

## Ovalbumin

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## Ovoproducts

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Ovalbumin was first isolated through successive salt precipitations in 1889, and the procedure was later improved in the first part of the 20th century. The standard purification procedures are labour intensive and difficult to mechanize, which meant that large-scale production of pure ovalbumin was not feasible. Neova Technologies has developed a purification procedure using chromatography techniques. As a result it is able to produce extremely pure ovalbumin in commercial volumes.

Ovalbumin is very similar in amino acid content to bovine serum albumin (BSA) (see Table below) and can be an excellent substitute for BSA.

**Table: Comparison of Amino Acids Between Albumins\***

Amino Acids	Ovalbumin	Lactalbumin	BSA
Lysine	6.6	11.5	12.8
Histidine	2.3	2.9	4.0
Arginine	5.9	1.2	5.9
Aspartic Acid	9.4	18.7	10.9
Threonine	4.5	5.5	5.8
Serine	8.1	4.8	4.2
Glutamic Acid	16.1	12.9	16.5
Proline	3.6	1.5	4.8
Glycine	3.2	3.2	1.8
Alanine	5.8	2.1	6.3
Half Cystine	2.4	6.4	6.5
Valine	7.1	4.7	5.9
Methionine	4.9	1.4	0.8
Isoleucine	7.0	6.8	2.6
Leucine	10.1	11.5	12.3
Tyrosine	3.9	5.4	5.1
Phenylalanine	5.4	4.5	6.6
Tryptophan	1.2	5.3	0.6

\* Grams per 100 grams of protein.

### APPLICATIONS

Ovalbumin is a key reference protein for immunization and biochemical studies. Some of its well-established uses include:

- as a standard in the investigation of composition, physical properties, and structure of proteins – in high purity crystalline form;
- as a blocking agent in immunohistochemistry and in Western blots of proteins – in solution;
- for the detection of anti-hemoglobin monoclonal antibodies in the enzyme-linked immunosorbent assay (ELISA); and
- as a protein standard in molecular weight determination by SDS-PAGE and size exclusion chromatography.

In addition, ovalbumin may be used in cell culture systems and in the diagnostic industry to stabilize enzymes and hormones that would otherwise lose their functional integrity. It is also ideal as a reference protein for both immunological and biochemical studies, where it serves as an effective carrier and as a stabilizer protein.

### BENEFITS / ADVANTAGES

As one of the largest manufacturers and suppliers worldwide of egg white proteins, Neova's advanced extraction and purification processes yield products that are consistently chosen over other competitive products. All extraction and refining is done under cGMP guidelines for active pharmaceutical ingredients (API).

A key benefit associated with using Neova ovalbumin lies in the full range of services, including both technical and applications support that Neova provides. Neova works with its customers to meet their unique product specifications.

An important advantage to using Neova ovalbumin is the elimination of the risk of disease associated with bovine and human derived albumins. This is because ovalbumin originates from a safer starting material than the other albumins and is processed to a pure form under more sanitary conditions.

Two grades of ovalbumin are available in a crystalline, lyophilized (freeze-dried) powder:

- Ovalbumin 90: minimum 90% protein
- Ovalbumin 98: minimum 98% protein (superior to 5X crystalline)

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