

Properties of hydrolysed collagen from the skin of milkfish (*Chanoschanos*) as affected by different enzymatic treatments

ABSTRACT

This study was carried out to evaluate the effects of different enzymatic treatments on the physicochemical and functional properties of hydrolysed collagen extracted from the skin of milkfish (*Chanoschanos*). Alcalase (A) and bromelain (B) treatment with different hydrolysis time (30, 60 and 90 min) were performed to extract the hydrolysed collagens. Bromelain treatment was found to be more effective in enhancing the degree of extractability of hydrolysed collagen, however, the extent of collagen hydrolysis was observed to be more efficient with alcalase treatment. The highest protein content was obtained for A90 (61.73 ± 0.07 %). All samples had relatively low moisture content (<10 %) with pH values in neutral range. Different hydrolysis time for both enzymes resulted in varying emulsion properties and water holding capacity of hydrolysed collagens. However, no significance differences ($p > 0.05$) was observed on the effect of different enzymatic treatments on the stability of emulsion formed. Hydrolysed collagens produced by bromelain hydrolysis were observed to have higher capability to scavenge free radicals, thus higher antioxidative properties (~ 80 % DPPH radical scavenging activity). Hence, modification of enzymatic hydrolysis treatment could resulted in varying properties of hydrolysed collagen, which can be tailor-made for specific application as functional food ingredient.