

Product Data Sheet

Product Name: Lysozyme from chicken egg white

Cat. No.: GC33922

Chemical Properties

Cas. No. 12650-88-3

Formula

M.Wt

Solubility Water : 10 mg/mL

Storage -20°C, protect from light

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

Lysozyme(chicken egg white)

Background

Lysozyme from chicken egg white is a glycoside hydrolase with bactericidal and bacteriostatic properties [1]. Lysozyme hydrolyzes the $\beta(1-4)$ glycosidic linkage between N-acetylmuramic acid and N-acetylglucosamine found in the peptidoglycan layer of the bacterial cell wall, causing cell lysis [2]. Lysozyme can be used in the cheese-making process to inhibit the growth of spoilage bacteria, preventing various types of cheese from experiencing deterioration in texture, bloating, and off-odors [3]. Lysozyme is widely used as a cell-disrupting agent for the extraction of bacterial intercellular products and as an antibacterial agent in ophthalmologic preparations [4].

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Suitable pH: 5.3-6.4. Source: Egg white. Properties: Powder.

Lysozyme is a single peptide chain composed of 129 amino acid residues of 18 types, rich in basic amino acids. Lysozyme contains four disulfide bonds that maintain the enzyme's conformation. Lysozyme is a basic protein with lysine at the N-terminus and leucine at the C-terminus. Lysozyme is a C-type lysozyme and is known to be the most heat-resistant lysozyme.

Definition of Enzyme Activity: a lysozyme activity unit is defined as the 25°C, pH 6.2, under the condition of using gambogic micrococcus suspension at 450nm absorbance change of 0.001 per minute required amount of lysozyme.

Solubility: 0.1M phosphate buffer (pH 6.2), 20mg/ml. Storage conditions: 2-8°C. Purpose: Lysozyme is a kind of alkaline mucopolysaccharide enzyme that hydrolyzes pathogenic bacteria. Lysozyme's primary mechanism involves breaking the β -1,4 glycosidic bonds between N-acetylmuramic acid and N-acetylglucosamine in the bacterial cell wall, thereby decomposing insoluble mucopolysaccharides into soluble glycopeptides, which leads to cell wall rupture, leakage of cellular contents, and bacterial lysis. Lysozyme can directly bind to negatively charged viral proteins, forming complexes with DNA, RNA, and apoproteins, thereby inactivating viruses. Lysozyme is capable of lysing Gram-positive bacteria such as *Micrococcus lysodeikticus*, *Bacillus megaterium*, and *Sarcina lutea*.

References:

- [1] Shahmohammadi A. Lysozyme separation from chicken egg white: a review[J]. European Food Research and Technology, 2018, 244(4): 577-593.
- [2] Banerjee P, Keener K M, Lukito V D. Influence of carbon dioxide on the activity of chicken egg white lysozyme[J]. Poultry science, 2011, 90(4): 889-895.
- [3] Khorshidian N, Khanniri E, Koushki M R, et al. An overview of antimicrobial activity of lysozyme and its functionality in cheese[J]. Frontiers in nutrition, 2022, 9: 833618.
- [4] Su C K, Chiang B H. Partitioning and purification of lysozyme from chicken egg white using aqueous two-phase system[J]. Process Biochemistry, 2006, 41(2): 257-263.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA