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Antioxidant activity of Iraqi buffalo whey protein hydrolysates and their incorporation into the preservation of Beef Patties

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Abstract

Whey proteins were separated by ultrafiltration with MWCO 10 pore size, concentrated at a rotary evaporator, and dried by Freeze-Drying and to obtain the whey protein concentrate, the enzymes Pepsin, Alcalase, and Papain were used in the process of degrading the whey protein concentrate and following up the degree of hydrolysis within four hours. Alcalase enzyme gave the highest degree of hydrolysis of 39.62% and calculated the length of the peptide chain. Antioxidant activity tests were conducted on Hydrolysate to determine the most effective degradation, where the ability to bind ferrous ion, reductive capacity, 1,1 Diphenyl-2picrylhdrazyl (DPPH) Radical Scavengers and hydrogen peroxide. And 157.17%, 82.48% and 79.07%, respectively, at the concentration of 25 mg/ml compared to the enzyme hydrolyzers of Pepsin and Papain. The peroxide number was estimated for Beef Patties treated with different concentrations of the hydrolysate prepared with the enzyme M Alcalase, and the lowest value for the peroxide number was at the concentration of 400 mg/100 g of beef.

Keywords

Iraqi buffalo, whey protein, Beef Patties