3 mV (Fig 3).

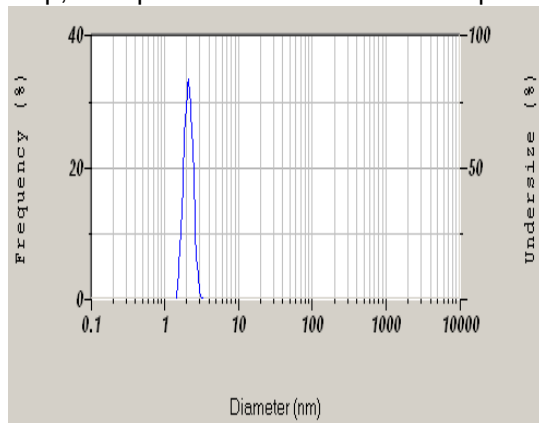


Fig 2. Particle Diameter of Lysozyme

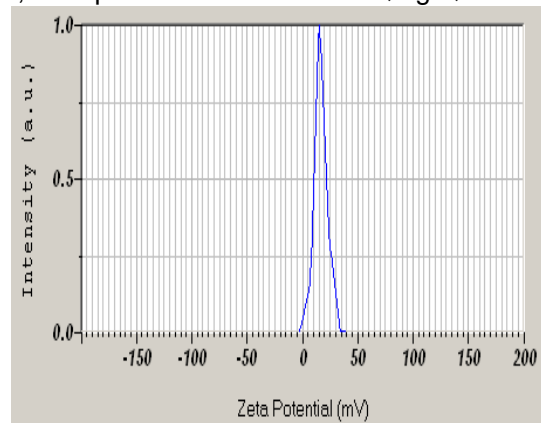


Fig 3. Zeta potential of Lysozyme

### Conclusion

To confirm the possibility of Zeta potential measurement of smallest particle, Lysozyme has been chosen. Measurement results indicate 2.0 nm particle's Zeta potential measurement is successfully executed using HORIBA's SZ-100 nano partica series. In the similar way, Zeta potential of other nano particles including nano proteins can be measured using HORIBA's nano partica.