



Brief Note on Antioxidant Compounds in Eggs

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Description

Eggs rich in the antioxidants lutein and zeaxanthin both play a protective role in reducing the risk of certain eye diseases, including cataracts and age-related macular degeneration. Studies show that these antioxidants are better absorbed by the body in eggs than in other plant sources. Egg is a food that has been shown to contain an endogenous antioxidant activity against free radicals.

The human body contains a combination of antioxidants known as endogenous antioxidants to reduce free radicals. Free radicals are molecules that have a single, unstable and highly active electron so they can lead to damage to cellular elements such as DNA, proteins, and other macromolecules. Antioxidants are unbalanced in the body, which can lead to degenerative diseases including cancer, heart disease, cataracts, diabetes and liver disease, because they do not have the ability to reduce the amount of free radicals in the body.

Taking antioxidants with food is thought to be important in reducing oxidative damage. These antioxidants play an important role in protecting cellular components from ROS that can damage and thereby maintain homeostasis and cell function. Synthetic antioxidants such as butylated hydroxyanisole, butylated hydroxytoluene, and tert-butylhydroquinone and propyl gallate have been used in both diet and medicine.

Antioxidant compounds in eggs

Eggs contain a variety of natural compounds that include the proteins ovalbumin, ovotransferrin and lysozyme in egg white, as well as phosphovitin, carotenoids and free amino acids in egg yolk. Other lipophilic antioxidants such as vitamin E, carotenoids, selenium, iodine and others can be transferred from the feed into egg yolks to produce eggs

rich in antioxidant. The bioactivity of egg antioxidants can be affected by digestion, storage and gastrointestinal digestion. Often heat processing methods can promote the loss of antioxidant properties in eggs due to oxidation and degeneration, while intestinal digestion improves antioxidant properties, due to the formation of new antioxidants.

Chemical and nutritional composition of eggs

The egg is made up of three parts: the oily shell, the egg white albumen, and the shell, which accounts for 9.5%, 63% and 27.5% of the total shell. The edible portion of egg contains water (74%), protein (12%), lipids (12%), carbohydrates (<1%) and vitamins and minerals. The chemical composition and properties of the egg are well documented. Part of the protein is distributed in both egg white (ovalbumin, ovotransferrin, ovomucoid, ovomucin, etc.) and yolk (high density lipoproteins, low density lipoproteins and livetins). Egg protein is a high quality protein and is used as a gold standard to measure the quality of other dietary proteins. Almost all egg lipids are found in yolk and about 65% of yolk lipids are triglycerides, while phospholipids, cholesterol and carotenoids make up 30%, 4%, <1%, respectively. The composition of the fatty acid of egg yolk can be altered by the composition of the feed to produce eggs enriched with polyunsaturated fatty acids with more benefits than basic foods.

Conclusion

In addition to nutrients, egg components have a variety of biological functions that may provide important health benefits. The egg is a complete biological system designed to nourish and protect the developing foetus from attack by various germs. As a result, egg shell containing membranes and egg white proteins have immune and biological properties such as viscosity, pH, antimicrobial properties, etc.