

Catalog Number: 100831, 100834, 191335, 195303

Lysozyme

CAS # : 9001-63-2

Synonym: Muramidase

Physical Appearance: White to off white lyophilized crystalline powder

Description: Lysozyme (muramidase) hydrolyzes preferentially the β -1,4 glucosidic linkages between N-acetylmuramic acid and N-acetylglucosamine which occur in the mucopeptide cell wall structure of certain microorganisms, such as *Micrococcus lysodeikticus*.

In humans, Osserman, et al.¹⁴ have indicated that lysozyme may be the mediator in the anti-tumor function of macrophages which, it has been shown, secrete the enzyme.⁸ There is evidence that cartilage lysozyme has a role in cartilage calcification.¹²

The enzyme has been used for lysing *E. coli* and *Streptomyces* for extraction purposes⁹ such as extracting group specific antigen.¹⁸ It would appear that lysozyme may act as a germinative agent of bacterial spores.^{2,7}

Molecular weight: 14,388 (Chicken¹¹); 17,000 (human).

Optimum pH: 9.2.⁵

Extinction coefficient: = 26.4.³

Isoelectric point: pH 11.0.¹

Inhibitors: The enzyme is inhibited by surface-active reagents such as dodecyl sulfate, alcohols and fatty acids.¹⁷ Imidazole and indole derivatives are inhibitors via formation of charge-transfer complexes.¹⁵

Stability: Solutions at pH 4-5 are stable for several weeks refrigerated and for days at ambient temperatures.

Assay: Mintz, et al.¹³ describe a sensitive fluorimetric assay.

Unit Definitions:

From Chicken: One unit will cause a decrease in A450 of 0.001 per minute at pH 6.24 and 25°C using *Micrococcus lysodeikticus* as substrate.

*Shugar Unit:*¹⁶ One unit is defined as the amount of enzyme that will digest powdered cells of *Micrococcus lysodeikticus*, causing a decrease in absorbancy of 0.001 per minute at 37°C, pH 7.0

Availability:

Catalog Number	Description	Size
100831	Lysozyme, from chicken egg white, 3X crystallized; Activity: 20,000 - 25,000 units/mg protein	100 mg 500 mg 1 g 5 g 10 g 25 g 100 g
100834	Lysozyme, from chicken egg white, 2X crystallized; Activity: > 9,000 units/mg protein	1 g 5 g 10 g
195303	Lysozyme, from chicken egg white, Type VI, 3X crystallized; Activity: ~60,000 units/mg protein	1 g 5 g 25 g
191335	Lysozyme, from human neutrophils; Activity: ~30,000 Shugar units/mg protein	100 ug

References:

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