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Hypocholesterolemic and Anticarcinogenic Effect of *Vicia faba* Protein Hydrolyzates

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ABSTRACT

In recent years, the consumption of vegetal-source proteins has been studied to determine their preventing effect on the development of several chronic diseases. The initial purpose of this report was to determine the effect of a hypercholesterolemic diet (HCD) given to mice, alone or with azoxymethane (AOM), on various obesity biochemical biomarkers, as well as on the induction of colon aberrant crypts (aberrant crypt foci; ACF). At the end of the 5-week assay, animals fed the HCD showed alterations in the level of total cholesterol, high- and low-density lipoproteins, and in the Atherogenic Index; besides, a significant elevation was observed in the number of ACF. Our second aim was to examine the effect of a Faba Protein Hydrolyzate (FPH) on mice fed the HCD. We first obtained protein hydrolyzates from the seeds of *Vicia faba*, determined the in vitro antioxidant potential with two tests, and, subsequently, evaluated the effect on obesity biomarkers and on the number of ACF. In the first case, we found that, generally, the best protective effect was obtained with the low dose of FPH (10 mg/kg) administered to animals fed the HCD, and injected AOM. With respect to the number of ACF, we observed that this dose was more effective, inhibiting such lesions to almost the level determined for the normocholesterolemic diet (NCD). Therefore, our results demonstrated the relevance of a HCD to develop anomalies in obesity biomarkers in mouse, as well as to increase the number of precarcinogenic lesions. Our results also showed a protective response with the administration of FPH, particularly with a specific dose, suggesting the need for extending research on the matter by widening the spectra of doses, in order to clearly define its potential to counteract the damage induced by the HCD, as well as to confirm if antioxidation in mice was involved in such an effect.

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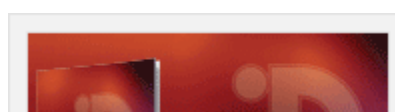
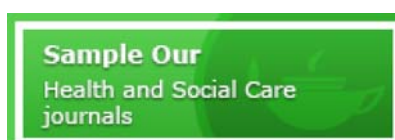
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