

Ovalbumin

Product Information

- Cat.number :** R5851A, 1g R5851B, 5g.
Other sizes available on inquire
- Product :** **Ovalbumin**, from Hen Egg, High purity
Synonyms: **Albumin from hen egg white**, L-Ovalbumin
MW: 44287 Da (calc.) ; CAS Number: 9006-59-1
Lyophilized powder, >98% pure, biotech grade
purified by crystallization (grade V), essentially free of salt
MDL number: MFCD00130424 ; EG/EC Number: 232-692-7
Safety: F 3-10 ; WGK Germany 2 ; RTECS AY9384000
- Storage:** Store at +4°C (or -20°C for long term) (M)
Stability exceed 1 year (has been shown stable up 3 years)
Warm to room temperature before opening.

Technical information

- **Structure:**
- Ovalbumin is a **glycoprotein** found in egg white (60-65% of the total protein). It has a molecular weight of 45 000 Da ([Perlmann 1952](#)) and consists of a polypeptide with up to two phosphate groups per mole and a side chain of mannose and glucosamine residues. It displays homology to the serpin superfamily, but is non-inhibitory serpin of fibrinolysis and coagulation. Its function is unknown, although it is presumed to be a storage protein.
In electrophoresis ovalbumin is isoelectric at pH 4.6 but there are three components in the crystalline preparation. It appears that this electrophoretic separation is due to differences in the phosphorus content of ovalbumin, the main component having two atoms of phosphorus/mole protein, the second, one atom, and the third minor fraction no phosphorus ([Perlmann 1952](#)). This was demonstrated by treating ovalbumin with phosphatases and measuring the electrophoretic changes, and by enzymatic proteolysis ([Linderstrom-Lang 1947](#)).
[Nichol 1985](#) reports a study of the shape of the ovalbumin molecule. See review by [Warner 1954](#).
There is a C-terminal amino acid residue (proline) ([Niu 1953](#)), and the N-terminal sequence was found to be: N-acetyl-Gly-Ser-Gly-Leu-Ala ([Narita 1962](#)).
There is one disulfide bond ([Warner 1954](#)).
The carbohydrate is linked to the protein through an aspartic acid carboxyl group and were able to purify the glycopeptides ([Nuenke 1961](#)).
Data indicates that the prosthetic group contains five mannose and three acetylglucosamine residues attached to aspartic acid at the glucosamine ([Bogdanov 1962](#)).
- Ovalbumin is soluble up 50mg/ml in water, giving a clear or yellowish solution.
- **Applications:**
- Ovalbumin is used as an antigenic **carrier protein** to create immunoconjugates with peptides that are injected to animals for immunization (taking to good account ovalbumin's immunogenic property), or more often as a **control carrier in immunoassays** to monitor the immunization obtained with haptens conjugated to HLH or BSA, notably to discriminate anti carrier antibodies.
- Ovalbumin is also used as a control protein (**molecular weight marker, irrelevant protein...**) in several assays, and for research purposes (protein interactions...).

FT-R5851B

Literature

- Ahmad, F., and Salahuddin, A.: The Denatured State of Ovalbumin, *Biochem. J.*, 128, 49P (1972).
- Ambrosino, R., Barone, G., Castronuovo, G., Ceccarini, C., Cultrera, O., and Elia, V.: Protein-Ligand Interaction. A Calorimetric Study of the Interaction of Oligosaccharides and Hen Ovalbumin Glycopeptides with Concanavalin A, *Biochem.*, 26, 3971 (1987).
- Ansari, A., Ahmad, R., and Salahuddin, A.: The Native and Denatured States of Ovalbumin, *Biochem. J.*, 126, 447 (1972).
- Ansari, A., Kidwai, S., and Salahuddin, A.: Acetylation of Amino Groups and Its Effect on the Conformation and Immunological Activity of Ovalbumin, *J. Biol. Chem.*, 250, 1625 (1975).
- Batra, P.: Conformational Stability of Citraconylated Ovalbumin, *Intl. J. Biochem.*, 23, 1375 (1991).
- Caslavska, J., Gebauer, P., and Thormann, W.: Purification of Ovalbumin and Lysozyme from a Commercial Product by Recycling Isotachopheresis, *J. Chromatography*, 585, 145 (1991).
- Conchie J., Hay A., Strachan I., and Levvy G.: The Enzymatic Degradation of Ovalbumin and Its Glycopeptides, *Biochem. J.*, 115, 717 (1969).
- Cunningham L., Ford J., and Rainey J.: Heterogeneity of [[beta]]-Aspartyl-Oligosaccharides Derived from Ovalbumin, *Biochim. Biophys. Acta*, 101, 233 (1965).
- Fothergill, L., and Fothergill, J.: Disulphide Bonds of Ovalbumins, *Biochem. J.*, 110, 36P (1968).
- Fothergill, L., and Fothergill, J.: Structural Comparison of Ovalbumin from Nine Different Species, *Eur. J. Biochem.*, 17, 529 (1970).
- Fothergill, L., and Fothergill, J.: Thiol and Disulphide Contents of Hen Ovalbumin. C-Terminal Sequence and Location of Disulphide Bond, *Biochem. J.*, 116, 555 (1970).
- Franklin, J., and Leslie, J.: The Kinetics of the Reaction of N-Ethylmaleimide with Denatured [[beta]]-Lactoglobulin and Ovalbumin, *Biochim. Biophys. Acta*, 160, 333 (1968).
- Gilbert, G., and Kellett, G.: Interacting Systems of the Type A + B -> C Ovalbumin and Myoglobin, *J. Biol. Chem.*, 246, 6079 (1971).
- Gilmore, L., and Fothergill, J.: The Thiol and Disulphide Contents of Immunologically Related Ovalbumins, *Biochem. J.*, 103, 39P (1967).
- Glabe, C., Hanover, J., and Lennarz, W.: Glycosylation of Ovalbumin Nascent Chains, *J. Biol. Chem.*, 255, 9236 (1980).
- Gorbunoff, M.: Exposure of Tyrosine Residues in Protein. III. The Reaction of Cyanuric Fluoride in N-Acetylimidazol with Ovalbumin, Chymotrypsin and Trypsinogen, *Biochem.*, 8, 2591 (1969).
- Goux, W., and Venkatasubramanian, P.: Metal Ion Binding Properties of Hen Ovalbumin and S-Ovalbumin: Characterization of the Metal Ion Binding Site by ³¹P NMR and Water Proton Relaxation Rate Enhancements, *Biochem.*, 25, 84 (1986).
- Holt, J., and Greeth, J.: Studies of the Denaturation and Partial Renaturation of Ovalbumin, *Biochem. J.*, 129, 665 (1972).
- Linderstrom -Lang, K., and Ottesen, M.: A New Protein from Ovalbumin, *Nature*, 159, 807 (1947).
- Narita, K., and Ishii, J.: N-Terminal Sequence in Ovalbumin, *J. Biochem. Japan*, 52, 367 (1962).
- Nichol, L.W., Owen, E.A., and Winzor, D.J.: A Macromolecular Shape Function Based on Sedimentation Velocity Parameters, *Arch. Biochem. Biophys.*, 236, 338 (1985).
- Niu, C., and Fraenkel-Conrat, H.: Determination of C-Terminal Amino Acids and Peptides by Hydrazinolysis, *J. Am. Chem. Soc.*, 77, 5882 (1955).
- Perlmann, G.: Enzymatic Dephosphorylation of Ovalbumin and Plakalbumin, *J. Gen. Physiol*, 35, 711 (1952).
- Warner, R.C.: *The Proteins*, Vol. IIA, (Neurath, H., and Bailey, K., eds.) pg. 437, Academic Press, New York (1954).

Related / associated products and documents

See [BioSciences Innovations catalogue](#) and [e-search tool](#).

- [Bovine Serum Albumin \(BSA\)](#), i.e. standard grade #[UPQ8417](#), 30% solution #[900101](#)
- MaxiBind OVA, a cationized ovalbumin designed for enhanced conjugations, Maleimidyl-OVA #23066A
- [Saturating agents for immunoassays \(i.e. SeaBlock \)](#)

Ordering information

Catalog size quantities and prices may be found at <http://www.interchim.com>.

Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : Uptima / Interchim; Hotline : +33(0)4 70 03 73 06

Disclaimer : Materials from Uptima are sold **for research use only**, and are not intended for food, drug, household, or cosmetic use. Uptima is not liable for any damage resulting from handling or contact with this product.

Rev.K01E-J02E