

## Lysozyme from chicken egg white

Cat. No.:	HY-B2237	
CAS No.:	12650-88-3	
Target:	Bacterial; HIV	
Pathway:	Anti-infection	Lysozyme(chicken egg white)
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.	

### SOLVENT & SOLUBILITY

In Vitro	H <sub>2</sub> O : 10 mg/mL (Need ultrasonic and warming)
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### BIOLOGICAL ACTIVITY

Description	Lysozyme from chicken egg white is a bactericidal enzyme, and it lyses gram-positive bacteria. Lysozyme from chicken egg white can also be used for the research of HIV infection and pulmonary emphysema <sup>[1][2][3]</sup> .
IC <sub>50</sub> & Target	Bacteria <sup>[1]</sup>
In Vitro	<p>Lysozyme is an ubiquitous enzyme. The hen egg is the most abundant source of Lysozyme, which constitutes approximately 3.4% of the albumen proteins. Lysozyme is a natural antimicrobial that hydrolyzes the β(1-4) glycosidic linkage between N-acetylmuramic acid and N-acetylglucosamine found in the peptidoglycan layer of the bacterial cell wall and causing cell lysis. The bactericidal effect of Lysozyme is primarily limited to gram-positive bacteria, including pathogens such as <i>Listeria monocytogenes</i> and certain <i>Clostridium</i> species as well as some spoilage organisms, including thermophilic spore-forming bacteria and certain yeasts. The gram-negative bacteria are more resistant to Lysozyme action because of their complex cell wall structure<sup>[1]</sup>.</p> <p>Lysozyme (1 mg/mL) impairs the ability of hyaluronan (HA) to prevent elastase injury to elastic fibers<sup>[3]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>Syrian hamsters exposed to aerosolized Lysozyme (20 mg in 20 ml of water; 50 min) prior to elastase administration shows significantly increased airspace enlargement<sup>[3]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

### PROTOCOL

Kinase Assay <sup>[1]</sup>	For measurement of lytic activity in egg white at each pH, temperature, and CO <sub>2</sub> condition, eggs are randomly selected from a flat of eggs (2 dozen eggs) obtained from a local grocery store. To determine the amount of egg white to be added to obtain a 0.001% lysozyme concentration, it is documented that chicken egg white contains approximately 3.4% lysozyme. For determining egg white activity, 0.030 g of albumen was added to 100 mL of the buffered solutions. This equated to a
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concentration of approximately 0.001% lysozyme. In addition, the egg white contains other antimicrobial proteins that are naturally present, as mentioned in the Introduction section<sup>[1]</sup>.

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## CUSTOMER VALIDATION

- Appl Surf Sci. 2020, 145332.
- iScience. 9 October 2022, 105311.
- Pharmaceutics. 2023 Mar 20.
- J Drug Deliv Sci Technol. 21 July 2021, 102714.
- STAR Protoc. 2023 Jun 21;4(3):102358.

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## REFERENCES

[1]. Jing T, et al. Magnetic molecularly imprinted nanoparticles for recognition of lysozyme. Biosens Bioelectron. 2010 Oct 15;26(2):301-6.

[2]. Cantor JO, et al. The effect of lysozyme on elastase-mediated injury. Exp Biol Med (Maywood). 2002 Feb;227(2):108-13.

[3]. Banerjee P, et al. Influence of carbon dioxide on the activity of chicken egg white lysozyme. Poult Sci. 2011 Apr;90(4):889-95.

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

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