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## TECHNICAL INFORMATION

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 b-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.<sup>14</sup> have indicated that lysozyme may be the mediator in the anti-tumor function of macrophages which, it has been shown, secrete the enzyme.<sup>8</sup> There is evidence that cartilage lysozyme has a role in cartilage calcification.<sup>12</sup> The enzyme has been used for lysing *E. coli* and *Streptomyces* for extraction purposes<sup>9</sup> such as extracting group specific antigen.<sup>18</sup> It would appear that lysozyme may act as a germinative agent of bacterial spores.<sup>2,7</sup>

**Molecular weight**: 14,388 (Chicken<sup>11</sup>); 17,000 (human).

**Optimum pH**: 9.2.<sup>5</sup>

**Extinction coefficient**: = 26.4.<sup>3</sup>

**Isoelectric point**: pH 11.0.<sup>1</sup>

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

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

**Assay**: Mintz, et al.<sup>13</sup> 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**:<sup>16</sup> 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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