

Whitepaper

Usage, composition and functional properties of egg white.

Global Food Group

Your dedicated partner in egg products

Introduction

Egg white, also referred to as egg albumen, contains 56 percent of the whole egg's total protein along with the majority of the egg's niacin, riboflavin, choline, magnesium, potassium, sodium and sulfur.

Alone, egg whites are about 88 percent water, 10 percent protein and almost completely free of fat and cholesterol, making it a very attractive ingredient in today's food formulating industry. In fact, egg whites are a high-quality, nutrient dense food ingredient, as the protein in egg white has a very high biological value. It has also been shown to provide satiety and thus assist in weight loss diets.

The proteins in egg whites are very functional, and assist food product developers with overcoming certain formulating challenges. An increasingly popular challenge in today's food industry is to satisfy the restrictions set by natural foods stores on what a product may or may not contain. Egg whites have always been a good choice, as it is all-natural and a nutrition powerhouse.

Egg whites help formulators with producing high-volume foams and with leavening. When combined with other ingredients such as water or milk, it can be used to glaze pocket-style sandwiches, rolls and breads, preventing the crusts from drying. Egg whites also act as an adhesive in both breading and coating processes, as well as with topical application of nuts and seeds.



Egg white products offered by Global Food Group

- Egg White
- Salted Egg White
- Sugared Egg White
- High-Gel Egg White
- High-Whip Egg White

Composition and functional properties of egg white

Proteins	% of total protein	Molecular weight (Da)	PI ¹	Td (°C) ²	Carbohydrate moiety	Surface tension (mN/m)	Texture functional properties
Ovalbumin	54	46.000	4,6	84	Yes	51,8	Gelling
Conalbumin (ovotransferrin)	12	76.000	6,5	61	Yes	42,4	-
Ovomucoid	11	28.000	4,0	70	Yes	39,0	-
Ovoglobulins	4+4 ³	36.000-45.000	5,6	92	Yes	45,4	Foaming
Lysozyme	3,5	14.300	10,5	75	No	42,0	Electrostatic interaction with acid proteins
Ovomucin	3	5,5-8,3x10 ⁶	4,5-5,0	-	Yes	-	Viscosity
Ovoinhibitor	1,5	49.000	5,1	-	Yes	-	-
Ovoglycoprotein	1,0	24.400	3,9	-	Yes	-	Viscosity
Flavoprotein	0,8	34.000	4,0	-	Yes	-	-
Ovomacroglobulin	0,5	7,7x10 ⁵	4,5	-	Yes	-	-
Ficin inhibitor (cystatin)	0,05	12.700	5,1	-	No	-	-
Avidin	0,05	68.300	10	-	Yes	-	-

1: PI = Isoelectric point

2: Td = Temperature of denaturation

3: There are two types of ovoglobulins (G2 and G3) and each compose of 4%

Bibliography

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