Table 10–4. Protein composition of egg white

Protein	*Percentage*
Total protein	10-11% (on wet basis) 82.8% (on dry basis)
Ovalbumin	70% of total proteins
Conalbumin	9%
Ovomucoid	13%
Globulins	
Lysozyme (G_1)	2.6%
(G_2), (G_3)	7%
Mucin	2%
Avidin	0.06%

(*Adapted from Fevold HL, 1951*)

When egg yolk is diluted with water, proteins precipitate. When the yolk is heated, the proteins undergo heat denaturation and precipitate. Egg yolk contains 2 phosphoproteins, lipovitellin and lipovitellenin, which differ from each other in the following characteristics :

	Lipovitellin	***Lipovitellenin***
Lipid concentration :	17-18%	36-41% (mainly lecithins)
Phosphorus concentration :	1%	0.2%
Protein present :	Vitellin	Vitellenin

Egg yolk also contains water-soluble protein that does not precipitate on dilution of the yolk. This fraction is called ***livetin***. The enzymatic activity of yolk lies in this fraction.

Whole egg is an excellent food because it is a very rich source not only of protein and lipid but also of most of the vitamins (except vitamin C) and most of the required minerals (except calcium).

MILK PROTEINS

Milk, a source of nourishment for all mammals, is composed, in part, of a variety of proteins.

Milk (Fig. 10-2) contains about 0.6–0.7% protein which is not precipitated on acidification to pH 4.7. This represents about 20% of the protein contained in skim milk. These ***whey proteins*** are separated into 2 fractions : ***lactalbumin*** and ***lactoglobulin***.

The name ***casein*** is assigned to the fraction precipitated by acidifying milk to a pH of 4.7. It is present in cow's milk (3-3.5%) and human milk (0.3-0.6%). Casein may be further purified by redissolving and precipitating again. It is of 3 types : α, β and γ. These differ one another in their molecular weights, their rate of migration in an electric field and their phosphorus content.

REFERENCES

See list following Chapter 11.