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Extraction and characterization of gelatin from rohu (*Labeo rohita*) fish scale

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ABSTRACT

The global market for halal food industry is growing rapidly with the main concern relies on the ingredient and processing method. Gelatin is an important ingredient in food industry which is regarded as unique among commercial hydrocolloids and serving multiple functions with a broad range of applications in food, pharmaceutical, biomedical, and photographic industries. Generally, commercial gelatin is derived from pig skins, cow skins and bones. However, porcine gelatin is prohibited for Jews and Muslims consumption and bovine gelatin is acceptable only if it has been prepared according to religious requirements. The incident of cow being infected with Bovine Spongiform Encephalopathy (BSE) or "mad cow disease" also urged the needs to find gelatin from alternative sources. Realizing the importance in searching alternative gelatin sources that could also meet the needs for halal requirement, this research attempts to produce halal gelatin from fish scales from Rohu fish. Rohu fish (Labeo rohita) is a tropical freshwater fish belongs to the carp family and has a thick scales which can be utilized as alternative source of gelatin. In this study, gelatin was extracted from rohu fish (*Labeo rohita*) scales by two different pretreatment methods, i.e with acid and alkaline. The gelatin obtained were evaluated in terms of yield and its physicochemical properties such as gel strength, viscosity, color, gelling and melting temperatures and other relevant functional properties.

Keywords: *gelatin, fish scale, alternative source, physiochemical properties*