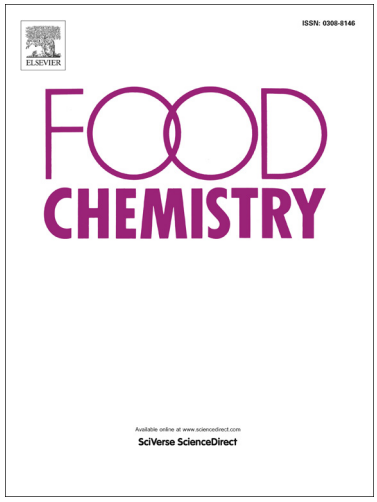

Effect of processing on aggregation mechanism of egg white proteins

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Effect of processing on aggregation mechanism of egg white proteins

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Abstract

Egg white proteins (EWPs) are important components of many food products. To obtain optimal functionality, EWP aggregation needs to be controlled. Different treatments can lead to the formation of aggregates in diverse ways, depending on the parameters of the treatments. Recent articles on the effects of processing (heat treatment, alkali treatment, pulsed electric field, high pressure, ultraviolet irradiation, and high intensity ultrasound) on the aggregation of EWPs are reviewed. The relationships between the processing parameters and the aggregation mechanisms are discussed. The information may be helpful in controlling the aggregation mechanisms during the processing.

Keywords

Aggregate, egg white protein (EWP), ovalbumin (OV), ovotransferrin (OT), lysozyme (LY), sulfhydryl-disulfide exchange (SH-SS exchange).

1. Introduction

Egg white (EW) is well-known for its excellent nutritional and functional attributes (foaming, gelation, and emulsifying) (Mine, 2002). Ovalbumin (OV) is the main protein in EW (54%), and its isoelectric