A REVIEW ON EXTRACTION, CHARACTERIZATION AND APPLICATION OF FISH COLLAGEN FOR BIOMATERIALS ENGINEERING

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ABSTRACT

A REVIEW ON EXTRACTION, CHARACTERIZATION AND APPLICATION OF FISH COLLAGEN FOR BIOMATERIALS ENGINEERING

Marine collagen usage is increasingly rapid due to its distinctive properties in comparison with mammalian-based collagen such as no risk of disease transmission, lack religious restrictions, cheap processes, low molecular weight, biocompatibility, and ease of absorption into the human body. This article outlines the latest research from 2014 to 2020 on collagen extraction from marine materials, especially fish by-products. The collagen structure, common extraction methods, characterization and biomedical application of fish collagen are introduced. More specifically, the acetic acid and pepsin-aided acetic extraction for isolating fish collagen were discussed and compared. In addition, the effects of extraction parameters (temperature, acid concentration, extraction time, solid-liquid ratio) on collagen yield were investigated. Lastly, the application of fish collagen in biomaterial engineering such as bone regeneration and tissue engineering was summarized.

Keywords: Fish collagen, collagen extraction, acetic acid and biomaterial application

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