Dietary Protein Oxidation: A Silent Threat to Human Health?

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Abstract

Protein oxidation has become a topic of great scientific interest in the field of Food Science and Nutrition. Food proteins are known to be preferential targets of radical species and protein oxidation has relevant consequences on protein functionality and food quality. Current trends in this field call attention to the nutritional and health dimensions of oxidized foods. Both lipid and protein oxidation products are accumulated in the food during processing and storage and also upon food intake, during the subsequent digestion phases. The gastrointestinal tract and internal organs are exposed to the cytotoxic and mutagenic potential of these species. While the molecular basis of the pathogenesis of particular dietary lipid oxidation products is well known, the impact of dietary oxidized proteins on human health has been largely ignored. The well-established association between *in vivo* protein oxidation and aging and age-related diseases urges scientists to investigate the contribution of dietary protein oxidation to particular pathological conditions. Recent reports indicate the involvement of dietary protein oxidation species on particular health disorders which emphasizes the link between dietary and *in vivo* protein oxidation.