Unicorn Fish (Naso reticulatus Randall, 2001) Skin Collagens Prepared Using Two Pepsin Sources: An Assessment on Physicochemical Characteristics

ABSTRACT

Fish collagens have gained considerable attention from numerous researchers due to their attractive traits and are more acceptable from most religious beliefs. This paper aimed to extract and characterize collagens from the skins of unicorn fish (N. reticulatus) influenced by pepsin from porcine (UCP) and pepsin from bovine (UCB). The yield of the UCP sample (15.60%) was significantly higher ($P<0.05$) compared to the UCB (10.40%). In addition to this, the swelling value of two collagens showed significant differences ($P<0.05$), with a greater percentage obtained in UCP 9261.23%) rather than UCB (196.75%). Both UCP and UCB were classified as type I collagen owing to the existence of two alpha chains under SDS-polyacrylamide gel electrophoresis. Under infrared and ultraviolet-visible parameters, the triple helical structure of collagens prepared using pepsin from porcine and bovine was preserved, and it was comparable to previous findings in fish collagen literature. All samples showed a different thermostability value, the higher one observed in the UCP (43.63°C) compared to the UCB sample (35.25°C), and their variations of thermostability were in agreement with the hydroxyproline content of UCP (83.57 mg/g) and UCB (81.47 mg/g). The unicorn fish (N. reticulatus) skin may be used as a good source of collagen, mainly utilized for industrial perspective.