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Development of a cashew nut coated with bioactive whey peptide extract with antihipertensive

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Abstract

There is a growing concern in the consumer's habits seeking healthy foods, which has opened new markets for functional foods. This global demand led to the development of functional foods, searching new ingredients to incorporate into conventional foods.
Whey proteins are studied not only from the nutritional and functional properties, but also as a source of peptides that may exert biological functions, particularly antihypertensive activity. These bioactive peptides are released by enzymatic hydrolysis and according the final composition they may exert biological activities.
Cashew nut was used as matrix for incorporation functional ingredients due to its nutritional properties conveyed by the high content of folic acid and essential fatty acids.
The aim of this study was to develop a cashew nut coated with peptide fraction obtained from whey and to evaluate the antihypertensive activity and consumer acceptance of the new functional cashew nuts.
The fraction with MW < 3000 Da was obtained by hydrolysis of whey with *Cynara cardunculus* followed by nanofiltration to obtain low MW fraction, exhibited very high ACE-inhibitory activity, IC50 12.8 µg /mL protein.
The incorporation of peptides (2 %) in cashew nut led to a reduction to values of ACE-inhibitory activity, 532.2 µg/mL. However, this is close the values reported by other products in the market claiming antihypertensive activity. In the formulation there is space to increase concentration and biological activity. Nevertheless, it is important to highlight that the antihypertensive activity was not lost even when high temperatures during coating and processing of the product were used.
The sensory analysis of the functional cashew nut showed high acceptability by the consumers. Our results suggest that the application of these bioactive peptide extracts with

antihypertensive activity in the development of a new snacks with reduce salt content is promising in the improvement of new value-added food products.

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