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P18. Ovalbumin Structural Changes by Phenolic Compounds Interactions

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ABSTRACT

Ovalbumin (OVA) is the most prevalent protein in egg white and, represents the major allergen from avian egg white that causes IgE-mediated food allergic reactions particularly in children. It has been shown that phenolic compounds interact with proteins by a single or multipoint mechanism, promoting structural and functional changes. Moreover, the interaction of some allergens with polyphenols, led to permanent modification of the tertiary structure of the allergen, which can result in a reduction in its IgE-binding capacity. This work aimed to analyse the effect of phenolic compounds (Gallic, Caffeic, Ferulic, Chlorogenic and Tannic Acids, Resveratrol and Quercetin) on the native structure of OVA, using Circular Dichroism (CD), fluorescence and Fourier transform infrared spectroscopy (FTIR). The phenolic compounds were incubated with OVA at different times, concentrations and temperatures. Changes in OVA secondary and tertiary structures were increasingly induced with increasing temperatures by the phenolic compound. Also, for a constant temperature, the changes found in OVA structure increased with the phenolic compounds concentration. The results show that the interactions between phenolic compounds and OVA result in complexes (phenolics – OVA) where OVA native structure is changed. This is likely to affect epitopes and hence OVA allergenicity.

Keywords: Egg allergy, Interactions, phenolic compounds, Ovalbumin.

Aknowlegments

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